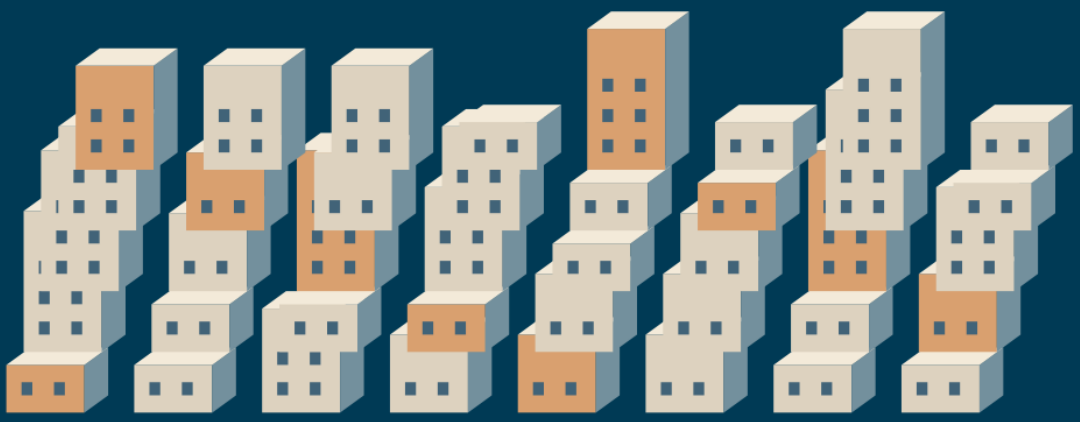
HOUSING THE NEXT BILLION

A Practitioner's Handbook

Land, finance, institutions, and technology
for affordable housing



ABHAS JHA

November 7, 2026

What governments should do

For governments facing scarce budgets, weak delivery capacity and shortages of serviced land, building flats is often a poor starting point. It can cost more per family, place households farther from jobs and reach fewer people. Start with land, services and finance that make adequate housing attainable for the bottom 50 percent. Build directly where government controls well-located land and can deliver safe, affordable homes and maintain them.

A. Make well-located land ready for housing. Resolve land rights, permit modest, safe homes, and provide water, drainage, roads and transport.

B. Enable households to build and improve their homes. Provide secure tenure, affordable serviced plots, small loans suited to irregular incomes, and practical construction advice. Allow households to add rooms safely over time, including rooms to rent.

C. Pay for essential services and close specific affordability gaps. Fund infrastructure and maintenance. Use targeted grants or rental assistance for households that cannot afford adequate housing. Protect tenants and displaced residents, and check that subsidies reach households rather than raise land prices or rents.

Build or commission homes directly when that route delivers better outcomes at a justified full public cost, or reaches households other routes cannot serve. Compare serviced plots, improvements, rental support and public units on additional safe, affordable home-years, access and rights.

The evidence supports comparing routes under local conditions. Addis Ababa and Mumbai housing lotteries show why an asset with letting rights can benefit households even when they live elsewhere; Singapore demonstrates public provision at scale. These findings require a fair comparison, including land, services, finance and upkeep. The book's three priorities organise that comparison without imposing a universal ranking. [R449, R450, R423]

This book focuses on households in the lower half of the income distribution: the bottom 50 percent. The next billion means the next billion people seeking adequate urban housing through population growth, household formation, migration and replacement of inadequate homes. It is a statement of scale, not a forecast for one date, one region or one billion new dwellings. Existing residents, tenants and people displaced by improvement belong in the account alongside new arrivals.

One home-year is one household safely occupying an adequate home for one year at a cost it can sustain. Count partial years proportionately. Specify safety, essential services, residual income and target-group eligibility before counting; report failure on each dimension separately, with home-years for the bottom 50 percent identified. Ten households meeting those conditions for ten years produce 100 gross home-years. If 60 would have occurred without the intervention, the programme produces 40 additional home-years. The counterfactual is often uncertain: show its range rather than rename all occupation additional.

This measure does not make rights tradable. An unlawful eviction cannot be cancelled by a larger number of home-years elsewhere. Nor does low mobility prove success: a family may be trapped. Follow voluntary exits, rental income, destination conditions and excluded people as well as those who stay. Report access to work and services alongside affordability rather than imposing one universal distance threshold.

Judge the results and fund the responsibilities

Judge housing by what households can obtain and keep

Count additional occupied years; approvals and completions are intermediate outputs.

Measure what remains after housing, essential services and travel, and allow for income and asset gains.

Compare locations with their actual prices, rights and time horizons: peripheral housing can help when people can choose, rent out or move.

Follow the original population, including renters and people omitted from the register, long enough to see who gains and who loses.

Remove the constraint that prevents usable housing

Land becomes usable housing when rights, permission and services arrive together.

Enforce life safety and remove restrictions whose costs exceed their benefits.

Treat small landlords and tenants as central to supply.

Count the full cost and identify who benefits

Match debt to household cash flow, including bad months.

Trace every subsidy to its eventual beneficiary.

Fund delivery and upkeep before scaling

Give each delivery responsibility an owner and finance upkeep beyond handover.

The three numbers to put before a minister

Report the full present value of public support; the additional households and home-years meeting the published conditions; and the number of original residents who lose housing, income or effective access to services. Show the assumptions and the bottom 50 percent's share of benefits and losses. These three accounts prevent an attractive completion count from concealing fiscal liabilities, weak additionality or displacement.

How to read the evidence

Randomised and credible quasi-experimental studies estimate effects within their samples. Administrative records describe delivery; institutional accounts describe programmes; qualitative research explains experience and mechanisms; models expose assumptions. None is interchangeable with the others. I use a common real discount rate of 5 percent for new teaching models, with 3 and 10 percent sensitivity. This is a comparison convention, not an official appraisal rate. Use the applicable public appraisal guidance for an actual investment, keep nominal cash flows with nominal rates, and state the price year. Report undiscounted physical home-years beside discounted costs; any discounted-benefit ratio must be labelled separately.

About this edition

Housing the Next Billion: A Practitioner's Handbook examines how public action can make adequate housing attainable. It connects usable land, household building and improvement, essential services and targeted assistance to the institutions that deliver them. AI and digital tools are assessed against specific decisions and their effects on residents.

This handbook is dated November 7, 2026. It contains an introduction, six parts and sixteen chapters, organised around three policy priorities and eight outcome tests. Practical procedures and teaching models are proposed applications unless identified as research findings. The handbook combines reference evidence with tools for decisions; it is intended for practitioners and expert review.

The opening defines additional safe, affordable home-years, the book’s proposed outcome measure. The chapters distinguish the welfare of a household from the physical location of an asset and distinguish voluntary moves from compulsory removal.

Bracketed R references identify entries in the consolidated bibliography. Sources retain their publication dates and evidence types. Teaching calculations use disclosed assumptions; they are not estimates for named projects. The Word edition preserves editable text and tables. CU denotes hypothetical currency units local to each teaching model, with no exchange rate or common purchasing power across the book. The CU 20,000 small-home examples and the CU 5.2 million district-account example use separate price levels. Compare amounts within a specified model, not across these scales. This remains an expert-review draft. The provisional Nairobi citation and other source limitations remain identified where they affect an argument.

Authorship and publication notes

Personal capacity and institutional affiliation. This book is written in my personal capacity. The views, interpretations, and conclusions expressed are my own and do not necessarily reflect those of the World Bank, its Board of Executive Directors, or the governments they represent. Institutional affiliation is provided for identification only. This is an independent publication and does not imply institutional review, approval, or endorsement. Any errors or omissions are my responsibility.

Use of a large language model. I write with a large language model in the loop as an editor, researcher, and thought partner. All judgments, errors, and omissions are mine.

Evidence and review limits. The manuscript has received targeted evidence, citation, editorial, and risk checks. These checks do not certify every statement, independently reproduce the underlying datasets, or constitute formal peer review or institutional clearance. Sources differ in quality and method. Causal estimates, administrative counts, reported case experience, and illustrative calculations are distinguished where material. Remaining source-access and numerical limitations are identified at the point of use.

Dates, examples, and professional use. Figures and programme rules refer to the dates stated and may change. Local currencies and historical cost bases are retained; cross-country amounts should not be treated as directly comparable current prices. Financial models and hypothetical households illustrate mechanisms rather than actual offers or guaranteed outcomes. The book provides general analysis, not project-specific legal, financial, engineering, or investment advice. Confirm applicable law, technical standards, and current programme terms before acting.

Names, data, and third-party material. References to jurisdictions, places, institutions, or geographic boundaries do not express a view on legal status or boundaries. Naming a product, organisation, or method does not imply endorsement. Rights in cited or reproduced third-party material remain with their respective holders; citations do not grant republication permission. Proposed data collection and linkage require a lawful basis, appropriate privacy protections, and safeguards for people whose rights may be affected.

Contents

How to use this book 7
Introduction 9

Part I Judge results

1. Measuring Housing Outcomes and Household Welfare 13

Part II Make land ready

2. Land Rights and the Path to Serviced Housing 33
3. Planning Rules and the Cost of Safe Housing 54
4. Infrastructure and the Delivery of Serviced Land 71
5. Metropolitan Growth and Access to Opportunity 88

Part III Enable households to build and rent

6. Construction Costs and Housing Production 99
7. Rental Housing and Secure Tenure 110
8. Housing Finance for Households and Small Builders 140

Part IV Pay for services and close gaps

9. Housing Subsidies and Who Benefits 156
10. Public Finance and the Full Cost of Housing 175
11. Maintenance and Long-Term Housing Affordability 190
12. Safer Housing and Recovery from Disaster 211

Part V Deliver and protect

13. Institutions and Procurement for Housing Delivery 230
14. Redevelopment and the Rights of Existing Residents 252
15. Inclusive Neighbourhoods and Access to Services 267

Part VI A practical agenda

16. A Practical Agenda for Affordable Housing 281
Appraisal and teaching tools 286
Glossary 290
Consolidated bibliography 291

How to use this book

Start with the decision you face

Use the six parts to follow the argument from diagnosis to delivery. Part I establishes results; Part II makes land ready; Part III enables households to build and rent; Part IV funds services and affordability gaps; Part V addresses delivery and rights; Part VI brings the evidence into a practical agenda. Each chapter names the priority and outcome tests it serves. The eight tests in Appraisal and teaching tools provide one framework for the whole book.

A minister assessing a programme

Read the opening argument, Chapters 1 and 16, then the eight outcome tests. Ask for additional years of safe, affordable occupation; the full present value of public support; and the outcomes of original residents, including those who leave. Turn to Chapters 9, 10 and 13 when the uncertainty concerns subsidies, fiscal commitments or delivery. The result should be a decision with conditions, a responsible authority and a review date.

A city preparing serviced land

Read Chapters 2, 3 and 4, then Chapters 10 and 13. Establish claims and lawful development rights, test service capacity and household access, and assign capital and operating obligations before procurement. Chapter 4 brings service feasibility and neighbourhood infrastructure finance together; Chapter 10 checks whether the wider public accounts can support the commitment. Use Chapter 5 when transport or growth crosses municipal boundaries.

A team designing housing support

Read Chapters 7, 8 and 9, then the fiscal account in Chapter 10. Choose the tenure and support instrument only after identifying the household or producer constraint. Chapter 8 connects the finance system to household repayment capacity; Chapter 9 follows the subsidy to its eventual recipients. Record excluded households, stress the recurring payments, and compare the instrument with a feasible alternative.

An official improving an occupied neighbourhood

Read Chapters 11, 14 and 15, with Chapter 7 for rental housing. Start with residents and service failures, then agree rights, management duties and funded repairs. Follow tenants and people who leave, as well as owners and new occupants. Chapter 12 adds the requirements for disaster recovery and safer construction. The result should be an operating agreement and resident safeguards that survive handover.

Use one appraisal throughout

The eight outcome tests are the common decision framework. Chapter tools supply evidence for these tests; they are not additional approval systems. Return to the same appraisal as information improves, record what remains uncertain, and distinguish a condition that can be resolved during delivery from a rights or safety requirement that must be met first.

Tests 1 and 2 establish who benefits and what households can sustain. Use Chapter 1 for the baseline and follow-up, Chapter 7 for tenure and rental access, and Chapter 8 for repayment capacity. Assess reach across the bottom 50 percent, including non-applicants and exits; include services, travel and other essentials in the affordability assessment.

Tests 3 and 4 compare feasible alternatives and locations. Use Chapters 2, 3, 4 and 6 for land, rules, services and construction, Chapter 5 for metropolitan access, and Chapter 12 for recovery alternatives. State the counterfactual, time horizon and assumed prices. The cheapest dwelling is not necessarily the least costly housing option.

Tests 5 and 6 trace public support and delivery obligations. Use Chapters 9 and 10 for subsidy incidence and fiscal commitments, Chapter 13 for the sequence to occupation, and Chapter 11 for maintenance. Name the authority, funding source and remedy for each obligation, including obligations after the construction contract ends.

Tests 7 and 8 secure rights and make results verifiable. Use Chapters 12, 14 and 15 for safety, redevelopment and inclusion, returning to Chapter 1 for independent follow-up. A favourable benefit calculation cannot substitute for lawful treatment, safety or accessible remedies. Chapter 16 converts the appraisal into a sequence of decisions and review points.

Read the evidence at its stated strength

Distinguish recollection, administrative records, causal estimates and teaching models. Recollections explain the questions that practitioners encounter; they do not establish a programme-wide effect. Figures sit beside the relevant argument and identify observations or assumptions. Selected readings at each chapter's end explain what a source contributes and where it stops; the full references remain in the bibliography.

Use the bold opening sentences to scan, then read the evidence before acting. Each chapter begins with its principal decision and closes with judgment, transfer and scale conditions, or the concluding agenda. For every chapter exercise, name the responsible institution and the evidence that would change the decision. Record a proposed action, its cost, the households affected and the point at which the decision should be revisited.

Where to find the main case accounts

Use one main account for each recurring case, then follow the shorter applications. Singapore's institutional and clearance record is in Chapter 15; Mukuru's rights and displacement record is in Chapter 14; Auckland's planning evidence is in Chapter 3; and Cape Town's rental mechanisms are in Chapter 7. Ahmedabad has two distinct homes: land readjustment in Chapter 2 and the relocation lottery in Chapter 5. Fiscal calculations and maintenance evidence elsewhere answer separate questions and should be read with those accounts.

Introduction

Define success by the lives households can sustain

For governments facing scarce budgets, weak delivery capacity and shortages of serviced land, building flats is often a poor starting point. For households in the bottom 50 percent, start with land, services and finance: make land ready, enable households to build and improve, and fund essential services and specific affordability gaps. Households can commission local builders, improve gradually or use rental markets and cooperatives. Direct construction needs well-located land under government control, credible delivery and funded maintenance. Compare its full costs, reach and access to jobs with feasible alternatives; the evidence does not establish that flats are always the most costly or worst located.

Public-housing evidence identifies conditions under which direct building can benefit households. Franklin's South African study finds income gains substantially driven by women's employment. Addis Ababa and Mumbai lottery findings show benefits when households receive an asset they can let, while the Ahmedabad case records substantial non-occupation. Singapore, China and Türkiye demonstrate large-scale public roles through different institutions. These are different treatments and populations, with different costs and rights. They justify testing public provision; they do not identify a universal ranking against plots, improvements or rental support. Chapters 2, 9, 5 and 15 examine those differences. [R348, R449, R450, R161, R502]

The argument has a clear lineage in the World Bank's 1993 enabling-markets agenda. Housing: Enabling Markets to Work, written by Stephen Mayo and Shlomo Angel, emphasised property rights, finance, subsidies, infrastructure, regulation and institutions. Buckley and Kalarickal's 2006 review recognised persistent land constraints and the limited direct reach of mortgage development among poor households. Those constraints help explain why market reform alone leaves needs unmet. [R507, R061] This handbook puts the appraisal work in one place: household outcomes over time, full public cost, distribution, enforceable rights and funded delivery. These are organising commitments, not a claim to have discovered concerns absent from earlier work.

My early experience taught me how easily a programme's construction target can displace the preferences of its occupants. I began working on affordable housing more than three decades ago, implementing Indira Awaas Yojana in India in the early and mid-1990s. I remember tribal families who wanted to build mud houses that they regarded as beautiful and comfortable, with much more space than the scheme's standard provision. Their proposal did not get through the local approval process. That may have been a local error; I do not treat it as evidence of a national prohibition. The broader problem was measurement: completed houses told us little about satisfaction or changes in health, education, and livelihoods. My later visits to Chennai raised a related question about what housing programmes enable families to do over time.

The neighbourhoods I visited in Chennai made me question why serviced plots had lost support as a housing approach. In Ambedkar Nagar and Arumbakkam, people had built homes and businesses through sites and services, creating neighbourhoods with homes and businesses. Yet a later visit cannot reveal how long residents endured poor access, who left, or which institutions would be needed to repeat the result. Chapter 4 examines those qualifications as well as the achievement. This

combination of observed progress and unresolved implementation questions shapes how I assess the cases throughout the book.

I write as a practitioner concerned with policies that ordinary institutions can deliver repeatedly. My work has taken me from public administration in India to urban development, affordable housing, and digital technologies, with a focus on how technology and AI can improve services for poor households. I am interested in how policies are funded, approved, procured, and maintained through changes in staff and leadership. I want governments to deliver at scale while families retain meaningful choices about where and how they live. That requires a definition of affordability broad enough to capture what families actually pay and receive.

Affordability includes recurring costs, usable services, and access to livelihoods as well as the price of the dwelling. Add housing payments, utilities, transport, maintenance, and fees in a household cash account. Record travel and care time, service interruptions, and uninsured risks separately; do not add hours to currency or count the same repair twice. Test irregular incomes and seasonal expenses, and show residual income after essentials by household type. If time or risk is monetised, disclose the assumptions and also show the result without monetisation. The next question is whether the nearby opportunities are ones the household can actually use.

Physical proximity is useful only when residents can access the jobs, services, and social support they need. Check skills, travel costs, route safety, school admission, disability access, opening hours, childcare, and informal work. A locally chosen 45–60-minute travel screen is not a universal entitlement threshold or proof of opportunity. Assess whether households in the bottom 50 percent can enter and remain, including deposits, documentation, discrimination, displacement, and access to shared facilities. Track people who leave the project boundary as well as those who stay. These household-level tests help interpret national and global estimates without confusing different forms of housing need.

Headline housing totals describe different problems and cannot be added into a single measure of demand. UN-Habitat's World Cities Report 2026 estimates that up to 3.4 billion people lack secure, safe, adequate housing, including more than one billion in informal settlements and slums. It reports a deficit of 288 million units in 2023, up from 251 million in 2010, and estimates that 44 percent of tenant households spent more than 30 percent of income on rent in 2023. The last denominator is tenant households, not all households. [R001, R011] Turning these measures into a programme requires local estimates of household formation, replacement needs, and usable supply.

Housing demand must be estimated by household type, income, tenure and location. India's and Africa's urban transitions differ across cities; national projections cannot substitute for a local account of household formation, migration, replacement needs and existing capacity. The land-quantity scenarios in Chapter 2 show how to turn a population assumption into an explicit range of land requirements. For the bottom 50 percent, name the reference population, income measure and data year; rank households within that population, not only among applicants. Report the poorest households separately. This focus guides public priorities, not a universal eligibility cutoff.

A low price cannot compensate for unsafe, inaccessible, or unsuitable housing. Assess secure tenure, basic services, habitability, accessibility, location, and cultural suitability, including crowding, ventilation, damp, sanitation, safe energy use, and room for care or home-based work. These dimensions follow the international adequate-housing framework; local legal duties and technical standards still require review. [R012] This book focuses on urban and peri-urban systems, especially in Africa and India. Rural housing, emergency shelter design, structural engineering, and jurisdiction-specific legal practice require specialist guidance. Within that scope, the central task is to identify why the inputs needed for adequate housing fail to come together.

Diagnose the institutions and incentives behind the constraint

Housing interventions work only when their complementary inputs are available in a feasible sequence. Land without roads, water, and drainage needs further investment before occupation. Infrastructure without development rights may remain underused. Mortgage liquidity cannot help a household that fails income or collateral tests, while a construction subsidy may raise land prices when supply is fixed. Examine land, planning, trunk and local services, construction, producers, household and developer finance, allocation, tenure, and maintenance together with transport and jobs. The binding constraint will differ by city and household group, and removing it may expose another.

Information is useful when an institution can act on it. Developers need verifiable rights, approvals and demand; lenders need evidence of repayment capacity; households need credible prices and future charges. Record which decision a missing fact prevents and who can resolve it. A registry or platform earns its place when it changes that decision at a justified cost. The distribution of authority matters alongside the quality of data.

Political economy determines whose costs and claims enter housing decisions. Existing residents can vote, attend hearings, and organise locally, while prospective residents often have weaker channels. Owners may seek to protect amenities and property values; tenants may fear displacement; municipalities may resist growth that adds service costs without revenue. Identify these interests through contracts, budgets, decisions, and separate interviews rather than assume motives. Record who gains from development rights, infrastructure, subsidies, and maintenance spending, and who can challenge the allocation. These conflicts also explain why coordination cannot substitute for a decision about public resources.

Some housing constraints require subsidy, redistribution, infrastructure investment, or a different site. Coordination cannot make a very poor household pay the full cost of adequate housing, and information cannot remove a physical water shortage or make an unsafe site suitable. A housing assessment must identify who can make the required choice and who will pay for it. The same discipline applies to affordable plots, rental rooms, redevelopment, and homeownership. Choosing among them requires attention to the institutions and markets in which they will operate.

Household building needs a local production account. Separate homes built or commissioned by households, small-landlord additions, developer-built units and public provision. Record both new supply and improvements, with the year, geography and denominator. India's 2025 pilot survey estimated 9.854 million households undertaking own-account construction for their own use during the preceding 365 days; that national activity count is not the share of urban homes built by households. [R509] The book does not have a comparable, verified city-level production share for an African and an Indian setting. The policy argument therefore rests on diagnosed constraints and comparative appraisal, rather than an assumed majority share.

Use technology and evidence to improve decisions

Digital technology and AI are useful when they reduce the cost or improve the reliability of a housing decision. Imagery, registries, and computer vision can help locate parcels and structures; workflow records can reveal approval delays; alternative data may assist underwriting; building information systems may reduce errors and waste. Rental platforms and digital payments can reduce search costs or create transaction histories. Each application needs five questions: which constraint

changes, by how much, who captures the gain, who gains power, and what new risk appears? Large mapping programmes show why outputs must be distinguished from their subsequent use.

Mapping at scale does not establish that rights have been resolved or that households can use them for finance. India's SVAMITVA programme reported drone surveys covering about 329,000 villages and 31 million property cards prepared for 187,000 villages by March 2026. On 4 August 2026, the ministry reported 32.4 million cards prepared and about 27.2 million distributed. Preparation, distribution, recognition of rights, and borrowing are separate outcomes, and rural coverage does not demonstrate urban applicability. [R004, R005] Inheritance, tenancy, customary claims, women's rights, and disputes on public land may remain unresolved after mapping. That makes rules governing data use part of the housing intervention itself.

Housing data needs correction, appeal, and use restrictions before it is shared widely. A new address can enter a tax register, a mapped structure can become an enforcement target, and a payment history can affect lending eligibility. Linking records can improve service planning while increasing the power of an agency or investor over occupants with weak documentation. Specify permitted users and purposes, prohibited secondary uses, and accessible remedies. Maintain common definitions and check uncertain matches, including when imagery and administrative records disagree. Evaluation must then test whether the resulting decisions improve household outcomes.

Transfer a mechanism only after identifying the evidence and conditions behind it. Examine an observed improvement, adverse results where available, and the rights, finance and institutions that could explain the difference. Paired cases are rarely controlled experiments. Keep teaching models separate from observed outcomes and record missing comparisons. Chapter conclusions state the judgment, confidence and evidence that would cause a revision.

Scaling requires testing whether finance, institutions, markets, and political agreements can sustain greater volume. State the mechanism and outcome supported by the evidence, the required legal powers and demand, and the adaptations needed for local tenure, informal work, exclusion, and capacity. At ten or one hundred times the pilot volume, test prices, networks, staff, supply chains, and changes in participation. Identify who pays for operations and renewal after pilot funding, who bears contingent liabilities, and who could block expansion. Name the responsible agency and its remedy for failure. Those questions should determine the data collected before implementation.

Part I Judge results

1. Measuring Housing Outcomes and Household Welfare

Which housing outcomes should government measure before deciding what to fund?

All three priorities depend on measuring the right result. This chapter supplies the baseline and follow-up for all eight outcome tests, especially reach (1), alternatives (3) and verification (8). Use household evidence to decide whether to prepare land, enable building and improvement, or fund a specific service or affordability gap. Track the resulting safe, affordable occupation, including exclusion and exits. Completed homes alone cannot establish additionality or retention. This chapter connects occupants and rights to administrative and experimental evidence, comparison groups and follow-up. Each information system must name the official decision it can change.

Evidence	What it establishes	What remains uncertain
In a Ghana field experiment, digital maps raised tax-bill deliveries 27% and collections 103%.	Information changed worker behaviour and fiscal yield.	The February 2025 paper reports an 11.6 percentage-point increase in household reports of any bribe, from a 13.9 percent control mean (Table 2, panel B, column 5). These are survey reports, not audited bribe transactions. [R222]
In Freetown, mapped properties doubled and tax collections tripled in the first year of reform.	Local data can support a more progressive tax base.	Central-local power and ownership of the system remained contested. [R214]
India reported 99.8% computerised records of rights by January 2026.	Digitisation has reached substantial scale.	Surveys, corrections, pending cases, and customary rights still require institutions. [R215]
Mukuru's planning documentation targeted about 100,000 households; a separate enumeration account estimated that 94% of residents were renters.	Enumeration changes who appears in the policy problem.	Formal title or building maps alone cannot determine who should gain. [R210, R211]

Evidence hierarchy: the Ghana estimate is experimental; the Freetown and India numbers are reported administrative measures; Mukuru figures come from enumeration and project documentation.

Collect information that changes a housing decision

Distinguishing owners from occupants

A roof map cannot establish the distribution of occupancy, ownership, and livelihood claims within a settlement. It can help identify structures for a service survey and support preliminary drainage planning, alongside terrain and engineering data. It cannot establish who occupies each room, who collects the rent, whose land claim is disputed, or how relocation would affect a resident's earnings. Those questions require household, tenure, and livelihood evidence. This example illustrates the different information needed for physical planning and resident protection. Mukuru was designated a Special Planning Area in 2017. Muungano's introductory account describes almost 650 acres, while its planning archive uses 689 acres. These published estimates imply a range of roughly 650–690 acres; they do not establish a reconciled survey boundary. [R198, R210] A city–community partnership brought together more than forty organizations and the residents themselves. Project documentation puts the target at roughly 100,000 households, with over 5,000 residents joining planning forums in 2018–19. In a separate account of the enumeration, residents and their partners found that around 94 percent of people were tenants and that underlying land rights sat with a much smaller set of owners. [R210, R211] Planning needs these different records together before determining benefits and obligations.

Tenure and population records should be linked without treating any single source as a complete account of rights. A land-record modernization project that recognizes only titled owners can protect the claims of landlords and landowners while displacing the tenants who finance the settlement through rent. An upgrading subsidy paid to the structure owner may become a rent increase. A relocated household may receive a sound apartment and lose the clients or employers who made its old room worth living in. The unit of observation affects which households and claims appear in a housing assessment. Plot records describe land interests. Roof maps describe structures. Registered mortgage records cover borrowers who obtained formal finance. None is a household census. Surveys of households, rents, livelihoods, walking times, rights claims, and service failures can identify housing needs that those administrative sources omit. Mukuru's enumeration illustrates why these records need to be used together. Community enumeration also needs safeguards and a clear route from information to action.

Slum Dwellers International and resident representation

Slum Dwellers International connects household enumeration to continuing resident organisation. Its account of Mukuru describes the Muungano Alliance, including Muungano, Akiba Mashinani Trust and SDI Kenya, working with municipal and technical partners. Savings groups, settlement profiling and the Know Your City process give residents information and an organised basis for negotiating services, tenure and finance. This is a participant account of institutions and practice, rather than a causal estimate of household welfare. [R497]

Resident representation needs inclusion rules and a response from the institutions holding authority and money. My operational inference is that enumeration becomes useful when disputed entries can be corrected and the resulting claims affect an actual planning or funding decision. Savings-group membership should not become the only route to recognition. Renters, recent arrivals and households unable to save need representation, privacy safeguards and access to an independent appeal. An audit should trace both included and excluded households through the decision and its consequences.

Enumeration should include review and correction as well as an institutional commitment to use the findings. Local leaders may favor long-term residents over migrants, owners over renters, or

men over women. A settlement register can become the basis for access to a future subsidy; people then have incentives to alter the list. Enumeration must record who supplied the information, when it was checked, which claims remain contested, and how someone can appeal. These checks are necessary when the register determines access to a public benefit or service. Information must be connected to service delivery. A survey identifies renters and structures. A rights process defines who is entitled to service or compensation. Utility planning specifies connections. A funded works programme installs them. A new survey checks rent, water cost, flood exposure, and the proportion of the original households still living there. A missing step can prevent the mapped households from receiving the intended service. The same coverage problem affects citywide housing-market data.

Gaps in housing-market information

Administrative housing records often omit informal production, failed applications, and households outside programmes. A city's administrative sources may record the government projects it has approved. It may know recorded sale values for titled plots, building plans filed at city hall, bank mortgages, and a sample of formal market advertisements. These sources may omit housing used by poor households: unregistered rooms, family subdivisions, houses built in stages, backyard rentals, informal contracts, shared water points, and households that move repeatedly in search of work. Changes in the measured population can distort reported results. A city can report that new home construction is rising while rents rise faster in the cheapest locations. It can report falling average rents because low-income renters have been pushed outside the boundary being measured. It can count more titled homes while low-income tenants lose protection. Report changes in population coverage alongside changes in the indicators. Household surveys can test both that coverage and the costs people actually bear.

Affordability measurement should combine recurring costs with realistic income and independently checked data coverage. For an owner it also includes loan installments, service charges, maintenance, property taxes, and the price of reaching work. Conventional price-to-income ratios remain useful but incomplete. A low-priced flat at the urban edge may impose a larger weekly cash burden than an expensive central room. The city therefore needs repeated observations, including households that left. A panel of sampled renters can track monthly rent, deposits, crowding, utility bills, commuting costs, tenure security, eviction and household composition. Transaction records and online listings provide much larger samples at lower marginal cost but overrepresent better-connected households and formal listings. Use independently sampled surveys to check the coverage of administrative and market data. It must also measure the set of homes the household can actually choose.

Count the homes households can build, improve, rent or buy, and identify what prevents those options becoming usable. Record completed formal units, safe rooms added by small owners and usable vacant homes separately from unbuilt permissions and land awaiting services. Measure access across the bottom 50 percent, including non-applicants and applications abandoned because of fees, missing connections or unaffordable finance. Use it to compare the households reached by resolving land claims, funding connections or financing safe additions with those reached by procuring finished homes. Property-location experiments show how a narrowly defined information gap can be evaluated.

Test what administrative and digital data can establish

Property-tax information in Ghana

Madina's randomised trial of geospatial tax-collection tools found revenue gains alongside increased household reports of bribery. Bill delivery rose 27 percent and collections 103 percent relative to the comparison group over six weeks. The February 2025 paper also reports an 11.6 percentage-point rise in household reports of any bribe, on a 13.9 percent control mean (Table 2, panel B, column 5): approximately 25.5 percent in the treatment group. These are survey reports, not audited bribe transactions. The increase is substantial and belongs in the same account as the revenue gain. [R222]

A precise register supports several administrative tasks without eliminating discretion or abuse. The same information can also expose informal residents to enforcement or demands for unofficial payments where safeguards and accountability are weak. Outcomes depend on the rules governing how the information is used. The operational response begins with how money moves: direct digital payment to the treasury; no cash collected at the door; a published schedule of charges; a receipt linked to the legal demand; random integrity checks; a protected complaint channel; and meaningful penalties. Mapping does not remove opportunities for abuse if collectors retain broad discretion without an auditable record. The Ghana evidence should therefore be interpreted as a test of a specific tool and setting.

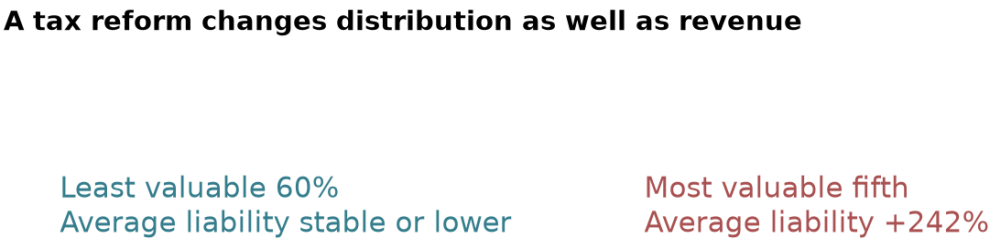
The Ghana trial identifies changes in collections and reported treatment of residents. It does not measure subsequent housing-service improvements. A housing application should independently check receipts and complaints and trace revenue into services. Those safeguards are proposals, not interventions evaluated in this experiment. A large relative collection gain must also be read against the short experiment and its initial collection level; it is not evidence that the municipality financed a comparable expansion in services.

Property-tax reform in Freetown

Freetown's reported results reflect a combined administrative reform rather than an isolated causal effect of mapping. By 2018 the city had not formally revalued its property-tax base for more than twenty years. The administration led by Mayor Yvonne Aki-Sawyerr introduced a reform intended to increase locally controlled revenue for municipal services. The ODI account describes fiscal constraints and uncertainty about national support. [R214] The reform linked geospatial property identification, a simple points-based valuation, billing, bank payment, and a software system that recorded the process. In its first year, registered properties roughly doubled, the estimated revenue potential quintupled, and actual collections tripled. The distributional design helped win consent: the average tax liability of the least valuable 60 percent of properties stayed stable or fell, while that of the most valuable fifth increased by 242 percent. A follow-up survey found support from roughly 70 percent of property owners. These are reported reform and survey results, rather than randomized causal estimates. [R214] The agreement over data, money, and authority is part of the explanation to investigate.

Information reform requires an explicit allocation of administrative control and responsibility. Mapping expanded information on taxable properties. A formula made valuation easier to explain and contest. The progressive design limited increases for lower-value properties while raising liabilities on higher-value properties. Tax payments were meant to finance the local services that make added housing density possible: drainage, roads, waste collection, public space, and routine repair. Control of the software and property data also affected authority over revenue collection and city

administration. The system began under municipal leadership. In 2023–24 it spread to other cities. During 2024–25 the national government adopted an upgraded version as the basis for a national municipal property-tax system. The central state could finance maintenance and scale; it also gained access to local fiscal information. The ODI account describes unresolved questions about central and local control of the system. [R214] For a housing data system, this experience suggests the need for an accountable implementing institution. It needs enough technical help to start and an operating budget after the donor leaves. It needs shared definitions so national and municipal agencies can cooperate. It must settle control over data, money and authority before expanding the system. Additional revenue then needs to be traced into the neighbourhood services it is intended to finance.



Teaching figure 1. Freetown reform reported in the ODI account cited in this chapter. This is the reported change in tax liability, not a randomised effect or the change in actual payments.

If a data initiative raises land and property tax receipts, the next test is whether that revenue supports safer and more affordable neighbourhoods. A housing–fiscal pact could publish how much of incremental revenue pays for connections, street drainage, maintenance, or infrastructure in fast-growing low-income areas. Without such a pact, housing policy may improve tax collection while leaving the tenant's daily life unchanged. This final claim is a proposed reform design, not an observed result from Freetown. India's digitisation experience shows another limit: improved records may leave disputed rights unresolved.

Measuring occupied housing and programme outcomes

Administrative totals need cohort definitions and cannot be read as vacancy, additionality, or equal-maturity completion rates. On the public portal checked in October 2026, the scheme reported 12.768 million homes sanctioned, 12.103 million grounded, and 9.907 million completed. These are important production milestones, and the portal offers more detail by state and city. [R002] The reported totals do not establish an equivalent reduction in housing need. Sanctions span different years and project types. "Grounded" refers to a stage in the pipeline; "completed" refers to a physical milestone. The ratio of completed to sanctioned homes across the cumulative stock is around 77.6 percent. It is not a completion rate for projects that have had equal time to mature, a vacancy rate, or a measure of additional housing available to households who otherwise lacked a home. Follow-up records are needed to establish whether completed homes remain occupied and usable.

A learning system should connect programme milestones to subsequent household costs, occupancy, and complaints. By which household? Was this an additional unit or the rebuilding of an existing dwelling? What happened to monthly housing-plus-transport costs? Did the family leave its job, school, or support network? Was the drainage working after three monsoons? How much central subsidy and city infrastructure expense was required for each durable occupied home? An Indian

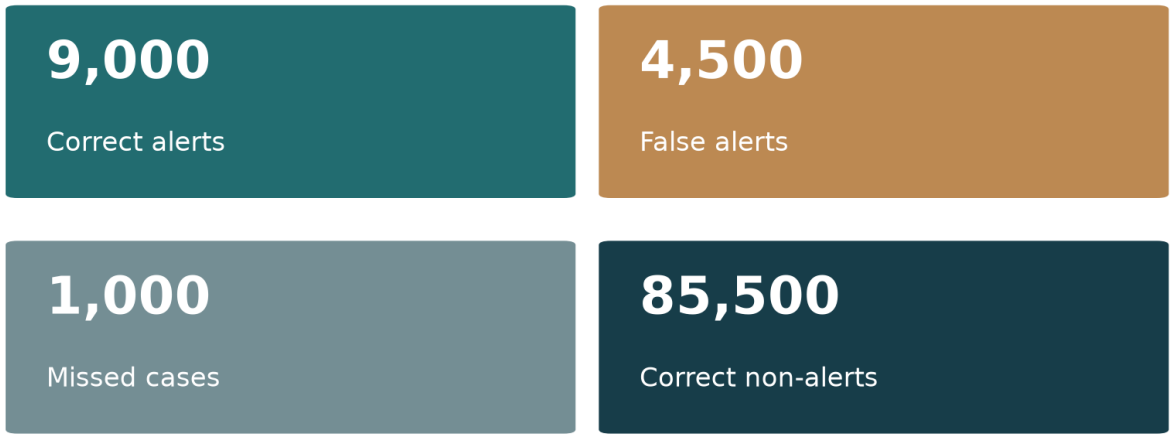
investigation reported in July 2025 that, in part of Chhattisgarh, a single house photograph was uploaded under multiple beneficiary records. The report involved a specific local inquiry and cannot establish the prevalence of fraud nationwide. The reported allegation illustrates why a geotagged image needs to be checked against a unique unit record and independent evidence of occupancy. [R218] The proposed response is independent verification of unit identity, construction, and occupancy. Each home needs a persistent project and physical-unit identity; each construction-stage event needs a date, source, and verifier; and occupancy needs independent sampling. Randomly selected on-site visits, repeat imagery, utility connections, tenant or owner contact, and time-series checks can identify discrepancies. A complaint should trigger review, not automatic deletion from a beneficiary list. Its reporting must answer different users' questions without allowing one measure to define success for all of them.

Housing records must answer different questions for residents, public agencies and investors. Treasury cares about the cost of each verified result. Lenders care whether income and collateral support repayments. Developers care about permits and sales absorption. Utilities care about connected users and maintenance. Residents care about rent, travel time, heat, flood, safety, and the risk of losing the home. The same administrative system must produce distinct answers for each user without allowing any one actor to define success for everyone. Imagery can add repeated physical observations, but its classifications require a separate accuracy test.

The capabilities and limits of satellite imagery and AI

Satellite and AI classifications need field validation, dated observations, and attention to errors on rare features. Flood exposure requires additional terrain and hazard data. Compare the full cost of imagery, validation, and updating with the fieldwork it would replace. Research published in 2024 developed models for deprived areas in Lagos, Accra, and Nairobi using freely available Sentinel-2 imagery. In city-specific tests, some models reported F1 scores above 80 percent. The authors also found differences across settlement types and warned that transferring a model to a new city remains difficult. [R219] A July 2026 International Growth Centre brief describes promising transfer tests using training data from locations in India and Burkina Faso. The researchers still stress local mapping for training and validation. [R220] These findings support using satellite predictions to help prioritise field investigation. Surveyors, residents, and the responsible authorities must verify consequential claims; legal rights require the applicable adjudication process. Accuracy reports deserve close reading. A model that classifies pixels can score well while failing to identify tenants, income, building safety or tenure. An algorithm trained on tightly packed metal roofs may miss poor households in formal-looking flats. Even measured classification accuracy can mislead when the feature sought is rare. A worked example shows why a high accuracy percentage can still produce many incorrect flags.

Figure 1.1. Classification accuracy and the prevalence of deprivation



Classification performance must be judged through the consequences of false results as well as aggregate accuracy. In this hypothetical example, 10,000 of 100,000 map cells contain the feature being sought. The model identifies 9,000 correctly and misses 1,000. It incorrectly flags 4,500 of the other 90,000 cells. Thus 4,500 of 13,500 alerts are false. These are illustrative calculations, not field estimates. Training labels require scrutiny. Record who classified a neighbourhood as informal, vacant, or unsafe, using what evidence. Check whether clearance sites dominate the sample and whether roof or vegetation patterns stand in for social identity. Restrict the use of predictions to the agreed purpose and provide a route to correct consequential errors. AI can also be tested on defined administrative tasks: reconciling parcel identifiers across agencies, spotting repeated construction images, identifying long permit queues, estimating demand for utility connections, finding likely unregistered buildings for a neutral field audit, and comparing maintenance reports with actual repairs. None requires giving an opaque score legal authority over a resident. My own use of satellite information has reinforced the importance of the decision that follows the image.

What I want from better information

My experience obtaining imagery after the Manila floods showed how much the value of information depends on timely use. In September 2009, after flooding in Manila, a colleague asked me to help obtain satellite imagery. Working from Washington, DC, I contacted the United Nations Office for Outer Space Affairs, which asked for the coordinates needed. As I recorded at the time, the imagery available through that process would be more useful for relief and recovery than for the immediate rescue request. A subsequent call concerned imagery as the storm moved towards Vietnam. [R225] I now specify the decision, location, and deadline before choosing the data. Satellite capabilities have changed since 2009; the need to match information to a usable decision remains. I am interested in digital tools when they change a decision that is currently made badly. A map of likely work locations may help compare housing sites. A linked asset register may reveal that no agency has budgeted for a pump. An application log may show that small builders face much longer waits than large ones. The value lies in the decision made with that information and the household consequence. That lesson connects directly to the distinction between recorded delivery and household benefit in IAY.

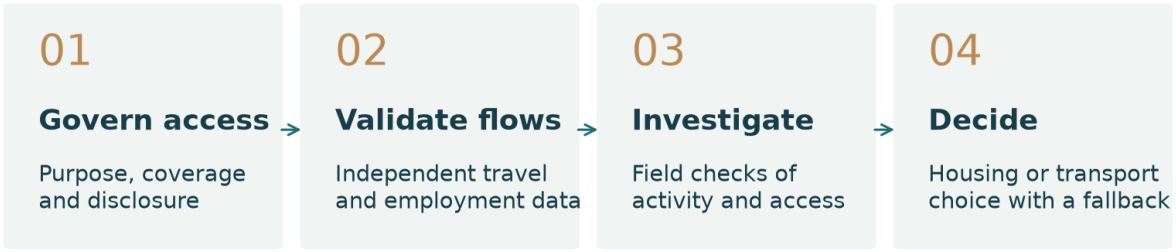
Better information should test household consequences and support accountable public judgment. Digitising an approval process can make it faster without making it capable of recognising a safe alternative design. Before automating a decision, examine the categories and evidence it accepts, who can challenge a rejection, and who has authority to correct the rule. A model can assist that work; it

cannot supply the public judgment or accountability. Mobile phone data illustrates both the potential and the limits of inferring activity from a digital record.

Using mobile phone records to locate activity and commuting

CDRs can help identify activity and commuting patterns, but they are not a census of jobs or workers. Repeated patterns can help identify likely residential areas, daytime activity centres, and travel between them. Kreindler and Miyauchi use mobile phone records from Bangladesh and Sri Lanka to study commuting and urban economic activity; their estimates of workplace wages rely on a model of commuting choices. The records do not directly observe employment, vacancies, occupations, or wages. [R223] Validation can change the interpretation. An Office for National Statistics research exercise compared mobile-derived commuting with census estimates around three London local authorities. Larger inter-area flows correlated strongly, but their levels were generally underestimated; within-area flows were overstated. The report identifies non-standard work schedules and students misclassified as commuters among the problems. It explicitly labels the outputs experimental and unsuitable for policy decisions. This is a useful warning against treating a strong correlation as accurate job counts. [R224] A local workflow needs representative periods and independent validation before those patterns inform housing sites.

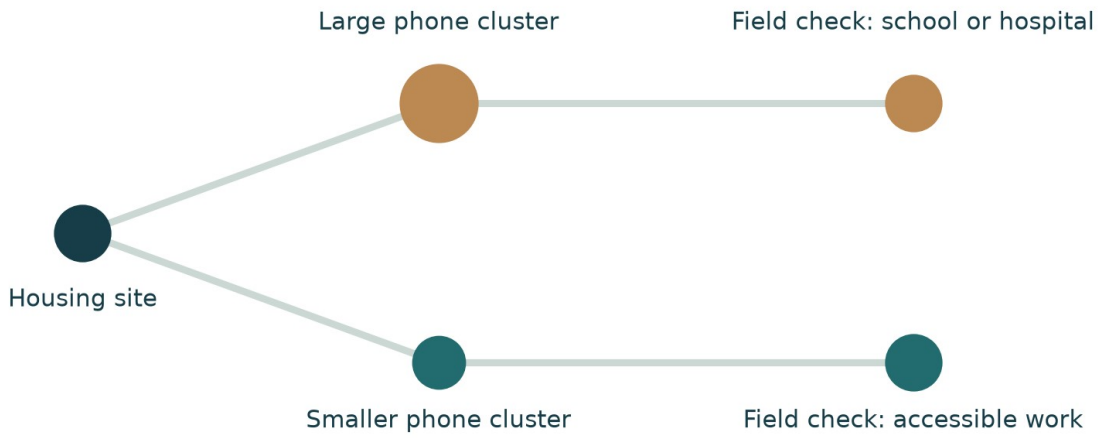
Figure 1.2. Using mobile records to guide field investigation



Proposed workflow informed by the studies in this section. Validation precedes a housing or transport decision. [R223, R224]

Validate aggregate mobile flows against independent employment and travel evidence before treating them as accessible work. Agree the legal purpose, permitted access, retention period, and disclosure controls with the operator and responsible statistical authority. Keep individual movement histories outside the housing team's working dataset; pseudonymous identifiers alone do not eliminate re-identification risk. Document operator coverage, active-phone selection, tower density, shared phones, and multiple subscriptions. Weighting can address measured differences, but cannot recover every unobserved group or trip. Overlay the aggregate activity signals with business registers, market and industrial-area surveys, transport routes, and actual fares. Visit a sample of high-activity and apparently low-activity areas: a hospital, school, or interchange may attract many phones without offering suitable jobs to prospective residents. Check shift workers, home-based enterprises, street traders, and people with limited phone use through independent fieldwork. Distinguish existing employment from vacancies and from jobs residents can realistically obtain. The validated result should support a defined choice, with a simpler fallback when data access is delayed.

Figure 1.3. Activity signals and verified access to work



Illustrative map, not a real-city analysis. A large daytime phone cluster can mislead site selection if its activity is not suitable employment. Chapter 7 illustrates the associated household-cost comparison.

Use the validated result to shortlist housing sites, target a business survey, or test a transport connection. Record how the ranking changes when uncertain activity estimates are reduced or excluded. Compare travel costs for the intended household groups before committing land or infrastructure. Evaluate against independently observed travel and employment patterns. CDR analysis can reduce the cost of deciding where to investigate; housing eligibility, eviction, and credit decisions should never depend on an inferred individual movement pattern. If operator access is unavailable or disproportionately costly, begin with employer and market listings, sampled workplace visits, and origin-destination travel interviews. Check branch locations rather than company headquarters, and include informal work. Do not delay a necessary field assessment while seeking a data-sharing agreement. A housing observatory should apply the same decision-led discipline to its wider data programme.

Build evaluation and safeguards into implementation

Designing a housing observatory

Begin by identifying decisions for which missing or unreliable information is a documented constraint. In one city that may be which wards receive sewer capacity. In another it may be the floor-space rules that stop small landlords from adding safe units. In a third it may be why subsidized homes stand empty. A useful observatory begins with those questions and works backward to the minimum data required. The design requires several linked but separate records. One describes parcels and rights, including disputed claims. One describes buildings and rooms. Another records households and tenancies, with strong privacy rules. Others record planning rights and permit events, network capacity and failures, project and subsidy stages, market rents and sale prices, and public assets with their operating costs. Each record has its own lawful steward. Before linking records, establish a lawful purpose, necessary fields, authorised access, and correction procedures. The system need not pool every personal detail in one database. Its records need dates, definitions, uncertainty, and a clear account of who may act on them.

Record	Minimum fields needed for a decision	Main owner and check
Parcel and rights	Geometry; public/private status; rights holders; encumbrances; unresolved claims; update date.	Land agency; correction process; community challenge.
Building and units	Footprint; floors; unit type; structural-risk flag; unique physical-unit ID.	City building control; field audit of model estimates.
Household and rental	Anonymous panel ID; rent, utilities, crowding; access to work; move or eviction; tenancy type.	Statistics office or independent survey partner; privacy steward.
Planning and permits	Legal floor space; application events; refusal reasons; officer; clock; appeal.	Planning department; public audit of exceptions.
Networks and assets	Capacity, outage, flood risk, capital cost, service standard, maintenance owner.	Utilities and city finance; independent service checks.
Public projects and aid	Site; cost; subsidy; procurement; stage; verified occupancy; aftercare.	Housing agency and treasury; sample verification.
Market and credit	Repeated rents and sale prices; vacancy samples; loan terms and rejections.	Statistics unit, landlord/tenant panel, lenders; sample bias checks.

Exhibit 1.1. The minimum viable information architecture. The critical fields are the ones attached to decisions and appeals. A universal platform can wait.

Useful housing records should make their coverage and uncertainty explicit and support a feasible response. Each record carries a valid time (when a fact was true) and a recording time (when an agency learned it). The system distinguishes verified facts from claims and model estimates. It preserves old versions. It shows the person or institution responsible for corrections. It allows lawful access without granting every agency the right to copy personal files. Test whether these design choices prevent incorrect decisions and make corrections effective across agencies. A city should also publish the market facts that private actors need: permitted floor space, transparent fees, service-capacity zones, average approval time, anonymized local rents, transport access, and infrastructure plans. More predictable information can reduce a developer's holding cost and help small builders seek finance. Government must then check whether developers pass savings into rents or prices. Supply constraints and market power still govern how the benefits are shared.

Information and market incentives

Better development information can reduce uncertainty while raising land values and changing who captures public gains. The developer needs answers from five offices: whether title is secure, what can be built, what the utility can connect, how long approvals take, and what comparable homes sell or rent for. Uncertainty can increase required returns or prevent a project from securing finance. Some developers pay brokers to compress that uncertainty; others leave the market. The costs may fall more heavily on firms without established information channels or sufficient working capital. Publishing legally reliable parcel-level rights, infrastructure capacity, and permitting clocks can reduce

this advantage. Developers can bid for land with a clearer sense of cost. Banks can underwrite time risk. Competition may strengthen if small and new builders can obtain the same information as incumbents. Yet the price of developable land can rise as uncertainty falls. If the landowner captures the gain, households see little benefit. The city must measure permitted and delivered affordable floor space after reform, and consider land-value capture or public-land conditions where the state creates large windfalls. The implications differ for a small landlord seeking finance or permission for a few rooms.

Information errors should be evaluated through their effects on small producers and affected households. The household needs a simple safe building standard, permission to connect toilets and electricity, a loan matched to rent, and a way to resolve tenant disputes. Data about average rents and structural risks help lenders price a loan. But a registration system that automatically triggers back taxes, demolition notices, and steep infrastructure fees may drive landlords back into invisibility. Offer a time-limited compliance route and finance safety improvements before applying punitive enforcement to noncritical violations. A citywide rental register also changes the bargaining balance with tenants. Information about comparable rents can aid dispute resolution and improve subsidy design. Named lists of tenants, irregular migrants or households in informal settlements can expose people to landlords or enforcement agents. Share aggregate prices with the market; protect identities and grievances. Assess errors by their consequences for affected households, as well as by their frequency. Investors further along the financing chain need reliable records of the asset and its operating performance.

Capital-market finance needs credible operating records and a viable housing asset. Pension funds or bond buyers need credible evidence of the cash flows and risks behind housing assets, including construction milestones, occupancy, rent collection, maintenance reserves, and insurance exposure. A shared record can lower due diligence costs. It cannot cure a project whose residents lack income to pay the contracted rent. Better information can deepen finance after there is a viable asset and an enforceable operating model. Evaluation is needed to establish whether those information improvements caused the intended policy result.

Run the additionality test before ranking instruments

Additional occupied years can change how housing programmes rank at the same public cost. Consider three deliberately invented programmes, each with a public present-value cost of CU 1 million over ten years. A rental intervention serves 500 households, but 200 would have obtained adequate housing anyway: 300 additional households cost CU 3,333 each. Upgrading serves 800, of whom 400 are additional: CU 2,500 each. An ownership grant serves 250, of whom 200 are additional: CU 5,000 each. If their additional qualifying years are respectively 2,400, 2,800 and 1,600, costs are CU 417, CU 357 and CU 625 per additional home-year. CU denotes neutral currency units.

The ranking is conditional on invented additionality and duration, not evidence that upgrading always wins. Record the lowest income reached and the share excluded for each real option; these are deliberately unspecified here. A programme serving people with greater needs may warrant a higher cost. If the counterfactual count is not identified, publish a break-even test: how much additionality would be needed to outperform the alternative? Do not fill a missing evaluation with a precise ratio.

Testing and evaluating housing policy

Evaluation needs a credible account of what would have happened without the intervention. Resident moves, spillovers, changing land prices, and long delivery periods complicate that comparison. Choose the method and collect the baseline before expanding the programme. Start with a specific causal claim. “Faster permits will lower the price of low-income rentals” contains several links: shorter

approval time → lower holding cost → more projects reaching financial close → more finished rooms in accessible areas → slower rent growth → households retaining more cash after housing and travel. Any link can fail. A permit reform can lower developer costs while site scarcity allows the landowner to raise the land price. Randomize where rules permit. A municipality might phase a permit-assistance service across equally eligible wards or assign added inspection support at random to a queue. For legal changes that must apply citywide, use matched comparison cities, staggered rollout, event-study designs, or carefully chosen boundary comparisons. Publish the pre-policy trend, all outcome definitions, and the planned analysis before results appear. Watch spillovers: cheaper rents in one ward can attract households from another; a tax enforcement intervention can alter decisions in comparison wards. Implementation records help explain the mechanism behind an estimated outcome.

Use implementation data to distinguish improved access from costs shifted to households or other locations. Track the time spent at each approving office, the number of projects that reach construction, and the median housing-plus-transport cost for eligible households. A null effect on rent can still teach: perhaps construction finance, not permits, became the next barrier. A policy that raises occupancy but increases commute time shifts costs rather than an unambiguous gain. Evaluation also needs authority and funding to change the programme when results fall short.

THE THREE NUMBERS TO REPORT TO A MINISTER

1. Household: change in monthly housing ✦ utilities ✦ travel cost and access to work for the target population. 2. Supply: net additional safe occupied units or rental rooms in accessible locations. 3. Public value: full public cost per additional safe occupied home-year, including future maintenance. Publish the comparison, sample size, uncertainty, and which households exited the sample.

Assign a budget and a responsible official to evaluation and follow-up. Quarterly meetings should review the latest constraint, the independent outcome estimate, and the action required. Decisions should name a rule that changes, a person who owns it, a deadline, and a future test. Reforms that fail should be stopped or revised, with the decision published. The reporting process should specify who can change the policy and budget when results fall short. Vietnam taught me why that evaluation design must begin before the investment changes the baseline.

Vietnam: establishing the evidence before the investment

Vietnam's upgrading experience made baseline design a central part of my approach to programme preparation. I remember frustration that gains in land values, household investment, and neighbourhood life were harder to demonstrate than the physical improvements. As a manager, I take from that experience an obligation to ask, before approval, what evidence we will need to judge the result. The published 2016 IEG review of the Vietnam Urban Upgrading Project (P070 197) rated its outcome Moderately Satisfactory. It noted missing baselines and targets, reported property-price increases that could not be attributed to the project alone, and discussed additional evidence supplied by the regional team. It ultimately found substantial achievement of the objectives. The review also recorded development of a National Urban Upgrading Program in 2009. Expansion and observed improvements did not establish which results were attributable to the project. [R226] A price rise can reflect better services, a city-wide boom, new construction, or expectations of redevelopment. Owners may gain while tenants face higher rents. A defensible evaluation must follow people as well as properties and distinguish these mechanisms. The guide below is my proposed commissioning standard for a housing or upgrading programme; it is not a claim about procedures used in Vietnam.

Keep the comparison group and follow people beyond the estate

Preserve eligible lottery lists, including unsuccessful applicants, under consent and lawful data governance. Plan follow-up at one, three, five and eight years, and budget feasible links at ten and twenty years. Record take-up, letting, sale, destinations, income and social ties. Attrition must be reported by treatment status. In redevelopment, maintain a separate displaced-resident cohort; volunteer lotteries cannot identify the effect of compulsory removal. Resident organisations should co-own the baseline, be able to challenge omissions and countersign its release. Public reporting should protect identities, not publish a map of vulnerable residents.

A practical baseline and follow-up guide

Agree the decisions the evaluation must support and collect the baseline before programme expectations change behaviour. Before approving the survey, the programme director should agree with the evaluation lead on three decisions the evidence must support: whether to change the design, whether to expand it, and whether the original households benefited. Write a short results chain for each main investment. For drainage, for example, test whether works reduce flood days, then whether reduced disruption changes workdays lost, school absence, or repair costs. Select a few primary outcomes and publish their definitions before results are known. Standard impact-evaluation guidance explains why the comparison strategy, sample, and data collection must be designed together. [R227] Collect the baseline before works begin and, where feasible, before a credible project announcement changes land prices or investment behaviour. Record announcement, survey, eligibility, relocation, and construction dates separately. If the programme has already started, retrieve dated administrative records and earlier surveys, identify what can be reconstructed, and label recall data. Do not describe a survey taken after expectations or displacement changed as an unaffected baseline. Separate household, property, and business records are needed to track who benefits and who moves.

Keep separate linked records for households, properties, and businesses. A property may improve while its former tenant moves away. Sample renters, owners, informal occupants, women-headed households, and people facing relocation; an allocation register alone will miss some of them. Use consent-based recontact information stored separately from research data. Give people a clear assurance that survey answers will not decide eligibility or trigger enforcement, and establish rules that make that assurance credible. A comparison design must then be chosen before allocation and phasing remove feasible options.

Question and measure	Collection method	Decision supported
Who is living here, and who leaves? Tenure, household composition, rent, reasons for moving.	Household survey linked to a confidential recontact register; follow movers as well as current residents.	Detect exclusion or displacement that an improved neighbourhood average could conceal.
What does occupation cost? Rent or debt payment, utilities, transport, repair costs, and income volatility.	Short expenditure and income modules using consistent recall periods; validate a sample against bills where available.	Adjust subsidy, location, or service charges before arrears and forced moves rise.

Question and measure	Collection method	Decision supported
Do services work? Flood days, water reliability, lift outages, indoor heat, travel time.	Combine resident reports with operator logs and targeted physical measurements; repeat in comparable seasons.	Locate the failing asset or service and assign a repair or operating response.
Do daily outcomes change? Workdays lost, illness expenses, school absence, satisfaction.	A small household panel with locally tested questions; consented administrative linkage where feasible.	Test the programme's stated welfare mechanism, without assuming changes are caused by housing.
What happens to property and investment? Sale and rental values, building area, condition, private spending.	Dated transactions or independent repeat valuations with plot attributes; distinguish assessed tax values, asking prices, and completed sales.	Separate market appreciation, construction, and service gains; assess owner benefits and renter pressures.
What would have happened otherwise? Outcomes in a defensible comparison group.	Evaluation specialist selects a feasible design before rollout; record pre-existing differences, other investments, and spillovers.	Estimate additional effects rather than crediting the programme for the wider city trend.

Suggested baseline modules. The evaluation lead should adapt the sample and frequency to the intervention, budget, and decisions; this is not a universal indicator requirement.

Commission the comparison design before allocation and phasing decisions become fixed. A phased rollout may permit comparison with eligible areas awaiting investment, but earlier sites may be systematically different. Where random allocation is appropriate and fair, agree it transparently; elsewhere, an evaluator should test the assumptions of the chosen non-random method. Never delay urgent safety works solely to preserve a comparison. If attribution cannot be established credibly, report change and contribution with that limitation. For land values, record location, plot and floor area, tenure, building condition, access, hazard exposure, transaction date, and whether a price is observed or estimated. Compare like with like and adjust monetary values consistently for inflation. Survey new private investment separately: money spent on an extension is a cost as well as evidence of confidence. Do not add a capitalised property-value gain to the full stream of service benefits it already reflects. Present effects on owners, renters, and displaced households separately. The programme must fund repeated follow-up and tracking of households who leave.

Fund follow-up before financing the works. For a multi-year programme, surveys at roughly one, three, and five years after occupation may be useful; the timing should follow expected effects and seasonality, not a fixed template. An evaluator should calculate sample requirements, including expected loss of respondents. Publish how many original households were recontacted and how those lost differ from those retained. A replacement household at the same address cannot stand in for the household that left. Use a modest core survey and targeted modules rather than collecting everything. The programme director should name a data custodian, budget fieldwork and independent spot checks, and approve a dictionary of definitions, identifiers, and version dates. Mobile forms can flag impossible entries; geospatial records can locate service gaps; administrative links can reduce repeat questioning. None substitutes for checking that the register includes the people the programme is meant to serve.

Release anonymised findings with missing-data rates, methods, and limitations; restrict identifiable locations and personal records. Each review should connect the findings to an action that an identified official can take.

At each review, connect findings to an action and an owner. Rising transport costs may require a route or site-design change. Poor thermal comfort may require a construction detail to change. High turnover among original tenants may require rental protections or different eligibility rules. My test is whether the measurement can alter a decision while there is still time to improve the programme, as well as support an honest assessment after completion. Technology procurement should be governed by the same requirement for a testable decision improvement.

Specifying and evaluating AI procurement

Use case	Binding constraint and test	Capture / power / safeguards
Satellite settlement mapping	Time and cost to identify new deprived areas; field-verified missed-settlement rate.	City saves survey effort. Residents face new visibility; map errors and purpose limits require community review.
Parcel matching and title records	Days to identify conflicts; correction time; share of records with contested claims.	Banks and landowners may gain; informal holders risk exclusion. Keep legal adjudication and appeals separate.
Digital permitting	Median and 90th-percentile approval time; additional safe units completed.	Developers save finance cost; landowner may capture gain. Open queues, exceptions and prices.
Construction verification	False payment and false rejection rates; cost of independent inspections.	Treasury gains; beneficiary may lose aid after a model error. Human review and redress.
Rental data and credit scoring	Reduction in loan-processing cost; new safe rooms financed; terms by income group.	Small landlords and lenders may gain; tenants may face rent pass-through; audit discrimination.
Tax, billing and service targeting	Net revenue, leakage, service improvements, bribe incidence by income.	City gains revenue; staff gain targeting power. Cashless payments and complaint audits.
Predictive maintenance	Emergency failures avoided; life-cycle cost per occupied unit.	Residents gain reliability; contractor incentives change; audit forecast misses and work orders.

Exhibit 1.2. Technology contract. Every row is a hypothesis requiring measurement. None is an established effect size outside the cited experiments.

Specify operational outcomes, data rights, and validation requirements before procuring AI capabilities. Separate model development from independent evaluation. Require portability of core records, reproducible logs, staff training, correction routes, and a tested exit plan if the vendor withdraws or the contract ends. Restrict supplier use, onward disclosure, and model training on household or confidential client records to explicitly authorised purposes. Software requires a funded operating plan. Every system requires data stewards, a help desk, cybersecurity, periodic re-surveys,

human review, and the ability to amend wrong records. Outdated maps can mislead users if the interface does not display observation dates and uncertainty. The resulting system will redistribute information and authority, which the appraisal must address explicitly.

Access to information and decision-making power

Information reform changes who can influence decisions and should be evaluated for unequal coverage and errors. Review whether publishing fees, allocation rules, processing times, and claims would reduce anyone's discretion or income. Establish this through local evidence. Tenants may reasonably resist disclosure if addresses expose them to eviction; purpose limits and protected access are part of the implementation agreement. Homeowners and neighbourhood associations hold another kind of informational power. They can attend hearings, commission traffic studies, and present precise objections to rental apartments. Prospective residents may have no equivalent opportunity to participate. A citywide information system can help document that imbalance by publishing forgone homes, expected service costs, and who has been excluded. The same statistics can be used to stigmatize a poor neighbourhood. Test whether registry coverage and treatment of claims differ by caste, race, or class. Formal job histories privilege salaried workers. A title-focused register can disadvantage customary and collective rights. Credit data can transmit the history of neighbourhood segregation into present lending decisions. A rent database that covers formal advertisements may exclude migrant workers and poorer neighbourhoods. A city should publish coverage and error rates by settlement type and, where legal and ethically sound, test differential error and outcomes across social groups. Those changes can create resistance from actors who lose control or income.

Actor	Information rent and veto	Feasible coalition or bargain
Public land agency and landowners	Control of inventory, valuation and disposal; can delay transfers or release selected parcels.	Independent public-land register; auction or allocation rules; appeals; parliamentary audit.
Planners and established homeowners	Discretion over permitted density and local objections; future residents lack a vote.	Publish infrastructure capacity and opportunity cost; share some land-value gains with local services.
Large developers and construction firms	Privileged information on approvals, infrastructure timing and public procurement.	Common APIs, published queues and bid data; time-bound approvals and competitive entry.
Small landlords and renters	Landlords control occupancy records; tenants fear exposure, rent rises and eviction.	Safe compliance path, affordable upgrade finance, anonymous rent sampling, rights enforcement.
Municipal officials and utility managers	Control records, service permissions and asset budgets; performance can be hidden.	Performance grants, public service standards, correction procedures, protected audit roles.
Central government and local government	Authority over revenue, data access, procurement, and system operation.	Shared standards with clear lawful access, fiscal returns, system operating responsibilities.
Data firms, enumerators and civic groups	Control over methods, software, classifications and who joins registers.	Portable systems, audit access, independent verification and funded community appeals.

Exhibit 1.3. Institutional interests and decision powers. These are hypotheses for local investigation, not findings about named institutions.

Anticipate conflicts over data and discretion while protecting claims absent from existing registers. A new public-land register can trigger litigation by beneficiaries of opaque disposal. A property tax map can provoke wealthy owners and national–local rivalry. A rental survey can prompt tenants to refuse interviews if no protections exist. A digital permit can leave old agency vetoes untouched. Implementation planning should establish who loses discretion, what lawful compensation or alternative incentives are offered, and who has enough authority to enforce the new rule. A feasible sequence begins with lawfully disclosable public information: building permissions, public infrastructure plans, official fees, service standards, and aggregate rental indicators. Add parcel and project identifiers with correction rights. Introduce tax and subsidy uses only after the appeals and privacy systems work. Include informal tenants and community enumerators in validation teams, with clear access limits, conflict-of-interest rules, and independent review of disputed entries. Then tie fiscal transfers or performance grants to improvements verified outside the implementing agency. Measure inclusion and exclusion errors by income, tenure and locally relevant identity groups; do not treat absence from a registry as absence of a claim. Accuracy alone cannot determine whether a proposed use of the information is legitimate.

Data accuracy and resident protection

Assess the proposed use of a map as well as its accuracy. Suppose an AI model correctly identifies rooms built on a disputed public parcel. The information might support safer drainage, an inclusive redevelopment plan, fair land-value recovery, or a mass clearance. The lawful purpose, procedural rights, and allocation of gains decide whether the use is legitimate. Privacy should therefore be designed around the decision. Publish aggregate rents, neighbourhood vacancy estimates and infrastructure constraints. Restrict named tenancy and household files. Separate eligibility checks from immigration enforcement and unrelated policing unless law explicitly authorizes a use with proportional safeguards. Set retention dates, log every access to sensitive records, and notify residents when an adverse decision relies on data or an algorithm. Give people a route to correct errors before an irreversible action occurs. Use "disputed," "estimated," and "verified" as distinct data states. Government should be able to deliver emergency water and sanitation while land adjudication proceeds. A household must be able to contest a boundary without losing its place on a service list. Community representation cannot substitute for individual appeals, since local committees can reproduce exclusions by gender, religion, tribe, caste or migrant status. Correction and appeal must be resourced as operating functions rather than left as unfunded promises.

Safeguards require an explicit budget wherever records inform consequential decisions. They should appear in project budgets beside aerial imagery and servers. Budget for accessible correction and appeal procedures wherever a register informs public decisions. A hypothetical rental-room programme shows how to incorporate these duties into a defined information intervention.

Identifying 20,000 safe rental rooms

A rental-room information pilot should specify the housing decision, comparison design, and safeguards before data collection. Consider a hypothetical African metropolis that wants 20,000 additional affordable rental rooms in three years. The minister proposes a large subsidized apartment programme. The city should first investigate the binding constraint. Perhaps thousands of households already build or rent rooms in fast-growing districts, while permit rules prohibit additions, utilities deny connections to untitled properties, and lenders cannot verify rental cash flow. The city commissions a stratified survey of rents, structures and utilities, cross-checks roof change against high-resolution

imagery, and maps legal building capacity within a commute of major job centers. It distinguishes approved rooms, rooms built without approval, rooms vacant or unsafe, and households who moved after a rent increase. It consults builders, renters, utilities and local savings groups before choosing the intervention. The city then pilots a package in matched neighbourhoods: a clear small-building code; a published permit clock; safe utility connections; structural inspections; loan products based on staged works and verified rental income; and a tenant grievance process. The control neighbourhoods retain existing services during the pilot and are promised later access if the intervention works. This design is illustrative; it is not a description of an existing experiment. Its quarterly results should distinguish new safe rooms, household costs, and municipal obligations.

Separate outcome accounts prevent a mapping or approval improvement from being mistaken for an overall housing gain. Its quarterly report has three independent outcomes: number of net new safe occupied rooms, change in the rent-and-transport burden of target households, and added municipal operating cost per room. It also reports unsafe units removed from service, rent increases, evictions, loan defaults, and permit and tax harassment. If landlords build more rooms while tenant burdens worsen, the reform is incomplete. If the rooms appear mainly in remote wards, the location constraint remains. If public service bills rise faster than city revenue, fiscal rules need repair. An illustrative operating budget of US$1.5 million per year for a city of 500,000 households is US$3 per household annually. It might finance a continuous rental panel, independent field checks, systems integration, appeals, and a small evaluation team. This is a design assumption, not a documented market price. The right budget depends on field costs, security, data access and the cost of correcting errors. The economic case should compare that expense with avoided wasted subsidy, faster lawful delivery, improved local revenue and safer occupied homes, without double counting those benefits. The pilot should expand only when those results justify its operating costs and risks.

A staged information pilot

Adapt and validate the information process locally, measuring correct decisions and resolved cases rather than system use. Cost data updates, field checks, licences, model monitoring and appeals after the pilot grant ends. The service owner must act on findings, the data custodian must correct records, and independent oversight must test abuse. Track correct decisions and resolved cases, cost per verified improvement, false exclusions, appeals, distribution of benefits and harms. The decision test below makes expansion conditional on useful results and acceptable errors.

Stage	Decision and evidence	Accountable lead
Prepare	Choose one decision and a bounded pilot. Confirm staff time, funding, lawful purpose, data access, privacy, correction and appeal rules before collecting or linking personal records.	Programme director, legal adviser, data custodian and finance officer.
Establish the baseline	Use existing records first. Cost missing data and an appropriate comparison design. Test linkage and coverage on a small sample; retain unmatched records for review.	Evaluation lead and field team, with service agencies and resident representatives.
Test readiness	Check security, access controls, offline participation and correction routes. Confirm delivery capacity and the response to a harmful or incorrect decision. Do not proceed merely because a date has arrived.	Data custodian and responsible service manager; independent checks proportionate to risk.
Run a limited pilot	Freeze primary indicators before analysis. Record processing time, costs, take-up, errors, complaints and immediate harms. Stop or adjust if safeguards or the operating budget fail.	Service manager and evaluation lead.

Stage	Decision and evidence	Accountable lead
Review and follow up	A six-month review may judge implementation feasibility. It usually cannot establish effects on supply, income, health or long-term maintenance. Fund follow-up at intervals suited to the expected effects before deciding wider expansion.	Programme director and budget authority, advised by the evaluator.

A public review should test operational value and safeguards without exposing personal records. Score each gate red, amber or green. A red flag at a rights or verification gate blocks automated action until corrected. A limited pilot may proceed on other amber gates only after lawful authority, funded safeguards, an accountable decision-maker, and stopping rules are established. Publish aggregate risk information without exposing personal records. Fieldwork should establish the source quality, legal authority, and control arrangements behind that judgment.

Gate	Question to ask before spending
Decision	Which government action will the new information change within six months?
Household	Which rent, housing quality, safety or access outcome will improve, and for whom?
Coverage	Which renters, migrants, informal occupants and unregistered units are missing?
Ground truth	What independent sample will test errors in maps, permits and beneficiary records?
Legal status	Are fact, claim, dispute, and model estimate kept visibly separate?
Incentives	Who gains money, discretion or bargaining power when the data become available?
Finance	Who pays to run, update, secure and audit the system after the pilot?
Interoperability	Can the records be exported with meanings, histories and open interfaces intact?
Rights	Who can see personal records, and how can people correct or appeal them?
Competition	Can small landlords and developers access the same public rules as incumbents?
Fiscal use	How will added revenue or avoided waste support services and maintenance?
Causal learning	What credible comparison reveals whether the intervention worked?
Adaptation	Who can stop a failing policy and reallocate money to the next constraint?

Exhibit 1.4. The 13-gate Housing Learning Test. Use a named owner, evidence link and deadline for every gate; avoid an average score that conceals a serious risk.

Measurement now provides the baseline for the land decision. Chapter 2 asks which claims, permissions and service commitments must be resolved to turn a parcel into usable housing.

Selected readings

Ghana technology and tax capacity [R222]. Read the experiment for effects on collection and reported bribes; it does not show that digitisation automatically improves housing outcomes.

Vietnam upgrading evaluation [R226]. Use the independent review to examine attribution and baseline limitations behind programme totals; those totals are not counts of additional homes.

Mukuru community enumeration [R211]. Use the account to distinguish residents from landowners and identify rental exposure; it is community documentation, not a causal impact estimate.

Judgment and transfer conditions

Additionality needs a counterfactual; completions alone do not measure success.

Confidence: High confidence in the distinction; programme-specific additionality remains uncertain. Revisit trigger: An evaluation showing that the proposed measure systematically excludes people with greater needs.

Transfer an outcome measure that compares land, service and finance interventions with finished-home delivery. Keep the counterfactual, rights tests and audit trail. At roughly ten times the pilot scale, test coverage of the bottom 50 percent and reliable follow-up. At roughly one hundred times the scale, require consistent definitions across agencies and independent evaluation, including households excluded by each route. Expansion should pause if those conditions fail.

Exercise

Recalculate the three illustrative programmes assuming that only half the claimed additional households are additional. Which ranking changes? Design a comparison group that could distinguish the two estimates.

Part II Make land ready

2. Land Rights and the Path to Serviced Housing

Which land arrangement can produce usable housing while protecting existing claims?

Priority A begins with land that households can lawfully use. This chapter supplies evidence for location (Test 4), full public cost (5) and resident rights (7). Combine rights, permission, services and access, then compare the public cost and enforceable obligations of each feasible arrangement. Estimate the land requirement, establish existing claims, and account for the value and obligations transferred through development. China illustrates both the scale public land can support and the fiscal liabilities it can create. The test for any institution is whether it makes land usable while protecting residents and funding delivery.

Tafelberg illustrates competing public claims on a valuable site near employment and services. The proposed disposal of the former school in Sea Point, Cape Town, brought the use of provincial land and access to affordable housing into the same dispute. The Province defended its legal authority and its broader housing programme; the applicants challenged the treatment of location, implementation and participation. The Constitutional Court resolved those legal issues in July 2026. Its findings and reporting remedy, discussed below, provide a basis for examining accountable delivery without attributing motives to the parties. [R359]

Turn population growth into an explicit land requirement

Begin with added population divided by plausible future gross urban density, including roads and public space. One million added residents at 150 people per hectare require roughly 6,667 hectares; at 100, 10,000 hectares; at 75, 13,333 hectares. These are scenarios, not a recommendation to acquire every hectare. Subtract independently demonstrated capacity in existing neighbourhoods, allow for household-size changes, and test whether that capacity can actually receive services and investment.

Angel's work on urban expansion makes declining density a planning risk rather than a reason to assume today's density indefinitely. My ranked proposition is to protect connected expansion corridors and network capacity while enabling feasible infill, before committing scarce capital to isolated finished estates. It would be weakened by evidence that expansion reservations are systematically occupied without services while serviced infill absorbs growth at lower full cost. Monitor realised density, prices and access, not the size of a planning boundary. Supply elasticity—the percentage change in housing supplied for a one-percent price change—helps distinguish a scarcity problem from weak demand. Measure it over a stated period; permits are not completed supply.

Make land usable for housing

Land cost reflects the raw site, its legal development potential, its services, and its access to opportunity. The first component is the price of undeveloped land. The second is the value added by

legal conversion and permission to build. The third reflects roads, drainage, water, sewerage, and power. The fourth is the location premium associated with access to jobs, schools, markets, and social networks. These components interact: a road may improve access, but it does not settle a disputed title or secure permission to build. Their combined effect is best assessed through the usable floor space and household access that a site can provide.

Measure buildable floor space and household access alongside land area. With adequate infrastructure, a hectare that allows mid-rise apartments or smaller plots can accommodate more households than one restricted to detached single-storey homes. Height limits, parking requirements, and minimum plot sizes affect that capacity, as do the space needed for roads, drainage, public facilities, and safety. The useful comparison is how many households each option could accommodate within a locally defined travel-time and cost threshold, at what fiscal and household cost. Evidence from African cities shows why those costs must be considered together.

Evidence from African cities links high urban costs partly to fragmented land markets and weak connections. The World Bank's Africa's Cities study found that urban households in 39 Sub-Saharan African countries paid 20–31 percent more overall than households in countries at similar income levels; a separate city comparison put the premium at about 31 percent. The report associated part of the difference with fragmented land markets, poor connections, and infrastructure arriving after settlement. UN-Habitat's 2025 summary estimated a housing deficit of roughly 70 million units across Africa and reported that 53.6 percent of Sub-Saharan Africa's urban population lived in slums. These figures measure different problems and should not be combined into a single estimate of need. [R013, R009] For a land team, the operational question is how the sequence of settlement and servicing contributes to those problems.

Servicing land after settlement can require costly changes to routes and existing uses. In 2024, the World Bank estimated that Kinshasa, then home to more than 15 million people, was adding roughly 2,000 residents and five hectares of urban area each day, much of it without drainage and other basic services. Where buildings already occupy a proposed utility or road route, the city may need a different alignment, a negotiated agreement, or compensation. Teams should compare those options before considering displacement and include replacement housing and livelihood costs in the appraisal. [R014] Preventing this problem also requires understanding why households cannot obtain serviced land through formal channels.

Restricted formal supply can redirect demand into informal subdivisions without reducing the need for housing. World Bank work on Ethiopia found that formal urban land supply failed to meet demand and that discretionary allocation helped push households towards peri-urban informal markets. It estimated a need for nearly 400,000 new urban housing units annually to meet new demand. Older evidence from Addis Ababa found that about 30 percent of the housing stock was considered illegal in 2004, alongside a large informal secondary market and slow regularisation. [R015, R016] These findings support investigating a possible reinforcing process: limited formal supply raises entry costs, settlement spreads informally, and later servicing becomes harder. Choosing a response requires identifying which rights and users a proposed reform would affect.

Agree how development changes rights and distributes gains

Land reform needs an explicit agreement about who contributes, who benefits, and whose existing rights must be protected. Government decisions on conversion, infrastructure, and permitted floor area can increase land values. Owners, developers, public agencies, tenants, and informal users have different claims on those gains and different exposure to the costs. An ownership register

alone will not show all those interests. The first task is to establish who can approve, refuse, fund, or appeal the proposed change.

A stakeholder assessment should document actual powers and losses rather than assume motives. Existing owners may benefit from restricted competing supply, while peripheral owners may gain from new roads and development rights. An agency may reserve land for a future public use; a tenant may face removal when an owner's claim is recognised. Future residents and renters may have less access to planning decisions than current owners. These possibilities must be checked through records and consultation, including separate opportunities for less influential residents to be heard. Once the affected interests are recorded, the team can test whether a development agreement offers each party a credible reason to participate.

Land readjustment

Land readjustment can make development feasible when owners accept smaller serviced plots in exchange for land needed for public uses. Gujarat's Town Planning Schemes reorganise private parcels as an area urbanises. Owners receive reconfigured plots; the scheme reserves land for roads, amenities, and other purposes, and may levy betterment charges to recover part of the investment. A World Bank guidance note describes a legal ability to take up to 50 percent of scheme land, with typical deductions around 40 percent. Its statutory menu includes 15 percent for roads, 5 percent for parks, 5 percent for social amenities, 10 percent for affordable housing, and 15 percent for a land bank. [R017] Those percentages describe an instrument; its performance depends on whether the promised services and resulting plot values materialise.

Ahmedabad's experience shows that the timing and financing of services can determine whether readjustment delivers at scale. By the mid-1990s, schemes could take years, infrastructure lagged, and the value-capture formula failed to keep pace with costs. Reforms after 2001 allowed infrastructure to start after draft approval, increased the land available to finance it, and permitted private contractors to prepare schemes. World Bank research reports that more than 200 square kilometres were developed through Town Planning Schemes between 2000 and 2009, compared with about 100 square kilometres in the preceding 25 years. [R018, R019] Faster development, however, does not establish whether residents without ownership titles shared in the benefits.

Ahmedabad's gains in land development coexisted with gaps in inclusion and service funding. WRI's case study associates the land mechanism with construction of roughly 33,000 dwellings under the national Basic Services for the Urban Poor programme. This is a programme output supported by land availability and national funding, rather than an estimate of homes caused by readjustment alone. Tenants and informal occupants lacked a place in negotiations; amenities faced financing gaps, and farmers resisted in places with limited prospects for appreciation. [R026] The transfer test must therefore examine both the value offered to owners and the protection offered to other residents.

Nunga shows why reserved plots need affordability rules

Nunga's land readjustment improved the physical layout while leaving low-income access insufficiently protected. A 2025 case study of the Kigali pilot reports that 303 of 1,115 residential plots were planned for low-cost housing. In this designation, lower-cost building materials were permitted; no mechanism ensured that the plots remained affordable to low-income households or prevented purchase by higher-income buyers. Owners could sell to the highest bidder. The study also identifies gaps in drainage and delivery of planned public facilities. These are findings from documents, spatial analysis, interviews and field observation, without an experimental comparison group. [R506, sections 3 and 4]

An affordable-land reservation needs a funded housing product and an enforceable access rule. My recommendation is to agree eligibility, rental and ownership options, construction finance, service charges, allocation and subsequent transfer conditions before approving the land contribution. Track actual occupation and retention by income and tenure, including original tenants and people who leave. A smaller serviced plot can improve an owner's asset position while a tenant loses access; those outcomes belong in separate accounts.

The land balance should protect each public purpose before anticipated sale proceeds are booked. Record roads, drainage corridors, parks, schools, affordable housing and marketable land separately, with the responsible agency and restrictions on diversion. Exclude protected or disputed land from saleable inventory until its lawful treatment is settled. Test small returned parcels for buildability and the owner's capacity to wait for services. These proposed checks make the exchange reviewable before rights are surrendered or public receipts committed.

Six jurisdictions separate consent, replotting and service delivery

A land-readjustment agreement needs separate legal and service clocks. The table compares specified instruments and source dates; it is not a ranking of national performance. Approval, possession, registration, functioning services and safe occupation are different milestones. For an actual transaction, confirm subsequent amendments and scheme-specific notices, then record promised and achieved dates for each milestone. Consent thresholds below apply to the identified route, not to every form of land acquisition in that jurisdiction.

Instrument and date	Consent and holdouts	When land and services arrive	Non-owners
Gujarat 1976 Act; government manual, February 2022 [R480]	Statutory scheme with notice, objections and adjudication; no requirement for unanimous owner agreement. Draft, preliminary and final approvals perform different functions.	Road land can vest at draft sanction under section 48-A; final-plot arrangements follow preliminary sanction; financial settlement follows final sanction. Infrastructure can begin earlier, but approval is not proof of a live connection.	Owner replotting does not itself protect every tenant or livelihood user. Record those claims and applicable compensation/rehousing separately; low-income housing reservations are not individual entitlements. [R026]
Andhra Pradesh, Amaravati 2015 pooling rules; 2025 RPF [R481]	Individual pooling agreements; negotiated settlement and acquisition under the 2013 LARR Act are separate routes. Non-participation cannot be described as consent.	The RPF reports all participating farmers had certificates and about 82% had registration by 10 February 2025. Neither milestone certifies serviced plots. Set and verify separate possession, infrastructure and completion dates.	Registered landless households have a separate livelihood-assistance route, with residence and eligibility conditions. Audit excluded applicants and actual income recovery alongside payments.
Delhi MPD-2047, notified 20 August 2026 [R482]	Owner assembly, DDA town-planning schemes and other regulated models are distinct routes. Owner-assembled schemes require at least 20 hectares; roads may require separate acquisition where land is unavailable.	Chapter 4.1 assigns scheme and infrastructure functions to DDA and links development to charges. Approval procedures and disputes are left to regulations. A master-plan designation supplies no household service-completion date.	The framework requires lawful ownership and possession for pooling and excludes specified existing settlement areas. Owner participation does not establish tenant or worker rehabilitation. Check the applicable scheme rules.

Instrument and date	Consent and holdouts	When land and services arrive	Non-owners
Japan 1954 Act as explained by JICA, 2018 [R483]	Association route: at least two-thirds of owners and of leaseholders respectively, plus at least two-thirds of the combined ownership and lease-right area. Public-sector city-planning projects use a different approval route; objections remain available.	Provisional replotting can change use before final replotting. Final rights and completed works require distinct records. The approval threshold provides no universal duration for a serviced plot.	Leaseholders participate in the legal process and public-project councils. This does not automatically give all informal occupants equivalent rights; identify the legal interest and relocation obligation.
Germany BauGB, accessed November 2026 [R484]	Municipal Umlegung begins by resolution after owner hearing (§47), rather than a unanimous private contract. Statutory review and valuation procedures govern the binding plan.	New legal status and possession follow notice under §§71–72. Servicing is a separate duty under §123: facilities should be usable by building completion; no general individual claim to servicing arises under that section.	§48 includes qualifying unregistered and personal use rights once asserted. Under §61, altered or extinguished rights can require monetary adjustment; owner-only registers miss affected interests.
Republic of Korea Urban Development Act effective 1 July 2026 [R485]	Association authorisation under article 13 requires consent representing at least two-thirds of land area and half of owners. This threshold must not be substituted for the different expropriation rules.	Articles 35–36 allow provisional replot use. Article 40 links final disposition to works-completion procedures; article 42 gives legal effect from the day after announcement. Check actual utilities separately.	Provisional replotting must account for leasehold interests under articles 35–36. Legal recognition of a lease is distinct from evidence of rehousing or restored business income.

Land-pooling thresholds must be tied to the applicable policy and development route. The 2018 framework's 70 percent contiguous-sector condition belongs to that policy. The 2026 plan provides different development routes, including owner assembly and DDA-led town-planning schemes, and leaves important procedures to regulations. Applying the older percentage as a universal current rule would confuse distinct frameworks. [R482, R486] In all six jurisdictions, a useful appraisal follows the affected resident cohort and the service contract alongside the legal title.

The transferable principle is a credible exchange of land and future value, supported by funded services and protection for non-owners. A city considering readjustment should independently value the contributed land and returned plots, test demand, secure infrastructure finance, and provide a process for objections. It should also specify what tenants, informal occupants, and livelihood users receive, since they may have no ownership plot to exchange. Copying a deduction percentage without these conditions leaves the main implementation problems unresolved. Collective ownership adds a further question: who has authority to make that exchange?

Customary and collectively owned land

Development on collective land requires verified authority and a clear distinction between ownership, use, and development rights. Mexico's ejidos and comunidades, Māori land, African customary holdings, and newly created community land trusts have different legal histories and rules. A leader's agreement cannot be presumed to bind every rights-holder. Housing for existing members also differs from housing for incoming low-income households, whose eligibility and rights require a separate agreement. The legal routes available in Mexico illustrate why tenure must be examined before a financing or development model is selected.

Mexico's agrarian law provides several routes to development, each with different consequences for community control. The Ley Agraria distinguishes settlement land, common-use land, and individually allocated parcels. Article 45 permits specified association or use contracts, including renewable third-party use terms of up to thirty years. Article 75 provides a conditional route for contributing common-use land to companies in which the ejido or its members participate. Articles 81–82 allow full ownership of eligible allocated parcels after the required assembly and registration procedures. These routes do not themselves provide urban planning permission, infrastructure, or an affordability obligation; a transaction needs specialist review of the land category, approvals, and applicable law. [R027] The experience of regularisation shows what remains unresolved when these other requirements are left outside the tenure process.

Registration alone has not resolved the planning and servicing problems of urbanising collective land in Mexico. Qualitative research in Guadalajara finds that PROCEDE, FANAR, and RRAJA improved mapping and registration while unplanned subdivision and informal urbanisation continued. The authors identify a mismatch between federal agrarian administration and metropolitan planning, together with procedures designed around rural land. This is an explanation from case research, not a causal estimate of each programme. [R028] It supports examining whether housing development can combine retained collective ownership with practical support for finance, services, and approvals.

Māori housing experience suggests that organised development support can matter as much as access to a loan product. Biddy Livesey's research describes Mangatawa retaining Māori land while developing housing around social and cultural objectives; the first ten homes in a planned thirty-home phase were completed in March 2012. The study draws on project-manager interviews and does not establish long-term affordability or a causal effect. By contrast, the Auditor-General's 2011 review recorded only one Kāinga Whenua loan since its February 2010 launch, with two more at final approval. Low incomes, restrictive eligibility, consent requirements, and limited advice constrained uptake. By the 2014 follow-up, eleven loans and nineteen infrastructure grants had been agreed; these are historical approvals, not completed-home totals or current performance. [R029, R030, R031] The comparison points to preparation finance, representative authority, and technical assistance as conditions to test when adapting a collective development model.

Thailand's Baan Mankong programme offers a related approach to organising residents, although its collective tenure is not equivalent to customary ownership. CODI describes communities negotiating collective purchases, land-sharing arrangements, or long-term leases with support for housing finance and infrastructure. Its programme description does not independently establish impact. [R032] The relevant question is whether an accountable resident body can negotiate, allocate benefits, and manage debt with technical support. That organisational test should guide the choice among leases, community development, pooling, and joint development.

Collective tenure must specify exit, inheritance and lender remedies

Collective tenure can preserve community control while giving households different bundles of rights. Three institutional records show the choices. They describe rules and programme experience; they do not identify the causal effect of collective tenure on income, displacement or credit access. The comparison concerns the rights that must work when a member dies, needs to move or cannot repay.

Arrangement	Resale and inheritance	Finance and practical constraint
Baan Mankong, Thailand CODI account, October 2019 [R462]	CODI describes an agreement requiring a departing member to sell the house back to the cooperative, which selects the next eligible household. Succession needs to be checked in the cooperative's rules and underlying lease; the programme account supplies no uniform inheritance rule.	Collective purchases and leases support community housing finance. CODI also records households under financial pressure selling outside the agreed process. A restriction needs a funded, timely exit route and support during repayment stress.
Namibia Flexible Land Tenure Act 2012; ministry guide, 2016 [R487]	Starter title permits inheritance and transfer to a qualifying person. Land-hold title permits transfer and bequest of a defined plot, with a share of common property. These are distinct rights within a registered block, not interchangeable with a community land trust.	Starter title cannot secure a mortgage. Land-hold title can. Legal mortgageability does not establish that banks lend or that households can repay; check charges, foreclosure and actual loan terms.
Caño Martín Peña, Puerto Rico General Regulation 7587 [R488]	The trust retains land while surface rights support separate building ownership. The regulation provides perpetual rights for specified residential categories, with exceptions. Mandatory heirs can inherit without the trust exercising first refusal; later sales remain subject to the deed.	First-refusal and resale rules preserve restrictions. Subsidised transactions have additional recovery provisions. Mortgage deeds require notice to the trust and its preferential acquisition right in foreclosure. Financing therefore needs an agreement consistent with those rights.

A credible restriction requires an affordable route out as well as protection against removal. Before approval, publish the exit valuation, buyer-selection process, maximum payment delay, treatment of improvements, succession procedure and lender remedies. Test whether the cooperative or trust can finance a buyback during a downturn. Report arrears, involuntary departures, waiting times for exit payments and inheritance disputes. These are proposed performance tests, rather than outcomes established by the three institutional sources.

The development route should match the rights the community wishes to retain and the obligations it can manage. A lease can preserve collective ownership while defining occupancy and development rights, but needs clear rent-review, renewal, succession, and default terms. Community-led development can preserve allocation control, provided preparation, accounting, and technical supervision are funded. Pooling can exchange land for services and reconfigured plots; joint development can exchange rights for homes, rent, or equity. Each requires independent valuation and remedies for non-delivery, and each remains subject to local law. Before inviting a partner or lender, the community and public authority need a shared record of the rights that the agreement must respect.

A community rights register should record overlapping uses and claims before bids are invited. It should cover collective authority, individual allocations, tenants, seasonal users, access routes, livelihoods, inheritance claims, and disputed boundaries. Women and less influential members need independent opportunities to challenge it. The parties should agree the lawful consent process, independent legal advice, valuation, distribution of proceeds, and treatment of rights that cannot be met through a cash payment. Financial terms can be disclosed without exposing personal records. With these matters established, lenders can assess the rights and cash flows actually available to support the project.

Finance must be secured against enforceable project rights without assuming that the communal estate can be mortgaged. Ask lenders to price the proposed lease or cash flow, fund preparation and trunk services explicitly, and test delays, low occupancy, cost overruns, and partner failure. The agreement should specify how affordability continues and who can replace an operator without extinguishing protected rights. If the parties disagree about what a lender may take after

default, the transaction is not ready. Similar discipline is needed when the land contribution comes from a public authority rather than a community.

China shows both the power and the liabilities of public land

China's mass housing experience joins large-scale construction, urban land development and infrastructure finance with distributional and financial risks. Glaeser, Huang, Ma and Shleifer describe the extraordinary expansion and price growth, and analyse whether high prices can be sustained by expectations about future demand and supply. Their 2017 study is an analysis of that period, not an explanation of every subsequent default. [R454]

Land-lease revenue can finance infrastructure while exposing municipal budgets to property-market downturns. Land-lease receipts can bring infrastructure funding forward. They can also make local finance dependent on continued sales and prices. A municipality spending volatile capital receipts on recurrent obligations has borrowed resilience from the future, even where the transaction is not formally called debt. Appraise housing sites with a fall in sales, slower absorption and the cost of completing surrounding infrastructure. This is an analytical application of the fiscal mechanisms, not an estimate of their magnitude.

The IMF's 2025 financial-system assessment describes the property downturn, developer stress and local-government financing vulnerabilities. Its 2025 Article IV report, published in January 2026, discusses completing presold homes and dealing with property inventories. These are policy diagnoses and recommendations. They do not establish that every unfinished project should receive a public rescue. [R455, R456]

A public-land programme therefore needs three separate accounts: who surrendered rights; who obtained and can retain housing; and who pays when sales or land receipts disappoint. Rapid delivery does not settle any of those questions. A mass programme can expand the stock while leaving mobile workers unable to use the same services as established residents. Eligibility linked to local registration must be examined alongside the unit count. Institutional integration can deliver at scale; the test is whether its benefits extend to people outside the preferred register. Urban China documents the historical hukou and service-access problem and reform agenda; rules differ across cities and have changed since that 2014 assessment. [R466]

Public land and land-value capture

Public land should be valued as a subsidy even when its transfer involves no cash payment. A parcel may have alternative uses: sale, lease, a school, infrastructure, or continued community use. Giving it to a housing project therefore has an opportunity cost that belongs in the subsidy account. For a well-served site in a prosperous area, compare continued public use, affordable rental, and mixed-income development before treating market sale as the default. The next step is to compare the benefits of those options with both the public contribution and the household costs of a cheaper peripheral site.

A public-land appraisal should show the homes, access, and fiscal obligations that each option would deliver. Begin with ownership, occupancy, disputed claims, valuation, and a stated public purpose, including how households in the bottom 50 percent can obtain and retain access. First test serviced plots, community use and small-producer access. Compare these with sale, lease or joint development, specifying the services and finance each needs. Direct building needs a well-located site under lawful public control and credible delivery; ownership alone is insufficient. If the preferred use differs from the most profitable market use, selection and contract terms must secure the intended public benefit.

A competitively awarded public lease can retain ownership while attaching enforceable housing obligations to development. The authority can specify affordability, occupancy, delivery, and default terms, including a lawful replacement or termination mechanism if delivery fails. This may preserve some future appreciation in public hands, but it requires monitoring and enforceable contracts. Land-sale receipts, by contrast, are one-off capital revenue and should not be treated as a continuing source for services. The wider financing question is how much of the value created by public action can realistically be recovered.

Land-value capture can help finance infrastructure, but its results depend on local markets and institutions. A World Bank comparison reported positive economic outcomes but mixed equity effects in São Paulo, and few observable economic or equity gains in Addis Ababa and Hyderabad at the time studied. The authors identified differences in tenure, planning, financial instruments, property markets, and implementation; the comparison does not isolate the effect of each condition. [R020] It supports testing the conditions for collection before incorporating expected receipts into a development budget.

A value-capture charge needs a defensible valuation, a legal basis, and a level that leaves development feasible. Estimate the land value without the public intervention, state the legal claim on the increment, and establish capacity to assess and collect. Publish the charging formula and intended use of receipts. Test the charge against project economics and household costs: excessive charges can suppress development, while project-by-project negotiation creates room for discretion. Funding new infrastructure also requires a separate plan for maintenance. These calculations depend on land information that is accurate enough to support decisions and open to correction.

Use information to secure delivery

Digital land systems should be judged by the decisions they improve and the rights they protect. Searchable records can make transactions easier to trace and can connect land administration with planning and infrastructure data. They can also reproduce errors or omit women, tenants, customary users, and informal occupants. An authoritative digital record can make those omissions harder to challenge unless correction and appeal procedures are accessible. Administrative rollout figures therefore need to be read separately from evidence of better housing outcomes.

India and Kenya demonstrate the scale of digital administration, but their reported activity does not by itself establish additional housing supply. India's DILRMP dashboard, cited for August 2026, reports computerised records of rights in 626,237 villages, or 95.56 percent of the total, with 5,229 computerised sub-registrar offices and 4,837 integrated with land records. The Department of Land Resources reports more than 408 million Bhu-Aadhaar parcel identifiers and guidelines for 2026–31. Kenya's Lands Ministry reported on 16 February 2026 that its national stamp-duty module had collected KES 1.946 billion over two months. Its projection of more than KES 20 billion by 30 June 2026 was a forecast, not a verified outturn. The approximate US$15.1 million and US$155 million equivalents use the Central Bank of Kenya's 2025 annual average of KES 129.3 per dollar. [R021, R022, R023, R024, R033] To assess housing benefits, evaluation must follow changes in costs, delays, disputes, and usable land.

Measure whether digital records reduce transaction costs and make serviced sites legally usable. Track search and approval times, disputes, correction requests, and the distribution of benefits, alongside the number of records digitised. Test whether affected people can obtain records and appeal without digital access. A shorter transaction is useful only if the resulting rights are valid and the land can support the intended housing. Imagery and AI can help investigate physical conditions, but they answer a different set of questions from the registry.

Geospatial analysis can screen sites and structures, but it cannot establish ownership or consent. Imagery and models can estimate built floor area, compare it with permitted capacity, locate potentially vacant parcels, identify roof materials and settlement growth, and screen access to jobs or exposure to floods and heat. Accuracy and update costs vary by task and data source. Field-check a sample, label inferred attributes, and keep them separate from legal records. The next test is whether this information changes a specific release, servicing, or investment decision.

Technology should be evaluated against a defined administrative decision and a measurable result. For example, compare the time taken to release an eligible serviced site before and after a new information process, while recording other changes that could explain the result. Automated valuation may support property-tax collection, but requires documented methods, corrections, and accessible appeals. A dashboard or a larger assessed tax base is not evidence of additional affordable homes. A practical appraisal should therefore bring legal, physical, financial, and household information together in one site decision.

Public-land development agreements

Establish the rights, alternatives, and value of public land

Public land and access to jobs

The Constitutional Court required location-sensitive housing measures and an account of implementation in central Cape Town. In Adonisi, decided on 2 July 2026, it upheld the appeals and set aside the Supreme Court of Appeal's order. It declared that reasonable measures must include affordable housing in the defined CBD-and-surrounds area and Sea Point, and found that the Province and City had failed to comply in implementing and completing their programmes there. The Court expressly recognised that projects might have advanced since the 2018 litigation record; it could not decide on later media accounts outside the evidence (paragraph 267). These are findings on that record, not an inventory of housing completed by November 2026. [R359, paragraphs 144–150, 267 and order]

The remedy makes budgets, coordination and delivery dates visible to judicial scrutiny. The Province and City were ordered to file sworn reports within three months covering completed, ongoing and planned projects, resources allocated and spent, intergovernmental coordination and further steps. The Court also found defective public participation over Tafelberg's disposal and a failure by the Province to consult the national minister; it suspended the invalidity of the impugned participation regulations for twelve months. The order establishes duties and a review process. It does not establish that homes have been delivered, or grant every applicant a particular plot. [R359, order]

Subsequent reporting should be assessed separately from the judgment. October 2026 accounts describe reports filed by the authorities and further planning for Tafelberg, with proposed unit mixes changing as design and approvals progressed. Those are reported administrative steps rather than verified occupied homes. The practical test remains signed finance, lawful allocations, completed buildings and low-income residents able to remain. [R364, R365]

Public-land decisions should connect valuation, resident rights, services, development duties, and long-term enforcement. A government ministry sees an underused asset that could finance schools or hospitals. A city sees a potential residential block that needs water, drainage and public transport. A developer sees scarce development rights. A nearby owner may fear congestion or changing property values. A hypothetical household commuting two hours each day may value the opportunity to reduce travel time and costs. These claims on the same plot should be assessed in a

common appraisal. This chapter examines the terms under which public land can support affordable housing: valuation, development obligations, resident rights, infrastructure commitments, and long-term enforcement. The first step is to establish which rights and responsibilities the term "public land" actually describes.

Rights and responsibilities attached to public land

Public ownership does not establish that occupancy, development permission, infrastructure, and disposal authority are resolved. It says little about the rights attached to the parcel, its physical condition, its best use, or the people who already rely on it. An old railway yard may be owned by a national corporation, occupied by tenants, used informally for workshops, marked as industrial in a planning map and located beside a transport stop. A vacant military compound may be contaminated or lack a drainage outlet. A former market may contain traders whose claims never entered the registry. Committing a site before resolving these matters can lead to disputes, delay or an unfinanceable project. There are at least five separate decisions. The government must establish what it owns and who else has rights. It must decide which public service deserves the site. The planning authority must define buildable use and density. Utilities must commit to service capacity. Finally, choose a feasible route to occupation: serviced plots for households, cooperative development, rental provision or completed homes. Each route needs affordable terms and an accountable party for construction and upkeep. Each decision rests with different officials, budgets and legal powers. A register can clarify some of these questions without answering them all.

Land maps can clarify physical conditions without resolving rights or delivery obligations. They cannot settle a disputed inheritance, confer legal title, negotiate with a street vendor or compel a water utility to connect a project. A public land register that records ownership alone does not establish that occupancy claims, services or development obligations have been resolved. The appraisal must also distinguish physical land scarcity from scarcity of usable rights and accessible locations.

Figure 2.1. Conditions for public-land housing development

1. Rights	2. Place	3. Permission
Recorded owner, other claims, residents, rights of way, disputes and legal power to transfer.	Access to jobs, schools, transport, markets and existing social networks.	Land use, density, height, heritage, flood exposure and building requirements.
4. Services	5. Deal	6. Stewardship
Water and sewer capacity, roads, drainage, power, schools and who pays to connect.	Land price, finance, developers, affordable rent or sale terms, allocation and sanctions.	Occupancy, repairs, tenant rights, renewal costs and a body able to enforce the agreement.

Housing development depends on both enforceable rights and available service capacity. A developer cannot finance a project without clear rights; a title is of little use when service capacity is absent. These six conditions form the chapter's implementation framework.

Different forms of land scarcity imply different public choices and cannot be resolved by a map alone. Physical scarcity arises when a well-located area lacks space. Regulatory scarcity arises when plots exist but rules prohibit enough housing on them. Institutional scarcity arises when no agency can release land on credible terms, supply infrastructure, settle disputes and monitor the resulting homes. Density changes, land assembly and administrative coordination address different forms of scarcity. A transfer of ownership alone does not establish usable housing capacity. Ownership

also generates options. A city can sell now; lease for a fixed term; develop and retain the buildings; exchange land for a fixed number of affordable units; combine land with transport investment; or protect existing occupants and help them build incrementally. The choice should follow a comparison of lifetime social value. A high auction bid reveals a strong private willingness to pay for a legal interest. It gives the treasury useful information. It does not, on its own, tell the minister how many low-wage workers should be able to live near jobs. The value of those choices should be recorded even when the land is transferred without cash.

The opportunity cost of public land

A public-land contribution has an opportunity cost that must be compared with its housing and inclusion benefits. Project accounts may call the land free. The public has still surrendered something valuable: the chance to lease the plot at market rates, build a hospital, preserve a park, or save it for a future need. The relevant cost is the value of the best feasible alternative after legal restrictions, development costs and social obligations are considered. In public finance this is an opportunity cost. It belongs in the appraisal even when no money leaves the treasury. Government actions also change land values. A new station, a drainage channel, extra building rights or a permitted change of use can turn a low-value site into an expensive one. If the state transfers the plot before settling these rights, a buyer may capture much of the gain. If the state waits and sells at full market price, it can collect more revenue but lose a rare chance to secure inclusion in a central location. Four linked cost accounts can make that comparison explicit.

Compare land rights, serviced development, household payments, and location costs over consistent periods. A project that earns a high land receipt may move families to a remote suburb and create new public expenses for transport and extensions to utilities. A central rental project may surrender land revenue yet reduce the costs borne by workers and employers. These savings should be measured rather than assumed. The worked lease example applies those accounts to an accessible public site.

Calculating the public contribution of land

Public economic commitment = the independently appraised market value of the rights granted minus the market value of the consideration returned to the state, plus cash grants, services and risk guarantees, minus verified public revenues or assets retained.

Household gain = the measured difference in shelter quality, cash housing costs, travel, time, employment access and security over a credible alternative, after fees and future upkeep. Land value and household gain use different measures; the analyst should show both rather than add them without care.

Valuing a public-land lease in Nairobi

A public lease should be valued against the additional targeted homes and credible alternatives it delivers. Take an illustrative two-hectare, well-located public site. Suppose an independent valuation puts a sixty-year unrestricted development lease at KES 1.20 billion. Under a tender with enforceable affordability conditions, qualified bidders offer KES 650 million for the same sixty-year interest. The proposal provides 600 apartments, of which 400 will be allocated to a verified low-income group at controlled rents. The public utility companies must invest another KES 300 million to serve the site. For simplicity, assume the bids, lease term, infrastructure scope and state residual rights are directly comparable. The apparent land concession is KES 550 million; the new network spending is KES 300 million. Combined public commitment equals KES 850 million, or KES 2.125 million per contracted low-income apartment. This is a resource cost, not a cash cheque to each family. If an

independent review later finds that only 300 of the 400 apartments are additional homes occupied by households in the target group, the same amount equals KES 2.83 million per additional targeted apartment. It may still be good policy, especially if the homes are beside employment. The appraisal must compare this higher cost per additional targeted apartment with credible alternatives. Continuing affordability obligations determine whether the initial concession retains its public value.

Exhibit 2.1. Valuing a public-land transaction

Assumption or result	Value	Interpretation
Market bid for unrestricted 60-year lease	KES 1,200m	Comparator, including lease reversion on equal terms
Winning bid with binding affordability terms	KES 650m	Less cash received for the same land rights
Implied public land contribution	KES 550m	Difference in like-for-like bids
Additional trunk infrastructure	KES 300m	Government or utility investment
400 contracted affordable units / 300 additional units	KES 2.125m / 2.833m	Public commitment per contracted / additional unit
Illustrative household travel saving: KES 150 × 250 days × 15 years	KES 562,500 gross; ≈KES 321,000 present value	8% discount rate; excludes time, wages and transport rebound

Illustration, not an appraisal of any actual Nairobi parcel. Time savings, rent differences and occupancy must be measured; the travel line is an assumption and the present value uses an end-of-year 15-year annuity. The public-land contribution is sensitive to valuation, rights granted and market competition.

Lease appraisal needs long-term enforcement and comparison of feasible designs rather than a single initial price. A developer can promise 400 affordable homes and later seek permission to raise rents, alter the eligibility rules, reduce apartment sizes or shift maintenance costs to tenants. The land discount is paid at the outset; the social benefit arrives over decades. A weak contract gives the state little power once the building is occupied. The agreement needs enforceable, long-lived claims on the affordable units, transfer restrictions and independent checks. There is a further comparison. A treasury official may reasonably ask whether KES 850 million could buy more housing elsewhere. A housing minister may reply that the other site is an hour from work. Both should use a common appraisal: unit affordability, employment access, public fiscal cost, tenant security and future costs of new roads and services. Site-level procurement should permit alternative designs and allow evidence to decide. Cape Town's legal and institutional process shows why those duties require several actors to agree.

Compare how public land produces housing benefits

Legal decisions and housing delivery in Cape Town

Different public institutions can hold valid objectives without any one of them having power to deliver the housing outcome alone. The provincial department responsible for disposing of land

sought cash for other government needs. The housing department had identified possible social use. The city controlled aspects of zoning and services; national authorities shaped the housing grant rules. Campaigners, supported by legal advocates, challenged the sale and argued that central location mattered for rights and opportunity. Heritage requirements and neighbourhood opposition added constraints. None of these actors had unilateral power to deliver social rental homes. Engagement must therefore lead to an enforceable agreement on finance, services, and occupation.

Legal engagement requirements need to be translated into financed development and continuing tenant rights. The Constitutional Court's July 2026 judgment found defective participation and required sworn accounts of affordable-housing programmes in the specified central locations. These findings rest on the litigation record discussed above. Yet an October city submission also claimed a broader housing pipeline and described funding constraints, while campaigners pointed to persistent gaps in completed central-city homes. The dispute shifted from the legality of selling one site to the resources and delivery needed for an entire neighbourhood programme. [R359, R364, R365] The case distinguishes the legal conditions for land disposal from the finance and management needed for housing delivery. Litigation and resident representation can change a disposal decision, while land servicing, social-housing grants, operations and maintenance still require funded agreements. A successful second coalition must include housing institutions, national and provincial budget officials, developers able to deliver mixed schemes, the municipality and the workers intended to live there. The agreement must also provide tenants with enforceable service and affordability rights after occupation. Kenya's programme illustrates how divided budgets and land custodians can complicate that translation.

Public-land delivery in Kenya

Public-land delivery requires commitments across housing entities, land custodians, counties, and service agencies. Yet announcing a site and proving that it can support housing are separate steps. The Auditor-General's special audit, issued in March 2026 and covering project status as at March 2025, listed 142 affordable-housing projects. On the audit visit, 60 had started, 78 had not, and four were outside verification. This is a dated project-list finding; it says nothing conclusive about all completions later in 2025 or 2026. [R250] The audit also raised questions about documentation and readiness across a broader portfolio. Each incomplete record creates a practical problem: a developer may discover an encumbrance after contract signature; compensation may remain unsettled; a utility may face a service demand outside its budget; or a title dispute may stop bank disbursement. National agencies can move cash faster than counties can supply approvals. County governments carry some infrastructure obligations, while land custodians and housing entities work under different legal and budget lines. Digitising the registry cannot substitute for those agreements.

Investment readiness should require resolved claims and documented agency commitments rather than platform registration alone. The Commission on Administrative Justice reported in March 2025 that incomplete digitization and shortcomings in the ArdhiSasa system were causing delays and leaving room for corrupt practices. Peer-reviewed research describes cases where official searches became inaccessible because conversion and georeferencing were incomplete; community groups used their own mapping to make residents and informal claims visible. [R366, R367] For a city manager, the reform sequence begins with each plot, rather than a national target. Verify the root of title and occupancy; obtain the service-capacity letters; reserve funds for off-site works; decide who owns and maintains the apartments; then tender. A central government can speed the process by putting those tasks under a joint performance agreement with named county and utility officials. Investment-ready status should require documented commitments from each responsible agency. Ethiopia provides a test of whether broad public land control itself guarantees affordability.

Public ownership and affordability in Addis Ababa

Public ownership can facilitate housing production without eliminating fiscal costs or household entry barriers. State control over urban land gives government powers to allocate and lease sites at scale. Addis Ababa used these powers to build large condominium programmes. By the time of a World Bank–government study published in 2019, roughly 383,000 units had been built under the programme. The study estimated that government recovered around 35% of the production cost of a typical unit. Its indicative cumulative subsidy for the programme was ETB 150 billion, using the prices and stock recorded at the time. These historical estimates should not be presented as current fiscal figures. [R368] The distribution of apartment access must be examined separately from the scale delivered.

Formal housing gains should be assessed alongside the households unable to receive or sustain the benefit. The study estimated that producing formal urban land commonly took four to seven years because compensation, preparation, infrastructure and administrative handoffs stretched across agencies. It found that poorer households often could not afford the required down payment and mortgage; large condominium developments on the urban edge also carried costs of distance and service extension. State ownership had lowered a barrier to assembling land, while construction finance, affordability and infrastructure remained binding. [R368, R369] The allocation rules also affect who receives the subsidy. A government can underprice the first sale, absorb land and construction costs, and deliver homes to better-off households who can pay the deposit. In that case, completed housing can serve a narrower income group than intended. Compare mass public construction with serviced plots, household-led improvement and well-located rental, using the same household and public-cost tests. Audit allocation under whichever route is chosen. Public land control enlarges what government can do. It does not ensure that the poorest receive the benefit. Delhi illustrates another tension between land-disposal revenue and affordable-housing objectives.

Land auctions and public costs in Delhi

Land agencies' revenue and planning roles need a consolidated appraisal of public costs and housing access. Auctions can disclose transfer terms and protect the public purse against arbitrary low-price deals. In a November 2025 auction, the Authority received bids totaling about INR 14.947 billion (INR 1,494.7 crore) for 81 residential, industrial, commercial, institutional and group-housing plots, against aggregate reserve prices of INR 6.292 billion (INR 629.2 crore). Two group-housing plots in Dwarka reportedly attracted bids of about INR 6.425 billion (INR 642.5 crore) against INR 2.549 billion (INR 254.9 crore) in reserves. These figures describe bids for the listed properties, not a measure of money available for affordable housing or evidence that the auction produced low-income homes. [R370, R371] A competitive price tells the state what developers think they can earn from the permitted use. It cannot decide the mix of homes a city needs. That decision belongs in a prior plan and budget. A development authority that depends on land sales to pay salaries, roads or debt service has a built-in reason to favor auctions and higher-value uses. A housing department may ask for a discounted plot; the land agency experiences that request as forgone revenue. The appraisal must reconcile revenue needs with affordable-housing objectives. The strategy for what is sold deserves scrutiny before the transparency of the auction process is assessed.

Before any sale, record the responsibilities and objectives of each agency. The treasury should show the market value of the rights being surrendered. The housing department should show the expected number, location and lifetime cost of additional affordable homes. The planning agency should publish the wider housing-supply plan and infrastructure needs. Without the strategy, the bidding portal can be perfectly transparent while the choice of what is auctioned remains hidden from public debate. Where a disposal involves relocation, the household cost comparison becomes an additional condition.

Relocation costs in Mumbai

Formal consent or title does not establish that off-site housing preserves livelihoods and fair access. The authorities have sought public and former salt-pan land outside Dharavi to house residents who are outside the eligibility rules for rehabilitation within the original settlement. In 2024–25, the state approved use of about 256 acres in Mulund, Bhandup and Kanjurmarg for the wider redevelopment effort. Officials argued that the parcels were suitable and would serve households otherwise excluded. Critics raised flood, ecological and displacement concerns; residents of receiving neighbourhoods objected to the arrival of relocated families. Courts have considered disputes over the land. [R373, R374, R375] Three allocations intersect. The original high-value land inside Dharavi supports redevelopment economics. Rules governing who qualifies for on-site rehabilitation determine which existing households retain access to that location. State-controlled land elsewhere provides a fallback for excluded residents, at the cost of moving households away from jobs, tenants, suppliers and kin. Objections in receiving neighbourhoods should be assessed against service capacity, resident rights and evidence of exclusion. Formal title or planning consent alone does not establish that relocation preserves livelihoods or provides fair access. The destination needs an actual budget and journey assessment for each affected livelihood group.

The test for off-site land is an actual household budget and journey, calculated for each livelihood group. A tailor with customers in Dharavi, a waste picker using local sorting routes and a worker with a fixed industrial shift face different relocation costs. Official allocations should include rental and informal occupants separately, publish the eligibility and appeals rules, and guarantee transit, schooling, shop space and a credible right to return where that has been promised. Map hazards before selecting a low-cost parcel; exposure to monsoon flooding may cause repeated losses. India's PMAY–Urban in-situ redevelopment framework itself treats land as a project resource: for eligible government-land schemes it provides for land costs to be waived by central agencies, central assistance for slum homes, and additional floor-area rights or transferable development rights to support cross-subsidy. The implementation agreement depends on local economics. In a high-value district, sale units may finance rehabilitation. Where sale demand is weak, a developer cannot pay for hundreds of low-rent homes out of rights worth very little. Informal tenants, who often hold no qualifying documents, remain at risk of losing out even when the cross-subsidy works. [R376] Pooling can avoid some outright acquisition while still requiring a separate test of inclusion.

Conditions for effective land pooling

Land pooling can secure public uses and owner participation without proving affordable access for non-owners. Owners give up part of their area and receive smaller parcels made more valuable by roads and legal permissions. With credible maps, compensation rules and phased trunk works, the design can reduce the need for compulsory acquisition. It is an important complement to state-owned land for city expansion. [R036, R017] Owners inside the scheme can gain valuable serviced plots. Renters, agricultural laborers, vendors and people living on land without recognized title may gain little, and speculative expectations may increase the cost of the affordable land reserved for them. Successful land readjustment therefore requires a separate plan for low-income housing, protection for existing households, and a transparent account of how the public share of the value increase will be used. Completed land readjustment therefore needs a separate assessment of low-income households' access. Vienna offers a different model that links land acquisition to continuing housing institutions.

Land acquisition and affordability requirements in Vienna

Long-term land and affordability institutions require contract monitoring beyond design and construction. The city's wohnfonds_wien supports land acquisition and uses developer competitions

for subsidized housing. Bids are judged across economic viability, social sustainability, architecture and ecology. Successful offers enter sale or building-right agreements; the procedures explicitly allow penalties, exclusion from later competitions and reversal of a transaction if contractual promises are broken. These arrangements make the price of land part of a longer public contract. [R377, R378] The model requires a housing finance system, experienced nonprofit or limited-profit developers and a capable institution that can monitor design and construction. It also requires continuity of funding and contract enforcement. In 2026 Vienna reported plans for approximately 2,600 homes at its Eibengasse district, around two-thirds of them subsidized. These are planned homes; their expected mix is an official programme intention rather than proof of completion or long-run affordability. [R379] Adaptation requires rules for evaluating bids and enforcing the resulting agreements. A city can ask bidders to compete over the lowest lifetime rent and highest quality for a fixed land contribution, rather than compete only over the biggest payment for the plot. Contract monitoring must continue after design and construction. Singapore shows the reach and costs of a more extensive public land and delivery system.

Land assembly and distributional costs in Singapore

Singapore's housing scale depends on coordinated land, finance, services, and renewal, with substantial public obligations. A government history records that nearly 70% of residents lived in slums or squatter settlements in 1960 and more than 80% lived in public housing by 1985. The 1966 Land Acquisition Act gave authorities strong powers to acquire private land, historically including at below-market compensation. Housing & Development Board (HDB) construction was paired with finance through the Central Provident Fund and public mortgages. [R380] Those gains came with coercive resettlement and distributional costs. They rested on a distinctive city-state administration, land law and financing system. They cannot be copied into African or Indian cities without confronting present-day constitutional rights, courts, customary claims, resettlement safeguards and local-government capacity. Public housing also requires substantial fiscal support: Singapore's HDB reported a S$6.34 billion net deficit before government grants in FY2024, including substantial costs for home ownership and upgrading. The public landlord must still pay to build, repair and renew its stock. [R129] The comparison supports transferring functions rather than assuming public ownership alone is sufficient.

In Vienna and Singapore, land policy operates alongside continuing housing institutions and finance. The state needs skills to price sites, issue rights, plan services, structure finance, supervise construction, allocate homes and care for neighbourhoods. Ownership without these functions can produce idle land. Delivery institutions also need lawful access to suitable sites in locations households can use. The Ahmedabad comparison identifies two limits: reserved amenity sites can remain unbuilt when finance and coordination fail, and tenants may remain outside the land agreement. Public control over a site is therefore only one input. The agreement must connect its opportunity cost to financed services and enforceable access for the intended residents. [R026] The actual transaction must still address the objectives and authority of the institutions controlling it.

Türkiye and the public land behind TOKİ housing

Türkiye's TOKİ combines public land, housing production and long-term repayment within one delivery institution. Its January 2022 programme account reported construction starts for just over one million units since 2002, with 86 percent of its portfolio classified as social housing. These are the agency's historical activity figures, not verified occupation or retention outcomes. The same account describes repayment over roughly 10–20 years, commonly with instalments adjusted to the public-sector wage index, and excludes land cost from the sales price for its poorest target group. The mechanism combines access to land with patient repayment; affordability still depends on how instalments change relative to household income. [R502]

Revenue sharing turns valuable public land into cash for other housing commitments. TOKİ describes partnerships in which private developers build higher-income housing on its land and share sales revenue, helping bridge immediate construction spending and slower household repayments. Its financial account also records land transfers from public bodies with or without payment. These institutional descriptions explain a financing mechanism; they do not establish that public support is costless. [R503] My appraisal implication is to record the land's opportunity cost, infrastructure obligations, realised receipts and remaining receivables in one account. Test the programme when premium-market sales slow, rather than treating forecast land revenue as cash already available.

TOKİ's production record also needs a separate account of residents affected by renewal. The UN housing rapporteur's 2009 communications report records allegations concerning Sulukule: demolition, inadequate consultation, unaffordable replacement housing and exclusion from relocation eligibility. It identifies the Housing Development Administration's role alongside the municipalities. The government's response described consultation, agreements with owners and tenants, replacement flats and measures to correct eligibility and contracting problems. These are a documented complaint and response, not adjudicated findings or a completed welfare evaluation. [R508, paras. 86–87, pp. 68–76] The appraisal implication is to follow original owners, tenants and unregistered occupants through relocation, debt and livelihood outcomes; national output totals cannot settle those questions.

The transferable lesson is to coordinate land and finance while keeping resident outcomes and fiscal exposure visible. At greater scale, replication requires a replenishable land pipeline, competitive procurement, dependable services and arrangements for households outside formal ownership eligibility. Publish allocation, occupation, arrears and household payment burdens alongside starts. Test indexed instalments against irregular or stagnant incomes, and record the treatment of tenants and existing occupants where redevelopment is involved. A central agency can coordinate responsibilities; its organisational form alone cannot demonstrate affordability, protect displaced residents or establish the seismic performance of completed buildings.

Contract for delivery and preserve public value

Public-land development agreements

Select a locally lawful land arrangement after documenting claims and comparing the public uses of the site. Compare forgone land receipts with the value and cost of the promised public benefit, including recurring services. The public landowner must enforce the agreement; the housing operator and utilities must deliver; independent valuation and appeals must remain available. Track public subsidy including land, homes delivered and occupied by target groups, access, covenant compliance and displacement. Land-disposal rules should require the state to explain the value of each proposed use. The duty need not force every urban plot into subsidized housing. Parks, hospitals, markets, freight facilities and schools also make cities function. It should force a transparent choice, especially where scarce central land could permanently alter who can live close to work. The approval gates below assign responsibility for the remaining legal, financial, and service conditions.

Terms of the land agreement

A strong contract defines both what the developer receives and what the public receives. Specify the exact parcel, lease term and rights. Attach the independent valuation and the approved density. State how many homes must serve each income band, their initial rent or sales price, the permitted growth of those charges, and the length of the affordability period. Provide for priority or protection of existing residents when applicable. Define the standard and funding of schools, drains, streets, water and public space. Make legal completion, safety certificates and tenant occupancy

conditions for staged payment or release of guarantees. Control what happens after the project opens. A long lease, recorded agreement or other locally enforceable mechanism must bind successors. Require the landlord to maintain an audited reserve for lifts, roofs, sewers and fire systems. Require the manager to report aggregate eligibility, vacancies, rents and complaints. Set penalties for misuse, clear triggers for step-in rights and a route to transfer management to another competent provider. Occupancy rights and remedies should remain enforceable when officeholders change. Bidding should test that outcome against affordability, quality, and lifecycle requirements.

Procurement should compare feasible public outcomes rather than maximise revenue before testing suitability and rights. One method fixes the public land contribution and asks who can provide the most long-term affordable room-years under verified quality standards. Another fixes the minimum affordable provision and asks who will pay the largest land premium. Both require fair comparators, independent cost estimates and real competition. Bid design cannot repair a site that is in the wrong place or whose occupants were excluded from planning. The land agency needs a funded preparation process to make that comparison credible.

Preparing a public-land transaction

Budget the valuation, legal work, consultation, and independent verification required before award. Use these stages to prepare a manageable transaction; disputed claims or statutory processes can take longer than an indicative schedule. Stage 1: select a small portfolio of diverse public sites. Establish legal custody, physical occupancy, climate risk, access to employment, and the inventory of existing utilities. Bring tenants, neighbors, utility managers and employers into the mapping. Publish uncertainty about site readiness, while protecting identifiable resident claims. Stage 2: commission an independent land valuation on the proposed terms, with a second review where transaction rules or material uncertainty require it. Complete the service-capacity and location appraisals. Estimate the fiscal cost of selling, leasing, retaining and upgrading. Reserve any national and municipal infrastructure funds. Publish a short options paper before political approval. Stage 3: agree the legal route and eligibility rules, hold meaningful hearings, settle major claims, and issue a competitive tender with lifetime affordability requirements. Publish bidder identities, all public contributions and the reasons for the selected scheme. Appoint an independent engineer and an independent tenant/ household auditor. Financial close and service works should follow only when their conditions are met.

Proceed through financial close, works, and occupation with common time horizons and explicit additionality assumptions. Stage 4: secure financial close and begin service works. Record contract changes and test a small tranche of construction and allocations before full expansion. Compare implementation with similar sites not yet released where feasible, documenting selection and market differences; do not call them a causal control group without a defensible evaluation design. Measure time to approvals, additional housing starts, total public cost and confirmed rights of displaced or existing residents. Extend or redesign only after field validation. The operating dashboard should track five-year eligible occupied room-years per unit of public economic commitment, alongside median commute, household housing-and-travel burden, actual service uptime, repair costs and eviction complaints. It should also report the number of additional homes relative to credible alternatives; raw completions can overstate the effect of a subsidy or a land release. Comparisons need common time horizons and explicit assumptions about who would have built anyway. The continuing review should test whether the public asset retains its intended housing value.

Preserving public value over time

Public-land performance depends on both the value committed and the institutions that preserve affordable access over time. Public land has two qualities governments seldom measure

together. It is a scarce asset that can finance other public needs. It is also a way to decide who gets access to the city's most productive places. Once a well-located parcel is sold with unrestricted rights, buying back that option may be prohibitively expensive. Once a costly housing block is built in a remote place, its commute and service burdens can persist for generations. The appraisal should consider these long-term effects alongside annual cash flows. The cases report different outcomes under different institutions. Ethiopia mobilized land for hundreds of thousands of condominiums and struggled with affordability. Delhi used auctions to capture substantial bids, which say little about who can live in the new buildings. Cape Town's activists changed the legal terms of public-land disposal, while still facing a difficult task of financing and managing homes. Vienna links land transfers to developer obligations and sanctions. Singapore built a vast public housing system by coupling land acquisition to finance and a strong delivery state, with large fiscal and historical costs. Digital systems should be judged by their contribution to that service and housing outcome.

Digital land systems should reduce a documented delay or error while preserving disputed claims and appeals. Measure the resulting service and housing outcomes, and record who receives the savings. Fieldwork should verify the underlying claims, costs, rights, and obligations before approval.

Public land should preserve affordability beyond the first allocation

Public land has an economic value even when no cash changes hands. If a well-connected site worth US$20 million supports 1,000 homes, transferring it free to a project is an implicit contribution of about US$20,000 per home before infrastructure, construction, finance, or household subsidy is counted. Appraisal should record that opportunity cost alongside budget spending so that a land donation cannot be treated as a costless private contribution.

Long-term affordability requires a rule for the second and third household as well as the first. Leases, resale formulas, shared-equity structures, social rental, community land trusts, or time-bound covenants can preserve part of the public contribution, while unrestricted sale may allow the initial recipient or developer to capture most of the subsidy once the market price rises. The appropriate instrument depends on local law and management capacity, which makes enforceability and long-run administration part of the original land decision.

The fiscal decision should compare alternative uses of the site over time. Sale proceeds may fund other public priorities; a long lease can preserve public ownership while generating revenue; a mixed-income development can cross-subsidize lower-income units; and a school, park, road, drainage corridor, or market may produce higher social value than housing on a particular parcel. The common metric is the discounted public cost per low-income household that remains in a safe, connected, affordable home, which links land policy directly to public finance and inclusion.

A land arrangement still needs workable development rules. Chapter 3 tests which requirements protect safety and which prevent feasible supply; Chapter 4 then tests service capacity and finance.

Selected readings

World Bank land guidance for South Asia [R017]. Use the Gujarat material to examine land contributions and reservations; statutory design does not establish delivery or household welfare.

Ahmedabad town planning schemes [R026]. Read the WRI assessment for the distributional questions within land readjustment; its institutional setting limits direct transfer.

Adonisi judgment [R359]. Read the Court's reasoning and order for the public-land decision; distinguish the legal holding from a general housing allocation rule.

Judgment and transfer conditions

Usable land requires rights, permission and services together.

Confidence: High confidence in the mechanism; local quantities and prices need estimation. Revisit trigger: Evidence that a cheaper, connected alternative serves the same people with fewer rights losses.

Transfer a way to give households usable land, with rights, services and affordable development finance. At roughly ten times the pilot scale, test dispute resolution, access for the bottom 50 percent and connection timing on the next sites. At roughly one hundred times the scale, require land administration, utility investment and safeguards that work across jurisdictions. Public ownership alone does not supply these conditions. Expansion should pause if they fail.

Exercise

Estimate the land required for one million added residents at three densities. Deduct feasible infill capacity. Identify the rights and service commitments required before treating the remaining land as available.

3. Planning Rules and the Cost of Safe Housing

Which planning rules should change to make safe housing feasible?

Priority A requires rules that permit safe, affordable homes. This chapter tests feasible alternatives (Test 3), household costs (2) and safety and rights (7). Make modest, safe homes and extensions lawful and practically buildable. Test plot sizes, floor-space limits, parking requirements and approval delays through project economics, retaining enforceable safety and service duties. A household needs an affordable route to approval and inspection as well as permission on paper. More rights can raise land value without producing housing; assess actual building, household access and infrastructure capacity together.

The South C collapse illustrates why a permit is not a substitute for verified construction safety. On 2 January 2026 a multi-storey building under construction in Nairobi's South C district collapsed before dawn. The National Construction Authority reported that it had registered the project in November 2023, after receiving county approvals, an environmental licence, and a geotechnical report. Four quality-assurance inspections had been recorded as accepted; the last had observed work at the third floor. After the collapse, investigators found that construction had added four floors beyond the approved structural design. Two bodies had been recovered by 7 January. The agency had yet to determine the precise technical cause. The county separately reported that it had intervened at the site in May, July, and December 2025 over breaches of building rules.[R269][R270] The South C case illustrates the need for continuing oversight after a permit is issued. Approval records, the structure actually built, inspections, and enforcement must remain connected. This single case does not establish the causes of other building failures. Planning systems can also fail by preventing safe feasible homes from being built.

Planning rules affect housing costs by determining which buildings can be developed profitably on each site. Allowing apartments on a plot previously limited to one house changes both the supply of housing and the value of the land. Planning rules determine the amount and type of legal floor space on urban land. Floor-area ratios, plot sizes, setbacks, height limits, parking rules, use restrictions, and approval procedures affect how much housing may be built. They can protect light, safety, drainage, heritage, and infrastructure capacity. Restrictions that exceed those needs can also limit supply and contribute to higher rents, land values, commuting costs, or informal construction. Residual land value provides one way to test a rule's effect. Start with expected building revenue and subtract construction, finance, taxes, infrastructure, professional fees, marketing, and a required return for risk. The remainder is the amount available for land. Additional usable floor space may increase that residual, while costly parking, large plots, or delays may reduce project viability. Whether these changes affect household prices depends on competition, demand, and the supply response. The economic test must be paired with a check that the permitted building can actually be delivered.

Identify which rules constrain usable supply

Development permission and housing supply

Planning reform must align development rights with infrastructure and feasible construction. Uncertain network capacity, parcel rights and approval times can prevent a project from proceeding. Because permission also changes land value, those who control decisions have strong incentives to influence the rules. Parking, plot sizes, and building envelopes are practical places to begin that check.

Price the smallest lawful dwelling

The relevant regulatory price is the cheapest safe home that can legally be supplied. In a deliberately simplified example, a 30 m² minimum dwelling at CU 500 per m² costs CU 15,000 to build. Add CU 5,000 for land, connections and fees: CU 20,000 before finance. A safe 20 m² alternative at the same unit construction cost would be CU 15,000, a 25 percent reduction. This assumes the smaller design meets ventilation, sanitation, fire and accessibility requirements; shrinking space is not itself proof of equivalent safety. Model scale: small-home teaching example; CU is hypothetical and is not comparable with the district-account price level.

At a 10 percent nominal annual rate, 20-year monthly amortisation and a 20 percent deposit, the larger home requires about CU 154 a month in loan payments and CU 4,000 upfront. The smaller requires about CU 116 and CU 3,000. At a 30 percent payment-to-income screen, their income thresholds are about CU 515 and CU 386 per month before utilities and travel. Match these thresholds to a local household-income distribution to calculate the share reached. Without that distribution, the share is unknown—not the share of people with formal jobs.

Patel, Byahut and Bhatha's Ahmedabad exercise estimated a roughly 34 percent cost reduction from rationalised rules on one site. It is a design simulation, not a measured fall in citywide house prices. Its importance is that it makes a regulatory claim testable in quantities, layouts and costs. Replicate that calculation with engineers and local producers before changing rules. [R457]

Broad, predictable baseline development rights should precede efforts to sell exceptional permission. Fund attributable network costs through transparent charges and tax realised property gains where administration permits. Selling extra rights is a second-best instrument when it gives the authority an incentive to preserve scarcity. Publish both the revenue and the homes forgone by the restriction.

How planning rules affect housing costs

Rules intended to protect amenity can exclude affordable building types when their costs exceed their benefits. Depending on rents and other costs, a developer may build fewer homes, change location, raise the asking price, or abandon a project. Test the parking requirement against observed car ownership, access needs, and alternatives at the proposed site. The same is true of minimum plot sizes. A household that can afford 40 square metres of dwelling on a 60-square-metre plot is excluded if the legal minimum plot is 200 square metres. A minimum unit size can ban the room a migrant worker can afford. A setback can make a narrow parcel undevelopable. A ban on mixed use can separate a street vendor's home from her livelihood. A cap on floor space can push the marginal household farther from work. These rules interact with finance. An unauthorised extension can make collateral unacceptable to a lender, and planning noncompliance can prevent a formal sale. An informal landlord may still build while accepting enforcement risk. Where affordable building types cannot obtain

approval, households may face a choice between expensive compliant housing and unauthorised alternatives. The scale of that effect requires local evidence. Where households cannot obtain a suitable compliant home, their building decisions reveal what the formal system is failing to provide.

Informal construction can reflect both weak enforcement and unmet demand. When thousands of households add rooms, divide plots, convert shops, or build extra floors, they reveal a demand for forms of floor space the formal system supplies too slowly or too expensively. Upzoning can remain unused if water, sewerage, drainage, streets, or transit cannot support additional residents. Networks can also remain underused where legal density is too low. Discretionary exceptions may make approval less predictable and increase the value of an individual decision. Assess whether the permitted floor space is serviced, financially feasible, and available through a transparent process. Indian floor-space policies illustrate how these constraints interact in high-demand locations.

Floor-space regulation in India

Bertaud and Brueckner's published 2005 model estimates welfare costs of building-height restrictions for Bangalore in a range of 1.5–4.5 percent of household income. This is a simulated welfare cost, not an observed reform effect or simply a measured transport saving. Infrastructure, construction costs and demand determine what additional permitted floor space can deliver. [R272]

Land assembly requirements and social exclusion can prevent households from benefiting from additional development rights. Affordable-housing obligations may make a project unviable if they exceed the available residual land value. Uneven exceptions can add uncertainty. Implementation therefore needs clear rights, predictable approval periods, funded infrastructure, disclosed obligations, and a lawful process for fragmented ownership. Planning reform also needs an assessment of social exclusion. Caste and class can affect access to rental and ownership housing in India. Informal settlements, unauthorised colonies, and subdivided peripheral land may provide access when formal housing is unaffordable or unavailable. Regularisation can improve security but may also change expectations about future enforcement. Enforcement decisions must examine impacts on households with weak documentation and provide due process, rather than treat legal status as a complete account of their rights and needs. African experience adds the problem of rules that fit only a small part of actual housing production.

Planning rules and informal development in African cities

Planning reform must make safe incremental production feasible for the households and landlords already building much of the city. Small landlords, households and informal developers are central to incremental housing production. The gap is large enough that policy cannot close it through public construction alone. Kenya's earlier housing assessments illustrate the arithmetic. The World Bank estimated a deficit above two million units, formal production below 50,000 units a year against a target of about 200,000, and a majority of urban households living in slum conditions. The exact figures move over time; the structural point remains. These figures put the annual target at more than four times reported formal production. They justify investigating which rules, costs, and finance constraints keep ordinary builders outside the legal market. Dandora in Nairobi provides a historical sites-and-services example. Households received serviced plots and later added rooms and floors as income and demand changed. Incremental development allowed construction spending to be staged and added rental supply. A fixed original building envelope could restrict those additions. Any permitted expansion still needs to be checked against structural safety, fire access, drainage, and service capacity. The costs they face extend beyond materials and labour to the infrastructure and administrative requirements attached to a legal home.

Servicing and compliance costs can limit the benefit of a cheaper construction method. CAHF's cross-country work estimated that materials and labour often accounted for roughly 45 percent of the cost of a typical 55-square-metre house, and infrastructure for around 14 percent. Administrative compliance, land, and finance made up much of the rest. A materials innovation should therefore be appraised against its share of total delivered cost, including any additional transport, finance, or maintenance expense. World Bank-supported urban programmes reported more than 2,700 kilometres of roads and 2,700 hectares of serviced land delivered across 117 cities between 2018 and 2024. A right to build becomes economically meaningful when pipes, roads, drainage and public services can support the building. Where those costs push housing away from employment, planning becomes a question of access to work.

Density and access to work in South Africa

South African evidence links dispersed settlement patterns to the need for housing closer to employment. Apartheid located many Black households far from economic centers. Three decades later, the geography remains unusually dispersed. New World Bank research using administrative, census and satellite data finds about 9,300 fewer residents per square kilometre than expected within five kilometres of commercial centers relative to twenty global peers, roughly 60 percent below the global median. The same South African research finds that greater distance from Johannesburg business hubs is associated with lower employment and household asset wealth. This association supports examining access costs but does not, by itself, identify the effect of moving a household closer. Transport, skills, job availability, and household selection also need to be considered. Upzoning can have different effects across neighbourhoods. Where jobs and infrastructure are available but apartments are restricted, more permitted housing may widen entry. On an occupied low-income rental corridor, higher development value may also increase demolition and displacement pressure. Compare added homes with losses of existing low-cost housing and track outcomes for original tenants and new entrants. Accommodating more residents in accessible locations also requires a credible municipal service budget.

Municipalities need a way to finance the network obligations created by additional housing. Metros must maintain water, sanitation, electricity, roads and waste systems. National government captures large tax bases while municipalities carry much of the service burden. A municipality asked to permit more residents needs a credible way to finance the networks those residents use. The country's new Metro Trading Services Program makes this institutional link explicit by tying national performance-based grants to improvements in metro trading services. Housing supply and municipal finance cannot be separated for long. International zoning reforms help distinguish changes in legal capacity from changes in actual supply.

Compare reforms and allocate development value

International evidence on zoning reform

Planning reform can increase supply where rules prevent building types that would otherwise be viable. Its effect on rents depends on the amount built, the timing of completion, demand, and changes elsewhere in the housing market. Minneapolis is useful because it changed several rules over time. The city reduced and then eliminated parking requirements, made apartment construction easier near commerce and transit, reduced minimum lot sizes, and later allowed duplexes and triplexes more widely. Between 2017 and 2022 its housing stock grew about 12 percent while rents rose about 1 percent; the rest of Minnesota added about 4 percent to housing stock while rents rose 14 percent. Pew estimates that nearly 21,000 units were permitted in Minneapolis over that period, 87 percent in buildings with twenty or more units. Most Minneapolis permits in this period were for larger

apartment buildings. The reported construction associated with duplex and triplex legalisation was limited. This pattern suggests testing corridor rules and parking costs alongside smaller-building reforms; it does not isolate the contribution of each policy. Construction cost, finance, parcel dimensions, and demand may still prevent an approved project from proceeding. Other reforms show why the geographic coverage of new rights and the building types they enable also matter.

Smaller plots and broader development rights can expand supply, but the response depends on the market and the reform package. After reducing minimum lot sizes, from 5,000 square feet to as little as 1,400 in parts of the city and later citywide, nearly 80,000 townhouses and other small-lot homes were built, according to Pew. Smaller legal parcels created a product between an apartment and a detached suburban house. These comparisons are observational, and the policy packages overlap. They support testing whether added legal capacity allows more housing in high-demand locations. They do not establish a universal supply response or show how much of an observed rent change came from a particular rule. Auckland and Chicago show why coverage and location need testing. Auckland's 2016 reform covered about three-quarters of residential land. Using an extrapolated linear counterfactual, researchers estimated 21,808 additional permitted dwellings over five years; that point estimate is sensitive to the counterfactual specification. These were permits, not net completed homes. Chicago's narrower transit-area reforms raised property values without a detectable increase in newly permitted dwellings in the initial five-year study. The markets, periods, and methods differ, so this is not a controlled test of breadth alone. Test whether enough competing sites become viable, alongside demand, finance, and infrastructure. [R045, R047] Those differences make the distribution of benefits and costs central to securing support for reform.

Allocating the value of development rights

An increase in permitted floor area can raise land value. The public authority should estimate that increase and state how infrastructure costs and affordable-housing obligations will be allocated. The city can grant the right freely to encourage rapid supply. It can auction additional development rights. It can charge for infrastructure. It can require affordable units. It can use land readjustment to obtain streets, parks and public sites. It can tax some of the uplift later through property taxation. Each instrument changes the project's economics and the politics of reform. Use residual land value to assess the feasible obligation. Estimate the revenue from the proposed building. Subtract construction, finance, infrastructure, taxes, professional costs, marketing and a competitive developer return. The residual is what can support land acquisition and public obligations. If the city demands more than that residual, the project stalls or the obligation is evaded. If it demands nothing where rights create a large uplift, it transfers public value to the landowner. Publicly owned sites require the same viability test and additional scrutiny of the terms on which public value is transferred.

Public-land decisions should disclose the value contributed and the housing obligations obtained in return. An auction to the highest bidder maximizes the immediate receipt. A long lease with density, affordability and delivery conditions can purchase a stream of urban outcomes. A negotiated allocation requires transparent selection and conflict-of-interest controls. The minimum information set should be public: parcel boundaries, valuation, permitted rights, bids, beneficial ownership, milestones and subsequent changes to the contract. Publishing those obligations is easier when parcel rules and approval records can be checked consistently.

Implement and evaluate the reform

Implications for housing supply

Planning reform must be followed through to usable homes and household outcomes. Record infrastructure capacity, construction, occupation and displacement alongside permitted floor area. The field assessment below identifies the project and household evidence needed for that judgment.

Implementing planning reform

Planning reform should address unsafe construction and unnecessary supply restrictions through distinct controls. On some plots a sound, simple rental room may be blocked by a density rule, a prescribed setback, an uncertain title, or an approval process designed for a much larger developer. Cities ration legal homes while struggling to regulate the homes that appear outside the rules. Planning reform should assess both restricted legal supply and unsafe construction. Before construction, public agencies determine lawful uses, development locations, safety evidence, objection procedures, and enforcement authority. These decisions affect land prices, small-developer entry costs, tenant safety, and infrastructure finance. Planning reform must coordinate them to expand safe housing near employment. Development permission creates value that makes both its allocation and its conversion into housing consequential.

Link planning permission to feasible development

Development permission and land value

A development right changes the options and value attached to a parcel, but does not guarantee construction. Its market price reflects what a buyer believes can be done there. If a city permits two homes where it previously allowed one, the owner receives a new option. If the city allows an extra floor, removes parking requirements, or permits rentals on a residential plot, it changes the plot's earning power. The option can raise the selling price of land immediately, even if no builder pours concrete for years. Changes to planning rules can therefore create gains for landowners before construction. The revenue that new rooms can earn, discounted for vacancy and operating costs, gives them a possible capital value. The builder subtracts construction, finance, fees, risk, and a normal return. What remains is the maximum that can be paid for land and development rights. A rule that makes more floor space possible can enlarge that residual value. If enough plots become buildable, competing landlords may eventually lower rents. If only a few sites obtain discretionary exceptions, existing owners may receive much of the increase in land value. Evidence on density restrictions should therefore be connected to the full conversion process.

Modelled benefits from relaxing restrictions require local testing of the path from permission to occupation. The 2005 analysis by Alain Bertaud and Jan Brueckner examines the travel and welfare costs of building-height restrictions. Restrictions on building height shift households outward from employment centres, lengthening travel. Their stylised simulations for Bangalore implied welfare losses of roughly 1.5–4.5% of household income. These are model results, sensitive to assumptions about the city and transport; they illustrate a modelled relationship between height restrictions, travel, and household welfare.[R272] Additional permitted floor area still requires title, services, construction, and occupation. A plot may be upzoned while its title remains disputed; a developer may receive permission while the sewer is full; a building may be completed while the power connection or occupancy certificate is withheld. Measure occupied homes that meet safety and accessibility requirements.

Regulatory capacity should therefore be judged as a conversion process. The denominators at each stage are needed to establish who proceeds and who disappears from the records.

1 Claim Who holds defensible rights?

2 Use Which dwelling types are lawful?

3 Hazard Can people live there safely?

4 Service Will networks accept the load?

5 Capital Will anyone finance construction?

6 Build Is the approved design followed?

7 Live Is the home occupied and affordable?

Exhibit 3.1. Seven gates between a legal possibility and a liveable room. Each gate has a different owner; failure at one can erase the value produced at all earlier gates.

Count all eligible parcels and application attempts as well as approved projects. An administration may process most files promptly because poorer owners never apply, because applications are labelled incomplete for months, or because only simple, low-risk cases reach its system. A credible statistic must track the entire stock of parcels and the full sequence from first inquiry to occupancy. Report which applicants and households are absent from the administrative records. Zoning comparisons show why additional permissions and additional dwellings need separate measures.

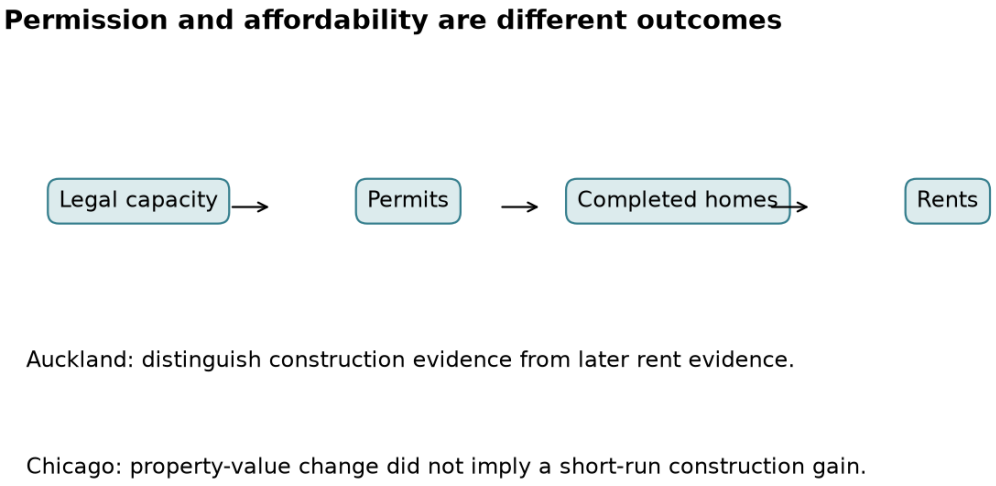
Comparing zoning reforms

Zoning reform should be evaluated through actual supply responses rather than land-value increases alone. Two reforms show how much the answer depends on scale, expected demand, and the surrounding institutions. Chicago raised permitted density and cut parking requirements near transit through changes in 2013 and 2015. Yonah Freemark used differences in the timing and location of those changes to estimate their effect. Transaction prices rose on parcels that gained rights, including higher values for existing condominiums. Across five years he could detect no additional permitted dwellings attributable to the changes. The study found higher property values without a detectable increase in permitted dwellings during that period.[R047] Auckland provides a comparison involving much broader geographic coverage.

Broad zoning reform requires separate measures of permits, completed homes, rents, and household access. Auckland's 2016 Unitary Plan increased capacity across roughly three-quarters of residential land. Townhouses and attached housing followed in volume. Ryan Greenaway-McGrevy and Yun So, writing in Economic Inquiry in July 2026, use a synthetic comparison with other New Zealand urban areas and estimate that Auckland rents were 23% below their no-reform counterfactual in 2024, eight years after the change. Their analysis also finds a marked rise in housing permits. The estimate is a modelled policy effect, with uncertainty about the chosen comparison cities and other policy shifts; 23% should never be read as an observed fall in nominal rents.[R046] These studies differ in markets, size of treatment, methods, and time. They still offer a useful test of the mechanism. Broad legal capacity makes more plots competitors in the housing market and can support a supply response. A narrow entitlement may first appear as a higher bid for scarce land. The result depends on finance, service availability, construction costs, and demand. Policy language should distinguish "more capacity", "more permits", "more homes" and "lower rent". Each claim requires a separate measure. The comparison with narrower reforms suggests conditions to investigate rather than a universal coefficient.

EVIDENCE AND INFERENCE

Observed study findings: Chicago's targeted reform raised property values without a detectable increase in permits over the study window; Auckland's broad reform is associated with a large supply response and a 23% lower modelled rent level by 2024. Judgment: a city that wants lower rents should liberalise enough well-serviced land to create competition, then protect the building and occupancy steps. A credible causal estimate for Chicago cannot simply be subtracted from Auckland's estimate.



Teaching figure 2. Conceptual comparison of the Auckland and Chicago studies discussed in this chapter. No common effect size is implied; reforms, samples and follow-up periods differ.

Reform breadth affects the distribution of development opportunities, while fair access remains a separate test. The Chicago and Auckland studies do not isolate the political effects of that difference. Before implementation, identify which residents and builders gain usable capacity, which neighbours face added service demands, and how the proposed rules address those costs. Treat the effect on support for reform as a local question to investigate. The Auckland–Chicago comparison in Chapter 3 should guide the implementation test: additional rights must become starts, completions and occupied homes. Access needs separate verification. In Delhi's rental audit, otherwise comparable inquiries received responses of about 35% with upper-caste Hindu names and 22% with Muslim names. That is evidence about responses, not completed leases. More physical supply cannot by itself establish fair access, and these studies do not measure the local size of both constraints. [R045, R047, R276] Implementation depends on the actors who control the permissions and complementary services.

Authority over development decisions

Planning decisions require agreements among parties with different powers, costs, and timetables. The owner wants the increase in land value. A builder wants a predictable, saleable project. A bank wants enforceable title and a usable completion certificate. A utility wants payment for connections and capacity. Existing neighbours seek quiet, access, and protection against flood or fire risk. Tenants want more choices near work; they may also fear eviction when their block is rebuilt. Councillors must respond to both housing demand and concerns about congestion and service failures. These interests require explicit comparison. These actors receive benefits at different times. Permission lifts a landowner's option value immediately. A contractor is paid during construction. The utility pays for capacity before future customers arrive. The city receives property taxes only after assessment and

collection. A tenant benefits from competition only when enough comparable dwellings are ready to rent, and may lose a current room while waiting. Different timing and responsibilities can leave each party waiting for another to act. Unequal political voice can prevent those agreements from representing prospective residents.

Published safety and service evidence should address local concerns without creating an indefinite veto over conforming homes. A low-income tenant seeking a room near a job has no clear plot on which to object or advocate. A homeowner whose street faces a proposed building can attend a hearing next Tuesday. In a study of planning meetings in the Boston metropolitan area, Einstein, Palmer and Glick found that attendees were more likely to be homeowners, older, male, politically active and opponents of new housing than the people living in the wider area. This is US evidence, with different institutions from Cape Town or Bengaluru. Participation in a hearing may not represent the wider population.[R280] Sometimes objections are sound. A narrow road cannot accommodate fire engines; an extra basement can worsen flooding; an unreinforced structure can kill its occupants. Elsewhere, traffic, heritage and "neighbourhood character" are elastic claims that allow decision-makers to exclude poorer tenants or defend the scarcity value of existing homes. The remedy is to make safety and service standards explicit, publish their evidence, and avoid granting an open-ended veto over every conforming home. The agreement must also assign the cost of accommodating growth.

The political agreement must assign both the right to build and the cost of growth. In many African and Indian cities a municipal planning department can permit density, while a separate water utility, electricity distributor, state road agency, district land office, or environmental regulator controls essential inputs. An announcement of new homes may precede agreement on responsibility for drainage and other services. The agencies that must provide extra capacity may receive no share of the new property-value gains. An intergovernmental fiscal mismatch can prevent additional housing even when the zoning change remains in force. Cape Town's small-rental reform illustrates how an entitlement can be designed around a specific producer and service setting.

Institutional constraints

Actor	Rent or stake	Veto	Possible agreement
Incumbent landowners	Scarcity premium and future uplift	Withhold plots; litigate boundaries	Predictable rights; staged charges on realised value
Existing homeowners / resident groups	Amenity and property prices	Hearing, court, electoral pressure	Clear safety tests; network investments; broad rules
Large developers	Land banks, privileged approvals, scale	Lobby for exceptions; sequence projects	Uniform entitlements; publish approvals and completions
Small builders / landlords	Rental income from extra rooms	Exit into informality; avoid permits	Simple legal designs, verified tenure and staged finance
City, utilities and professionals	Fees, taxes; professional work; discretion	Refuse connection; request new studies	Service compact; timely payment; independent audit
Tenants and excluded groups	Affordable access to jobs; security	Limited formal veto; organise collectively	Tenant standing, anti-displacement rules, allocation evidence
Customary authorities / brokers	Land sales, informal levies, control of claims	Competing title, coercion, obstruction	Joint claim validation and public escrow; legal redress

Exhibit 3.2. Institutional interests and planning authority. These are hypotheses to test through local records and consultation. Adapt implementation to local ownership and service arrangements.

Compare reforms through project economics and rights

Small-rental planning reform in Cape Town

Cape Town's additional rental right creates a legal route that must still be converted into inspected, serviced homes. Its lower-income neighbourhoods have long supplied housing through backyard structures, converted houses and small rental buildings. Much of this densification has taken place where households are far from the city's highest-value jobs. Research using neighbourhood and satellite data finds that much of Cape Town's overall densification between 1998 and 2019 came from poorer households crowding into already dense peripheral areas, while formal, investment-led densification favoured more affluent neighbourhoods. Apartheid's spatial legacy survives in these uneven property and labour markets.[R274][R283] On 26 June 2025 the city approved amendments to its planning by-law. A new additional use right permits up to eight small affordable rental units alongside an existing dwelling, or up to twelve if no dwelling remains, on plots covered by the designated map. Related incentive overlays support more development in selected corridors. The rental provisions began operating on 1 September 2025; much of the wider package followed on 1 October. The city subsequently published location maps, development guides and prototype layouts for micro-developers. The change creates a legal route for small rental development that can be inspected and serviced.[R273][R073] The benefit depends on whether each stage in that conversion becomes feasible.

Small-rental reform should connect predictable permission to construction, finance, services, and tenant protection. A homeowner may already own the land, borrow against another asset, use a local contractor and add a few rooms. That owner may lack the legal and design capacity to build a conventional apartment complex. A map that states the allowable use, an intelligible standard plan, and an affordable inspection route could change the decision from "build outside the code" to "build under it". A lender can then verify the right to let the rooms. Utilities can identify connections before an overload occurs. The municipality must price the standard-plan, advice and inspection service, publish its charges and fund any concession needed for low-income builders. A tenant may gain a sound structure, sanitation, and a lease that can be enforced. A new entitlement is evidence of a rule change, not a completed housing outcome.

Evaluate the reform by following projects and tenants through the agencies that must act after permission. The city's 2025 change is evidence of a new entitlement. It does not by itself establish completed rooms, lower rents, improved fire safety or reduced displacement. Legal "affordability" also needs to be tested against the earnings of households at the bottom of the rental market. A planning category can generate units called affordable while the final asking rent remains beyond their means. If formalisation brings larger bills for water, power, tax, insurance and debt, the owner will try to pass them on to renters. The same rule that makes eight rooms legal can raise the value of the parcel, rewarding the owner before any tenant benefits. A credible Cape Town coalition therefore reaches beyond the property owner. The municipality offers a pre-agreed safe envelope and quick review. The water and electricity departments publish the connection and reinforcement costs. Engineers provide an affordable route to certify stairs, loads and fire access. Credit providers offer loans whose repayment fits rent collections. Tenants receive written occupancy rights and a clear repair process. If these parties share the same timetable, the legal change can result in usable supply. If each waits for the others, builders may delay work or proceed outside the formal process. A rental-project calculation can test whether the permitted design is financially usable.

Rental project viability

A small-rental appraisal should separate construction expenditure from land already held and its opportunity value. The numbers below are a teaching model in South African rand; they are not bids from Cape Town and make no claim about market rents or construction rates. Suppose the new rooms total 110 square metres of gross floor space, at R11,000 per square metre to build, with R180,000 for water, power and site work, and R110,000 for drawings, compliance and finance. Total new capital is R1.50 million. The land is already held; any increase in its opportunity value appears as a separate cost if the plot is sold to a new builder. Occupancy, operating costs, and financing assumptions then determine the feasible return.

Project viability and tenant affordability require separate calculations under explicit assumptions. Assume 90% paid occupancy, operating costs of 20% of collected rent, and an 8.5% capitalisation rate. At R3,000 a month per room, the annual net income is R103,680, capitalised at about R1.22 million. The project is short of its R1.50 million cost. It needs an illustrative rent of R3,689 per room to support that cost at the assumed yield. At R4,200, its imputed value rises to roughly R1.71 million. That larger rent can make the project viable while still failing an affordability test for many households. Assess prospective tenants' affordability separately from the return to the owner and any effects on existing occupants. Changing one input helps identify which constraint actually determines whether the project proceeds.

ILLUSTRATIVE 4-ROOM INFILL	Lower rent	Break-even	Higher rent
Monthly rent / room	R3,000	R3,689	R4,200
Annual net income	R103,680	R127,491	R145,152
Capital value at 8.5%	R1.22m	R1.50m	R1.71m
Value minus R1.50m cost	−R0.28m	≈R0	+R0.21m

Exhibit 3.3. Explicit assumptions: 4 rooms; collection 90%; operations 20% of collected rent; capitalisation 8.5%; capital cost R1.50m. Rounded to the nearest R1,000 where appropriate. These are hypothetical calculations, not reported prices or a forecast.

Sensitivity analysis shows whether additional rights, lower costs, or public support make the project feasible. A nine-month delay while R1 million of site and design capital is committed at 12% simple annual finance cost adds R90,000. Spread at the same assumed yield across the four rooms, that would require about R221 more in rent per room each month. A city may save the applicant a modest official fee and still impose a much larger bill through slow decisions. Conversely, a faster permit has little value if the site cannot connect to the water main or the builder cannot prove lawful possession. A transparent, conditional capital grant of R300,000 would reduce the required supportable rent from roughly R3,689 to R2,951 under these assumptions, provided the owner did not pay more for the land or face new charges. If the entitlement raises the asking land price by a similar sum, much of the public grant accrues to the seller. A fair programme should therefore test the rent, the extra occupied rooms, the quality and the land transaction together. The subsidy chapter and the public-land chapter established how to account for the transfer; permission shows the point at which the transfer first becomes possible. Approval deadlines address a different constraint and must be measured from the applicant's first attempt.

Statutory approval deadlines in Hyderabad

Statutory deadlines change the legal consequences of delay but do not establish actual processing performance. Telangana's building approval and self-certification law of 2020 requires ordinary applications accompanied by valid, complete documents to be decided within 21 days. The statute provides for deemed permission if an order does not arrive in time, with powers to revoke a deemed approval obtained by false statements or contrary to rules. The online TG-bPASS process combines submission, scrutiny, downloadable approvals and complaint handling. The statute changes the legal consequences of missing the deadline; actual processing times require separate measurement. [R447] Incomplete applications and pre-filing steps can remain outside the reported clock.

Measure the full interval from first filing attempt to lawful occupation, including amendments, withdrawals, and inspections. If an official can keep a file outside the clock by seeking another plan, land certificate or clarification, the statutory period may say little about actual delay. Self-certification also shifts risk. A small owner with a lawful plot may gain. An applicant on a floodplain, or a builder whose structural design is wrong, may gain an unwarranted paper approval unless independent checks operate at the right construction stages. The Act and portal prove what the system is designed to do. They supply no causal estimate of how many extra affordable homes were occupied as a result. A city should publish the interval from first filing attempt to lawful occupancy, including withdrawn cases, amendments and inspections. Household access can still be blocked after the building receives permission.

A completed lawful unit is not an accessible opportunity where landlord selection excludes eligible households. Under PM-UDAY, the Delhi Development Authority offers rights of ownership, transfer or mortgage to eligible residents in 1,731 unauthorised colonies. Its own account links property recognition to potential bank loans and approved building plans. That may enable investment on some plots. Yet recognition depends on competing documents and on the person who holds the claim. It says little, on its own, about how a tenant gains protection when a newly valuable site is rebuilt, whether streets can accommodate fire engines, or which agency will pay for upgraded sewers. Appraisal should include the public-service obligations alongside the private rights created.[R275] A field experiment by Saugato Datta and Vikram Pathania sent otherwise comparable inquiries to online rental listings in Delhi and surrounding areas. Landlords responded to 35% of upper-caste Hindu applicants and 22% of Muslim applicants. The 13-percentage-point gap was measured at the contact stage; the study did not observe final leases or the whole housing market. It identifies differential treatment at the inquiry stage in the sampled market. A new apartment in the right neighbourhood expands the physical supply. Landlords can prevent that unit from becoming a housing opportunity for particular households.[R276] Planning implementation needs records of land claims, usable permission, and occupant rights.

A successful permission reform in India therefore needs three records that often sit in different offices: the landholder's claim, the building's usable permission and the occupant's rights. A fourth record, the service connection, determines whether a family can remain there. Digitising the first two can improve lending and inspection while deepening exclusion if tenancy, caste, religion, disability and migrant status disappear from the questions government asks. Any inclusion rule must be enforced through lawful, privacy-preserving channels; a public tenant registry could expose vulnerable households to retaliation. Accra illustrates why even the authority to grant development permission may be contested.

Land rights and development permission in Accra

Contested land authority can delay development beyond the formal permit process. Customary owners, family heads, competing chiefs, the Lands Commission, district planners and

informal land guards can each assert claims over a plot. Legal forms alone will not reveal who can stop the work. A study by Divine Mawuli Asafo, published in Housing Studies, followed the experiences of 22 housebuilders and interviewed customary authorities and land sellers in several peri-urban communities. Buyers described repeated payments when new people claimed ownership, violence or threats from land guards, interruption of construction, and repeated attempts to secure the same site. One household had begun seeking land in 2010 and had yet to begin building in 2018. The qualitative sample cannot estimate citywide prevalence, though the accounts identify possible mechanisms linking contested claims to delay.[R277] Resolving that risk requires documenting rival claims and the consent and revenue-sharing agreement.

Land-conflict remedies should establish claims, consent, benefit sharing, and appeals before credit is secured against the site. When savings are tied up in disputed land, the household may abandon a qualified contractor, build in fragments, reduce the quality of materials, or start without complete plans. A partially built house then becomes evidence of possession. Construction may be used to assert possession even when starting work increases financial risk. Informal authority becomes a parallel approval market with its own fees and coercive power. Research on land governance in Kumasi describes the overlap of ownership and administration by traditional leaders, whose decisions can govern use, resolve disputes, and affect infrastructure location alongside statutory planners. Where the state treats customary institutions as obstacles to be bypassed, the promised permit may lack local acceptance. Where it delegates every decision without oversight, land sales and arbitration can become sources of private rent. The workable agreement starts by documenting rival claims, setting rules for consent and revenue sharing, protecting customary members and women with weaker bargaining power, and offering impartial appeal before credit is secured against the parcel.[R278] Digital records must preserve disputes rather than erase them through a single authoritative entry.

Digitising an unresolved land claim can turn disputed ownership into an apparently settled record. A satellite footprint proves that a roof existed on a date. It cannot decide which family sold the land, whether a chief had authority to sign, or who was threatened into leaving. Recording the first claimant as a digital "owner" can record a disputed claim as settled ownership. Georeferenced evidence should identify discrepancies and support a public adjudication process; it should not silently adjudicate them. The right to challenge the record is part of the information system. Mukuru provides an alternative route for bringing residents and owners into statutory planning.

Tenant participation in Mukuru

Area planning can coordinate infrastructure and claims that cannot be resolved one plot at a time. Around 94% of residents in the study area were tenants, many renting structures on private land with contested or irregular histories. Organised residents, Muungano wa Wanavijiji, lawyers, planners and county officials used the 2017 Special Planning Area designation to create space for a settlement-wide plan. The process drew together separate work on land, infrastructure, health, housing and public participation. It recognised that a drainage line, a road, or a new rental block could not be planned one plot at a time while informal owners and tenants remained outside the decision.[R279] Meaningful participation still needs remedies independent of registered ownership.

Participation should give affected tenants and occupants enforceable routes to influence and challenge decisions. Conventional consultations often begin with registered owners. Mukuru's resident-based organisation gave tenants a stronger route into decisions that could otherwise raise their rent or displace them. Its organisers described the settlement's economy and residents' payments for costly informal services as evidence that residents could support better public networks. This helped form a coalition around service delivery rather than a simple contest between "legal landowners" and "encroachers". The process also encountered resistance from officials, structure owners and informal

providers with income at risk.[R279] Participation did not ensure delivery of services or secure leases. A special planning area can suspend ordinary development while the integrated plan and finance remain unresolved. Uncertain eligibility lists can reward early participation while excluding later arrivals. Landowners may demand compensation for rights that cannot be reconciled with the settlement plan. Where affected residents have weak property claims, the process needs representation and independent remedies that do not depend on registered ownership. Those rights complement safety controls rather than justify removing them.

Implement and evaluate a proportionate approval system

Safety requirements and supply restrictions

Essential safety rules protect occupants who cannot independently inspect structural and fire risks. A failed retaining wall, inaccessible fire stair, narrow evacuation route, blocked drain or building over a river has costs that the original owner may never pay. Kenya's Architectural Association, reporting on 2024, recorded thousands of unsafe or dangerous structures identified in inspections; its findings are from buildings selected for inspection and cannot be read as a national prevalence rate. The South C chronology shows why the inspection system must continue after the first permit. These rules protect renters who cannot inspect reinforcement steel or underwrite structural failure themselves.[R281][R269] Each restriction should nevertheless be tested for evidence, proportionality, and distribution of costs.

Test safety requirements against the hazard, feasible compliance options, and the households affected. First, can an engineer state the harm and the measurable standard? Second, is there a lower-cost design that delivers the same performance? Third, can an inspector verify it with reasonable effort and authority to stop work? A mandated parking bay may consume space with little safety benefit in a walkable rental district; a second exit from a crowded building may save lives. Some provisions should be non-negotiable. Others can be performance-based, graduated for small extensions, or replaced with safe standard plans. Protecting safety through a rule that nobody can afford to obey often produces the very uninspected buildings the city fears. The same distinction applies to environmental and cultural protection. A floodplain or natural wetland can be a reason to refuse density. A heritage district can preserve genuine common value. But a city should make the evidence public and assess the distribution of the burden. If the valuable centre is closed to new homes under loose definitions of "character", the poor may be forced into more hazardous peripheries. Report the locations and household groups that bear the costs and receive the benefits of protection. Digital permits should record that reasoning and the agencies accountable for it.

Implementing planning reform

Diagnose authority, density, safety, network, finance, and enforcement constraints before selecting the reform. Test a small builder's route from a lawful plot to a connected, financed home. Budget inspection and network expansion through transparent charges and public funding. Planning must decide consistently, utilities must connect, inspectors must verify safety and an accessible body must address exclusion. Track conversion of rights into starts and completions, decision time, safety compliance, net rents and access for the bottom 50 percent, including excluded groups. Suppose a mayor, a planning director, a water utility and a coalition of small rental builders agree to test reform in two urban corridors. The temptation will be to announce a new density limit and launch a portal. A better first step is to assemble a sample of plots, inspect the land records, walk the water and drainage network, identify hazards, and interview tenants as well as owners. The sample should include rejected applications and plots where nobody has applied. Use the results to assess whether the principal barrier

is permitted density, title uncertainty, network capacity, cost, financing or fear of enforcement. Pilot locations should then allow the relevant changes and protections to be evaluated.

Select pilot areas and professional responsibilities that make the proposed supply and safety mechanism testable. In a serviced location with jobs and an existing rental market, grant an automatic entitlement to a limited class of safe small additions. On adjacent blocks where networks are near capacity, publish a funded reinforcement schedule and a transparent connection charge. Require an engineer to certify structural loads, fire access and drainage before the permit can become occupancy permission. Standard plans may reduce design cost for simple plots; complex or hazardous sites retain individual review. Every denial must identify a specific rule and an appeal route. Specify the benefits and obligations for each participant. Small builders receive predictable rights, standard design support and a path to loans. Utilities receive a capital plan and payment for incremental service costs. Existing homeowners receive documented traffic, drainage and safety safeguards. Tenants receive lease terms, repair channels and a chance to participate before redevelopment displaces them. Councillors receive reports on occupied homes against agreed targets. Landowners face predictable charges on realised increases in value with exceptions subject to published criteria and review. Professionals receive fee-paying work tied to verified safety, with sanctions for false certification. An evaluation baseline is needed before the new process changes applications and behaviour.

A 12-month evaluation framework

Establish rules, rents, occupancy, service limits, and processing times before tracking the reform's effects. The planning lead should cost the rule changes, staff training, inspection workload, and appeals before announcing a start date. Begin with low-risk applications that can be handled under existing powers; support actual projects only after lawful permissions and service commitments are in place. Track implementation during the first year and compare similar untreated locations where credible, recording spillovers and demand differences. Starts, completions, rents, and displacement may require longer follow-up than faster permit processing. At each step ask a narrow question. Did more low-income owners and small builders submit complete applications? Did the worst delays fall? Did finance become cheaper? Did starts turn into completed, connected rooms? Did rents decline relative to comparable units, or did rising land prices absorb the gain? Did unsafe additions and evictions increase? Did women, migrants, lower castes and minority tenants gain access to the new stock? An aggregate rise in approvals can conceal worsening exclusion, and the early figures may show developers exercising existing options rather than truly additional homes. Results need denominators that distinguish eligible opportunities from the projects that successfully entered the system.

THE PERMISSION-TO-HOMES DECISION RULE

Go forward when legal capacity rises and the conversion rate into safe occupied units improves without serious displacement, service failure or price capture. Revise when applications accelerate but construction stalls: test credit, land disputes, infrastructure and inspection. Stop or redesign where increased density exposes residents to unmitigated fire, flood or structural hazards, or where identifiable groups bear eviction and discrimination. These are proposed governance thresholds; each city must set measurable local values before the pilot starts.

The 12-month evaluation should publish five denominators: all eligible parcels; all first application attempts; all approved plans; all completed and inspected units; and all units occupied by the intended income groups. It should separately publish the share of tenants who retained their neighbourhood after redevelopment. The fiscal ledger records the cost of added water, drains, roads, schools and inspections alongside revenue from property taxes and connections. Compare neighbourhood construction and service costs with the public revenues and land-value gains received

elsewhere; an unaddressed imbalance may undermine implementation. Those measures allow the authority to judge whether additional rights have become safe accessible housing.

Implications for development control

Development control should be judged through delivery, household access, and the distribution of public costs and land-value gains. Appraisal should distinguish returns to private investment from gains created by a public decision. Discretionary exceptions require transparent reasons and review. Broad rights still need service capacity and safety checks. Digital parcel records should preserve unresolved claims until the responsible authority determines them. Planning reform should make lawful construction predictable. Give households and builders clear requirements, use verifiable safety and service tests, and provide a route to contest official mistakes. Test whether modest homes can be built lawfully at prices intended residents can afford. Apply consistent rules while retaining the authority to stop dangerous work. Evaluate support for the reform among existing residents and prospective occupants. The cases support different parts of this test and should not be pooled into one effect estimate.

Different studies illuminate safety, supply, rights, and access without establishing a common effect size. Cape Town's rental-planning reform is intended to give small builders a route to lawful development. Accra shows the limits of a state permit when competing authorities control the land. The Delhi study identifies unequal treatment in rental inquiries. Auckland and Chicago show that legal capacity becomes lower rent only through a supply response. Together, the cases identify decisions to test: development rights, services, safety, tenure, supply, and equal access. Their different methods and settings do not establish one common effect size. Fieldwork should identify which mechanism is operating in the proposed reform area.

Permission does not establish service feasibility. Chapter 4 assigns the capital and operating obligations needed to make the permitted housing usable.

Selected readings

Auckland supply study [R046]. Use the study to examine the response to changed development rights; permitted dwellings are not net occupied stock.

Freemark on Chicago [R047]. Read the contrasting price and construction results; reform scope and follow-up differ from Auckland.

Building regulations in Sub-Saharan Africa [R490]. Use the regulatory review to distinguish the functions of a building-control system; it does not supply a local dwelling-level price of safety.

Judgment and transfer conditions

Remove costly restrictions only after separating them from life safety.

Confidence: Moderate confidence in supply gains where demand and infrastructure exist. Revisit trigger: No completion response after credible implementation, or higher displacement and safety failures.

Transfer a workable route from lawful plots to safe housing that households and small producers can finance. At roughly ten times the pilot scale, test permit conversion, inspection quality, and connection costs and displacement for the bottom 50 percent. At roughly one hundred times the scale, require serviced capacity, predictable rules and enforceable life safety. A permission reform that households cannot use needs redesign before expansion.

Exercise

Cost the smallest lawful dwelling and a safe alternative. Calculate deposit and payment thresholds, then identify the local income-distribution data needed to estimate who can enter.

4. Infrastructure and the Delivery of Serviced Land

Can households build and sustain occupation on this serviced site?

Priority A depends on funded services before occupation. This chapter connects land readiness to Priority C and supplies evidence for public cost (Test 5), delivery and upkeep (6) and safety (7). Prepare serviced land on which households can safely build and live as their means allow. Confirm access, network capacity and affordable recurring costs, with named funding and maintenance duties. Tanzania provides causal evidence of long-run gains from sites and services; other experiences show the costs of poor timing and isolation. A plot programme also needs rental and assisted-building routes for households unable to undertake construction.

The Chennai neighbourhoods I visited showed what residents could build over time. I remember vibrant neighbourhoods in Ambedkar Nagar and Arumbakkam and wondered why we had moved away from an approach that gave households a place to build and room to adapt. These visits are personal observations. They raise a question about how sites and services develop; they cannot establish the conditions faced by the first residents or the results of all such projects.

Assess the whole cost of a serviced location

Serviced land has causal evidence as well as promising revisits

Tanzania's sites-and-services evidence supports durable physical improvements while leaving original residents' retention unresolved. Michaels and coauthors study sites-and-services investments in seven Tanzanian cities using spatial boundaries. Areas developed on previously undeveloped land in the 1970s and 1980s had better housing and urban form decades later than adjacent comparison areas. This is stronger evidence for durable physical effects than a selected revisit to successful sites. It does not identify retention of every original poor beneficiary or show that all upgrading produces the same result. [R451]

Harari and Wong's Jakarta study identifies a trade-off between settlement preservation and later redevelopment. Long after Kampung Improvement Programme investments, treated neighbourhoods had lower land values, shorter buildings and more informality, especially near the centre. Their spatial analysis separates local preservation from the opportunities foregone through redevelopment. The studies estimate different interventions and outcomes; Tanzania's greenfield result cannot be used to erase Jakarta's trade-off. [R452]

Serviced-land and upgrading programmes depend on demand, connections and the ability to adapt over time. Early servicing can shape durable neighbourhoods when land demand and connections exist. Upgrading can protect residents while constraining later redevelopment if rights, finance and infrastructure cannot adapt. Buckley and Kalarickal's account of shelter lending also points to implementation, cost recovery, land and standards problems. The move away from sites and services

should not be narrated as proof that the physical idea failed, nor should later physical success establish that the poorest entered and stayed.

Chennai and the case for serviced neighbourhoods

Later studies provide evidence that my visits could not. In 2015, Sumila Gulyani and colleagues revisited 15 sites in Chennai and Mumbai. Her published account reported thriving neighbourhoods in all but one, with fewer than 10 percent of plots vacant. Small plots, economical street layouts, a range of plot sizes, and space for businesses and amenities helped make gradual household investment possible. This was a selected group of projects observed decades later, not a representative evaluation of every sites-and-services programme. [R059] The experience of the first residents remains essential to judging whether the outcome can be repeated.

Early isolation and the later decline of sites-and-services lending complicate a simple account of success. The Ambedkar Nagar study in Chennai describes early difficulties associated with remoteness and weak access to employment. Among surveyed occupiers, original allottees accounted for 76 percent in 1998–99 and 44 percent in 2017–18. These are survey-composition figures, not a measured rate of forced displacement. Assessing how the settlement developed and what happened to its original beneficiaries requires separate evidence. [R060] A World Bank review documents a shift towards housing finance and sector-wide policy reform: sites and services together with upgrading fell from more than 70 percent of shelter lending in 1972–86 to 15 percent in 1987–2005. The review also records deteriorating project ratings during 1982–91. These are categories of lending across countries and do not establish that Chennai itself failed or explain the causes of the lending shift. [R061] Understanding the policy retreat requires examining the institutions expected to finance, manage, and support gradual development.

My explanation for the retreat centres on institutional incentives and the difficulty of sustaining support through a long development period. My reading is that three institutional problems help explain the retreat. First, the time needed for a neighbourhood to develop can exceed the period over which a project is judged. Low early occupancy may indicate a poor location or an area where services and employment have yet to develop. Second, the approach demands coordination over land, trunk services, transport, allocation, household finance, and later maintenance. Providing serviced plots requires agreements among these agencies. Third, a completed dwelling is easier to count and attribute to a provider than years of investment by households. That creates a possible bias in programme design; it is not evidence about the motives of any particular official. A new sites-and-services programme must address the costs households incur while waiting for transport, services, and nearby employment. Upfront plot and construction payments can exclude the poorest. Collection and maintenance failures can prevent replication. The appropriate response is to test these conditions at the proposed site, not to assume that a successful Chennai neighbourhood settles them. A renewed programme would need to address those conditions before asking households to invest.

I would support a new serviced-neighbourhood programme only with a funded transport and service timetable, a credible route for households to build safely in stages, rental options, and a plan for families unable to self-build. Track original allottees, incoming buyers, and renters separately. For the bottom 50 percent, follow entry costs and reasons for leaving alongside plot occupancy. The transferable principle is to organise affordable access to serviced land while letting households invest over time. It cannot depend on their surviving a decade of avoidable isolation. Budget trunk services, household connections and staged building finance together, with grants or assisted delivery where households cannot manage or repay.

The cost of serviced land

Separate trunk and local infrastructure costs before comparing housing sites. Trunk systems, including arterial roads, bulk water, treatment plants, substations, main drains, and mass transit, serve many developments. Local infrastructure, including neighbourhood streets, pipes, sewers, lighting, and public space, connects individual parcels. A third layer is operations: pumps must run, drains must be cleared, bills must be collected, assets must be repaired. If the first affordable-housing project must pay the entire cost of a trunk main that will later serve wealthy developments, its units become artificially expensive. If government pays everything from general taxation, landowners may receive a windfall. If a utility charges full connection costs upfront, low-income households may remain unconnected even when a pipe passes their door. One useful measure is the additional infrastructure cost per square metre of legal floor space. Estimate the public and private investment needed for another 1,000 square metres of housing at a given location and density. Identify the upfront payer, repayment source, and expected receipts from land value, tariffs, or taxes. Report capacity thresholds separately because a small addition may require a large network upgrade. The number of households sharing those networks will affect both costs and the capacity required.

Higher density can lower network cost per home until capacity constraints require new investment. A kilometre of pipe serving 40 homes costs more per household than an otherwise comparable pipe serving 400, until capacity upgrades are required. Compact development can therefore lower per-household network cost. Density beyond funded capacity can instead increase outages, sewage overflows, and flooding. Compare engineering designs rather than assume costs fall continuously as density rises. Ethiopia's municipal programme illustrates an attempt to finance infrastructure while strengthening the institutions responsible for delivery.

Match infrastructure delivery to local institutions

Municipal infrastructure and capacity in Ethiopia

Ethiopia's reported infrastructure outputs demonstrate the scale achievable through a multi-city programme, but do not establish the full housing outcome. Between 2018 and 2024, Ethiopia's Urban Institutional and Infrastructure Development Program financed construction and rehabilitation of more than 2,700 kilometres of roads and development of 2,700 hectares of serviced land across 117 cities. World Bank programme reporting attributes improved living conditions for more than 6.6 million people and 1.15 million jobs, including 915,000 temporary and 237,000 permanent jobs, to the programme and associated investments. These are reported outputs and benefits; they are not estimates against a no-programme comparison. [R040] Participating Ethiopian cities also worked on financial management, audits, planning, and own-source revenue. The mayor of Arba Minch reported a 262 percent increase in municipal revenue over five years. The cited account does not specify whether this figure is adjusted for inflation. The programme linked investment support to institutional development, but the revenue figure alone cannot establish its causal contribution. [R040] The proposed mechanism is that predictable transfers reward institutional improvements, allowing cities to prepare and execute investment plans. Better revenue and asset records may then support maintenance and later investment. Assess each step through budgets, audits, delivery dates, and service performance. The reported construction totals do not establish that this full process occurred. The appraisal must distinguish those construction outputs from sustained employment, functioning services, and resident access.

Employment and service claims need measures that distinguish temporary outputs from lasting benefits. Serviced land does not automatically become affordable housing. Allocation rules, lease prices, building standards and credit determine who ultimately occupies it. A road can enable

formal development or accelerate speculative land conversion. The reported outputs demonstrate delivery at scale; they do not isolate the programme's causal effect on institutional capacity or establish who retained the benefits. [R040] Sustained service needs a separate test. The IDB's follow-up assessment of 88 Favela-Bairro II settlements found uneven durability: roughly one-third had problems with street paving and drainage, and two-thirds had poor street lighting and sewers. These are conditions in upgraded settlements, not an experimental estimate of the programme's long-run effect. Ethiopia's delivery figures do not establish that it has avoided such maintenance problems. Performance-linked funding should verify operating services and resident access as well as completed works. [R040, R057] Indian land-pooling experience shows how the timing of those benefits also affects participation.

Land readjustment and delivery times in India

Ahmedabad's town-planning schemes illustrate how land reorganisation can combine private development with streets and public facilities. A smaller returned plot may be more valuable after servicing, but that outcome depends on demand, charges and delivery time. State the scheme's legal regime and initiation, possession, service and final-approval dates separately. A historical delay from one cohort is not a current programme-wide performance estimate. Account for non-owners as well as landowners before treating a deduction percentage as evidence of a fair bargain. [R052]

Amaravati's land-pooling figures describe participation by landowners and planned development, not completed housing benefits or livelihood restoration for all affected people. Landless workers, tenants and non-participants require separate accounts. The two Inspection Panel records—an earlier proposed operation closed in 2019 and the later P507 508 programme—are examined together in Chapter 14. [R463, R464]

Infrastructure maintenance in South Africa

South Africa's metropolitan reforms link infrastructure finance to the reliability and financial performance of municipal services. The World Bank's November 2025 programme announcement reported that South Africa's eight metropolitan municipalities served more than 22 million people and accounted for about 85 percent of national economic activity. Its accompanying assessment described declining reliability in water, sanitation, electricity, and waste services, with weak revenue collection, underinvestment, and inadequate asset management. The economic-activity share is the announcement's estimate; the source does not provide its calculation. [R054, R042] The Metro Trading Services Program changes the fiscal incentive. A US$925 million World Bank Program-for-Results supports a broader government effort; national grants to metros are released against verified improvements in governance, revenue management, asset management and service delivery. Failure to achieve results means the grant is not released. A housing programme can fund connections without providing the utility's continuing operating and renewal budget. Low collections, network losses, and deferred maintenance can undermine the service to new homes. Appraisal should therefore examine utility finances and measured reliability alongside the number of connections financed. South Africa's reforms link national urban objectives to municipal service responsibilities. Performance-based transfers can give metropolitan governments a financial incentive to maintain networks while accommodating growth. Housing supply policy therefore requires an explicit municipal financing arrangement. Private finance can contribute only if the allocation of repayment and operating risks is credible.

South Africa's Credit Guarantee Vehicle is intended to attract private infrastructure finance. A World Bank programme approved in March 2026 projects that it could help mobilise about US$10 billion over ten years. That is an expected financing outcome. Guarantees can change the distribution of financial risk, but tariffs, procurement, project preparation, and oversight still need to support

repayment and reliable service. The same discipline applies to proposals that finance infrastructure from increases in land value.

Infrastructure investment and land values

Public investment may create land-value gains, but the amount recoverable must be tested against local demand and project costs. The size and distribution of that gain depend on demand, development rights, and adverse effects such as noise or displacement. When public spending creates an increase in value, appraisal should identify how much goes to owners and whether some can lawfully help finance services. That creates five broad choices. Government can recover value through property tax; levy a betterment charge; sell or lease public land after infrastructure raises its value; auction development rights; or require developers to finance specified infrastructure. Each has different incidence and administrative demands. Value capture depends on enough development value remaining after construction, finance, and other obligations. Charges that exceed project viability can reduce development; charges below the feasible level leave more publicly created value with owners. Estimate residual land value under alternative market conditions and disclose the distribution of costs. A fixed recovery percentage cannot replace that appraisal. The choice of how to dispose of serviced public land determines how much of that value supports affordable access.

Selling serviced public land to the highest qualifying bidder may increase immediate revenue while favouring a higher-price housing product. A discounted allocation can instead create a subsidy with weak delivery conditions. A long lease may preserve ownership and impose affordability, density, and delivery obligations. Compare these options using enforceable terms, monitoring costs, and treatment of current occupants. Making that choice requires an explicit account of the parties gaining value and those responsible for delivery.

Fund and sequence services before occupation

Services and tenure in informal settlements

Service provision and tenure protection need to proceed together where claims are disputed. Requiring full title before connection can leave entire neighbourhoods without water or sanitation. Providing permanent infrastructure can be interpreted as recognition of occupation. Connection decisions therefore need an explicit statement of their effect on tenure rights. A practical approach separates service entitlement from final adjudication of property ownership where law allows. Basic water, sanitation, drainage and fire access protect public health and the wider city. Digital enumeration can record occupants and service accounts without converting every record into title. Tenure regularization can proceed through its own due process. In-situ infrastructure can raise rents and land values. Owner-occupiers may gain; tenants can lose. Structure owners may capture public investment through higher rents. Upgrading therefore needs a tenant strategy: rent monitoring, additional supply, targeted support, rights during redevelopment, and protection against opportunistic eviction. Protecting residents also requires knowing what reliable services will cost them after upgrading.

Operating and maintenance costs

Unreliable services create household costs that tariffs alone do not measure. Intermittent water requires storage or alternative purchases. Poor drainage can damage possessions. Unreliable power may require batteries or generators. Broken streetlights can affect perceived safety, and poorly managed waste sites can expose nearby residents to pollution. Include these costs where they can be measured, and disclose uncertainty. For every network, identify its owner, expected asset life, maintenance standard, annual operating cost, replacement provision, tariff or transfer source, and service target.

Missing information on these items is a gap in the project appraisal even if construction is fully financed. Capital grants can fund assets without sufficient operating revenue. Results-based finance may help if it rewards measured reliability, sound collections, and asset management, with independent verification. Track the duration and quality of household service alongside kilometres of pipe installed and public cost. Such outcome measures need agreed definitions and adequate monitoring. Transport adds another recurring cost that can reverse the apparent advantage of a cheap site.

Transport and household affordability

Compare peripheral and central sites using the full household budget: rent or mortgage, utilities, transport, expected maintenance, and uninsured climate losses. Include travel and care time separately unless a transparent valuation is used. Lower land or purchase costs may be offset by higher recurring expenses. This creates a coordination rule: large affordable-housing sites should pass a job-access test before public money is committed. Measure the number of jobs reachable within 45 and 60 minutes by the modes low-income residents actually use, at peak times, and include fares. A proposed transport line counts only when funding and delivery are credible. Transport investment may raise nearby land prices and increase displacement pressure. Consider affordable-housing provision before or alongside it through public land, inclusion requirements, social rental, lawful acquisition, or value-sharing agreements. Acquisition requires due process and protections for affected rights-holders and occupants. Compare these options before land-price increases make affordability commitments more costly. A reliable site comparison therefore depends on combining housing, network, transport, and land information.

Sequencing infrastructure and subsidies

Assess infrastructure and transport before fixing the housing site, design, and subsidy. The budget may later need to absorb roads and utilities while households still face poor access. Check those requirements before committing to a beneficiary count or site design. Begin with access, network capacity, and existing rights. Compare places where jobs, land, and services can be coordinated. Where land assembly is needed, use lawful procedures with resident protections and costed alternatives. Test density against network design, agree funding for trunk and local systems, and provide operating and maintenance revenue. Then choose tenure, subsidy, and finance that households can sustain. This appraisal can show when low-priced public land has high infrastructure and transport costs, or when a proposed private development depends on unbudgeted public works. It also provides a basis for negotiating land-value contributions before new services change prices. The appraisal framework below makes those commitments visible before approval.

Financing neighbourhood infrastructure

Infrastructure improvement can expand access while changing rents and the distribution of benefits. Between 2015 and 2023, Dar es Salaam expanded roads, drainage and local infrastructure. Through the World Bank-supported Dar es Salaam Metropolitan Development Project, the authorities delivered about 207 kilometres of improved roads, with streetlights, footpaths and roadside drains; about 75 kilometres of major drainage; and local improvements in low-income areas. The Bank reports improved mobility for more than four million people. New drainage was designed to protect 406 hectares from the kind of flood expected, on average, once in ten years. These works were intended to improve all-weather access and reduce flood exposure. [R383] Infrastructure improvements create benefits for residents, property owners, and businesses. Better roads improve access; drainage reduces damage; water networks support additional housing. Higher land values and rents can transfer some gains to owners. A tenant may benefit from better services yet be unable to remain after a rent increase.

Appraisal must account for both effects. Output reports need household and service-cost measures to establish the result.

Estimate investment, operating costs, and household effects

Infrastructure investment and rents

Infrastructure counts should be linked to the reliability, access, and recurring costs experienced by households. Public project reports usually count kilometres built, drainage completed and people reached. They cannot, by themselves, tell us how many low-income households gained a lasting right to the improved location, how much rent changed, whether the new network was maintained, or how much of the increase in site value returned to the public purse. Dar es Salaam's published figures establish delivery at substantial scale. They do not establish the distribution of the resulting land-value gains. The public debate on affordable housing often begins with the price of a house. A developer offers a two-room unit for a given sum. A minister asks whether construction methods, land concessions or mortgage subsidies can lower it. Yet a house sold at cost remains a poor housing option if it has no reliable water, a septic tank that overflows, a road that floods, an electricity connection the family cannot afford, or a three-hour daily commute. The appraisal must include these service and access costs alongside the purchase price. Delivery requires an agreement across the actors controlling land, networks, budgets, and occupancy.

Four components of infrastructure cost

A housing connection requires local works and resolution of the land and rights-of-way they use. Consider a developer building 500 apartments on the edge of a fast-growing African city. The building contractor can estimate concrete, rebar, labor, windows and lifts. The developer knows what a bank will lend against presales. The scheme still depends on decisions elsewhere: whether a water utility can supply peak demand, whether a sewer has an outlet and a treatment plant, whether the access road remains passable during heavy rain, whether an electricity feeder can carry the load, whether schools and markets can absorb 2,000 more residents. Each decision sits in a separate plan and often a separate balance sheet. The first bill pays for land and corridors. Streets, drains, pipes, easements, substations and retention areas need space. Public rights-of-way must be legally protected before plots are sold. Compensation, resettlement and utility relocation can exceed initial estimates. A line drawn across an aerial photograph may cross a religious site, a tenant's dwelling or an unrecorded market. Such conflicts can require redesign, compensation or legal resolution before works proceed. The wider network and its maintenance create additional bills beyond the site boundary.

Network capacity and preventive maintenance must be funded alongside local construction. A small apartment block needs on-site pipes, roads and wiring. It also needs larger shared assets: water treatment, trunk sewers, stormwater outfalls, power substations, bus services and access roads. Engineers separate internal works, links to the existing system, and bulk capacity. Each has a different beneficiary and a different funding claim. A developer can rationally pay for a building's internal reticulation. Asking one affordable-housing project to finance a treatment plant serving an entire district can overcharge its residents if existing users also benefit from the new capacity. The third bill pays for lifetime operation. A drainage channel needs desilting; a road needs resurfacing; a water network needs pressure management and leak repairs; a treatment plant needs energy, staff and chemical supplies. Sometimes a donor or national ministry finances a capital asset that the city lacks the money, tariff authority or technical staff to run. Capital approval should therefore include funding for preventive maintenance and responsibilities during heavy rainfall. Household access to opportunity adds a fourth cost that project accounts often omit.

The household cost of a housing site includes access to jobs, services and everyday care. A distant site can offer cheap land and a cheap housing unit while forcing its occupants to spend more money and time travelling to work. Good public transport can partly reverse that penalty. Schools, clinics, markets, childcare and public space matter in the same way. These networks connect the house to the income and services that make it affordable. A project's real cost to a family therefore includes housing payments, utilities, transport, foregone work time and expected losses from flooding or unreliable service. These costs fall at different times and require a coordinated financing and service schedule.

Exhibit 4.1. Full household and public costs of serviced housing

Household affordability: rent or mortgage ✦ utility charges ✦ transport ✦ expected loss from outages and floods ✦ household share of repairs and fees.

Public investment: rights-of-way and land ✦ trunk and link networks ✦ neighbourhood amenities ✦ climate protection ✦ resettlement and grievance handling.

Exhibit 4.2. - the full cost of a serviced home

Whole-life fiscal cost: upfront investment ✦ financing and guarantees ✦ annual operations ✦ periodic renewal - realistic tax, tariff and land-value receipts.

Distribution test: count the benefits separately for landowners, homeowners, renters, firms, utilities and taxpayers; measure who can still live on the site five years later.

Infrastructure delivery requires coordinated commitments before households can demonstrate occupied demand. Land can rise in price when a project is merely announced. Developers need an assurance of future service before they borrow. The public agency wants firm demand before it builds the trunk. The utility may refuse connections until the developer pays a charge. The residents cannot prove demand until they have moved in. These dependencies can delay the project. A joint schedule should fund trunk works, connections and household building stages before occupation, including affordable payment terms and the gains to existing landowners. India’s investment and revenue evidence shows why capital needs alone do not establish delivery capacity.

Match financing instruments to delivery conditions

Infrastructure needs and delivery capacity in India

Infrastructure appraisal should test investment execution and operating capacity alongside estimated capital needs. A 2022 World Bank assessment estimated urban infrastructure investment needs of about US$840 billion over fifteen years, or roughly US$55 billion each year, to 2036. The estimate covered urban transport, water, sanitation, drainage, roads and other city services; it excluded housing construction and slum upgrading. At the time of the assessment, central and state governments financed more than 75 percent of city infrastructure, urban local bodies around 15 percent from their own surpluses, and private sources only about 5 percent. The Bank estimated that ten of the largest urban local bodies spent only about two-thirds of their capital budgets over three fiscal years. [R151] Additional borrowing can help creditworthy cities, but it must be accompanied by the ability to clear rights-of-way, prepare tenders, coordinate utilities and supervise contractors. The appraisal needs to assess both investment execution and the capacity to operate assets after construction. Local revenue and funded service commitments determine whether completed assets become usable housing support.

Low municipal revenue capacity makes explicit service-funding commitments essential to housing targets. The same assessment reported urban property tax collections of only 0.15 percent of GDP during 2011-18, compared with 0.3-0.6 percent for low- and middle-income countries in the comparison cited by the Bank. The precise benchmark depends on tax definitions and jurisdiction. The low collections indicate limited use of property taxation; they do not measure how much value from public investment could feasibly be collected. [R151] A state can sanction thousands of subsidised housing units while the municipality that must provide drainage and solid-waste collection has little new revenue for either. A municipality may have to fund connections and operations while another level of government funds construction. Reconcile both budgets before approving the scheme. State how tariffs, transfers, and local revenues will cover the additional service load. The answer requires a joint investment schedule. A serviced-housing agreement should specify the pipeline, water capacity, power load, road links, drainage outlet and recurrent funding before a construction award. Each agency should identify the decision it controls, its cost estimate, the date of service readiness, and the legal consequence of delay. A construction target without these commitments can overlook the conditions needed for usable housing. Ahmedabad's readjustment approach offers one mechanism for obtaining land and financing part of the infrastructure.

Land readjustment in Ahmedabad

Readjustment can help assemble public corridors and housing land while sharing serviced value with owners. Under Gujarat's Town Planning Scheme (TPS), landowners in an urbanising area pool their parcels. The planning authority reserves land for roads, utilities, open spaces and other public purposes. The remaining land returns to owners as smaller, more regular plots with development potential. Instead of purchasing every road corridor through compulsory acquisition, the city distributes part of the cost across the plots expected to gain value. The model offers several possible gains to participants. A farmer can surrender some land and receive a better-connected plot worth more per square metre. The municipality obtains continuous streets and service corridors. Developers receive clearer, buildable layouts. State rules give the planning authority powers that a municipality negotiating one lane at a time would lack. A World Resources Institute study found that this system helped Ahmedabad provide land for roads, trunk services and low-income housing, including land that enabled about 33,000 low-income homes under an earlier national programme. [R026] The agreement's inclusion depends on how it treats tenants and other users outside the ownership bargain.

Owner participation needs credible appreciation and separate protection for tenants and informal occupants. A review of Ahmedabad's Bombay Hotel area, a low-income Muslim neighbourhood, found that local objections led planners to reduce land deductions and alter road alignments to limit displacement. The compromise reduced planned infrastructure in places while allowing more residents to remain. A scheme designed around registered owners could otherwise have excluded households whose claims lay outside the land records. [R384, R385] Ahmedabad also illustrates the distinction between reserving land and funding services. The WRI researchers describe public spaces and amenity sites that remained unbuilt because the authority could not fund the works. Delay arose from state-level approvals and poor coordination among agencies. Plot appreciation could benefit owners before residents received the promised public amenities. Where future urban demand was weak, farmers had less reason to accept a deduction from their land. The agreement works best when land values rise enough to make participation credible. [R026] Longer international experience reinforces the need to distinguish property ownership from livelihood and occupancy rights.

Land readjustment requires local legal capacity and an independent account of claims beyond the cadastre. OECD research reports that Japanese schemes often reserve roughly 30-40 percent of readjusted land for public improvements and use some plots for sale to finance works. Japan

generally requires the consent of two-thirds of participating owners and leaseholders for voluntary schemes. The relevant conditions for transfer are that land value gains can replace some cash compensation, provided there is a credible legal map, expected demand, and a process for dissenters. [R386] In neighbourhoods with overlapping customary tenure, leaseholds, tenants and informal building owners, a registry-only scheme can transfer power to whoever controls the recorded parcel. It can expose occupants to eviction by a newly empowered owner. A land-pooling authority therefore needs an independent occupancy census, protections for renters and small businesses, access to appeal, and a schedule for financing the services promised. Record occupancy rights and livelihoods separately from cadastral ownership. Comparing it with in-situ infrastructure investment clarifies the different financing mechanisms.

Use maintained connections, affordable bills, and resident retention to compare infrastructure-financing approaches. Land readjustment can secure space for services; upgrading can deliver roads and drainage in existing settlements. Neither administrative coverage nor land reservation establishes that tenants retain the gains. Use completed and maintained connections, affordable bills and resident retention to judge whether the financing mechanism works. [R026, R383, R384, R385, R387] Dar es Salaam provides an example of investment within existing settlements.

Services and formalisation in Dar es Salaam

Infrastructure in occupied settlements can improve mobility before a greenfield district would attract comparable use. Much of the demand for upgrading was already present in built neighbourhoods. The Metropolitan Development Project improved roads, drainage and public space across existing areas, with a special focus on underserved districts. Its reported outputs included approximately 207.8 kilometres of roads, 75 kilometres of trunk and secondary drainage, and improvements in 152 informal settlements, according to the Bank's December 2023 account. The reported number of people benefiting from improved mobility was about 4.1 million. [R383, R387] Those gains still need to be assessed alongside clearance losses and distributional effects.

Upgrading existing areas can provide immediate access benefits while removing some homes and uses. A shop gets deliveries. Children reach school in the rain. Water no longer stands at a doorway after ordinary storms. Public works can change the economics of incremental construction: landlords are more likely to invest in durable rooms when streets and drainage reduce risk. Kenya's KISIP2 appraisal made a similar observation about earlier upgrading, describing new multistorey construction and local investment following works in beneficiary settlements. It also reported that flexible road standards - including narrower one-way streets where suitable - reduced potential displacement by up to 85 percent in some settlements, relative to applying ordinary planning widths. That figure is a project appraisal comparison in selected places, rather than an independently evaluated average. The appraisal should count housing losses from road clearance alongside the access benefits. [R388] Higher attractiveness may also change rents and the types of housing landlords provide.

The distribution of upgrading gains depends on maintenance and whether lower-income residents retain access. A family that rented before the road was built may have no legal claim to the gains. Better drainage can also encourage construction on nearby land; if building expands into floodways, some protection may disappear. The impact evaluation should therefore track resident turnover, rent trajectories, land transactions, new floor area and maintenance alongside journey times and flood incidence. Large capital grants or concessional lending can provide roads and drains where annual municipal budgets could never cover the initial outlay. Those grants do not supply the maintenance contracts, spare parts, enforcement against blocked drains or compensation procedures for resettlement. Dar es Salaam's reported achievements show what a coordinated capital operation can deliver. Whether the gains remain progressive depends on who maintains the assets and whether lower-

income households retain access to the improved neighbourhoods. A follow-up design can distinguish better access from property appreciation and displacement.

Track original residents, prices, and services to test who retains the benefit of upgrading. Before construction, enumerate owner-occupiers, tenants, landlords, businesses and public-space users; record baseline travel, rent, water prices and flood exposure; publish the location of every outfall and the responsible maintenance unit. After completion, repeat the survey at 12, 36 and 60 months. Compare trends with similar neighbourhoods still awaiting works where feasible. A programme can then distinguish improved access from rising property wealth and investigate whether rent increases displace intended beneficiaries. Development charges address the separate question of how additional construction funds shared capacity.

Development charges in Cape Town

Development charges should make the cost of additional network capacity explicit rather than leave it outside project accounts. Cape Town's policy, in effect since July 2014, levies a one-off capital contribution on a land development to pay its proportional share of additional municipal engineering infrastructure demand. Johannesburg's published 2021 policy similarly ties contributions to a development's added demands on external services and excludes maintenance and historic backlogs from the charge. [R389, R390] The economic case is strong when the charge is predictable. Growth creates demand for pipes, substations and roads. A formula linked to additional capacity specifies part of that cost before approval. A developer who uses extra capacity can pay a fair share; existing ratepayers avoid carrying the entire cost of new private development. Developers also benefit from a reliable timetable and a clear method of calculating what they owe. When additional capacity is not priced or funded, a project can leave the utility with costs absent from the developer’s accounts. Their level and exemptions determine whether that financing supports or excludes low-income housing.

A charge or waiver is feasible only when the resulting capacity obligation still has a payer. If a small backyard landlord must pay the same large upfront contribution as a luxury developer with similar added peak demand, the first may abandon formal permission and continue to build informally. If a city loads historic service failures into a new project's charge, the price of entry rises for everyone. A waiver granted to an affordable-housing developer can lower the sales price or rent only when competition and binding affordability terms pass the saving through. If the city grants a waiver without replacing the lost infrastructure funding, service capacity may fail later. The resulting service failures can impose additional costs on residents. An exemption therefore needs eligibility, replacement funding, and an enforceable affordability condition.

A feasible exemption therefore has three linked parts: a clear eligibility rule tied to actual low-income occupancy, an explicit fiscal source that pays the waived contribution, and a recorded obligation to keep the units affordable. The municipality must publish the cost of the exemption, the agency providing bulk capacity and the terms under which eligibility ends. The charge can be reduced or deferred for qualifying rental rooms in already serviced areas if engineering evidence shows spare capacity. A formula should also reward sites near existing transport and water networks, where marginal costs are lower. Existing and future residents can face different costs and benefits from growth. Current residents can participate in local decisions, while prospective residents may be absent. Developers need predictable approvals and charges; utility managers need funding for additional capacity. A workable coalition couples greater density with funded network capacity, published service standards and a fair charge that new residents can afford. This makes the debate about shared capacity and long-term costs rather than an argument over a single building's height. Recurring property revenue can finance a different part of the neighbourhood service obligation.

Property-tax administration in Freetown

Property-tax reform can recover value for services, but reported administrative gains do not establish a lasting housing effect. Property taxes are valuable because a site cannot be moved out of the city to escape the tax. They can also be deeply unpopular. Owners may question a bill when they cannot see how revenue supports services. Effective reform must establish a convincing exchange between taxes and better services. In Freetown, Sierra Leone, the city mapped properties, built a simpler points-based valuation system, digitised billing and offered mechanisms to appeal. Research organisations helping the reform report that the stock of registered properties doubled, assessed revenue potential rose fivefold, and actual collections tripled during the early implementation period. The least valuable 60 percent of properties saw average bills remain unchanged or fall; the most valuable 20 percent saw average assessments rise by 242 percent. About 70 percent of surveyed owners expressed support, according to the follow-up research. These are reform evaluations and administrative findings, not a randomised estimate of a lasting fiscal effect. [R214] Distributional changes and resident treatment should be measured with collections.

Higher assessed liabilities and improved collections need a separate test of equitable enforcement and service spending. Public meetings linked the higher tax to visible city priorities, and a participatory process allocated part of the revenue to neighbourhood choices. The city pledged to direct 20 percent of property-tax revenue to participatory budgeting, according to the Institute of Development Studies. [R391] The council also had to contend with the national government. In 2020, central authorities intervened and paused the collection process amid disputes over legal powers and rules; negotiations allowed reform to resume. The case shows why tax administration also requires agreement on legal authority. [R392] Ghana offers stronger causal evidence for a narrower proposition. In a randomised study of local property-tax administration, Dzansi, Jensen, Lagakos and Telli found that a tool helping collectors locate owners increased successful delivery of bills by 27 percent and tax collections by 103 percent. The researchers observed that collectors changed how they spent their time, concentrating effort where payment was more likely. The intervention improved collections in the study setting; it did not by itself show that poor neighbourhoods received better services or that enforcement was equitable. [R222] A location tool's measured effect should not be relabelled as evidence of AI or long-term maintenance success.

Evaluate coverage, ability to pay, enforcement, and expenditure together before claiming fair neighbourhood finance. This finding concerns a tax-location tool, rather than an evaluation of AI. It illustrates a mechanism relevant to other administrative technologies. Technology changed the cost of finding a taxpayer. Collection agents gained discretion and new knowledge about households' propensity to pay. Fiscal revenues increased. The distribution of burdens depended on how agents used the information. A municipal data platform can improve service finance while concentrating enforcement on households already recorded or willing to pay and missing unrecorded or harder-to-enforce liabilities. Provide independent appeals, regular valuation rules, and published collection coverage alongside the software. For housing, a recurrent property-tax agreement should specify its distributional provisions: updated values for well-served high-value property; affordable payment schedules and deferrals for cash-poor owners; protection for renters against arbitrary eviction; a transparent share of proceeds financing local networks; and published eligibility rules and reviewable decisions on tax exemptions. A city that increases the assessed value of low-income homes after a public upgrading project should test whether its tax rules encourage landlords to raise rents or sell. Assess coverage, ability to pay and expenditure together to determine whether the reform finances maintenance fairly. Land-value capture requires its own baseline and legal claim on the increment.

The potential and limits of land-value capture

Value capture needs an early valuation baseline, clear authority, and disclosure of the decisions creating the gain. The proceeds can contribute to the investment's cost. Its feasibility depends on identifying the gain, establishing a baseline, collecting cash and assessing who ultimately pays. First comes identification. Property prices change with national interest rates, new firms, private building quality, inflation, school reputations and expected future growth. An observed price rise is rarely attributable in full to one public work. The state needs a credible comparison area, a valuation date and a way to distinguish rising land value from new construction. Aerial images show roofs, streets and flooding. They do not automatically reveal arm's-length prices or legal ownership. Second comes anticipation. Land often appreciates when a transit line is announced, years before inauguration. The people who buy just before the announcement may capture a gain when the project is commissioned. Advance knowledge of routes, land releases or compensation creates a conflict-of-interest risk. A public process should fix the valuation baseline early, disclose conflicts of interest, and preserve dated parcel histories and planning decisions. Liquidity and household tenure determine whether the assessed contribution can be collected fairly.

Rising value does not imply immediate cash, and rising rents may exclude the intended beneficiaries. Higher land values cannot pay today's contractor unless the state can levy a charge, sell development rights, borrow against reliable future revenue, or dispose of public plots. A poor owner may hold appreciated land without the income to meet a large betterment bill. Deferral until sale, instalments and exemptions can avoid distress sales. Such relief needs rules that prevent wealthy owners from claiming it through nominee holdings. Fourth comes incidence. A levy collected from a developer may be passed backward into the price paid to an original landowner, forward into the selling price or rent, or absorbed in developer profit. Which occurs depends on market competition, land supply, timing and the ability to move investment elsewhere. A city cannot assume that the person who writes the cheque bears the economic cost. Similarly, rising land values may signal better access while rising rents exclude the tenants who most needed it. Bogotá's evidence helps distinguish an observed access premium from a fully recoverable tax base.

The value of transit access can be capitalised in property prices without establishing a universal recovery percentage. A propensity-score matching study of residential buildings near the TransMilenio bus rapid transit system estimated a 5.8-17 percent price premium for properties with system access. The estimate is context-specific and the matching design cannot remove all unobserved differences. The premium indicates that accessibility can be capitalised in property values; it is neither a universal rate for African cities nor a tax base that government can capture in full. [R393] Further evidence on transport and land-use interaction informs when the rules should be announced.

Coordinate infrastructure and inclusive land-use rules before expectations are fully reflected in land prices. A 2026 study of Bogotá in the American Economic Review took the analysis further. Nick Tsivanidis found that conventional time-savings calculations captured only 52 percent of the modelled welfare gains from transit investment, after accounting for shifts in where people and firms locate. Distributional impacts in the model were modest. The model accounts for changes in the location of jobs and housing as well as journey times. A city's appraisal needs to measure new opportunities, rent effects and movement of activity. The 52 percent figure comes from that study's model and setting; it is no general multiplier for other projects. [R394] Transport investment should therefore be planned with housing permissions. A bus line serving a corridor of low-rise, tightly zoned plots may enrich incumbent owners while preventing the extra rental supply that could absorb demand. Allowing modest density, small rental units and mixed use near stations can spread benefits. A targeted land-value levy can then recover some windfall from owners who benefit, while protecting low-income renters and financing

access for surrounding neighbourhoods. Publish the line and the inclusive land-use rules together, before expectations of development are reflected in land prices. A worked district budget can then test the financing assumptions and collection risk.

Agree who funds, delivers, and maintains the networks

Infrastructure financing model

This hypothetical district has 100 hectares, 5,000 dwellings and 60 hectares of saleable plots after public space and infrastructure. All values are neutral currency units (CU), not Kenyan project estimates. The same per-home land, infrastructure and construction assumptions appear in the subsidy account in Chapter 9.

Exhibit 4.3. Illustrative infrastructure finance for 5,000 homes

Capital infrastructure costs CU 4.75 billion: roads and bus connections 1.50 billion; water 0.65 billion; wastewater 0.85 billion; electrical links and local works 0.70 billion; stormwater and social facilities 1.05 billion. This is CU 950,000 per home.

Before development, the whole 1,000,000 m² district at CU 10,000 per m² is worth CU 10 billion. Afterwards, 600,000 m² of saleable plots at CU 25,000 are worth CU 15 billion. Net district uplift is CU 5 billion, not CU 9 billion. The latter counts appreciation on private plots without deducting CU 4 billion of original land surrendered to public uses.

An illustrative effective capture of 25 percent of the CU 5 billion net uplift yields CU 1.25 billion, leaving CU 3.50 billion of the infrastructure bill. Record the CU 4 billion public-space land contribution separately as an in-kind opportunity cost. Grants or additional collectable revenues must cover the remaining funding requirement. Debt can finance expenditure in advance of those revenues only when its repayment source and debt service are specified; it does not remove the gap. Avoid charging the same infrastructure expense twice through overlapping levies and development fees.

At an assumed 2 percent of infrastructure capital cost, operations and renewal require CU 95 million annually before debt service. Borrowing CU 1 billion at 10 percent for fifteen years with annual amortisation adds about CU 131.5 million a year. Match that commitment to recurrent revenue rather than a one-time land receipt.

If 3,000 rented dwellings each experience a CU 1,000 monthly rent increase, the annual transfer to landlords is CU 36 million before vacancy and other costs. This is a sensitivity, not a forecast or measured net welfare gain.

If the after-servicing sale price is only CU 15,000 per m², saleable plots are worth CU 9 billion against the original whole-district CU 10 billion. There is no positive net uplift to capture under this simplified account. The infrastructure funding gap then remains CU 4.75 billion. Public-space benefits may still justify investment, but they are not cash for paying contractors. Test price, take-up, delay and collection separately.

Lower prices and weaker collection can reduce cash receipts even when net land uplift remains positive. In a second hypothetical stress test, reduce the CU 25,000 sale price by 20 percent to CU 20,000 per square metre. The 600,000 square metres then have a value of CU 12 billion, leaving CU 2 billion above the original whole-district value. A 25 percent levy on that uplift would assess CU 500 million; collection of 60 percent would realise CU 300 million. Against unchanged infrastructure capital

costs of CU 4.75 billion, the remaining funding requirement is CU 4.45 billion, before financing costs. The reduced plot value is an asset valuation, not an additional receipt available to the authority.

A payment schedule must distinguish a timing shortage from a permanent funding shortfall. If the base-case CU 1.25 billion capture receipt arrives two years after the works require it, bridge finance needs a dated repayment plan and an explicit interest allowance. It cannot also be counted as funding for the separate CU 3.50 billion gap. Record collections, construction payments and financing costs by phase, then show the grant or recurrent revenue supporting debt service. Keep the annual CU 95 million operating and renewal obligation visible alongside that schedule, and test whether a slower build-out reduces the revenue intended to meet it.

A defensible business case compares at least three locations: vacant peripheral land, serviced infill near jobs, and upgrading an existing low-income area. For each, calculate the discounted public cost per additional safe, occupied, affordable household-year while holding access to work, resilience and service quality constant. Infill may have a higher land price and a much smaller bulk-infrastructure bill. Upgrading may serve fewer new dwellings but yield immediate benefits to existing residents. Compare the full location and service costs before selecting the site. The preferred option also needs an agreement among the actors able to enable or delay delivery.

Infrastructure delivery agreement

Adapt infrastructure design to occupied settlements while retaining safety, access, and livelihood protection. Use one-off land receipts for suitable capital obligations and recurrent taxes, tariffs or transfers for ongoing service. Utilities and municipalities must reconcile capital schedules, connection conditions and maintenance duties before either housing contracts or household building grants proceed. A household grant cannot finance an unbudgeted trunk main. Track actual connections, uptime, lifecycle costs, affordable bills, travel time, rent change and retention of original tenants. A city should enter a major housing or upgrading operation with one binding schedule shared by the municipality, housing agency, utilities, transit authority, land administration and finance ministry. The schedule should record the asset and the household result together. It should specify the financial and service consequences of delay or non-delivery. The following nine gates form a practical approval test. A bounded service-area appraisal can establish whether the required agreement is ready.

Exhibit 4.4. Infrastructure delivery assessment

1. People and rights. Has the city counted tenants, owner-occupiers, informal businesses, public-space users and their claims independently of cadastral ownership?

2. Location. Do typical low-income households gain access to work, schools and services at affordable money-and-time costs compared with the best alternative site?

3. Capacity. Are measured water, sewer, power, road and drainage headroom available, or are named network expansions contracted?

4. Whole-life cost. Do costings include land and corridors, relocation, engineering links, bulk works, operations, replacement and climate risk?

5. Incidence. Who receives the uplift, who pays every levy or charge, and how do rents and sale prices change after the intervention?

6. Funding. Are capital sources legally appropriated, with double counting excluded, payment dates matched to construction milestones and contingencies disclosed?

7. Maintenance. Is a utility or city unit contractually responsible, funded and measured for ten years after handover?

8. Inclusion. Do tenant protection, grievance mechanisms, fair access, anti-discrimination and affordability covenants survive the first sale or lease?

9. Evidence. Will a dated parcel-to-service record link original and returned plots, public-use reservations, compensation and levy balances, cash receipts, utility commissioning, occupation and maintenance? Publish aggregate resident outcomes and changes in obligations while protecting personal information; use a credible comparison or phased rollout for evaluation.

Start with an authorised engineering lead and a funded readiness assessment rather than an arbitrary completion promise. The finance counterpart prices the necessary works and identifies who can legally commit each funding source. Use existing network maps and targeted field checks to establish the critical capacity and rights-of-way gaps; cost a wider survey only if these gaps prevent the decision. Share the proposed household charges, service dates, and unresolved obligations with affected residents and developers. The first output is a decision on whether the site is ready for a funded investment agreement, not a promise that all disputes and network designs can be completed in 100 days. Subsequent review should measure execution, service, household costs, and continued access separately.

Expansion should wait when the critical rights, service or funding commitment remains unresolved. This is a proposed decision rule: redesign where affected residents lack a lawful and funded remedy, trunk capacity is unavailable, or the downside financing case has no credible payer. Where a smaller phase is viable, begin with a connected corridor whose rights and funding are settled, then extend after services are commissioned. At larger scale, reconcile adjoining schemes against common trunk networks and drainage systems; ten separately balanced site budgets can still omit the shared treatment plant.

Judge infrastructure execution through functioning services and household outcomes as well as financial performance. Sequence road and drain works before home occupation where they are necessary. Publish every development charge and exemption. Track whether utility connections were actually delivered, whether the operator can maintain them and whether the public budget received the expected revenue. Where politically feasible, stage similar interventions so that outcomes can be compared. Commission independent spot checks of parcel data and rents. Build in a corrective trigger: if promised capacity is late, freeze new approvals in the affected sector or fund interim service; if existing tenants face abnormal displacement, deploy the agreed protections before releasing the next tranche. Public dashboards should display five results separately: additional homes safely served, existing residents protected, minutes and money saved reaching jobs, full public cost per home-year, and service uptime five years after handover. An increase in assessed property values is useful evidence about benefits and tax capacity. It cannot substitute for any of these measures. Fieldwork must verify the cost allocation and revenue assumptions behind those results.

Serviced land leaves the production decision unresolved. Chapter 6 compares construction methods through household choice, safe performance and whole-life cost.

Selected readings

Planning Ahead for Better Neighborhoods [R451]. Read the Tanzania study for long-run evidence on planned, serviced development; the local history and comparison determine what the estimates mean.

Indonesia's long-run upgrading study [R452]. Use the Jakarta evidence to examine how an intervention changes later urban development; short-run service gains do not settle long-run outcomes.

Thirty Years of World Bank Shelter Lending [R061]. Read the portfolio review for the institutional history of sites and services; combined lending categories cannot isolate the performance of that model.

Judgment and transfer conditions

Early servicing can leave durable gains, but retention and future adaptation need separate tests.

Confidence: Moderate; Tanzania and Jakarta identify different margins. Revisit trigger: Poor take-up, unfunded maintenance or adverse resident outcomes over a longer follow-up.

Transfer serviced-land delivery with a funded route from plot allocation to safe household building and occupation. At roughly ten times the pilot scale, test take-up, connection timing, finance access and retention among the bottom 50 percent. At roughly one hundred times the scale, require trunk-network finance, maintenance revenue and capacity for later additions. Expansion should pause if households receive plots they cannot use.

Exercise

Recalculate the district account when only 50 hectares are saleable. Separate cash receipts from land surrendered for public uses. State who finances the remaining capital and recurrent gap.

5. Metropolitan Growth and Access to Opportunity

Which development location offers households a feasible improvement over their alternatives?

Priority A must connect land to the opportunities households can use. This chapter tests location (Test 4), alternatives over time (3) and rights under relocation (7). Compare access, space and total costs over time, including letting rights and voluntary mobility, while assessing compulsory displacement separately. Peripheral housing can impose travel and service burdens, but letting rights, asset gains and voluntary mobility can change its value. The lottery evidence makes those distinctions essential. Compare feasible growth patterns and finance their networks, while keeping compulsory displacement separate from a household's choice to accept a housing offer.

A metropolitan housing strategy should compare homes through the access and recurring costs households experience across boundaries. Imagine a worker living on the edge of Nairobi. Her employer, landlord and bus operator all serve the same labor market. The planning office that controls the next apartment block may sit in another county. The road agency can widen a highway; the water utility must still connect the site; the county must maintain its drains. Without coordination among these agencies, the worker can face higher rents and fares, longer journeys, and unreliable services. A Nairobi study measures the access problem. A World Bank study using job-location data, the Digital Matatus network and household surveys estimated that the average resident could reach fewer than 10 percent of Nairobi's jobs on foot within one hour, and only around one-quarter by minibus. Homes with better job access commanded higher rents. Poorer residents and residents of informal settlements faced the weakest access [R149]. Limited access can reduce the jobs available to a household and raise the cost of reaching them. A household may find cheaper shelter farther away and lose the saving on travel, foregone work, or both. Urban growth increases the number of decisions that must be coordinated to protect that access.

Compare locations across the urban region

Growth across municipal boundaries

Growth forecasts should inform shared housing and service decisions while representing renters and prospective residents. An OECD-led assessment projects Africa's urban population rising from roughly 717 million in 2020 to 1.4 billion by 2050, with urban land area more than doubling under its spatial scenarios [R147]. For India, a 2025 World Bank assessment projects urban population approaching 951 million in 2050 and estimates that more than 144 million new homes will be needed by 2070 [R010]. These projections use different definitions and horizons; adding them produces an indication of scale, not a harmonized dwelling forecast. Both point to the same practical task: millions of sites, streets, pipes and legal floor areas need advance planning and timely provision. The metropolitan agreement is a deal among the places that gain from growth and the places that must host it. A central district gains workers and customers. An outer county gains land development and perhaps property taxes. A transit agency gains riders. Incumbent owners can lose quiet streets, parking and exclusivity; landowners close to new infrastructure can gain a windfall. Low-income renters need access to the city

yet have the least influence over the decisions that govern their future address. The physical options are infill, serviced expansion, and new development centres, each with different costs.

Three approaches to urban expansion

Metropolitan strategies should compare infill, planned expansion, and new employment centres using common demand, access, and infrastructure assumptions. Infill adds homes within the built-up city through subdivision, small rental buildings, redevelopment, and construction near jobs and stations. Its constraints include costly parcels, multiple owners, restrictive rules, and limited network capacity. The built-up core can also be hazardous. Where added density requires expensive pipe replacement, the public cost must appear in the comparison. Expansion prepares land beyond the existing footprint. New employment centres can reduce dependence on the old core when firms and workers have reasons to locate there. For each location, cost serviced plots and small rental additions before fixing an apartment programme. Include safe land, network investment, household finance and recurring costs. The choice also depends on how firms use the city.

Expansion planning needs to cover land beyond today's mapped cities. Sub-Saharan Africa's Urban Awakening projects that 71 percent of the region's urban population growth between 2025 and 2050 will occur outside current mapped city extents, in peripheries, towns, and areas changing from rural to urban. This is a projection under the report's spatial classification, not a finding that 71 percent of growth will occur in secondary cities. It strengthens the case for identifying future routes and safe land before occupation. Investment still requires local demand evidence: the report warns that premature infrastructure and speculative land development in towns with weak growth prospects can create lasting fiscal and maintenance burdens. [246, pp. 17, 120]

Housing and business-location decisions should be assessed together. Firms can benefit from shared suppliers and infrastructure, better matches with workers, and knowledge exchange. These advantages depend on connectivity and compete with congestion, commuting costs and land prices. Grover Goswami and Lall's review explains why cities can develop several employment centres rather than a single dominant core. The World Bank's Africa's Cities report likewise argues for coordinating housing, transport and industrial investment. This evidence supports examining where firms can operate productively and workers can afford to live. It does not establish that greater residential density or a designated business district will generate growth. [226, pp. 2–5; 227, pp. 20–23]

Modelled job maps can help target fieldwork before a city commits land or infrastructure. The 2026 World Bank report uses predicted employment maps for 5,600 cities across Sub-Saharan Africa and three other regions. Within its three city-size classes, average job concentration is lower in Sub-Saharan Africa than in East Asia and Pacific and South Asia. These are machine-learning estimates, rather than an observed jobs census; the authors caution that individual-city predictions require careful interpretation. The regional comparison does not establish the causal effect of concentrating jobs. I would use the maps to identify locations for employer surveys and checks of transport, utilities, and affordable housing, then test investment proposals against those findings. [246, pp. 45–48]

Location requirements differ across firms and activities. The literature reviewed by Grover Goswami and Lall shows that some services benefit from close contact in central locations, while land costs and goods-transport requirements influence manufacturing location. The patterns vary by industry and country; evidence from developed economies cannot be applied mechanically elsewhere. For a proposed growth area, I would therefore test demand for business premises, reliable utilities, supplier and freight access, and housing affordable to the expected workforce. Existing supply chains and credible firm commitments should carry more weight than employment targets attached to a master plan. Compare a housing-first or industry-first sequence with coordinated investment before committing public capital. [226, pp. 14–16; 227, pp. 20–23]

Expansion planning should connect a citywide road network with workable neighbourhood layouts. Angel's published planning framework combines protection of environmentally sensitive land with an arterial network and subdivision of the larger areas between arterial roads into smaller, walkable blocks. It recommends using existing roads and property lines where possible. I would organise this as a division of work: public authorities secure the connecting routes and protected areas, while landholders, communities and developers work with planners on local streets, plots and public spaces. The layout must respond to drainage, terrain and existing occupation. This is a planning approach to assess locally, not evidence that a geometric grid by itself produces inclusive growth. [228, pp. 131–132]

Reserving a route and constructing its infrastructure require separate decisions and budgets. The Ethiopia Urban Expansion Initiative divided plans into phases intended to accommodate five years of growth. Its implementation sequence included engineering surveys, compensation, demarcation and construction of simple roads. Some lightly settled land was reserved for later use; in occupied areas, residents were assisted in reorganising plot boundaries. The authors reported funding and institutional constraints as well as progress. These examples support adapting the sequence to local occupation and resources. They do not establish that all future road land can be acquired immediately or that reservation guarantees later servicing. [229, sections 'Plan development' and 'The creation of an arterial road grid']

The sequence of road reservation and plot subdivision should follow existing occupation and demand. The 2026 World Bank report allows arterial planning and local subdivision to proceed together, in sequence, or independently. Already-subdivided land may need readjustment to accommodate arterial rights of way. Where trunk infrastructure exists, or a new arterial grid is impractical, local subdivision can proceed without one. Internal subdivision can wait where urbanisation is unlikely soon. This makes the programme a set of decisions about land and infrastructure, rather than a requirement to reproduce the same grid everywhere. The rights, compensation, and financing tests below still apply. [246, p. 95, note 23]

Land arrangements must protect people whose claims are not recorded in a formal title. Before agreeing on road contributions or plot changes, identify owners, tenants, customary rights-holders and livelihood users, and explain how benefits, costs and remedies will be allocated. The World Bank's ESS5 guidance distinguishes people with formal rights, legally recognisable claims and no recognisable legal claim; assistance differs between these categories. It also calls for consultation and a grievance mechanism where ESS5 applies. I would require a documented agreement, a responsible authority and funds for the resulting obligations before treating a reservation or subdivision scheme as ready. Chapter 12 applies the corresponding risk and rights tests to protected land. [230, pp. 7–12]

Housing form must be compared through land use, construction cost and continuing operating obligations. Four-storey walk-ups, row houses, courtyard rentals, high-rise flats and serviced incremental plots have different land and construction economics. Lifts, fire systems, foundations and common-area maintenance can make a taller building costly; large parking mandates and setbacks can make a low-rise one consume too much land. Settle location, service capacity and payment limits across the bottom 50 percent before choosing the building form or financing a factory pipeline. Land scarcity and transport costs help explain why a cheaper building form can still produce a costly household location.

Land scarcity and transport costs

High housing and transport costs can reflect scarce usable development opportunities rather than a lack of raw land. The World Bank's Africa's Cities study finds that, after accounting for national income levels, housing costs in African cities were about 55 percent higher than in comparable cities elsewhere; transport prices were about 42 percent higher [R148]. These are historical cross-country price

comparisons, not present-day market quotes. Fragmented urban land markets make serviced locations scarce. Weak transport makes a distant location a poor substitute. A housing ministry can lower a unit's construction cost and leave this combined scarcity untouched. The price of a central apartment reflects several things: floor space, building quality, neighbourhood safety, services and access to jobs. Some of that premium pays for genuine scarcity, including fixed land and expensive infrastructure. Part reflects rules. A height limit, minimum plot area, wide setback or parking mandate can prevent the city from adding homes at a location where households would pay to live. A developer then bids against other developers for the few legal projects, and the right to build becomes valuable in its own right. The price of a peripheral plot may also exclude infrastructure costs borne elsewhere.

Peripheral land should be appraised with the public network cost and the household's actual pattern of work and care. The central public budget may finance a cheap house on cheap land. A distant municipality must add schools and maintain drains. A national agency builds the trunk road. The household pays higher fares and loses time. The land bill looks small because part of the cost has been assigned to other balance sheets. When cities appraise projects this way, peripheral development can appear cheaper in procurement while imposing higher total costs. The practical measure is generalized housing cost: the present value of shelter payments, utilities, transport cash outlays, time spent travelling, service unreliability, climate exposure and relocation risk. Governments should calculate it for distinct income and tenure groups. A dual-income family has a different job-access map from a single worker; a domestic worker with several clients values a different network from an office commuter. A worked comparison makes the effect of those recurring costs explicit.

Exit rights and time can change the location result

Addis Ababa's voluntary housing lottery shows why letting rights and longer follow-up matter to location appraisal. Franklin's Addis Ababa lottery study follows applicants after three and eight years. Winners could rent out the subsidised home but faced a five-year sale restriction. More than half occupied it at both follow-ups. The study finds no detected adverse effects on employment, income, education or non-housing consumption; early losses in networks and amenities improved over time. It remains a working paper. This is evidence about voluntary applicants receiving an asset with letting rights, not a licence for compulsory relocation. [R449]

Kumar's Mumbai lottery study likewise allows a distinction between owning and living in the allocated home. Winners could occupy or rent it out. At three to five years the study finds gains in housing quality, reported income and investments in education and youth employment despite less favourable neighbourhood opportunities on some measures. The asset and the option to let it matter to interpretation. [R450]

Location appraisal must consider household options, asset value and adjustment over time alongside distance. Distance is a cost to measure, not a verdict. Compare the option set, the value of the transferred asset, rental and sale restrictions, actual access and the time needed for networks to recover. A central home can be unaffordable; a peripheral asset can improve welfare. Conversely, an apparently valuable transfer can trap someone who cannot let, sell or sustain travel costs. Follow both the household and the asset.

Compulsory relocation can improve housing while weakening social networks, and its legality remains a separate test. A newer Addis study of compulsory clearance uses discontinuities at relocation boundaries. It reports gains in housing and some economic outcomes alongside losses in social networks, with proximity to former neighbours easing social costs. This working-paper evidence

further cautions against assuming a uniform sign even for forced moves. It does not settle legality, consent or remedies. Rights and distribution remain separate tests. [R459]

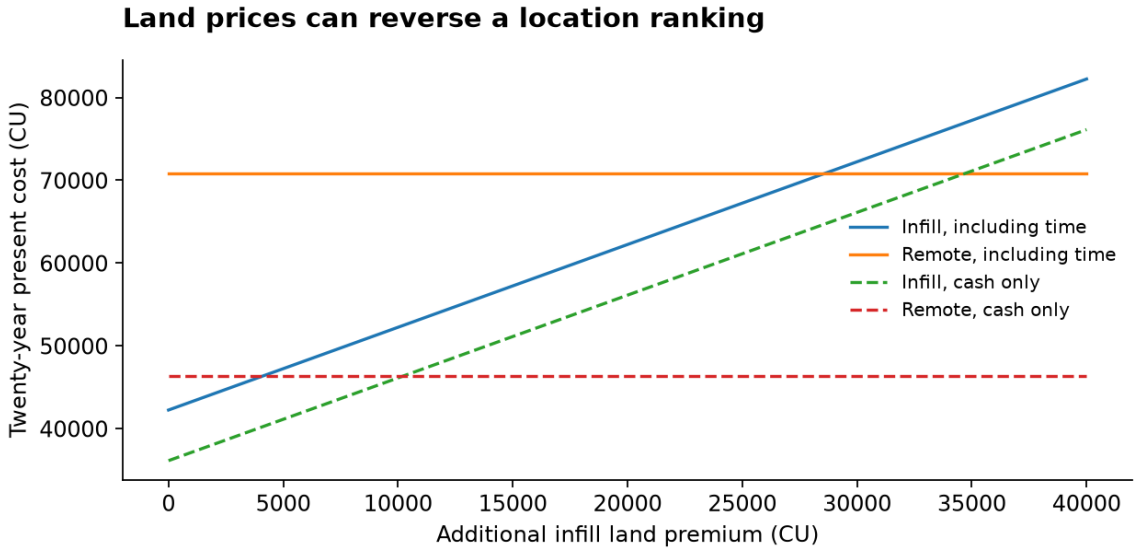
Comparing development locations

This revised location model uses a twenty-year horizon and a 5 percent effective annual real discount rate, equivalent to a monthly rate of (1.05)^(1/12) · 1. The monthly present-value factor is 152.943. Fares are CU 40, 80 and 120 per month; travel time is 40, 100 and 160 hours per month, valued at an illustrative CU 1 per hour. Floor areas are 30, 40 and 50 m² respectively. These are assumptions, not city observations. Compare cash-only and time-valued totals, then vary the infill land premium.

Option and area	Housing	Infrastructure	Cash-only PV	With time PV
Infill 30 m²	26,000	4,000	36,118	42,235
Extension 40 m²	20,000	8,000	40,235	55,530
Remote 50 m²	16,000	12,000	46,353	70,824

Illustrative model only; it describes a method for appraisal, not costs observed in an African or Indian city. Totals add housing, public infrastructure and present-value mobility costs. Time valuation is an explicit assumption and should be sensitivity-tested.

At the base assumptions, infill has a cash-only present cost of CU 36,118, compared with CU 46,353 remotely; including time gives CU 42,235 and CU 70,824. An additional infill land premium of about CU 10,235 eliminates the cash-only advantage; about CU 28,589 eliminates the time-valued advantage. A functioning land market may capitalise access into price, so the premium cannot be assumed zero. With a household upfront housing budget of CU 20,000, the initial housing-price gap is CU 6,000 plus any premium for infill, zero for extension and zero remotely, before fees and finance. That is an affordability gap, not automatically a justified state grant. Floor areas differ, so a final appraisal must also value the space difference.



Teaching figure 3. Illustrative revised location model, 5% effective annual real discounting. Time valued at CU 1/hour; areas differ. The land premium is a sensitivity, not an estimated capitalisation coefficient.

Observed relocation outcomes reinforce the need to assess livelihoods and access alongside physical housing improvements. The US Moving to Opportunity experiment found later earnings gains for children who moved young; the Ahmedabad housing lottery improved dwellings without measured income or human-capital gains over the long follow-up. The populations and interventions differ. Together they show why the appraisal must test usable opportunity and the cost of losing networks, rather than assume either relocation or proximity benefits every household. Chapters 14 and 15 examine the household evidence in more detail. [R159, R161] Nairobi shows why those connections often require agreements across several jurisdictions.

Learn from metropolitan growth and reform

Metropolitan coordination in Nairobi

Nairobi's functional housing market extends into Kiambu, Machakos, Kajiado and Murang'a. Kenya created the Nairobi Metropolitan Area Transport Authority in 2017 to coordinate integrated public transport across these five counties [R150]. Its metropolitan council includes national transport and treasury officials as well as county governors. The arrangement addresses journeys that cross county boundaries: daily commuters and traffic cross boundaries that each county cannot manage alone. Transport coordination is necessary and partial. Housing sites, zoning, development approvals, land rates and local roads remain tied to other authorities. A county can approve a large estate on its side of the boundary. The national highway may carry commuters toward Nairobi. The water utility faces a new connection bill. No single investor has a contract to deliver the entire housing-and-job-access outcome. A corridor agreement can align those fragmented decisions around common population, service, and employment assumptions.

A metropolitan agreement should connect growth forecasts and infrastructure commitments with transparent land terms and resident representation. It would link station investments to legal rental and ownership floor space within a defined catchment. County housing targets should follow corridor capacity and job access, with transfers compensating counties that serve a wider labor market. The political obstacle lies in who gains. A peri-urban landowner can capture the uplift when a new interchange or pipeline is announced. A developer values rapid approval. An incumbent neighbourhood can oppose small apartments while still employing the workers who need them. Minibus operators may fear the loss of routes or income under transport reform; they can also become part of a regulated feeder and operating system. A feasible agreement needs specified benefits for these actors, transparent land transactions and a direct voice for current tenants and future residents. An accessibility atlas can turn that agreement into a set of feasible sites and preparation tasks.

A land and accessibility atlas should identify feasible sites, required works, funding commitments, and the households expected to benefit. Use it to compare options and assign preparation tasks; update it when service or cost assumptions change. India illustrates how divided urban powers and weak municipal finance complicate such agreements.

Urban growth and municipal finance in India

Municipal finance determines whether additional development is treated as a source of opportunity or an unfunded service burden. For metropolitan coordination, the immediate task is to reconcile investment needs with each municipality’s ability to prepare, fund, and execute works. A regional growth plan should identify who pays and who can deliver each cross-boundary connection. [R010, R151] The fiscal institutions constrain the housing response. The Reserve Bank of India's 2024 review of 232 municipal corporations found continued dependence on transfers and grants, with own

revenue inadequate to meet recurrent spending for most corporations [R152]. A World Bank assessment put urban property tax receipts at about 0.15 percent of GDP during 2011-18 [R151]. A metro that cannot recover a reliable share of the value created by additional floor space can view growth mainly as a service obligation. The division of legal powers also affects which agency can assemble and service the required land.

Land pooling and readjustment require agreements across planning, land, transport and service institutions. Gujarat's statutory menu and deductions described elsewhere in the book are not interchangeable with the realised deductions or delivery times of a particular Ahmedabad scheme. Use the documented case to examine the mechanism and verify the current legal regime and project dates separately. An agreement among registered owners must also address people whose claims are absent from the cadastre. [R052]

Readjustment can align owners' interests with servicing while leaving tenants and livelihood users needing separate protection. It gives the city a means to lay down a street grid before prices surge. Its weak point is time, title complexity and the treatment of people who hold no recognized plot. A tenant, informal structure owner or small shopkeeper may lose a livelihood during readjustment while registered owners receive the uplift. The right to return, rental supply and a verified occupancy census must therefore enter the land process at the start. The cadastral map alone shows a partial distribution of claims. South African spatial evidence shows why the locations made available by these agreements matter for inclusion.

Access to central locations in South Africa

Persistent spatial separation makes accessible social rental and public land important metropolitan policy tools. A recent World Bank study using census, administrative and satellite data found that areas within five kilometres of commercial centers in South African cities had about 9,300 fewer residents per square kilometre than predicted against twenty global peers, roughly 60 percent below the peer median [R025]. The housing market supplies much of its lower-income population at a distance from the main job centers. That mismatch reflects decades of forced segregation, capital investment patterns, land markets and present-day regulations. A policy of peripheral construction can leave this structure intact. Central land may be held for low-density uses, industrial parcels, parking or expensive development; older low-income districts may be exposed to eviction, poorly funded services and weak safety. Increasing allowed density near employment centers can widen supply. It also raises the value of sites, and redevelopment can displace long-standing tenants. South Africa's social rental and public-land tools have a clear metropolitan role where they secure below-market homes in areas that already contain jobs and high-capacity transport. Additional central housing alone does not determine which households can occupy it.

A coalition for spatial inclusion must address allocation and affordability as well as the quantity of housing. Employers benefit when workers spend less time commuting. Transit agencies benefit from all-day ridership and connected station catchments. Municipalities can receive more rates from improved land. Incumbent owners may oppose apartments or low-income tenants; developer margins may favor expensive units. Central-government capital grants, explicit inclusion covenants on public land, credible utility upgrades and published tenant protections can convert some opposition into a negotiated agreement. Land-use reform that leaves allocation to the highest bidder may produce more dwellings with limited change in who can live centrally. Auckland's reform provides evidence on the supply response to broad metropolitan development rights.

Metropolitan zoning reform in Auckland

Auckland offers evidence on broad upzoning, with estimates that remain conditional on the study's counterfactual and local context. In 2010, seven local territorial councils and the regional council were merged into one Auckland Council with regional powers and local boards [R153]. Auckland's 2016 Unitary Plan allowed more medium- and higher-density housing across approximately three-quarters of residential land. The 2026 peer-reviewed study by Greenaway-McGrevy and So used a synthetic comparison of other New Zealand urban areas and estimated that Auckland rents on new tenancies were 23 percent below their 2024 counterfactual without the reform. The authors also estimated that permit rates more than doubled relative to a synthetic comparison at the height of the building boom [R154]. The study reports about 127,000 dwelling permits during 2017-24 and an estimated 18 percent increase in Auckland's dwelling stock across the eight years. These are observed totals, while the 23 percent rent result is a model-based causal estimate. Synthetic-control studies depend on the similarity of the comparison cities; this paper examines sensitivity to donor selection and pandemic-era changes. The estimate supports a rent effect under the study's counterfactual assumptions; its size remains sensitive to how Auckland would otherwise have developed. It is no guarantee of the same coefficient in Lagos, Mumbai or Nairobi. The institutional coverage of the reform is part of the mechanism to examine before adaptation.

Broad, common rules can reduce fragmented decisions, but their effects still require credible measurement of housing outcomes. A regional council could set common rules across the commuting area. Central government required a single plan. Developers gained many possible sites instead of a small negotiated list. The reform reduced the scarcity of legal development opportunities; the study's results are consistent with greater supply reducing rent pressure. Public submissions and local resistance were substantial, and local boards preserved a role for place-specific needs [R153]. Wide coverage helped prevent every neighbourhood from treating extra homes as someone else's obligation. African and Indian cities face different constraints: title disputes, incomplete utility networks, small informal landlords, weak construction finance, uneven enforcement and lower household purchasing power. Their supply response may be smaller if upzoning changes permission without changing serviced land. The transferable mechanism is the breadth of reform, the common metropolitan rule, and the measurement of completed homes and rents against a credible counterfactual. São Paulo adds the question of how transport-related development rights translate into inclusion.

Development rights and inclusion in São Paulo

Transit-oriented rights and obligations should be calibrated before land transactions absorb the expected gains. São Paulo pursued transit-oriented development under its 2014 Master Plan, allowing denser construction along transport axes. Research published in 2023 found more development and smaller units in the corridors, yet insufficient inclusion of low-income households because property prices increased [R155]. Transit investment and development rights can produce marketable central housing; scarce access and high land values can still screen out poor households. The design choice arises before a developer buys the site. Governments can reserve public land near planned stations, require a share of regulated rental or ownership units, charge for additional development rights, and use the proceeds to finance infrastructure or housing support. Each choice changes the residual price a developer can pay for land. A requirement calibrated after land changes hands can stop a project; an obligation announced in advance is more likely to be reflected in land bids. Longer-term occupation and tenure protection determine whether the intended households retain access.

Transit investment needs tenant and livelihood protection before rising land values displace existing users. Renters and informal vendors near a new station can face higher rents and relocation long before any affordable unit is delivered. A pre-project occupancy survey, phased construction,

temporary rent support and return rights can protect the households who helped create the market for transit in the first place. An inclusion target should measure who occupies the completed homes after five years, as well as the share of units reserved at approval. Metropolitan finance must support those commitments while sharing costs across jurisdictions that benefit from growth.

Share costs, authority, and implementation responsibilities

Financing metropolitan growth

Publicly created land value and intergovernmental transfers can help align the benefits and service costs of metropolitan growth. The fiscal issue is how much of that increase returns to the public institutions responsible for growth. The OECD identifies betterment levies, developer obligations and charges for additional development rights as distinct land-value-capture tools [R156]. These instruments can finance part of metropolitan expansion, provided valuations, rules and spending are credible. A metropolitan fund should combine predictable national or state transfers, a portion of own-source property revenue, charges linked to new capacity, and a transparent share of public-land proceeds. It needs binding service and affordability outputs. Funds should follow infrastructure catchments and commuting corridors rather than existing administrative boundaries alone. A county that hosts households for the metropolitan labor market should receive support for schools, local streets and drainage; a central jurisdiction should contribute when it benefits from workers who live elsewhere. Each financing instrument still needs a project-level feasibility and revenue test.

Charges and rental revenues should be appraised using feasible obligations and realistic collection and maintenance assumptions. Too high a charge can deter projects, reduce serviced supply and pass costs to buyers when competition is weak. Too low a charge grants private windfalls. Auctions for additional rights, published standard rates, and residual land-value models can help reveal the market. The baseline rights must be clear and predictable, or officials can create artificial scarcity and then sell permission to escape it. The same discipline applies to public land. Government should record its market value before committing it, publish the lease or tender, price any below-market transfer as a subsidy, and require long-run housing services in return. A thirty-year lease with enforceable affordable rents can create a different public return from an outright sale. Each must be appraised with a full fiscal and household balance sheet. Private finance requires identifiable revenues and an explicit allocation of risk. Municipal bonds depend on collectible revenue and credible reporting. Guarantees transfer risk to public budgets. Refinancing can extend loan terms without reducing land prices or increasing tenants' incomes. Rental projects still need realistic vacancy, maintenance, and collection assumptions. The political assessment must also recognise the informal housing through which households already accommodate growth.

Informality, segregation, and development opposition

Informal production contributes housing capacity that formal strategies must understand before changing rules or priorities. Small landlords add rooms and floors. Shared taxis connect peripheral neighbourhoods. Vendors create local jobs near transport hubs. Informal settlements place workers within reach of the labor market, often under dangerous service and tenure conditions. A plan that erases these functions can raise measured housing quality and reduce household welfare. The political interests differ by place. Central homeowners and landlords can gain from scarce housing and oppose apartments; young renters and employers gain from more supply. Peripheral landholders favor roads and rezoning that raise their land values; incumbents who fear acquisition may resist the street grid. Developers favor predictable permissions and infrastructure; some benefit from negotiating exceptional projects. Intermediaries may control information about claims and allocations. Investigate

any alleged coercion or unlawful interference through documented complaints and legal findings. Municipalities seek revenue and fear service costs. Construction counts are visible sooner than many gains from infrastructure maintenance. Compare budget allocations and performance measures to assess whether that timing affects priorities. Social exclusion and local vetoes can prevent that capacity from becoming safer and more accessible.

Metropolitan reform should address documented local impacts without giving each established neighbourhood an indefinite veto over wider access. In India, access to rental accommodation can be affected by social screening even when household income is adequate. South Africa's spatial legacy remains racialized. In African cities, customary rights, informal occupation and patronage can give different groups unequal access to legal plots. Any digital or legal reform that recognizes only registered owners can exclude tenants and others whose claims are missing from the registry. A credible metropolitan coalition should include renters, small landlords, employers, transit agencies, construction workers, utilities, resident associations and representatives of settlements facing upgrading or eviction. The coalition must be built around concrete gains: legal additional rooms, reliable water, protected tenants, faster permits, local public revenue, cheaper commutes and jobs. Citywide housing targets can give future residents a proxy voice. Local consultation is needed for impacts; it cannot give each established neighbourhood a permanent veto over the metropolitan housing supply. The responsibility map below identifies where agreements and protections are required.

Implications for urban growth

A metropolitan plan must guide existing housing processes through explicit location, service, financing, and protection commitments. Make usable land available through both infill and planned expansion, with lawful corridors and funded services. Permit safe household extensions and rental rooms within that capacity; reserve space for larger or assisted provision where household building is unsuitable. A metropolitan agreement should bring location costs, public-service obligations, and the distribution of land-value gains into one appraisal. It should state which jurisdiction will accommodate growth, where housing can be built, which services are funded, who pays, and how existing residents are protected. Applying that test requires respecting the different limits of projections, observational studies, and causal evidence.

Ethiopia: service access and the limits of advance reservation

Ethiopia’s Urban Expansion Initiative provides evidence of improved service access near new roads and practical limits to advance land reservation. A March 2026 International Growth Centre working paper analysed 4,000 households in eight selected cities where road construction permitted household-level evaluation. In matched cross-sectional comparisons, households near new arterial roads were 7.4–8.4 percentage points more likely to have piped water and 11.5–13.7 points more likely to have improved toilets than comparable households farther away. Clinic journeys were about three minutes shorter. These estimates account for observed household differences. They cannot eliminate unobserved differences or selection into better-connected neighbourhoods. [224, pp. 5–7, 16–22]

The study did not establish consistent gains in poverty reduction or formal employment. Its separate income analysis used retrospective reports of conditions roughly a decade earlier. Those difference-in-differences estimates depend on accurate recall and comparable trends between groups. It did not estimate changes in rents or property prices. A coauthor helped develop the initiative, so the study should not be described as an independent replication. [R162]

Implementation evidence shows why reservation needs a credible budget. In the five cities covered by qualitative interviews in the original evaluation, none acquired arterial rights-of-way

substantially beyond immediate projects. Limited compensation budgets and uncertainty about keeping unused corridors clear constrained advance acquisition. Municipal teams also reported that urban expansion displaced farming households whose transition to sustainable urban livelihoods remained difficult. Respondents considered compensation and support insufficient despite improvements. [225, pp. 12–14]

I would phase corridor reservation and acquisition with funded protection of existing rights. Authorities need to identify affected households, fund compensation and livelihood support, and provide access to affordable land and services. Monitoring should track who benefits and who loses access, alongside roads opened and plots supplied. These are implementation requirements suggested by the evidence; the studies did not test this complete package.

Spatial appraisal must also account for hazard and recovery. Chapter 12 compares safety interventions before Chapters 14 and 15 examine redevelopment and inclusion.

Selected readings

Franklin's Ethiopian housing lotteries [R449]. Read the three- and eight-year results with the rights attached to the offer; this is working-paper evidence from a specific applicant population.

Kumar's Mumbai housing lottery [R450]. Use the housing, income and human-capital results to test an unconditional location claim; lottery offers do not identify every effect of urban distance.

Ethiopia's urban expansion initiative [R162]. Read the working paper for household-level evidence on planned expansion; distinguish its intervention and comparison from a housing lottery.

Judgment and transfer conditions

Location works through access, asset value, choice and time.

Confidence: Moderate; lottery findings are strong for their applicants, not universal. Revisit trigger: Longer-term or compulsory-move evidence reversing the relevant population's net outcome.

Transfer access to well-located land together with its transport, service and financing commitments. At roughly ten times the pilot scale, test travel costs, choice, asset use and adjustment for households in the bottom 50 percent. At roughly one hundred times the scale, require metropolitan networks, usable land supply and protection against displacement. Cheap peripheral land alone is no basis for expansion.

Exercise

Find the infill land premium that reverses the cash-only ranking and the time-valued ranking. Explain what rental rights and a longer follow-up could change beyond those arithmetic comparisons.

Part III Enable households to build and rent

6. Construction Costs and Housing Production

Which production method lowers the cost of housing that households want and can safely keep?

Priority B requires safe homes that households and small builders can produce. This chapter supplies evidence on household cost (Test 2), production alternatives (3) and delivery capacity (6). Enable households to build and improve by making safe construction choices feasible. Households may hire tradespeople, join a cooperative or commission a builder; they need not supply unpaid labour or manage risks beyond their capacity. Compare production methods through household requirements, whole-life costs and delivery capability. The worked examples distinguish productivity, financing and operating savings, while technical advice, inspection and reliable payment make those choices usable.

My experience of Indira Awaas Yojana exposed a gap between volume delivered and the homes families wanted. In the early and mid-1990s, implementation was dominated by the imperative to deliver houses in volume. I remember tribal families wanting mud houses that would be beautiful, comfortable and considerably larger than the standard provision. Their preferred designs did not get through the local approval process. I associated the refusal with the Public Works Department's technical framework, but it may have been a local error rather than a requirement of the scheme. I cannot identify the specific rule. The families knew what they wanted; our monitoring concentrated on how many houses we completed.

Define the cost and quality problem

Indira Awaas Yojana and the houses people wanted

National records and later policy must be distinguished from my recollection. The NITI Aayog library abstract of the Planning Commission's 1992 quick study reports 1.06 million houses constructed nationally during 1985–92; its field sample covered 56 villages in 14 states. [R070] The June 2013 IAY guidelines explicitly recognised appropriately specified mud and bamboo houses meeting durability requirements, rejected a compulsory standard design and provided for beneficiary choice. These later provisions do not resolve the local rule two decades earlier, but they rule out treating my recollection as evidence of a permanent national prohibition. [R071] The following small study supplies a separate source on choice and suitability.

Restricted household choice requires evidence on satisfaction and use as well as completed buildings. A 1996 Development Alternatives pilot survey examined nine cases involving Scheduled Caste widows in two villages near Rohtak. Conventional construction and the junior engineer's model largely shaped the houses. Its author reported greater satisfaction where beneficiaries exercised their own choices, alongside weak technical advice and workmanship. This small survey concerns a different population and does not verify my encounter with tribal families. [R072] The broader problem in my implementation experience was the limited attention given to life after completion. We did not systematically follow income, health, schooling, or occupants' satisfaction to understand what the

housing support had changed. This is a statement about the work I remember, not a claim that no evaluation of IAY ever measured these outcomes. A house count was necessary for managing delivery. It was insufficient for judging the programme's value to the family. An approval process that permits suitable alternatives is a practical response to that problem.

Alternative building materials need an evidence-based approval route and genuine household choice. For an earth-building option, require a locally competent technical institution to establish performance requirements for the relevant hazards, moisture exposure, foundations, roof connections, and maintenance. Prepare costed details, train masons and inspectors, and specify which evidence releases each payment. Compare usable space, indoor comfort, repair burdens, and resident preference with the conventional option. No material deserves approval merely because it is traditional, and no household should be compelled to use it. Keep the volume target, but pair it with a funded follow-up sample. Ask whether families occupy the homes, find them comfortable, can afford repairs, and can still reach work and school. Record alternative designs proposed and reasons for refusal. Track household income, illness-related expenses, and school attendance where the programme has a plausible route to changing them. Do not attribute every improvement to housing: other services and wider economic changes matter. Chapter 1 sets out how to establish a baseline and a credible comparison before construction begins. The alternatives must then be compared against all the costs of delivering and occupying a home.

Components of housing cost

Construction savings improve affordability only to the extent that they reduce the household's total delivered cost. Their effect on affordability depends on their share of total cost, whether savings reach households and whether the method can be used reliably at scale. In CAHF's benchmarking of a typical 55-square-metre house, materials and labour have accounted for about 45 percent of total cost, while infrastructure has contributed around 14 percent. The shares vary sharply by country and city. Older city-level benchmarks found construction near 40 percent of total development cost in Nairobi and Kampala, while it exceeded 60 percent in some other markets. Land, infrastructure, statutory compliance, finance, holding costs, taxes and marketing fill the rest. An illustrative calculation shows the limit of a component saving. If construction represents 40 percent of the delivered price and a method reduces that cost by 20 percent, the direct saving is 8 percent before other changes. The buyer receives that full saving only if it passes through. Higher land prices, developer margins, or additional financing and implementation costs can reduce it. The size of the affected cost component provides a first test of the likely saving.

Estimate the cost share affected, the feasible reduction, and the share expected to reach households. Then test demand and production volumes under which the saving persists. The product of those factors can be a screening calculation, but expansion probability is an assumption, and the factors may interact. Compare the result with savings from approval time, finance, and other large costs. That calculation requires an account of the linked production systems behind a completed home.

Productivity is output per input at a comparable quality

Measure completed floor area or units per labour hour, alongside material use, defects and delivered cost. Goolsbee and Syverson document weak long-run US construction productivity and examine whether measurement alone can explain it. D'Amico and coauthors connect land-use regulation to fragmentation and limits on scale. Both concern the United States; they do not establish a universal coefficient for African builders. Their implication for appraisal is to measure firm scale, repeated designs and idle time as well as factory technology. [R470, R471]

Construction inputs and productivity

A finished home is the output of several linked production systems. Materials must be made or imported. Contractors need labour, equipment and working capital. Designs must satisfy codes. Developers must hold land while approvals proceed. Banks or investors must finance the interval between spending and sale. Utilities must connect the site. Buyers must trust the product enough to purchase it. A construction change can affect other costs. Prefabrication may shorten site work and reduce defects, while introducing factory overhead that becomes costly at low production volumes. Locally produced earth blocks may reduce transport and embodied emissions if the material and design suit the site, but lenders may require evidence of durability and resale value. Standard designs may speed approval while limiting later extensions. Include these effects in the comparison. Distinguish three levels of production. Repeated designs can reduce design and training costs. Firms can spread equipment and overhead across projects. A wider market needs multiple suppliers, contractors, lenders, inspectors, and repair providers. A demonstration establishes experience with one design or firm; evidence on supply chains and repeat demand is needed before inferring wider market viability. African cost comparisons show how the constraints differ across those systems and locations.

Institutional differences in African construction costs

Differences in materials, logistics, and institutions can produce large cost differences for a similar house. CAHF's comparative work reports substantial variation in the cost of a standardized house across African cities. Its early bill-of-quantities exercise priced the same specification from under US$30,000 in Dar es Salaam to more than US$60,000 in Nairobi. Labour accounted for more than one-third of construction value in some high-cost markets and more than half of the construction component in Nigeria. Finance and holding costs were especially high in Maputo; sales taxes were unusually high in Nairobi. The cost of an identical specification can vary with labour markets, taxes, logistics, approvals, and finance. These historical comparisons support a local cost breakdown rather than a single construction-cost assumption for African markets. Check which component accounts for the difference before selecting an intervention. Rwanda illustrates the logistics channel. World Bank analysis estimated that import taxes plus transport and logistics could raise construction-material prices by as much as 43 percent. Benchmark housing costs were about 30 percent higher than in South Africa, with building and infrastructure costs important contributors. The analysis identified alternatives such as autoclaved aerated concrete, compressed stabilized earth blocks and modern clay products, while stressing that scale remained limited. Lower-cost local alternatives still need an approval and supply chain that can support repeat use.

A local material may lower transport costs and foreign-exchange exposure while requiring new testing, inspection skills, contractor training, or lending criteria. Adoption therefore depends on evidence that it can meet performance requirements and be supplied, financed, and maintained reliably at the intended volume. A consistent cost record is needed to establish whether those conditions produce a delivered saving.

Construction cost monitoring in Kenya

Huruma's reported pilot figures require reconciliation before they can be used as a tender benchmark. The account gives KES 2.85 million for four units and KES 717,485 per unit; division of the first number gives KES 712,500. It also reports KES 16,491 per square metre as of December 2024. Scope and rounding differences remain unresolved. [R066, R033] Compare labour, donated inputs, fees, tax, finance, margin, structure, finishes and external services line by line. The hypothetical commercial budget in this chapter has a different purpose and cannot establish a fourfold productivity gap.

Structural adequacy requires the design and the responsible engineer's certification; it cannot be inferred from a low reported unit price.

Larger housing programmes should publish enough cost and performance information to distinguish efficiency from concentration and cost drift. Large pipelines can create economies of scale in materials and contracting, yet they also create procurement rents and concentration risk. If a small group of developers or suppliers wins repeated packages, scale economies can become market power. Procurement should therefore publish unit-cost benchmarks, bidder concentration, variation orders, delivery times and defect rates. India's technology programme provides another test of what reported construction outputs can establish.

Match construction methods to demand and producer capacity

Construction technology adoption in India

Public demonstrations can establish experience with a construction system without proving comparative household savings. Six demonstration projects in Chennai, Rajkot, Indore, Lucknow, Ranchi and Agartala have tested different industrialized and alternative systems. The public sector plays the role of first buyer: it creates reference projects, gives regulators experience with unfamiliar systems, and lets engineers observe construction and performance. Evaluation should continue after a demonstration project. Assess whether developers adopt the system without a special grant, local suppliers can support it, contractors can repair it, and lenders, insurers, and households accept it. Cost comparisons must include transport, royalties, factory utilisation, and financing. World Bank results reporting states that the Tamil Nadu Housing and Habitat Development Project built roughly 15,000 affordable homes between 2020 and 2025 through public-private market interventions, including a state-sponsored investment fund. It reports use of resilient-design standards and green certification. Related reforms addressed planning permissions, mixed-income development, private participation, finance for poorer households, and resident involvement in upkeep. These reported outputs do not establish comparative construction savings or lower household bills. [R064, R067] Adoption therefore needs a project-specific assessment beyond the demonstration.

A construction method must be assessed alongside permits, finance, maintenance, and local demand. Compare its installed cost and service life under those conditions before committing to production. For factory-based production, that assessment must also test whether sufficient orders will materialise.

Demand and industrialised construction

Industrialised construction exchanges some site uncertainty for factory, logistics, financing, and utilisation risks. In principle they reduce waste, improve dimensional accuracy, shorten site time and reduce defects. Their fixed costs create the central economic condition: utilization. Consider an illustrative factory with capacity for 5,000 units a year. With 5,000 funded orders, it can spread fixed costs across that output. With 800 orders one year and none the next, unit costs and financing needs increase. Before supporting a plant, test procurement commitments, the cost of unused capacity, and whether the operator can serve other customers. These volumes are a scenario, not observed project results. This creates a role for the state that differs from subsidy. Government can publish a multi-year pipeline, standardize performance specifications, pre-approve systems, and aggregate demand across agencies. It can also avoid locking the market to a single proprietary system. Use open interfaces, multiple qualified suppliers, and performance-based codes to support competition. Speed has a financial

value. A shorter construction cycle reduces interest during construction and returns developer equity sooner. Where finance is expensive, time savings may be more valuable than material savings. The pro forma should price both. The comparison with conventional building must use all-in delivery costs under realistic demand.

Pilot unit costs and industrial production economics answer different questions. The UK House of Lords inquiry documented the collapse of Ilke Homes and House by Urban Splash and the closure of L&G's modular operation. Witnesses cited insufficient orders and wider business and economic problems. These are different technologies and markets, not a matched comparison with Huruma. They show why factory utilisation, financing and all-in delivery cost need testing before a government commits to scale. [R066, R068] Even a verified production saving must pass through the developer's land, finance, and sales decisions before it reaches households.

Katerra and the risk of an integrated supplier

Katerra shows why construction technology and supplier solvency need separate tests. The company sought to integrate design, technology and construction, and entered Chapter 11 in June 2021. Its subsequent sale motion described a liquidity crisis and a process to market assets. That account is a debtor's filing, rather than a judicial finding that any particular building technology caused the failure. [R500, pp. 2–3]

A buyer needs a workable completion and maintenance plan if an integrated supplier fails. My inference for procurement is to test funded orders, factory utilisation and cash flow alongside installation speed. Contracts should preserve access to drawings, component specifications, warranties and replacement suppliers. An attractive production cost has limited value if the purchaser must finance an unfinished development or cannot maintain proprietary components after the original supplier exits.

Developer returns and cost savings

Developers bear coordination and financing risks that influence both production costs and the distribution of savings. A required return compensates investors for capital and risk. Observed margins may also reflect market power or scarce rights, so appraisal should not treat every margin as a necessary cost. Compare assumptions with competing projects and bids. This explains why an apparently cheap technology may be rejected. A developer may prefer a familiar system that costs 5 percent more if contractors, banks, valuers, buyers and building officials understand it. The expected value of fewer delays and lower tail risk can exceed the quoted saving in construction cost. For affordable housing, the policy goal is therefore to reduce risk that serves no public purpose: uncertain approval time, unclear title, unpredictable connection dates, arbitrary standards, slow inspections and volatile subsidy payments. Lowering these risks can reduce the return a developer requires and widen the set of viable projects. Competition then determines incidence. In a constrained market with scarce development rights, a cost reduction can capitalize into land. In a competitive supply market, developers have stronger incentives to pass savings to buyers. The same construction innovation can therefore produce different affordability outcomes in two cities. A delivery strategy must therefore identify the producers and financing arrangements able to carry those risks.

Before buying finished houses, test whether land, connections or staged finance would enable households to build or improve. Compare repair, small rental additions and cooperative building on full cost, safety and the capacity of households in the bottom 50 percent. Fund advice and inspection alongside any grant or loan. Direct procurement needs well-located land, a capable delivery team and funded upkeep. The comparison below identifies producer functions and risks; it does not assume one method is always cheapest.

Small developers need a budget and a payment clock

A producer building 50 to 500 units faces a different market from a household builder or a national contractor. An illustrative per-home budget might allocate CU 5,000 to land and connections, CU 11,000 to labour and materials, CU 1,000 to professional fees and approvals, CU 800 to finance, CU 700 to contingency and CU 1,500 to margin: CU 20,000 in total. State taxes, scope and dates before comparing it with a community-built unit. A low reported cost with donated labour and omitted infrastructure is not evidence of fourfold productivity. Model scale: small-home teaching example; CU is hypothetical and is not comparable with the district-account price level.

Incremental construction needs a designed extension envelope. Establish foundations, load paths, fire separation, drainage and shared services for the eventual permitted form; decide which components require public finance or technical support before households move in. A starter unit that invites structurally unsafe extensions is an unfinished safety obligation. Pay for inspections at extension stages, not only at initial handover. The cost and structural certification must come from the actual design; the illustrative budget above is not an engineering estimate.

Producer business models and entry barriers

Exhibit 6.1. Comparing producer business models. Proposed diagnostic; validate costs, financing terms, and constraints in actual project accounts.

Producer and cash cycle	Likely constraint to test	Support and condition to test
Household-builder: savings or remittances finance successive stages; occupation may precede completion.	Small purchases, interrupted work, technical advice and safe extensions.	Serviced tenure, technical assistance and inspected stages. Avoid a repayment schedule that assumes a salary.
Small contractor: pays labour and suppliers before receiving certified payments; may own no land.	Working capital, late payment, bid security and contract size.	Prompt payment and proportionate lots and securities. Retain safety, quality and completion checks.
Small landlord: builds against future rents, often on an existing plot.	Legal additional floor area, utility capacity, construction finance and vacancy.	Approval and connection support with staged finance. Test debt service after vacancy, repairs and tenant protections.
Larger developer: commits land and equity, then combines borrowing, sales or institutional investment.	Land assembly, uncertain approvals, infrastructure timing and demand at the intended price.	Predictable permissions and competitively allocated serviced sites. Verify additional affordable supply before extending concessions.
Cooperative or community organisation: pools contributions and public support; members share decisions and risks.	Collective authority, uneven contributions, professional support and internal accountability.	Recognised rights, technical support and transparent accounts. Protect minority members and residents who cannot contribute equally.
Social or long-term rental provider: capital funding precedes a stream of rents and operating costs.	Patient capital, allocation duties, collection and renewal funding.	Match grant and debt terms to rents and lifecycle costs. Fund any operating gap and enforce affordability through ownership changes.

A housing programme needs each production function to be performed, even when several functions sit within one firm. These functions may sit within a developer or in separate organisations. Combining them can reduce handoffs, but it can also restrict entry if one firm controls both developable land and access to services. Before promising a pipeline, establish which rights and

connections another qualified producer could obtain on comparable terms. Why might formal firms move up-market? A fixed approval cost, minimum plot size, expensive finance, or long delay must be recovered from the homes eventually sold. Higher-price products may cover those costs when lower-price products cannot. Scarce serviced land can also reward holding land rather than building it. These are mechanisms to test in local project accounts, not a universal explanation of developer behaviour. Compare entrants and failed projects as well as established firms. Before awarding a large pipeline, test whether smaller contract lots, shared infrastructure, standard approvals, or staged finance allow more qualified firms to compete without weakening safety. Track bidder entry, completion time, final price, occupied units, and the firms that stop bidding. Tracing actual projects shows where a missing function or financing gap prevents delivery.

Follow money through a small number of completed, stalled, and abandoned projects. Record deposits for land, approval spending, supplier payments, certified bills, interest, sales receipts or rent, and the months of maximum cash exposure. A viable final sale price can conceal an unfinanceable construction period. Compare applicants who failed to obtain finance with those who built; accounts from successful firms alone will miss barriers to entry. The cases in this book support different interventions. Chennai's sites-and-services experience shows households building over time on a serviced layout, while the evidence in Chapter 4 also records long gestation and uncertainty about who retained access. Singapore's core-contractor arrangements in Chapter 15 illustrate a reciprocal pipeline and capability commitment; they do not prove that guaranteed work is competitive. South African social rental illustrates why a capital grant needs an operator able to sustain affordable rents. Use these comparisons to select the missing function, not to declare one production model universally superior. Cape Town's support for smaller producers illustrates one way a city can address an administrative barrier.

My conversations with Hugh Cole drew my attention to Cape Town's practical assistance for small housing producers. My first personal interaction with Hugh Cole, Director: Policy and Strategy and Chief Data Officer for the City of Cape Town, was in June 2025, when I learned more about Cape Town's efforts to support affordable housing. We continue to work with the city. Cape Town's Local Planning Support service provides small producers with assistance: guidance on affordable rental flats, development rules, design guidance, prototypical layouts, and location maps. Its published resources show how a city can make the approval route more usable. They do not establish the number of additional completed homes caused by the service. [R073] An adaptation should test which applicants reach compliant occupation, what they spend, and whether the new rooms remain affordable. A public procurement pipeline requires a separate test of whether its packaging allows capable smaller firms to participate.

Where public procurement of dwellings is justified, compare a bundled delivery option with smaller lots or independently serviceable phases where feasible. Include the public cost of managing more contracts. Require open eligibility, proportionate qualification criteria, and disclosure of common ownership where lawful; smaller lots alone do not establish competition. If public support merely increases the land bid or the incumbent's margin, revise the award terms. If smaller firms cannot meet essential standards even with feasible support, do not relax those standards to meet an entry target. Those firms are only part of the wider network of households, landlords, and tradespeople producing low-income housing.

Incremental design needs support after the first half-house

Alejandro Aravena and ELEMENTAL's Quinta Monroy made a difficult trade-off visible: retain an urban site and build an initial structure that residents could extend. O'Brien and

Carrasco's fifteen-year spatial and ethnographic study describes 93 families and an original government allocation of US$10,000 per household. It finds extensive additions, including changes outside the anticipated envelope that compromise liveability. This is longitudinal case evidence, not a controlled impact estimate. The lesson is to design the eventual structure and fund continued technical support; initial architectural acclaim is not proof of safe long-run adaptation. [R475]

Mexico's Piso Firme shows that a targeted component improvement can benefit households without replacing the whole dwelling. Cattaneo and coauthors' quasi-experimental evaluation of replacing dirt floors with cement finds improvements in child health and cognitive development and in adults' reported wellbeing. A modest component improvement can deliver benefits without a complete replacement dwelling. Its mechanism and sample do not establish the effect of every material substitution, but they challenge the assumption that the only meaningful housing output is a new unit. [R473]

Households, builders, and small landlords

Support for small producers should simplify compliance while retaining independently verified safety protections. A household may add rooms or floors over several years using savings or remittances. Measure this production locally; it can be missed by permit and developer records. Its financing, safety, and service needs differ from those of a large formal project. Building in stages can take longer but allows expenditure to follow irregular household income. It avoids a large mortgage. It can adapt the dwelling to a shop, workshop or rental room. Households buy materials at retail prices, technical advice is weak, work stops when cash runs out, and hidden structural defects can accumulate. Support for household and small-builder production can include accredited mason networks, tested structural designs, pooled purchasing, staged loans, digital bills of quantities, and inspections at critical stages. These are options to test for local cost and accessibility. Preserve independently verified standards for structural stability, fire, sanitation, drainage, electrical safety, and accessibility; simpler administration must not remove essential protection. The choice of production method also affects the mix of labour, skills, and output.

Industrialized construction can reduce some site labour; incremental construction sustains large networks of local trades. The correct comparison includes productivity, wages, skills, safety and total housing output, rather than maximizing construction employment per house. These trade-offs should inform standards that protect occupants without excluding workable building methods.

Safety standards and affordability

Building standards should be tested against the safety benefits they provide and the costs they impose. Requirements that households cannot finance may discourage compliance or formal production. That affordability problem calls for review of avoidable costs, suitable designs, and targeted support. It does not establish that health or safety standards should be reduced. Use risk-based regulation to distinguish essential protection from avoidable prescription. Structural stability, fire escape, sanitation, drainage, electrical safety, hazard exposure, and accessibility need enforceable standards. Assess finishes, parking, and other amenity requirements separately. Room dimensions can affect ventilation, crowding, and disability access, so changes require technical review. Performance-based rules can admit alternative materials when independent testing demonstrates equivalent safety. Standards can affect competition as well as safety. Require evidence for specifications that exclude alternative products or add professional steps, and disclose conflicts of interest in code review. Provide a transparent route to demonstrate equivalent performance. Assess each requirement on its costs and benefits rather than presume the motives of producers, professional bodies, or officials. The cost

comparison must continue beyond construction to energy, repairs, and climate exposure during occupation.

A green premium must pass the household cash-flow test

A 5 percent premium on a CU 20,000 home is CU 1,000. Financing it at 10 percent over twenty years with annual payments costs about CU 117 a year. A 20 percent saving on a CU 240 annual utility bill saves CU 48. On these assumptions, bill savings alone do not cover the premium. The break-even premium is about CU 409, or 2.0 percent of the base price. Health, comfort and carbon benefits may justify additional spending, but identify who pays and who benefits rather than claim a household saving that the arithmetic does not produce. Model scale: small-home teaching example; CU is hypothetical and is not comparable with the district-account price level.

Carbon, resilience, and lifetime costs

Thermal performance can reduce heat exposure and energy costs, but a construction premium must be compared with actual bills and financing. The worked premium test at the start of this chapter shows why an assumed percentage saving alone cannot establish household affordability.

Align procurement, finance, and implementation

Public procurement and market development

Procurement should compare viable local options and disclose costs, competition, variations, and defects. Publish the cost and duration of purchase guarantees; avoid indefinite subsidy to unused capacity. The procurer must verify quantities, structural performance and defects, and retain the ability to procure alternatives. Track comparable all-in cost per usable square metre, delivery time, defects, energy and maintenance bills, and household access to jobs. Where direct construction passes the land, service and financing tests, procurement can shape the local construction market. Lowest-price awards may encourage bids that depend on later claims. Prescriptive specifications may exclude suitable alternatives. Very large packages may exclude small firms, while small unpredictable annual orders may not support factory investment. Compare these risks with actual bidder, price, and delivery data. A better procurement design buys performance: delivered cost, time, structural and fire safety, energy performance, defect rate, maintainability and adaptability. Bidders can choose the means. Framework contracts or multi-year pipelines can create demand certainty while keeping several suppliers in competition. Open cost data make collusion and drift easier to detect. Private financing changes the contract's risk allocation but does not eliminate the underlying costs.

Public-private partnerships add financing and delivery capacity, yet they do not make costs disappear. Private capital prices land risk, approval risk, demand risk and government-payment risk. Transfer a risk the private party cannot control and the bid price rises. The contract should allocate each risk to the actor best able to manage it. Construction finance must therefore be assessed against the actual timing of expenditure and receipts.

Speed saves interest on drawn capital

For an illustrative CU 20,000 home with CU 15,000 construction expenditure, suppose the average balance financed during a four-month saving is CU 7,500. At 12 percent a year, the financing saving is 7,500 × 0.12 × 4/12 = CU 300, or 1.5 percent of the selling price. Applying the rate to

the full price would overstate the gain. Measure approval savings on the balances actually committed during delay; a faster factory may save little if land and permission still absorb years. Model scale: small-home teaching example; CU is hypothetical and is not comparable with the district-account price level.

Construction finance

Construction finance covers expenditure before sales or rent receipts begin. Its cost rises with time and uncertainty. A two-year approval delay before construction can be as economically important as an expensive material. A six-month reduction in build time reduces financing costs most where interest rates and required equity returns are high. Small builders face a different gap. They need working capital in thousands of dollars, not project finance in millions. Banks often cannot underwrite an incomplete structure on weak title. Supplier credit, micro-construction loans, savings-linked finance and milestone disbursement can fit the production cycle better. Capital markets enter further upstream. Long-term finance can fund rental portfolios, factories, warehouses and developer pipelines. Cheap capital for an uncompetitive supplier or an unviable project postpones the loss; it does not remove it. Reliable records of that expenditure also provide the basis for useful digital construction tools.

Minimum standards: separate life safety from exclusionary specifications

Minimum legal standards set a price floor for formal housing. A 2026 masterclass counterfactual for Kenya held a 30 m2 basic dwelling, marginal servicing, and life-safety requirements constant while reducing the assumed minimum plot from 100 m2 to 50 m2; spreading fixed land and trunk costs over twice as many plots lowered the illustrative full production cost from KES 3.93 million to KES 2.96 million, or 24.5%. The calculation is an analytical scenario rather than a measured market effect, and its value is to expose which cost wedge a rule creates before a subsidy is designed to offset it.

Standards reform must distinguish enforceable safety requirements from specifications whose additional cost needs justification. Structural stability, fire egress, flood exposure, sanitation, ventilation, and safe access require technical thresholds and independent inspection, while plot size, parking, finishes, room mix, and some setbacks should be justified against their incremental cost and local infrastructure conditions. This distinction leads directly to the question of who captures the savings when a costly rule is relaxed.

Cost reductions reach low-income households only when supply can respond and competition is credible. Landowners may capitalize additional development rights into land prices, developers may retain part of the margin, and incumbent residents may use discretionary approvals to restore scarcity through delay, so standards reform should be paired with broad enough zoning change, serviced capacity, transparent approvals, and monitoring of rents, sale prices, safety incidents, and household location. Those implementation conditions determine whether a technically sound code reform becomes an affordability reform.

A producible dwelling still needs a viable tenure and payer. Chapters 7 and 8 examine who can obtain the home, on what terms, and with which financing risks.

Selected readings

Indira Awaas Yojana guidelines [R071]. Read the 2013 provisions on design choice and materials; they cannot establish the local rule encountered in the author's earlier recollection.

Niazi's IAY pilot survey [R072]. Use the nine cases to examine suitability and choice; this small study is neither a national evaluation nor the author's field encounter.

Katerra sale motion [R500]. Read the debtor account for business and liquidity risks in industrialised construction; it is not a judicial finding of what caused failure.

Judgment and transfer conditions

Evaluate the delivered cost and operating performance, not the novelty of the building system.

Confidence: High for accounting; comparative productivity is design- and site-specific. Revisit trigger: Measured whole-life savings under comparable quality, scope and financing.

Transfer safe construction methods that households and builders can finance on usable, serviced land. At roughly ten times the pilot scale, test supplier capacity, defects, inspection and staged payments affordable to the bottom 50 percent. At roughly one hundred times the scale, require reliable materials, workforce skills and affordable replacement of components. A factory or large contract should expand only when demand and whole-life savings justify it.

Exercise

Recalculate the green-premium test at half the assumed bill saving. Compare the resulting finance burden with the saving from four months less construction finance. Which intervention benefits the resident?

7. Rental Housing and Secure Tenure

Which tenure and producer support will expand households' feasible housing choices?

Priority B includes both household builders and people who rent. This chapter tests who can enter (Test 1), what they can sustain (2) and whether their rights endure (7). Compare security, entry costs, mobility and recurring obligations, and make safe small-scale supply and enforceable tenant protection part of the same policy. Renting can provide mobility and access with less upfront capital; ownership can provide security and an asset while exposing households to debt and repair costs. Neither delivers affordability automatically. Compare supply, filtering, tenant protection and subsidy incidence, including the bargaining power that shapes informal rents.

Tenure determines who can occupy a home, on what terms and with what rights. It affects mobility, wealth exposure, maintenance incentives, access to credit, political voice and the ability to absorb a shock. Ownership bundles shelter with an asset. The household supplies equity, often takes debt, bears repair costs and gains or loses with the property's value. Rental unbundles shelter from the asset. The tenant buys use for a period; the landlord holds the capital and residual property risk. Social rental adds a public subsidy and an institution charged with preserving affordability. Informal rental may lack some formal protections while often achieving a price and location that formal markets cannot match. Tenure support should fit household risks and preferences. A migrant with uncertain work may need a room near jobs. A household expecting to remain may prefer ownership. An older resident may prioritise stable charges and an enforceable right to stay. Compare these choices using realistic payments and access to services. The choice deserves explicit appraisal because public programmes often favour ownership without comparing the alternatives.

Match tenure to household needs

Tenure, mobility, and household finances

The policy preference for ownership

Ownership support should be assessed by who can qualify, occupy, maintain, and benefit from the asset. They also create demand for loans, land, and development. Those features may help attract support from recipients and providers. They do not establish the reasons a particular government chose ownership; that requires evidence from its programme design, budget, and stated objectives. Rental support should be measured through sustained occupancy, repairs, predictable charges, and access to jobs. These outcomes depend on management after construction and may receive less attention than completed units or titles. Compare actual budget allocations and household tenure needs before concluding that policy favours ownership. Ownership subsidies can interact with supply restrictions. If subsidised demand rises while little housing is added, part of the benefit may increase prices. Existing owners may support restrictions that protect amenities or property values. Test those responses before expanding buyer subsidies, and compare support for rental supply and other tenure options. Mortgage subsidies, tax preferences, discounted public land, and infrastructure support often favour owners. Renters receive fewer asset-linked benefits. Assess the distribution of support by identifying who qualifies, who can wait for allocation, and who receives the resulting land-value gains. For many urban households, rental housing offers a more attainable route into a suitable location.

Rental housing in African cities

Rental is central to some African low-income housing markets. A World Bank review found that 92 percent of residents in the Nairobi slums studied were rent-paying tenants. It described poor services alongside high rents. This historical finding supports examining how scarce well-located space affects rents even where water and electricity are inadequate; it should not be treated as a current citywide tenure estimate. Slum upgrading that assumes residents are owner-occupiers can transfer public value to structure owners while tenants pay higher rents. Tenure regularization that recognizes only one claimant can erase subtenants, room renters and informal commercial users. Compensation tied to title can exclude poor households without title. Kenya's 2023/24 Housing Survey provides a contemporary base for this debate. It was designed to measure tenure, affordability and housing conditions across all 47 counties. Collect rental-market data alongside mortgage data: rents, deposits, vacancy, lease length, landlord type, utilities, arrears, eviction, and the cost of moving. Small landlords are important to that supply because their production model differs from a completed development for sale.

Small landlords can add rooms or floors to land they already hold and spread construction spending over time. Knowledge of local demand and nearby management may reduce some costs. Finance, inspection, and tenant protection may remain limited. Compare their actual costs and returns with other providers rather than assume that all can accept a lower return. Those advantages need to be assessed together with the risks that upgrading creates for existing tenants.

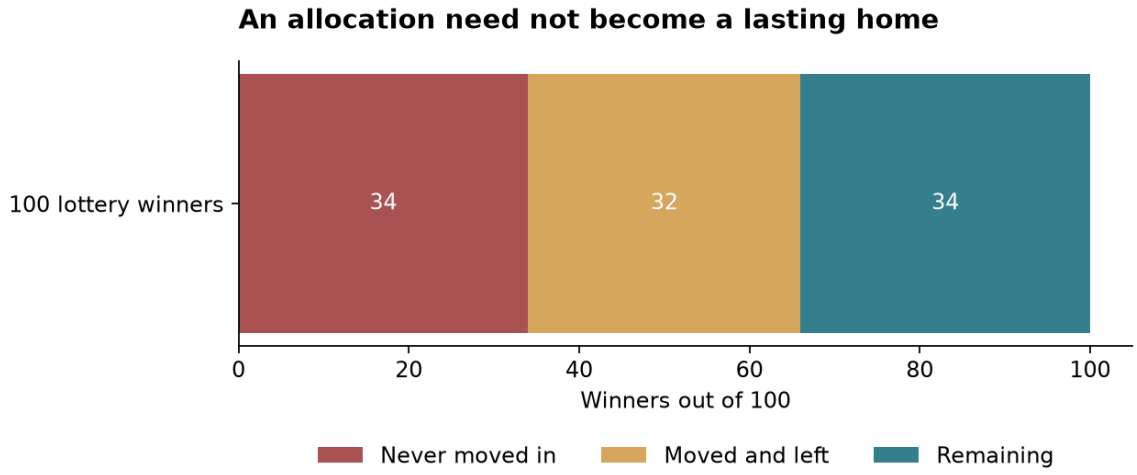
Small landlords as housing producers

Incremental rental production can lower entry costs, while improvements may expose current tenants to higher rents or displacement. Management can be on site or nearby. Savings, remittances, or a rotating savings group may finance the extra room, with rent repaying the investment. These advantages vary by ownership, service access, and building condition. Formal policy can improve this production system without converting every landlord into a corporation. Cities can publish pre-approved designs for room additions and backyard units; utilities can offer bulk or simplified connections; lenders can make small construction loans against staged inspections; building departments can focus on structure, fire, sanitation, drainage and electrical safety. Suppose a public programme pays for sanitation, drainage and structural improvement in a rental settlement. The asset becomes more valuable. If supply remains fixed and tenants have little bargaining power, the landlord can capture part of the subsidy through higher rent. Tenant protection and additional supply must therefore accompany upgrading. The household cost of losing a location becomes clearer in evidence on relocation.

Relocation costs in India

The Ahmedabad relocation experiment shows why better buildings do not necessarily compensate for lost livelihoods and networks. A randomised housing lottery in Ahmedabad offered women working in the informal sector the opportunity to move from slum housing to improved subsidised homes on the urban periphery. Fourteen years after allocation, winners reported better physical housing but no detected improvement in family income or human capital. They also reported greater isolation from family and caste networks and reduced informal insurance. Thirty-four percent never moved into the subsidised housing; a further 32 percent of winners moved in and later left. The design estimates the effect of the housing offer in this applicant population. [R076] The Ahmedabad exits show that improved physical housing and subsidised rent were insufficient to retain many winners. The study links the result to geographic isolation and weaker networks; it does not separately identify every effect of commuting, customers, schools, or childcare. Appraise those location-dependent costs before offering relocation, and interview households that decline or leave. [R076] Housing policy often prices land and construction while treating social networks as free. For poor households, networks can

substitute for formal insurance, childcare, job search and credit. Their value can be large precisely because formal markets are weak. Where a site remains unsafe, relocation still requires an appraisal of those losses and the alternatives.



Teaching figure 4. Ahmedabad lottery, Barnhardt, Field and Pande (2017), as discussed in the tenure chapter. The 34 and 32 figures use all winners as denominator; remaining 34 is the arithmetic complement.

Some locations may remain unsafe after feasible risk-reduction measures are considered, including floodways, unstable slopes, and contaminated sites. Railway-reserve status alone does not establish that displacement is necessary. Where relocation is justified, compare alternatives, follow applicable due process, consult affected residents, and fund replacement housing and livelihood support. Assess job access, travel cost, school continuity, network disruption, and enforceable occupancy rights before moving households. Housing choice can also be restricted by discrimination even when a safe and affordable dwelling exists.

Discrimination in housing access

Access to housing depends on social acceptance and allocation practices as well as the legal tenure offered. Landlords screen tenants. Owners form associations. Brokers steer households. Lenders price risk. Planning rules sort by income through minimum lot sizes, parking requirements and limits on apartments. In India, caste and religion can affect access to rental and ownership markets. In South Africa, the geography of apartheid still shapes distance to economic opportunity. In both settings, income alone cannot explain residential sorting. Financial support may be insufficient when a household faces discriminatory screening or cannot find a suitable landlord. A formal title may improve security without improving job access. Social housing in accessible areas may widen choice, but its actual allocation, services, and treatment of neighbouring residents must be assessed. Existing residents have established local channels for influencing housing decisions; future residents may have few. Developers can organise around projects, though their preferred product may be beyond low-income households' budgets. Include renters, younger households, employers, transit providers, and public finance officials in assessing added capacity and its costs. Do not assume that any group has a single position. Rental policy must therefore address the terms on which households can actually obtain accommodation.

Compare the effects of rental and ownership policies

Rental policy in India

India's rental policy response needs to be evaluated through occupancy, household costs, and responsibility for operating gaps. The COVID-19 migration shock exposed a gap in India's ownership-heavy housing system. The Affordable Rental Housing Complexes framework was designed for urban migrants and poor households who often choose informal settlements or peripheral areas to keep housing costs near work. The programme uses two channels: convert existing government-funded vacant housing into rental complexes, and allow public or private entities to build, operate and maintain rental housing on their own land. Both channels require years of management, maintenance, and reletting. PMAY-U 2.0 has carried rental forward as a distinct Affordable Rental Housing vertical. As of April 15, 2026, the broader PMAY-U 2.0 programme had sanctioned more than 1.361 million homes, while the ministry continued to promote affordable rental for migrants, homeless people, industrial workers, working women, construction workers and other vulnerable groups. The ministry also emphasized locating partnership housing near mass transit and within cities. Test whether target rents can cover management, maintenance, vacancy, utilities, debt, and replacement reserves after the capital subsidy. If they cannot, the programme needs an explicit operating contribution, a larger capital contribution, lower costs, or a different financing structure. Record the gap before occupation and assign responsibility for funding it. South Africa's social-rental model provides a different institutional approach to accessible rental housing.

Rental housing and spatial inclusion in South Africa

Social rental requires location standards and capable operators whose performance is verified after occupation. Social rental projects are targeted to restructuring zones and well-serviced areas of economic activity. The state uses a capital grant to make the project viable for lower-income tenants, while accredited social housing institutions and other delivery agents manage the stock. SHRA's undated About Investment page reports an average construction cost of R426,000 per unit, including land and bulk services (about US$23,700, my illustrative conversion at R17.96/US$, a cross-rate calculated from the Central Bank of Kenya's 2025 annual averages). That page also displays an older grant amount. SHRA's capital guidance and 2025/26 performance plan instead specify a standard grant of R426,308 (about US$23,700 at the same reference rate), with adjustments for the income mix; the plan dates this level to April 2023. These are different measures and vintages, not a current cost-to-subsidy ratio. Obtain a dated project budget and applicable grant decision before appraisal. [R081, R079, R033] Social housing institutions need the staff, systems, and revenue to collect rent, resolve arrears, allocate units, maintain buildings and common areas, manage security, and meet income-mix obligations. SHRA's accreditation and regulation link grant eligibility to institutional requirements. Verify operating performance alongside accreditation status. Its income and payment requirements also define which households need a different form of support.

Social rental can remain unaffordable to households with the lowest incomes. The poorest households may still fall below the social-housing market. Social rental can bridge a large gap between informal renting and market housing, while deeper poverty requires income support, public housing, shelter assistance or other instruments. For households already renting, protection from sudden shocks must be balanced with maintenance and future supply.

Separate three routes to more affordable rental housing

Enabling households to build can expand rental choices when owners add safe rooms that tenants can afford. Give small producers lawful building rights, affordable connections and finance tied to safe additional rooms. Verify whether tenants in the bottom 50 percent gain access; an owner's asset gain alone does not establish this. Filtering through wider supply takes time and may involve deterioration; subsidised allocation changes access to a particular home now. Compare these distinct routes, including continuing assistance for households unable to meet adequate rents.

Tenant participation needs power over decisions, not a meeting attendance count. Where landlords and structure owners dominate a recognised community body, establish a separate tenant constituency, publish representation rules and fund independent advice. In a resident-held budget, publish eligibility, procurement, accounts and appeals; allow confidential complaints against the recognised body. If rival organisations claim to represent the same residents, an independently supervised process must settle mandates before funds are transferred. Recognition by an agency alone is not evidence of resident consent.

Rent regulation and housing supply

Tenant protection should account for residents' investment in place and landlords' options to withdraw or convert housing. They learn a commute, build local networks, place children in schools and find nearby work. A sudden rent increase can destroy those investments. Rent regulation therefore answers a real insurance problem. A San Francisco quasi-experiment found that rent control increased covered tenants' probability of remaining at their address by nearly 20 percent relative to the comparison group. Affected landlords reduced their rental supply by about 15 percent; this is not a 15 percent fall in the city's entire rental stock. The authors' December 2017 working-paper model estimated a 5.1 percent increase in citywide market rents from the supply response. That model-based figure is from an earlier version, not the 2019 published article. Local treatment estimates and model-based citywide results are different kinds of evidence. [R081, R082] Rent rules change returns to supplying, maintaining, or converting property. Where owners can withdraw homes from rental use, controls may reduce the regulated stock. Outcomes depend on exemptions, enforcement, conversion rules, market demand, and new construction. The San Francisco result therefore requires local testing before its magnitude or policy implications are transferred. That trade-off calls for comparing instruments that insure tenants without making continued rental provision unviable.

Compare ways to protect tenants from rent and income shocks while financing maintenance and supply. Options include longer leases, predictable indexation, eviction due process, targeted allowances, and temporary hardship support. Their costs and effects differ by market. Where stronger rent controls are adopted, monitor conversions, repairs, vacancy, new construction, and rents outside the regulated stock. The San Francisco result applies to its particular rules and landlords' options. It supports separating protection against income and rent shocks from the return needed to maintain and add rental homes. Before adapting the instrument, establish whether owners can convert or withdraw units, which tenants receive protection, and what options remain for newcomers. [R082] Ownership provides another form of security, but suits a different pattern of income, risk, and mobility.

When ownership suits household needs

Ownership can be suitable for households with stable income and a long horizon. Mortgage amortization turns payments into equity. A paid-off home can reduce housing costs in old age. The household gains control over alterations and can use the property for a business or rental room. In markets with secure title and liquid resale, the asset can store wealth. A household can become

overleveraged. A peripheral home can leave workers far from new employment opportunities. Climate risk can destroy an uninsured asset. A weak condominium association can leave common infrastructure unfunded. Title can be secure while resale demand is weak. Homeownership concentrates household wealth in one neighbourhood and one local economy. Ownership subsidies should therefore be tested against a rental counterfactual. Compare the present value of down payment, debt service, maintenance, taxes, transaction costs, insurance and transport with the cost of renting an equivalent location. Include the value of mobility. A mortgage payment alone is an incomplete comparison. Households unable to finance a finished home may instead build ownership gradually.

Rent-to-own compared with other tenure choices

Rent-to-own should be compared with feasible renting, saving and purchase options on the same household budget. This is a proposed appraisal, not a general recommendation or a statement of country-specific rights. Compare location, housing quality, time horizon, total payments and the resources left for essentials under each option.

The payment label does not establish what the household acquires. For renting, identify the occupancy terms, deposit and exit costs. For renting while saving, identify who controls the savings and whether they remain accessible on a move. For purchase, price the deposit, borrowing, transaction costs and ownership duties. For rent-to-own, separate rent, fees and any amount credited towards purchase; verify the enforceable interest, purchase price or pricing rule, conditions for transfer and any final lump sum.

Cost and maintenance obligations must be clear before the household commits. Compare undiscounted payments and present values using common assumptions, including service charges, insurance, repairs and major renewal. Identify who must perform and fund each repair before and after transfer. Stress income loss and changes in charges; a low initial payment does not establish affordability over the full term.

Exit and missed-payment terms determine how much accumulated value the household can retain. Ask what happens after arrears, a voluntary move or provider failure: what is refundable, deductible, transferable or forfeited; who holds the money; and who resolves disputes independently. Verify local law, enforceability and observed outcomes before recommending a country-specific scheme. Where those facts are unavailable, record the uncertainty rather than describe accumulated payments as protected equity.

Incremental ownership

Incremental tenure can match how households earn and build if rights and essential services are secured at each stage. A household may acquire a plot, occupy a core unit, add rooms over time, rent part of the structure, strengthen tenure gradually and extend services as the building grows. Essential water, sanitation, safe access and a habitable structure must be available before occupation. This pattern is common because household income is volatile and long-term mortgage credit is scarce. Incremental building allows households to stage expenditure and pause after an income shock. A completed rental room may help finance a later addition. Compare those benefits with slower completion, exposure to weather during unfinished work, technical risks, and the cost of repeated small purchases. Incremental ownership is an option to assess against feasible alternatives, rather than an efficient choice in every case. Policy can improve the path through serviced plots, expandable core designs, clear building envelopes, staged title or occupancy rights, small construction loans and inspections at critical structural points. The aim is to make the informal production logic safer and more

legible without imposing the full cost of a finished formal product on day one. Public investment in those areas must still distinguish owners from tenants and other occupants.

Distribution of upgrading benefits

Upgrading benefits need to be tracked by tenure group so that public support does not finance tenant displacement. An informal settlement is rarely a community of identical owner-occupiers. It contains tenants, structure owners, land claimants, shopkeepers, subtenants and brokers. Public investment changes the value of each claim. Drainage, roads, water and tenure security can raise rents and land prices. In-situ upgrading can preserve location and networks while increasing rents or land values. A title issued only to a structure owner may change the tenant's negotiating position. Owner-only compensation can exclude renters and livelihood users. Record those claims and specify funded protections before works or tenure changes begin. Every upgrading project should therefore begin with a tenure census rather than a parcel map alone: who occupies, who owns the structure, who claims the land, who pays rent, who runs a business, and who would receive compensation? The project should then state explicitly how much of the public investment may be capitalized into private rents and what will protect tenants. The feasible tools include temporary rent stabilization during works, additional rental supply, tenant relocation rights, return rights, compensation for documented tenants, and community land or lease structures where appropriate. The objective is to prevent the public subsidy from financing displacement. Publicly owned land can help retain affordable access if its use remains subject to enforceable obligations.

Public land and housing services

Public land can help retain affordable housing in accessible locations when long-term obligations are enforceable. Sale may increase immediate receipts; a discounted transfer creates a subsidy that should be recorded. A long lease can preserve ownership and require affordable housing over time. Compare the alternatives with their monitoring, renewal, and enforcement costs. The contract should state the subsidy and its conditions. Price the land at market value, record the concession, specify the affordable-rent or income mix, require delivery milestones and maintenance standards, and define what happens at expiry. This converts a one-time land transfer into a measurable purchase of housing services. Transit, rezoning, and infrastructure may increase public-land value. Selling before those investments can transfer part of the subsequent gain to buyers, depending on what prices already anticipate. Compare early sale with retention, leasing, or reservation for rental and mixed-income housing, including the public cost of each option. Choosing those obligations requires understanding who gains now and who bears costs over time.

Support access and continued occupation

Municipal finance and rental housing

A municipality bears the service cost of new residents: streets, drainage, waste, water interfaces, public space and local administration. The tax gain may accrue partly to national government. If local revenue does not rise with population or density, resistance to new rental housing can be fiscally rational. The metropolitan economy gains when workers live closer to jobs, while the host jurisdiction bears local service costs. National or metropolitan transfers can compensate the locality and reduce exclusionary incentives. Property taxation can also turn added floor space into recurring local revenue. The proposed mechanism is that added rental homes increase service demand, predictable local revenue finances the required capacity, and reliable services may reduce opposition to further housing. Test each step through occupancy, service costs, receipts, and recorded objections. Revenue alone cannot

establish public support or a supply response. The tenure agreement must also specify who funds and performs maintenance inside the development.

Maintenance responsibilities under different tenures

Maintenance responsibilities differ across ownership, rental, and common property and must be funded accordingly. Rental concentrates maintenance with the landlord. Social rental adds a public interest in preserving the asset. Each tenure therefore needs an operating model before construction begins. For a rental project, calculate target rent, collection rate, vacancy, management cost, routine maintenance, major-repair reserve, utilities, insurance and debt service. Stress-test arrears and inflation. If the affordable rent cannot cover sustainable operations after the capital subsidy, write the operating subsidy into the fiscal plan. Unfunded repairs should be reported as a financing gap. For condominiums and subsidized ownership, the equivalent risk is the owners' association. Elevators, roofs, pumps, facades and common pipes eventually fail. A low-income owner who can afford the mortgage may not afford a large special assessment. Reserve funds and simple, enforceable governance are part of affordability. Digital records can help administer those responsibilities if they also protect occupants whose tenure is informal.

Homelessness prevention and supported housing

Responses to homelessness must combine access to housing with support suited to the household's needs. Count rough sleeping, temporary accommodation, and insecure stays with other households separately, using outreach and service records as well as surveys. Protect confidential information about domestic violence and health. Ask why the last tenancy ended and whether arrears assistance, legal help, a deposit, accessible accommodation, or continuing support would address the cause. Canada's At Home/Chez Soi trial tested Housing First with support for people experiencing homelessness and mental illness in five cities. Over two years, participants receiving the intervention spent an average 73% of their time stably housed, compared with 32% under usual services. This supports rapid access to housing combined with appropriate support for that population; it is not evidence that a dwelling alone resolves every need or that the same effect will occur elsewhere. The report also identifies participants whose additional needs were not adequately met. [R085] Adapting supported housing requires securing the accommodation and continuing services together.

A local adaptation needs actual homes, willing providers, continuing rental assistance where required, and accessible support services. Begin with an outreach-to-placement pathway and name who will fund support after initial placement. Compare sustained housing, returns to homelessness, household choice, and total programme cost with existing services. Do not require a person to complete a digital application or demonstrate mortgage capacity before receiving emergency assistance. Clinical support arrangements require qualified health services. The field assessment should establish which households need that support and what the other tenure options can deliver.

Incremental and small-scale rental housing

Small-scale construction and rental markets supply housing that official programmes may not record. A household adds a room behind its home. A plot owner rents six bedsitters above a shop. A worker pays for a single room close to the factory. A mother extends a roof before a child is born. These acts add space, stage payments and keep jobs within reach. They can also expose renters to collapsing buildings, fire, polluted water, unlawful eviction and monopoly prices for basic services. Small builders supply inexpensive rooms in locations where formal developers may not serve low-income demand. Prohibiting this supply can reduce housing access; leaving it unregulated can expose tenants to

unsafe construction. Policy must make safe building and fair rental practices viable for small producers. Delivering that support requires coordinated changes to services, finance, permissions, and tenant protection.

Incremental construction and informal rental require different diagnoses even where they overlap. Incremental housing describes a process in which households and small builders add quality or space in stages. Informal rental describes occupancy bought from someone whose land claim, building permission or lease may be weak. Neither term alone establishes poverty, poor quality or illegality. A support package must connect feasible permissions and finance with safe construction, funded services and enforceable tenant rights. Mukuru shows why these duties must distinguish the many claims attached to a single structure.

Understand the households and producers in small rental markets

Small rental units and their occupants

Mukuru's rental economy depends on access to nearby work and on overlapping land, structure, and tenancy interests. Its location keeps workers close to factories, markets and transport. The building in which a family rents may sit on a parcel held by one legal owner, carry a metal structure erected by another person, receive water from an intermediary and hold tenants who have little proof of residence. When the city improves a road, the distribution of benefits depends on land ownership, structure ownership, service arrangements, and tenancy. Enumeration is needed to identify those interests before public investment changes their value.

Resident enumeration makes visible the occupants and claims that ownership records alone can miss. Resident enumeration undertaken with Kenyan universities and the Muungano Alliance mapped about 23,000 structures and identified roughly 100,000 households. Around 94 percent were tenants. Many paid structure owners who had built shacks on land owned by other, sometimes absentee, proprietors. The same research uncovered a system of service brokerage and threats of eviction as land values rose. The International Development Research Centre described court action that halted evictions and the subsequent effort to build a shared record of land, structures and occupants.[R197][R198] For compensation, identify affected households separately from title holders. A building record cannot tell who receives rent. A beneficiary list cannot show who will lose customers when a lane closes. If government compensates registered owners alone, public investment can reward the strongest claim and exclude households whose occupancy or livelihood claims are unrecorded. A statutory planning route can then connect that information to decisions about services and rights.

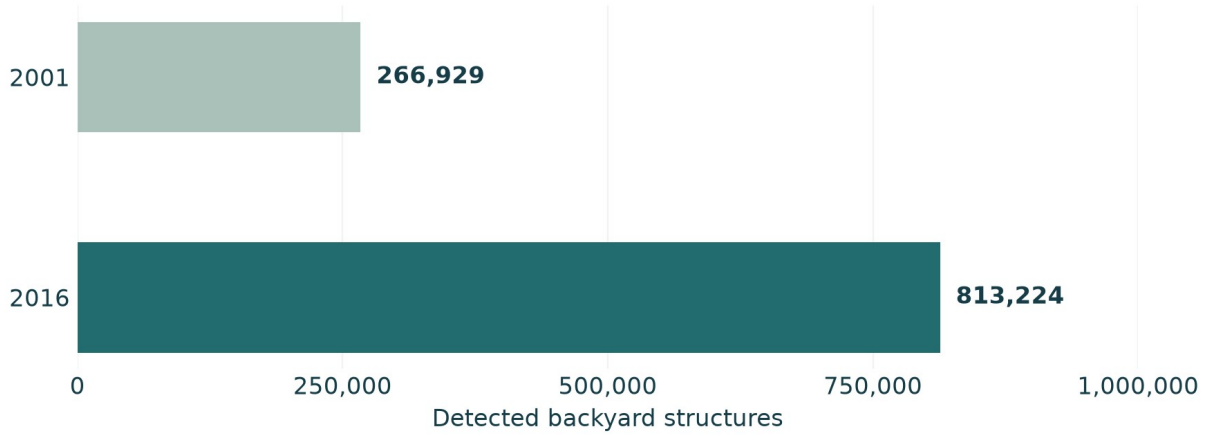
Mukuru's planning process illustrates the need for a treatment rule for each type of claim. Nairobi County's 2017 declaration of the Mukuru Special Planning Area created a legal route to coordinate infrastructure, land, health, environment and community groups. The planners organized approximately 100,000 families into 13 planning segments, with smaller clusters for consultation. Such organization converts dispersed knowledge into usable planning evidence. Implementation must then address a further problem: residents, structure owners and landowners have claims to different pieces of the same place. A plan needs a rule for each claim.[R182] The resulting agreement must accommodate how households and landlords build in stages.

Incremental housing supply

Incremental housing responds to changing income and household needs through staged investment. A worker renting near a market can save on transport despite cramped shelter. A young couple may rent a room while testing job prospects. A family with some security may build a first floor, add a toilet later, then rent a room to pay school fees or finance a second floor. A pensioner may depend on rent from a backyard unit. Housing is simultaneously consumption, collateral, a workplace and a family savings instrument. The conventional housing pipeline offers a finished unit financed with a long mortgage and delivered to one registered household. The incremental pipeline runs differently: savings, wages, a small loan and a building-material purchase arrive in uncertain order. Construction pauses during a job loss. A tenant moves before a structure is complete. A builder uses rent from the first two rooms to pay for the next two. A standard mortgage rarely fits this risk pattern. That flexibility can expand supply while making the size and use of the resulting stock difficult to measure.

Staged construction allows later investment to be deferred, but detected structures should not be treated as verified occupied homes. Each stage preserves the right to postpone the next investment until household income, demand and legal security justify it. That flexibility can be valuable where earnings fluctuate. It can also be expensive. Small purchases lose bulk discounts; repeated mobilization raises labor costs; poorly planned foundations make future floors dangerous. A policy that accelerates building without improving design can turn incremental finance into a subsidy for structural risk. Satellite-based analysis by the Gauteng City-Region Observatory found that backyard structures increased from 266,929 in 2001 to 813,224 in 2016. Over those fifteen years, backyard structures accounted for about 546,000 of the 1.3 million net additional residential structures reported in the same dataset: roughly 43 percent. These are detected structures, some with uncertain residential use; they are not an independently counted stock of occupied rental dwellings.[R199] Service planning must account for the actual demand added within existing plots.

Figure 7.1. Backyard housing structures in Gauteng



Source: Gauteng City-Region Observatory / GeoTerraImage; structures, not confirmed households [R199].

Additional rooms can increase service demand well beyond that assumed for the original dwelling. Backyard rooms add density in townships where formal public housing and services already exist. They help young households enter the city and give owners a revenue stream. Yet the infrastructure attached to one household often serves several more. Service planning based on the original house can therefore understate the plot's later demand. The producer's cash flow must therefore include realistic connection and capacity costs.

Small-landlord finances

Small landlords differ in assets, control, financing, and risk, so support should be based on their actual business model. Policies that call them all "informal" conceal differences in wealth, power and incentives. Their financing needs, maintenance practices, rent levels, and compliance costs should be investigated separately. Absentee ownership alone does not establish unsafe practices or unlawful conduct. The small landlord's real choices depend on expected net rent, the probability of losing the land, the price of materials, the right to add rooms, the chance of fire or prosecution, and the ability to collect rent. A reduction in approval delay has value only if permission survives future political changes. A loan has value only if the extra rooms attract tenants at a rent that services debt. A public sewer connection has value only if the charge and network capacity are credible. A worked investment account can show which charges and repayment terms are feasible.

A small-rental investment should be tested through its full construction cost, net rent, and debt-service capacity. A six-room rental project costs R1.2 million to construct, excluding the value of the already-owned land. The landlord finances 60 percent with a ten-year loan at 12 percent annual interest. At R3,000 rent per room, 90 percent collection and occupancy combined, and operating and reserve costs equal to 20 percent of collected rent, the property generates roughly R12,960 in monthly net operating income. Monthly debt service is about R10,330. The resulting debt-service coverage ratio is 1.25. Reduce rent to R2,600 and the ratio falls to 1.09. Raise the borrowing rate to 14 percent at R3,000 rent and it falls to 1.16. These are illustrative assumptions, not observations from a South African project. The difference between a bankable and a marginal property is small. Construction delays, unpaid rent, failed drains or a higher loan rate can erase the surplus. The illustration shows how cash-flow constraints can reduce funds for maintenance or increase reliance on rent advances. It does not establish how common either response is. An expensive small loan can make an otherwise low-cost design unaffordable. The example below makes those assumptions explicit before financing is considered.

Monthly rent per room	12% loan: DSCR	14% loan: DSCR	Interpretation
R2,600	1.09	1.00	Little margin for repairs or shock
R2,800	1.17	1.08	Thin resilience
R3,000	1.25	1.16	Potentially financeable; verify market rent

Illustration: capital cost R1.2m, debt R720,000, amortization 120 months, combined occupied/paid share 90%, and operating/replacement costs 20% of collected rent. DSCR = net operating income / scheduled debt service. Land opportunity cost, income taxes, origination fees and major shocks excluded.

A lender should finance the verified building and rent stream, with staged drawdowns and inspection, while checking the rights and income evidence available to the borrower. A wholesale capital-markets vehicle may fund thousands of such loans if loss data, collateral rights, servicer performance, concentration risk and tenant outcomes can be audited. Securitization transfers risk; it cannot make unviable rents viable or unsafe buildings safe. Cape Town's additional rental rights provide a policy setting in which to test that production and financing model.

Compare support, regulation, and tenant protection

Backyard rental development in South Africa

South African rental-rights and financing initiatives create a testable opportunity rather than proof of completed affordable supply. Cape Town's amended Municipal Planning By-law, gazetted in August 2025, created an additional use right for small affordable rental flats in designated areas. The rule permits up to eight additional rental units alongside a house, or twelve units on a site without a dwelling house, subject to conditions. It also added selected incentive overlays and powers to stop unlawful construction. This is a specific exchange: more legal floor space for small builders, paired with greater ability to require safe connections and enforce standards.[R200] In July 2026 Rand Merchant Bank and INDLU announced a R1 billion blended-finance programme for micro-developers. Its announced structure includes a R30 million concessional construction-warehouse commitment from the FirstRand Foundation, long-term funding from FNB, and participation by FSD Africa Investments in catalytic finance. INDLU reported that its earlier model had helped deliver more than 2,200 rental units and had facilitated approximately R311 million in finance. These are company-reported delivery figures and a new funding commitment; independent measures of tenant rents, occupancy, defaults, subsidy cost and building performance are still needed.[R201] The evaluation should follow each stage from usable permission to sustained tenant occupation.

Evaluate the rental-development mechanism through permissions, finance, construction, occupancy, and tenant costs separately. Zoning clarity raises the value of compliant plots. Engineering standards and formal connections lower catastrophic risk. Staged finance turns an owner's future rental income into current construction funding. Digital rent collection creates a repayment history. A larger lender can then fund a portfolio. Each change also affects the distribution of costs and returns. Permits may raise land prices. Loan terms may raise the minimum feasible rent. Formal utility charges may land on tenants. A portfolio sold to outside capital may give the financier new influence over property management and eviction decisions. A proper evaluation would compare eligible and otherwise similar plots near the new regulatory boundaries. Did rental rooms increase relative to untreated plots? Did rent per square meter, structural compliance, connection quality and household transport cost improve? What was the net gain for tenant households after utility bills? How many small landlords borrowed safely, and how many became overleveraged? The announced R1 billion programme offers an opportunity to test these outcomes as lending and construction proceed. India's vacant stock illustrates why even a completed dwelling may fail to become usable rental supply.

Vacant housing and rental demand in India

Vacant homes and unmet demand can coexist when legal risk, location, or operating conditions prevent letting. Census 2011 recorded roughly 11.09 million vacant urban census houses. The figure is old and its category includes dwellings that may be poorly located, unusable, unfinished or otherwise unavailable for rental; it should never be read as 11 million immediately habitable units. OECD analysis drew attention to the concentration of vacancies in peripheral developments with weak transport and services. Both geography and law can keep a building vacant even while workers crowd into central rooms.[R202] A careful empirical study by Sahil Gandhi, Richard Green and Shaonlee Patranabis used district panel data and changes in rent-control provisions in four Indian states. It found that restrictions on rent revision were associated with an additional 2.8-3.1 percentage points of vacancy. The authors modeled a possible 7.5 percent reduction in the housing shortage in reforming states, with faster contract enforcement also linked to lower vacancies. The result concerns legal and judicial incentives; it does not imply that removing tenant protection alone will make housing cheap. The

vacancy measure pools several forms of vacancy, and model estimates require care in new places.[R203] Refurbishment and rental-conversion programmes need to resolve those specific obstacles.

Rental conversion requires a viable agreement over ownership, refurbishment, operation, and demand at the site. The Model Tenancy Act, approved in 2021 for states to adapt, seeks clearer rental contracts, rules for deposits and faster dispute resolution. Because tenancy law depends on state legislation, the national model has no uniform automatic effect. The Affordable Rental Housing Complexes programme seeks to put publicly funded vacant housing into rental use and to stimulate purpose-built rental stock on other land.[R204][R205] The programme's official public-housing conversion page currently lists 83,534 government-funded vacant houses as available for its first model and 5,783 as converted, about 6.9 percent of that administrative pipeline. Those figures are a web snapshot accessed in October 2026; they do not establish how many converted units are occupied, in which locations, or by what income group. The page itself shows large nominated stocks in Delhi and Maharashtra with no conversions recorded in the summary. The basic institutional obstacles include who holds the asset, the cost of refurbishment, the ability to bundle it into a viable operating contract, and demand at the actual site.[R204] The test is whether a household can use the resulting home without losing access to work.

An empty apartment is an asset with a location, a claim, a repair bill and a future operating duty. A rental project works when the owner, contractor, municipality, operator and tenant can sign a credible contract for those facts. A national dashboard that counts conversions cannot reveal the household value of a unit if its commute makes a job impossible. That use also depends on legal protection that supports tenants without unnecessarily withdrawing supply.

Tenant protection and rental supply

Tenant protections should be assessed together with landlords' maintenance, entry, and withdrawal decisions. Landlords need predictable possession rules, rent collection and a credible way to resolve disputes. One-sided systems can unravel. When a landlord expects a five-year court struggle over a room, keeping the unit vacant may be rational. When a tenant expects expulsion after a repair request, reporting a dangerous building may be irrational. The sustainable agreement separates three functions. First, set clear written rights: habitability, notice, deposits, repairs, rent changes and lawful eviction grounds. Second, make small disputes fast and affordable: mediation, an accessible tribunal, inspection and enforcement. Third, expand supply so market tightness cannot erase statutory rights. Rent stabilization for incumbents may prevent displacement; controls that destroy returns to new safe rental units can shift investment away from the sector. Design and context determine the net effect. The Indian evidence supports measuring legal risk and household welfare as distinct outcomes.

Rental reform needs separate measures of vacancy, supply, and tenant welfare. The Indian vacancy evidence identifies a real supply response to legal risk. It does not establish that weak protection is welfare-improving. A proper analysis must value the landlord's willingness to rent, the tenant's stability and bargaining power, and the fall in overall rent if new supply enters. The evaluation should report all three outcomes rather than infer tenant welfare from supply alone. Advance-rent requirements create another barrier that operates through household liquidity rather than the monthly rent alone.

Advance rent payments in Accra

Accra's advance-rent system finances landlords partly through tenants' upfront payments. A low-income worker can afford monthly rent and still fail the entry test. Landlords often demand one or two years of rent before handing over a key. A 2024 mixed-methods study of 362 Ghanaian renters found

the norm of advances of two years or more created repeated borrowing pressures and disrupted savings. Section 25(5) of Ghana's Rent Act distinguishes monthly or shorter tenancies, for which more than one month in advance is prohibited, from tenancies exceeding six months, for which the limit is six months. The cited news report describes officials announcing renewed enforcement of the six-month ceiling for longer tenancies beginning in April 2026; evidence that the new enforcement has changed market behavior remains limited.[R206][R207] If monthly rent is GHS 1,000, a two-year advance requires GHS 24,000 before moving. Six months requires GHS 6,000. The difference, GHS 18,000, is a liquidity barrier, equal to eighteen months of rent. This calculation does not imply that the landlord loses GHS 18,000 in economic rent. The landlord loses access to an interest-free pool of working capital and transfers financial risk back onto itself. Removing that requirement needs an alternative way to finance the transition and enforce the new terms.

A prohibition without replacement credit can push the same demand into illegal fees, higher rent or tenant selection. A package to test would enforce the applicable cap, assess whether working-capital finance against verified leases reduces rent advances, support deposit escrow, and resolve arrears disputes while protecting tenants from summary eviction. The fiscal question then becomes whether government should subsidize the transition, and whether tenants receive the savings. Safety upgrading presents a similar need to make compliance practically feasible rather than rely only on prohibition.

Improving safety in stages

Staged safety improvement should distinguish immediate life-safety requirements from upgrades that can be sequenced. A more useful choice is an ordered set of safety duties. Small rental buildings that pass structural and site-safety screening may be improved in stages. Prioritise immediate risks to life while setting deadlines and funding for the remaining work. A weak foundation cannot safely carry a subsidized extra floor. A single exit cannot safely evacuate a crowded tenement. A water tap connected to a failing sewer can increase exposure to disease. Begin with a risk screen before inviting investment: floodway, industrial hazard, unstable slope, fire access, electrical load, structural capacity and contested rights. A red life-safety condition triggers urgent enforcement and a credible housing alternative. For other buildings, the city can offer standard designs for one, two or three floors; pre-approved reinforcement details; a licensed engineer's inspection at critical stages; tested materials; and an accessible permit for a modest improvement. The next stage brings separate metering, toilets, drainage, ventilation and durable weather protection. Builders need a published route through those stages, with evidence on what each improvement achieves.

A usable compliance schedule should specify duties, costs, inspections, and the outcomes supported by the evidence. Requirements designed for large towers may make compliance infeasible for a small rental extension. Keep structural and life-safety requirements enforceable, and allow dated improvement plans for other defects where law permits. Independently inspect decisions where officials retain discretion to demand additional work or fees. Randomized shelter evaluations distinguish physical improvements from income effects. Randomized evaluations of basic prefabricated shelter improvements in El Salvador, Mexico and Uruguay found higher housing satisfaction and general well-being, with improvements in child health in two settings. The researchers found no consistent employment or durable-goods gains. These studies support housing and well-being benefits without establishing general wage or neighbourhood-service gains.[R208] Shelter improvements should not be treated as proof that a complete rental-upgrading package will raise livelihoods.

Stage	Public obligation	Small-builder obligation	Tenant safeguard
0 Map the claim	Record land, occupiers, tenants, risk and service capacity	Disclose rooms and intended use	No registry shared for eviction without due process
1 Prevent catastrophe	Fire access, hazard rule, independent inspection	Load-bearing safety, wiring, exits, drainage	Emergency remedy and temporary shelter if unsafe
2 Connect and improve	Predictable utility connection and standard plans	Ventilation, sanitation, repairs and materials	Written terms, notices, rent disclosure
3 Add safe rooms	Quick permit, staged finance, verification	Engineered extra floor and compliant meter	Rules for displacement during works
4 Sustain the asset	Tax, inspections, services, complaint path	Maintenance reserve and tenancy records	Renewal rights and remedies

These shelter studies do not validate a complete rental-upgrading package. Accra's advance-rent barrier remains even when construction becomes cheaper, and physical improvements need not raise earnings. Set separate objectives for safety, affordable entry and livelihoods, then judge each against the evidence. [R208, R206, R207] Additional safe rooms also need an area-level service plan.

Density and municipal services

Small rental growth uses shared municipal capacity and requires a fair rule for network costs. Its owner may receive more rent and pay more property tax. Yet water and sewer networks may have been designed for a single house. Municipalities often treat incremental rental construction as a private land-use matter and omit its future load from service planning. Service plans and budgets should record that additional demand. The fiscal solution has three parts. First, forecast people and water use from observed structures and tenancy counts, with a check on whether satellite imagery mistakes storage sheds for dwellings. Second, publish a neighbourhood capacity schedule for sewer, electricity, water and access roads. Third, pair extra legal building rights with targeted network upgrades and a transparent tariff or development charge. Charging the first compliant builder the entire cost of a trunk main would punish compliance and reward those who built earlier without permission. An area agreement can spread those costs without penalising the first builder who seeks compliance.

Area-level agreements can share network costs while keeping maintenance duties explicit. City and utility fund common capacity. Builders fund fair local connection costs. Tenants pay a regulated, metered service bill where possible. National government can pay performance grants for verified additional safe rental rooms and connections, especially when municipalities bear costs while the metropolitan labor market gains workers. Plan operations before construction begins. A new block of six rooms adds solid waste, wastewater, roof runoff, fire load and potential arrears. A permit should specify who maintains each common part and what reserve pays for replacement. Link room counts and asset records to funded maintenance responsibilities. Service access alone will not resolve discrimination in who can rent the improved rooms.

Discrimination in low-cost rental markets

Low rents do not establish accessible housing where landlords or allocation practices exclude particular households. Some landlords refuse Muslims, migrants, unmarried adults, single women,

people in stigmatized occupations or those lacking formal pay slips. In Delhi and its suburbs, a controlled online rental audit found a 35 percent landlord response rate for upper-caste Hindu applicants and 22 percent for Muslim applicants. The study did not find equally clear callback penalties for Scheduled Caste or Other Backward Class names in that design. It measured first contact; it did not observe final lease awards.[R276] Exclusion works through discretion at several gates. A broker withholds a listing. A housing society adds a membership rule. A lender treats cash wages as unreliable. A utility refuses a meter to an occupant without title. A public programme counts a sanctioned unit before learning who is allowed to occupy it. These separate choices cumulate into segregation. Supply support and enforceable rights must address those barriers together.

The housing-policy remedy needs supply and rights together. Require nondiscriminatory rental listings and written reasons for refusals in public-assisted housing; test landlords and brokers through lawful audits; allow alternative income evidence; provide a confidential complaint path; and ensure migrant households can access services without surrendering personal information to their landlord. Tenure security for the structure owner should never become a license to evict the sitting tenant after public upgrading raises value. The resulting reforms will redistribute income and discretion among landlords, tenants, and agencies.

Sequence improvements around viable projects and resident rights

Sequencing support and enforcement

Begin with local layouts, tenant conditions, and service capacity while retaining essential safety standards. Use targeted grants for non-recoverable safety or network costs and loans only where realistic cash flows support repayment. Municipal building control and utilities must offer a usable compliance path; tenant dispute resolution must remain accessible. Track safe occupied rooms added or retained, rent changes, closures, original tenant retention, service reliability and borrower distress. A city can move quickly if it separates evidence gathering from punitive enforcement and publishes a predictable path to compliance. The first ninety days should produce a representative room-and-tenant sample, a map of severe hazards, a count of eligible plots within existing infrastructure, and a cash-flow model for small landlords. It should also identify who profits from current informal water, power and permit markets. A sample based solely on advertised online listings will miss the poorest renters. The pilot can then test a limited set of approved designs, inspections, and recognition procedures.

Pilot expansion should follow demonstrated inspection and delivery capacity rather than a fixed calendar. Over the next 120 days, the city can designate pilot areas, approve a limited set of safe standard room and stair designs, publish utility capacity and fees, recruit qualified local inspectors, and open a voluntary tenancy-recognition channel with strong privacy safeguards. Treasury can offer temporary, conditional support for fire egress, sanitation and structural safety. Lenders can pilot staged loans with independent certification, clear repossession rules and a limit on landlord indebtedness. Tenants need funded grievance support from the first day. In the following twelve months, verify changes against comparison areas or a credible phased rollout. The indicators should include rental additions, net rent and utilities, occupied room-months, tenant turnover, structural defects, fire incidents, the share of units with safe sanitation, water uptime, permit time, lender losses and public cost per additional safe home-year. Monitoring displacement is essential: a project can improve average quality by forcing out the poorest residents. Pre-agreed stop rules are needed if rents, evictions, defects, or collection practices worsen.

A pilot should stop expansion when rents rise sharply, tenant evictions increase, safety inspections fail or collection complaints indicate unlawful or coercive practices. It should expand when additional occupied rooms appear, habitability improves, and the combined cost of rent, utilities and travel remains within the target household's means. Publish the stop and expansion criteria before the pilot begins. The assessment framework should make those conditions visible before approval.

Implications for incremental housing

Supporting existing producers requires testing the combined effect of rules, finance, services, and protection on safe affordable occupancy. Millions of households already create housing in small decisions, close to work, with risk and finance distributed across family, tenant, supplier and landlord. Governments can make those choices more productive by supplying rules, networks, credit and enforceable rights. They can also reduce supply by trying to replace every existing room with a complete formal apartment and a mortgage. Small rental housing supplies needed rooms but can expose residents to unsafe buildings, unreliable services, and insecure occupancy. Evaluate improvements against both the housing supplied and the risks residents bear. The proposed sequence is as follows. Legal small-scale density raises potential supply. Predictable permits and verified engineering lower construction risk. Staged credit reduces liquidity barriers. Funded utilities make added rooms habitable. Enforceable tenant rights can help tenants retain benefits. Protected administrative data and aggregate reporting can support oversight. Test whether the combined reforms add safe, affordable occupancy, rather than assuming each proposed link works in the city concerned. That package must change the incentives sustaining poor conditions rather than assume they will disappear after registration.

Persistent unsafe housing reflects the options available to participants, which reform must change without removing affordable access. Households accept insecure rooms to stay near work; landlords supply what those rents can finance; officials may tolerate non-compliance because enforcement would remove shelter without replacing it. Changing one rule can leave the other incentives intact. A title alone will not make a costly building standard affordable, and cheap credit will not create a legal service connection. Use a function-by-function transition plan. Preserve small payments, incremental investment, rental flexibility, and access to customers where residents value them. Remove unsafe wiring, fire traps, coercive eviction, contaminated water, and arbitrary extraction through funded, enforceable measures. For each requirement, identify the improvement cost, who pays, the likely rent response, and the option for a tenant who cannot absorb it. The South African backyard-rental and Indian incremental examples in this chapter are tests of this transition, not reasons to romanticise informality. Fieldwork should therefore measure both production and the tenancies retained after improvement.

Treat small rental producers as part of the formal supply strategy

Rental markets and municipal policy

Municipal rental policy should improve entry, habitability, and security while keeping additional supply and maintenance financially viable. Diagnose the local barriers facing tenants and producers before choosing regulation, credit, or subsidies. The municipality then needs responsibilities and revenue consistent with the density and services it permits. Evidence on rental occupancy establishes the scale of that task.

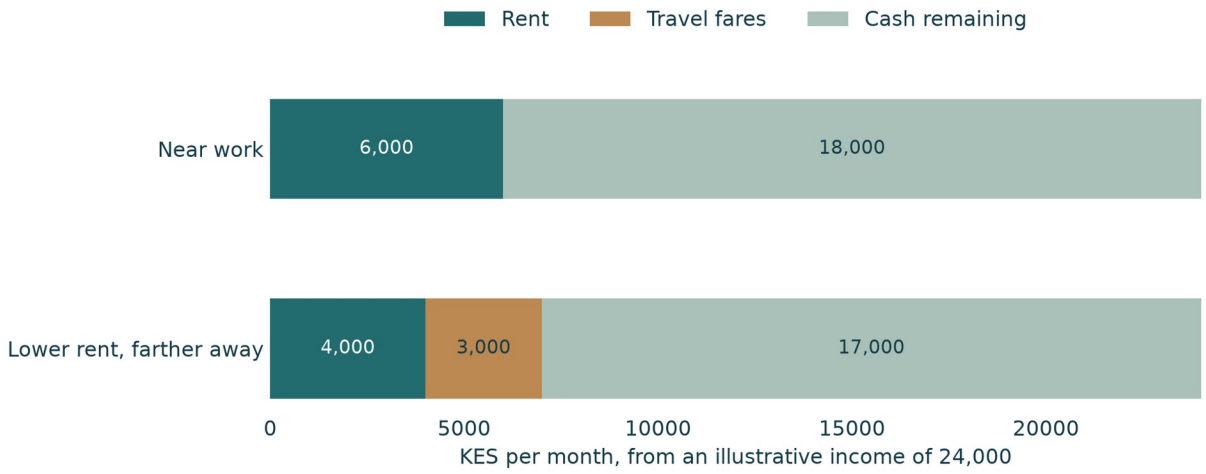
Nairobi's rental evidence makes tenancy central to housing policy while leaving the effect of job proximity to be tested. The Kenya National Bureau of Statistics' 2015/16 household survey put the

share of rented dwellings in Nairobi at 86.4 percent. India's 2018 National Sample Survey found that 63.8 percent of urban households occupied a dwelling they owned, leaving a large minority with some other tenure arrangement. South Africa's 2022 census recorded 23.2 percent of households renting nationwide and 36.6 percent in Gauteng, its main urban jobs region [R310, R311, R312]. Different dates, definitions and geographies limit comparison. The figures show that renting is a major housing tenure in these locations. They do not, by themselves, establish how proximity to employment affects rental demand. Different household needs require rental products and protections suited to their circumstances.

Rent purchases shelter, services, location, and security whose combined value differs across households. The first is shelter: floor space, roof, ventilation, water and safety. The second is location: access to work, school, care, customers and transport. The third is flexibility: the right to leave without selling a large asset. The fourth is protection against risk, including eviction, service failure, violence and unpredictable charges. A low rent can conceal a large cost in travel time, illness, danger or insecurity. Equally, a modest room near work may yield better household welfare than a spacious subsidised flat far away. Residual income after these costs provides a more useful affordability test than rent alone.

A useful starting measure is the residual income after housing and access, not an isolated rent-to-income ratio. Suppose a worker earns KES 24,000 a month. A room at KES 6,000 within walking distance of work, with no commuting fare leaves KES 18,000 before utilities and other essentials. A room at KES 4,000 that adds KES 3,000 in fares and two hours of unpaid travel a day can be economically dearer. These figures are an illustration; household surveys must measure the actual trip pattern, including the value of time, uncertain earnings and the cost of childcare. A fixed 30 percent affordability rule is a screening device. It is a weak substitute for estimating whether a household can pay for food, transport, education and emergencies after its rent. Landlords need a corresponding calculation of income, costs, and risk for the product being supplied.

Figure 7.2. Lower rent can be offset by transport fares



Author's hypothetical calculation using the rent and fare assumptions in the text. These are not observed Nairobi market data.

Different landlord types require different financial and regulatory responses. Contract rent becomes cash only if a unit is occupied and payments arrive. Gross receipts must cover cleaning, security, repairs, water shared in common areas, waste, insurance, property charges, arrears and periodic roof or pipe replacement. Debt is paid from the remainder. Lenders and tenants both need to test whether payments remain manageable in costly or low-income months. Ignoring these cash-flow risks can leave a project unfinanceable or require rents beyond the intended households' means. There are at least four rental submarkets in an African or Indian city. A room in an informal settlement may rest on

disputed land and be let by a structure owner who has no title. A backyard room may sit behind a formal homeowner's house. A small walk-up block may have permits and utility connections but depend on an individual investor's savings. A social rental estate may use public land, capital grants, regulated rents and professional management. Each has different costs, tenants, collateral, political power and enforcement risks. One law and one credit product cannot serve all four equally well. The city needs tenancy information as well as ownership records to assess those responses.

Exhibit 7.1. Rental market segments

Segment	Real constraint	Who may take the gain	Main tenant risk
Informal settlement rooms	Disputed land; unmetered utilities; weak proof of tenancy	Structure owners; intermediaries; informal water sellers	Eviction; high utility mark-ups; fire and flood
Backyard rooms	Serviced plot; plans; staged building credit	Existing homeowner; land seller; contractors	Crowding; unequal bargaining; overburdened services
Small formal walk-ups	Land, approvals, long-term debt and lease-up	Micro-developer; bank; landowner	Higher asking rents; screening and deposit costs
Regulated social rentals	Public land/subsidy; professional management; collections	Tenant where subsidy is enforced; otherwise suppliers	Allocation bias; poor upkeep; insolvency

Rental policy requires information on actual tenancies as well as ownership. A property map can reveal a roof and sometimes its floor area. It does not reveal the number of paying households, the chain of subletting, the rent, the arrears history, the condition of a toilet, or whether a tenant can leave safely. These are facts that households and landlords may have reasons to conceal. A programme that equates registered ownership with housing need risks excluding tenants or directing benefits to owners whose needs differ. South Africa’s small-producer experience shows how these relationships shape financing and construction.

Small landlords as housing producers

Small-rental production depends on staged finance, local relationships, and enforcement arrangements that must be examined rather than idealised. A homeowner trades some yard space, privacy and construction savings for monthly income. Jan Brueckner, Claus Rabe and Harris Selod used a model and satellite-derived counts of backyard structures to test this choice; they found results consistent with more backyarding where jobs were easier to reach [R313]. Their finding is evidence about the association predicted by a model, rather than proof that any given planning relaxation will create a specified number of safe rooms. It does identify the scarce good many tenants pay for: proximity to work. Field research by Scheba and Turok finds a sector that can improve physical buildings as informal landlords reinvest rental proceeds. It also documents persistent safety, infrastructure and legal risks [R314]. Research in eight Cape Town neighbourhoods finds that family ties, safety and relations between homeowners and tenants affect the market alongside rental yields [R315]. A landlord may accept a relative who pays late; another may select tenants perceived as less likely to challenge authority. The financial model must therefore include trust and informal enforcement without assuming that these arrangements are fair. Public support should then be judged by additional safe occupied rooms rather than participation alone.

Lower entry barriers should be evaluated through net additional affordable and compliant occupation. Cape Town approved a R20 million Development Charges Fund in March 2024 for qualifying micro-developers in 194 targeted lower-income areas. Its stated design covered 50-90 percent of applicable development charges for developments of three to 30 units, subject to readiness conditions [R316]. In August 2025 the city gazetted planning amendments, with the new affordable-rental-flat provisions taking effect in September. In designated areas, the 2025 framework enabled up to eight small rental units alongside a house, or twelve where there was no main house, subject to conditions [R317]. These are policy provisions, rather than measured housing outcomes. The net addition of occupied, affordable, code-compliant units must be measured separately. Predictable rights can change land values and returns as well as the number of rooms built.

Permission and finance affect the distribution of benefits through supply response and market power. Relief from a development charge cuts the cash needed before rent begins. Technical support can lower the cost of meeting fire, structural and service rules. Together, they may shift investment from one informal room at a time to a safer, planned building. Yet several claims compete for the saving. The homeowner may keep a higher return; the seller of a well-located plot may raise its asking price; contractors may charge more; or tenants may see lower rents if other landlords can also build. The distribution depends on supply response and market power, not on the programme's intention. Producer coalitions therefore need tenant participation when rules are designed and reviewed.

Cape Town's micro-developer coalition illustrates an institutional route for smaller producers to influence municipal decisions. A 2025 study of Cape Town's emerging micro-developer alliance describes a coalition of small property entrepreneurs, civic groups, officials and other specialists that opened channels into municipal decision-making [R318]. Such representation can affect which proposals officials consider. Larger developers may have more resources to prepare projects and seek changes to rules, while small builders may have limited contact with officials outside inspections. Organised micro-developers can make a credible case for clear rules, affordable finance and safe infrastructure. Tenant organisations should participate in setting and reviewing the rules so that the reform addresses tenant interests alongside those of property owners. Access to credit remains a separate constraint requiring a viable project and shared lender risk.

Guarantees can help a sound small-rental project cross a funding barrier but cannot make its rents viable. Interviews with South African small-scale developers reported by Viruly and co-authors, and further work published in 2026, identify lending products poorly matched to how these builders acquire land, construct in phases and collect rents [R319]. A conventional mortgage finances a finished asset against a salary or title. A small landlord needs staged construction money before the completed rooms generate cash. The lender must understand permits, cost overruns, lease-up, payment histories and a possible title dispute. Short unsecured loans force high monthly debt payments; expensive equity pushes up the rent needed for a project to proceed. A guarantee cannot make an unviable project viable or provide missing utility capacity. It can help a sound project cross a collateral or tenor barrier if the lender shares losses and has reason to monitor it. A worked building account shows where that distinction matters.

Financial model of a twenty-room building

A rental appraisal should test debt coverage at affordable rents before assuming that credit will unlock construction. Take a hypothetical twenty-room building on a small urban plot. The owner already holds the land. The proposal costs KES 16 million in construction, service connections, design, compliance, contingencies and initial letting expenses. The land could be used for another purpose and has an assumed economic value of KES 4 million. Thus, the full economic investment is KES 20 million even though the new cash outlay is KES 16 million. None of these amounts is a market estimate for

Nairobi. They are deliberately transparent assumptions for testing a deal. The owner secures a hypothetical KES 6.4 million construction-to-term loan, equal to 40 percent of the new cash cost. Suppose the lender agrees to a fixed 12 percent nominal annual rate and fifteen years of level monthly payments. Monthly debt service is about KES 76,811. Assume 92 percent physical occupancy and an operating-and-renewal provision of 25 percent of rent actually collected. At KES 6,000 per occupied room, annual rent collections are KES 1.3248 million; monthly net operating income after costs is KES 82,800. Debt-service coverage is only 1.08. A bank asking for 1.25 coverage would reject the project at this rent even before testing the landowner's return. The owner's equity and land contribution must also be included in the return calculation.

Exhibit 7.2. Illustrative cash flow for a twenty-room building. Assumptions, not a Nairobi market survey.

Monthly rent	Occupancy / costs	Monthly NOI	Loan payment	DSCR
KES 6,000	92% / 25%	KES 82,800	KES 76,811	1.08
KES 7,500	92% / 25%	KES 103,500	KES 76,811	1.35
KES 8,500	92% / 25%	KES 117,300	KES 76,811	1.53
KES 7,500	80% / 30%	KES 84,000	KES 76,811	1.09
KES 6,000 + KES 3m capital grant	92% / 25%	KES 82,800	KES 40,806	2.03

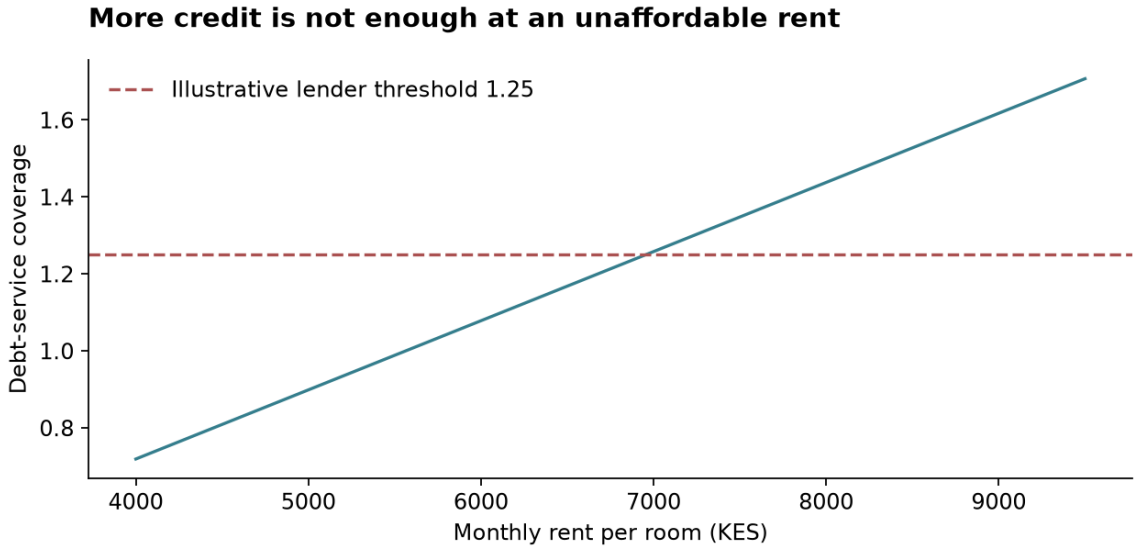
NOI = collected rent after operating and renewal provision; DSCR = NOI / debt service. Base loan: KES 6.4m at 12% nominal with 180 equal monthly payments. Grant case replaces KES 3m of debt. All values rounded.

Project returns should account for land, equity, delays, and operating costs alongside loan payments. The owner has KES 9.6 million of cash equity in the build plus KES 4 million of land at risk. At a rent of KES 7,500, net cash after debt service is about KES 320,000 per year, before income taxes and any major surprise. That is roughly 2.4 percent of the KES 13.6 million owner contribution on a simple annual cash basis. Debt principal repayment adds equity over time, and land values can change; these benefits remain outside the cash-yield measure. The calculation explains why credit availability alone may yield little low-rent supply. With the assumptions above, rent must reach roughly KES 6,958 for debt-service coverage of 1.25. That is 29 percent of the illustrative KES 24,000 income, before utilities. If occupancy drops to 80 percent and operating costs rise to 30 percent of collections, a rent of KES 7,500 produces coverage of about 1.09. A six-month construction delay on the original KES 6.4 million loan adds roughly KES 384,000 in simple interest at 12 percent, before capitalised fees and inflation. Administrative delays increase financing costs and can create pressure to raise rents or reduce construction spending. A capital subsidy can then be evaluated by the obligation it removes and the benefit it purchases.

A grant replacing debt can change cash flow, but its accounting cost per home-year is not proof of additional impact. Now suppose the public sector contributes KES 3 million as a one-time, verified capital grant and requires it to replace debt rather than private equity. Loan principal falls to KES 3.4 million and monthly debt service to about KES 40,806. At KES 6,000 rent, coverage rises to 2.03. Yet the grant may simply lift the owner's return if rents are left unregulated. The public investment works only if the project is genuinely additional, rents are capped for a stated period, maintenance is funded, selection is fair and repayment or clawback follows breach. Over ten years, KES 3 million spread mechanically across twenty rooms amounts to KES 1,250 per potential room-month before discounting,

vacancy or displacement. That accounting figure is a way to compare instruments, not proof of impact. Tenant-side assistance provides an alternative that should be compared under the same assumptions.

Compare producer and tenant support through additional access, public cost, risk, and the capacity to sustain supply. Compare a tenant-side payment of KES 1,500 a month for twenty eligible households over ten years. Its undiscounted cost is KES 3.6 million; discounted at an illustrative 5 percent annually with payments at year-end, the present value is about KES 2.78 million. A capital grant and a rental voucher have different uses. A supply grant might create stock where a building otherwise fails to clear the financing threshold. A voucher can help families choose from existing safe units where vacancies and landlord participation permit. The public buyer should fund the constraint it can identify, and test whether the benefit reaches tenants rather than being absorbed in land prices or higher rents. Cheaper blocks or prefabricated walls change one component of KES 16 million. Savings help most when land, permits and infrastructure remain available and competing builders can enter. A digital design tool that cuts errors by a measurable percentage may improve the cash flow; it cannot repair an absent sewer, confer title or guarantee that the landlord offers an affordable lease. Chapter 8 will address these financing and risk-sharing choices across ownership and rental housing. India's migrant-rental programmes illustrate why available units and administrative allocations can still differ greatly.



Teaching figure 5. Twenty-room teaching model: 92% occupancy, 25% operating and renewal provision, KES 6.4 million loan at 12% nominal over fifteen years. No claim about a real lender's threshold.

Compare policy choices through access and supply

Rental housing for migrants in India

Migrant rental programmes require agreements over operating losses, eligibility, and complaints as well as identified buildings. The government responded in 2020 with Affordable Rental Housing Complexes (ARHCs). One model sought to convert existing government-funded vacant homes through public agencies or partnerships. A second supported construction and operation on public or private land. The official scheme envisaged one-bedroom units and dormitory beds, with rental use preserved for at least twenty-five years [R320]. The stated beneficiaries included industrial workers, street vendors and other low-income urban migrants. The conversion model offered a logical agreement: government-owned units already stood vacant, and workers needed somewhere to live. But a vacant flat has little value to a worker who cannot afford the journey to a job, cannot assemble the deposit or would

be separated from co-workers. The costs of retrofitting, operating shared areas, screening residents and managing turnover still have to be paid. An allocation plan must therefore identify who will cover operating losses, decide eligibility and resolve complaints. Allotment figures help reveal how much of the identified stock has entered use.

Vacant government stock should not be counted as effective rental supply before it is made usable and allotted. A written parliamentary reply reported in December 2024 indicated that 5,648 units from the stock of 83,534 identified vacant government-funded houses had been allotted to migrant workers - about 6.8 percent of the identified stock. This is a dated administrative snapshot, not an occupancy estimate for all ARHC models or for 2026. The same reporting distinguished new-build sanctions and completions from converted and allotted stock [R321]. The large gap between identification and allocation points to a series of gates: legal control, conversion cost, tenders, usable services, local demand and the authority to allocate and manage tenancies. Counting identified stock as housing supply would obscure all of them. New rental programmes must assess the destination's services and suitability for intended residents.

Rental design should be tested against transport, safety, work schedules, and household use rather than bed counts alone. PMAY-Urban 2.0, approved in 2024, retained an Affordable Rental Housing vertical alongside beneficiary-led construction, partnership housing and interest subsidies. The current official design recognises urban migrants, women workers and the need for civic and social infrastructure [R322]. Its results will depend on whether states and cities can identify employment-linked sites, package viable management contracts, keep rents affordable and measure actual occupied room-months. A lease for a dormitory bed entails different privacy, safety and gender needs from a family home. A design that optimises the number of beds can still fail for women working late shifts if transport and security are missing. A lawful tenancy must also be inexpensive enough to obtain and enforce.

Employment-linked housing should be tested for the consequences of losing or changing a job. Before endorsing an arrangement, ask what happens to the family's right to stay, charges and deposit when employment ends or the worker changes employer. Is there a defined transition or alternative accommodation arrangement, and an accessible grievance route independent of the employer? These are proposed safeguards to assess against the contract and applicable law, not claims that universal legal rights already exist.

Rental-law implementation should be assessed through the time, cost, and accessibility of obtaining a remedy. India's 2021 Model Tenancy Act proposes written agreements, security-deposit limits, specified obligations and dedicated rent authorities and courts [R323]. It is a model circulated for state adoption, without automatic force across India. Government statements in December 2023 reported that four states had revised tenancy laws along its lines; adoption and operational performance must be checked state by state [R324]. Even where registration is mandatory, a contract that requires a landlord and tenant to navigate an expensive process may push low-value tenancies further off the record. A useful implementation test is how much time and money a woman renting one room spends to obtain, enforce or terminate a lawful agreement. Transitions from older regulation need particular protection for vulnerable sitting tenants.

Rental reform should fund repairs and protect vulnerable incumbents while giving new investment clear rules. Tandel and co-authors describe how stringent historical rent controls protected incumbent tenants while reducing incentives to maintain buildings and invest in new formal rental supply. Informal key-money transactions and other workarounds emerged [R301]. The study is a detailed institutional and historical analysis, not a causal estimate of the size of the supply loss. It nonetheless identifies a credible mechanism: when rents cannot cover renewal costs and contracts are

hard to adjust, owners try to avoid the regulated activity. Removing protection overnight would shift the cost onto incumbents who have built their lives around an old contract. A feasible reform needs a transition that protects vulnerable existing renters, finances building repairs, and gives new rental investments clear rules. South Africa's informal and regulated sectors show why several production and operating models may coexist.

Two rental housing systems in South Africa

South Africa's Social Housing Regulatory Authority publishes a standard Consolidated Capital Grant of R426,308 per unit, subject to project assessment and affordability-mix adjustments. This is a grant quantum, not the full development cost. A project budget must separately price land, construction, infrastructure, debt and operating requirements; an older total-cost benchmark cannot be combined with a newer grant to infer the public share. [R079]

Evaluate rental models by occupied safe homes, household costs, location, tenure, and public cost per year of use. South Africa's Department of Human Settlements reported 1,364 social rental units delivered in FY2024/25 against a target of 2,699, or 51 percent. It cited approval and contracting delays, difficulty securing debt, bulk-service availability and construction-cost pressures. Institutions also tenanted 2,661 units against a distinct annual tenanting target; those tenancies can include units completed in earlier periods [R325]. Targets, completions and letting therefore describe different processes. They cannot be combined into a single conversion rate. Regulated estates and backyard rentals require different forms of oversight. A well-managed regulated estate can give tenants predictable repairs and an independent institution to hear complaints. It can also fail if collection systems, security costs or the maintenance reserve weaken. An informal landlord may build quickly and know every tenant; that same personal control can turn into harassment, discriminatory selection or unsafe repairs. A city needs multiple tenure options and different oversight instruments. It should evaluate each by a common set of outcomes: occupied safe homes, rent-to-residual-income, location, tenure security, service uptime and the public cost per year of occupancy. Distressed operators also need a credible agreement on utilities, payment, and dispute enforcement.

Operating stability requires reciprocal duties from rental providers, residents, and public agencies. The 2025 national policy statements acknowledged rent boycotts, criminal interference with construction and the need to stabilise distressed rental institutions [R326]. These problems require attention to revenue collection, service performance and lawful enforcement. A capital grant cannot protect a lender if a building cannot collect revenue. Enforcing payment obligations also requires a process for resolving documented service failures. A landlord who receives public support should therefore accept transparent billing, independent complaints, audited reserves and a tenant voice in service decisions. The public agency must in return provide predictable utility service and dispute enforcement. The ordinary lease should therefore be supplemented by clear municipal service responsibilities.

Tenant rights and municipal responsibilities

Rental governance should include service duties and accessible receipts and remedies for households without digital access. A city requires the landowner to pay for bulk water and sewer connections. A landlord passes part of the charge through rent or a separate utility bill. Tenants may pay an informal reseller above the utility tariff and still receive poor service. When a toilet backs up, the resident blames the landlord; the landlord blames the utility; the utility says the drain is private. Each actor may have a technically defensible account of why it has failed to act. For small rental blocks, link the lease to an agreement on service responsibilities. The owner should demonstrate lawful control of the land, structural and fire safety, capacity for water and sanitation, metering arrangements,

maintenance responsibility and a route for complaints. The municipality should disclose the network's spare capacity, connection time and charge before a builder commits money. Tenant notices should state the rent, deposits, separate utility charges, annual adjustment rule, service standards and a dispute route in a language the resident understands. Digital payment records may strengthen proof of tenancy and income. A paper receipt and an offline appeal must remain legally effective for tenants without a bank account or smartphone. Compliance and additional network costs need a proportionate financing rule.

Share compliance and service costs so that neither newcomers nor existing households face an unworkable burden. A building permit that costs the same administrative effort for six rooms as for six hundred will deter the small investor. Proportionate, risk-based standards can protect residents while allowing standardised plans, staged inspections and shared technical assistance. Structural calculations, fire egress and sanitation capacity still require professional judgment; a planning amnesty alone cannot make an unsafe building sound. Municipalities can pay part of the cost of network upgrades where the public benefits from density. They must then decide how to share those costs among old and new households so established owners do not subsidise newcomers indefinitely and newcomers are not priced out before moving in. Affordability conditions attached to public support should be distinguished from general rent regulation.

Publicly purchased affordability obligations and market-wide rent ceilings are different instruments with different supply effects. A city can allow more rooms near transit, improve drainage and reduce development charges. Existing landowners are well placed to capture the first rise in land value. A tenant's wage does not rise when a plot's value does. To preserve a public return, cities can attach time-bound rent conditions to targeted grants, require independent verification of new units, fund portable assistance for tenants in severe need and invest in neighbourhood services with clear operating budgets. Blanket rent ceilings imposed on an expanding private market are a different instrument, with consequences for the incentive to supply and maintain space. Regulation should be evaluated separately for sitting tenants and prospective entrants.

Implement a funded municipal rental programme

Choosing the recipient of rental subsidies

Specify the constraint before choosing whether assistance should go to the tenant, provider, or service network. A family may need help with a deposit and the first three months' rent while changing jobs. Another faces a permanent gap between disability benefits and the cost of a safe room. A small developer may have enough tenants at an affordable rent yet lack a fifteen-year loan or water connection. An estate in a central location may need a land concession and operating support because commercial returns will never cover the target rent. Resolve the missing right, connection or financing gap before commissioning a new estate. Where existing supply cannot serve the intended households, price a well-located rental development and its continuing operating support.

Match the rental instrument to the barrier and disclose its valuation, enforcement, and renewal obligations. Its value depends on the landlord accepting it and on the tenant's ability to meet ongoing rent. Short-term emergency assistance can interrupt a spell of arrears after illness or job loss. A longer-lived rent supplement can stabilise very poor households while preserving choice among safe landlords. A targeted capital grant can make additional units viable, provided the state buys measurable affordability and keeps that condition on the property. A public-land lease can provide even more value, but requires published valuation, transparent award and a credible plan for renewal at the end of the lease. Evidence on long-term assistance can inform the choice without establishing identical effects elsewhere.

Rental-assistance evidence should be adapted to local supply, rents, tenancy law, and fiscal capacity. The US Family Options Study randomly assigned 2,282 families in shelters to priority access to different interventions. Long-term rent subsidies improved housing stability and other dimensions of wellbeing relative to usual care over thirty-seven months, at approximately 9 percent higher cost within the study's measured package of services [R327]. Chilean quasi-experimental research finds that rental vouchers improved housing conditions and mobility before the pandemic; receipt during the shock helped families limit debt and maintain stability, while evidence of moves to substantially better neighbourhoods was weaker [R328]. These findings establish plausible benefits for households facing large affordability shocks. Local rent levels, supply, informal tenancy law and fiscal capacity will determine whether a version works in an African or Indian city. The evaluation must then determine how much support reaches an occupied household.

The public sector also needs to know how much of each subsidy reaches the tenant. Where new units cannot be added, landlords may capture some voucher value through higher asking rents or tighter selection. Where safe vacant housing exists, assistance can raise occupancy with little new construction. Where construction is responsive, predictable subsidies may draw in new supply. An evaluation should therefore compare recipient and non-recipient rents, vacancy, construction permits, occupied units, tenant mobility and rent burden in matched places. Programme agencies often report the number of vouchers issued; an unused voucher buys no housing. Digital records and communication can help only when they resolve a specific leasing or verification barrier.

Information systems for rental policy

Use rental information systems to reduce a measurable cost or strengthen a household's evidence and bargaining position. A geospatial inventory can locate roofs, plot boundaries, flood exposure, transport and nearby utility networks. Building-permit records can identify where small additions are allowed. A tenant-friendly lease register can supply evidence of rent and deposits. Payment histories can help responsible landlords demonstrate cash flow to lenders, potentially lowering credit risk. An inspector's mobile record can link defects to accountable owners and completion certificates. These changes are useful when they lower a measurable delay, improve verification or shift bargaining power toward the household that previously lacked proof. Chile's voucher experiment tests one such information barrier.

Information assistance should be tested against landlord participation and available homes rather than assumed to resolve all take-up barriers. In a randomised evaluation of 11,149 unused rental-voucher recipients, basic information about the subsidy and lease-up steps, plus reminders, increased take-up by 6.4 percentage points in the short run, roughly 35 percent relative to the comparison level. Early reporting found effects still present after twenty-four months; richer neighbourhood information had more complex effects because finding a willing landlord remained difficult [R329]. A March 2026 Inter-American Development Bank analysis examines the heterogeneity and fiscal welfare implications of this experiment and reports improved use without higher observed rents in that setting [R330]. This supports testing information against a specific leasing barrier, then checking whether landlord participation and available homes limit further take-up. Follow-up must trace the path from a message or award to an affordable contract and continued residence.

Publish replicable aggregate evidence while protecting households and distinguishing information from completed access. An identifiable tenancy registry deserves strict limits on access and retention. Informal households must be able to contest a record without exposing themselves to enforcement retaliation. The best early digital investment may be a simple case-tracking and payment-receipt system, accompanied by a staffed desk and a clear remedy. Estimates based on weak field data need explicit uncertainty ranges and independent validation. Chile's information intervention and

Delhi's rental audit identify different points where an eligible household can fail to secure a lease. The populations and methods differ, but both require the agency to follow the whole leasing process. A successful message or subsidy award must be followed by landlord acceptance, an affordable contract and continued residence. [R329, R330, R276] A municipal pilot should establish the baseline needed to measure that conversion.

Municipal rental reform and evaluation

Adapt the pilot to actual leases and records, distinguishing new rooms, replacements, permissions, and occupied supply. Fund targeted support and inspection over time; do not use a short pilot grant to imply permanent affordability. The municipality must coordinate rental standards, landlord assistance and tenant remedies with housing-benefit administration. Track lease-up and renewal, new safe rooms, total rent and fees, discriminatory refusals, repairs and access to opportunity. A city could test these ideas through a defined eighteen-month experiment covering, for example, three well-serviced employment-linked neighbourhoods and three comparable areas. In the first ninety days, a team of planners, utilities, tenant groups, local builders and independent researchers would map existing rooms and rents, verify service capacity and identify land-tenure conflicts. The team would record the distribution of migrant status, household type and disabilities using consent-based interviews rather than inferring personal attributes from satellite images. The baseline must distinguish a new room from a replacement, and an occupied room from a permitted one. Publish the complete package of rights, charges, inspections, leases, and remedies offered to eligible plots.

A pilot package should make obligations predictable and report retention, new entry, and repairs. A financing partner would offer construction-to-term loans linked to verified milestones, with any public first-loss exposure capped and audited. Separate assistance would be offered to very poor tenants for deposits or rent, with landlords paid against verified tenancy and service standards. A local tenant body would monitor arbitrary eviction and the effect of improvements on rents. The municipality would report each quarter how many old tenants stayed, how many newcomers found rooms and which defects were repaired. Independent evaluation should compare those benefits with the full household and municipal costs.

Expand a rental intervention only when its benefits persist after costs and displacement are counted. First, did the package produce additional safe occupied room-months relative to the comparison areas, net of replacement and displacement? Second, did the monthly cost of rent, utilities and access fall for households in the bottom 50 percent of the income distribution? Third, what was the fiscal cost per safe and well-located occupied room-year, including land, grants, administration, utility capacity and expected maintenance? It should also record landlord returns, loan default, female tenants' safety, discrimination complaints and the time required to resolve disputes. The city could expand the intervention whose benefits persist after these costs are counted. The public commitment should state the specific benefit purchased and how it will be verified.

Exhibit 7.3. Rental investment assessment

Gate	Minimum evidence	Red flag that stops the deal
1 Land and services	Control and tenure checked; capacity letter from water, sanitation and power; flood and fire review	Unresolved eviction claims; no service or flood plan
2 Build and finance	Costed safe typology; stress-tested monthly cash flow; repayment and major repairs accounted for	Project survives only through unrealistic occupancy or unpaid maintenance

Gate	Minimum evidence	Red flag that stops the deal
3 Tenants and rights	Baseline of actual tenants; published rent/deposit/notice terms; accessible complaint remedy	No protection for incumbent renters or excluded groups
4 Public return	Counterfactual occupied room-years; subsidy value and clawback; independent evaluation	Public spending buys only permits, loans or registries

Specify the benefit purchased with public money, the households intended to receive it, and how delivery will be checked. Permissions, loans, and registrations are intermediate steps; the evaluation must follow their conversion into affordable occupancy. The long-term institution must sustain that benefit through maintenance and continued supply.

Institutions for rental housing

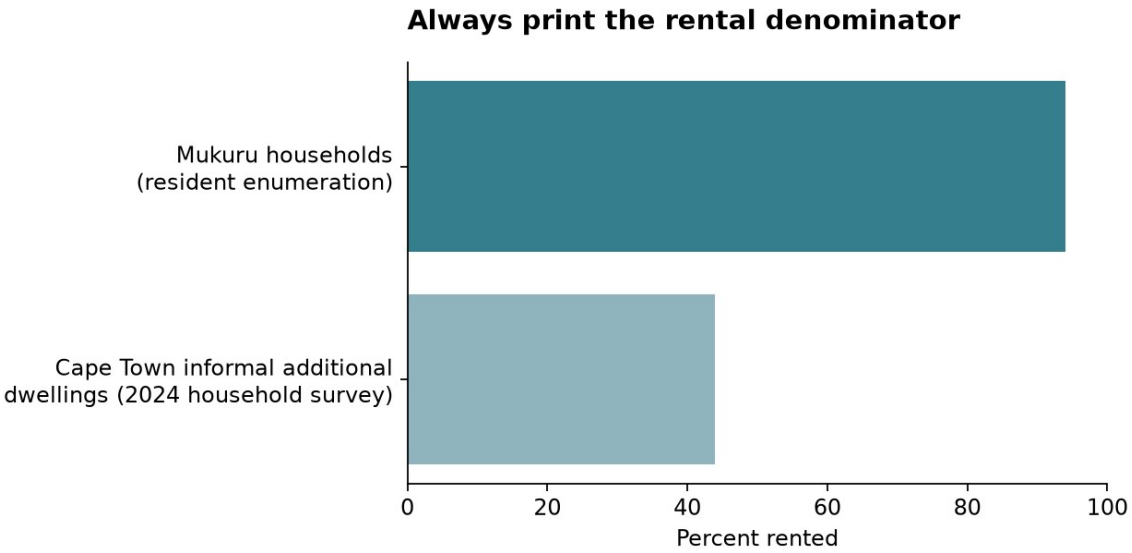
Rental institutions should support mobility and affordable entry while preserving provider viability and tenant benefits. An enforceable contract should protect a tenant's belongings and deposit, assign fire-safety and drainage duties, and establish remedies for unpaid rent and disputes over possession. Evaluate rental policy through safe, occupied, well-located housing available to low-income households. Include public land and service costs, measure benefits retained by tenants, and test whether landlords and lenders can finance continued supply and maintenance. Fieldwork should test that agreement against actual rents, costs, rights, and operating performance.

Informal rent reflects power as well as scarcity

Marx, Stoker and Suri's Kibera study reports higher rents and lower housing quality where landlords and the local chief share ethnicity. It examines patronage within a particular informal market, not an inherent characteristic of an ethnic group. This evidence changes the small-landlord account: access to authority and weak tenant recourse can shape prices and investment alongside construction costs. Tenant organisation and independent dispute resolution therefore belong in the supply model, not in an optional social appendix. [R472]

Informal landlords and the incidence of upgrading

Small landlords are a major source of low-cost urban housing and a central incidence channel for public investment. Mukuru's enumeration reports roughly 94% of households renting, while Cape Town's 2024 household survey found that 43.9% of informal additional dwellings were rented; these figures describe different settlement types, yet both show that improving a structure or service often affects a tenant and an owner separately. Rental policy therefore needs to model the landlord's cash flow, the tenant's total occupation cost, and the underlying land right at the same time.



Teaching figure 6. The cited sources describe different populations: Cape Town informal additional dwellings and Mukuru households. These are not citywide rental shares or a harmonised comparison; see the rental chapter for source dates.

Infrastructure grants can be capitalized into rent when tenants have few alternatives. Reliable water, sanitation, roads, lighting, or formalized rights raise the value of a room, and the landlord may recover part of that gain through higher rent even when the public budget paid for the improvement. A credible upgrading agreement should therefore define allowable rent and fee changes for a period consistent with local law, preserve stronger existing rights, require independent safety inspection, and verify tenant retention before the final public payment.

Landlord finance should be conditional on additional safe supply and continuing affordability. Cheap credit or grants to structure owners can expand rooms, improve fire and structural safety, and create a maintenance reserve, while unconditional support can simply improve the owner's asset value. This distinction connects informal-rental policy to the wider question of subsidy incidence and public value.

Tenure choice does not settle repayment capacity. Chapter 8 diagnoses the financing constraint; Chapter 9 then tests whether a subsidy is justified and who retains its benefit.

Selected readings

Ahmedabad relocation lottery [R076]. Read the long follow-up for housing, networks and exit outcomes among applicants; the offer and the decision to occupy are distinct.

San Francisco rent-control study [R081]. Use the incumbent-retention and rental-stock findings together; effect sizes from this market are not predictions for another city.

Collective Housing in CODI [R462]. Read the institutional account for collective tenure and upgrading arrangements; reported activity does not establish a causal welfare effect.

Judgment and transfer conditions

Rental supply and resident protection require separate accounts for tenants and owners.

Confidence: Moderate; behavioural responses differ across markets. Revisit trigger: Evidence that the chosen rules reduce safe entry or displace intended beneficiaries.

Transfer small-rental support with lawful sites, funded connections, viable finance and enforceable tenant protection. At roughly ten times the pilot scale, test safe additions, rents and retention of tenants in the bottom 50 percent. At roughly one hundred times the scale, require utility capacity, accessible dispute resolution and durable funding for continuing assistance. Expansion should pause if owner gains are accompanied by exclusion of the intended renters.

Exercise

Use the twenty-room budget to estimate the rent required for 1.25 debt coverage when occupancy falls to 80 percent. Specify a tenant protection that can be financed at that rent.

8. Housing Finance for Households and Small Builders

Which financing constraint prevents a household or producer from sustaining a viable housing investment?

Priority B requires finance that matches the next feasible building or improvement stage. This chapter tests affordability (Test 2), alternatives to debt (3) and public exposure (5), identifying where Priority C needs a grant or continuing assistance. Match finance to a safe, affordable building or improvement plan and the household's cash flow under stress. Small staged loans may fit incremental work; households unable to repay need a grant, rental assistance or another housing option. Cheaper credit alone can leave the affordability gap intact. Compare concessions at their public cost and specify who bears losses. Colombia's indexation crisis and Shelter Afrique's historical losses show why financing rules matter alongside volume.

Housing finance spreads a large upfront cost over time. A bank, housing finance company, cooperative, or microfinance institution advances money and collects repayments. This can allow a household to buy or improve a home before saving its full price, provided the payments and other housing costs remain affordable. Consider an illustrative US$10,000 loan. At 14 percent for 12 years, the monthly payment is about US$144. At 8 percent for 20 years, it falls to about US$84. A household able to devote US$90 a month to debt can borrow roughly US$6,260 at the first terms and US$10,760 at the second. Better tenor and cheaper capital expand borrowing capacity by about 72 percent in this example. If the cheapest adequate, well-located home costs US$20,000, a household with US$90 monthly debt capacity still has a substantial funding gap in this example. Extending the term may reduce payments while increasing the period exposed to income, interest-rate, and property risks. Finance can address payment timing and liquidity; the remaining gap needs lower costs, savings, income, or subsidy. Calculate the cheapest adequate housing product first, then ask which financing friction keeps the household from reaching it. Select the financing instrument after identifying that constraint. The first step is to distinguish the financing barriers that different instruments are designed to address.

Identify the financing constraint

Housing costs and the timing of income

Five constraints on housing finance

Housing-finance policy should separate low income, missing savings, short funding terms, information gaps, and credit risk. A resource gap exists when the household cannot afford the efficient cost of adequate shelter. A liquidity gap exists when lifetime affordability is adequate and the deposit or construction stage is too large. A term gap exists when lenders fund themselves short and cannot safely lend long. An information and credit-risk gap exists when lenders cannot observe informal income, collateral or repayment capacity at reasonable cost. A currency and rate-risk gap appears when long-term funds exist only in foreign currency or at rates households cannot absorb. Match instruments to the diagnosed constraint. Capital grants can address a resource gap. Savings matches, smaller deposits, or staged loans may address liquidity. Refinance institutions and suitable long-term funding may address maturity mismatch. Guarantees can share defined credit losses, while better underwriting

can reduce uncertainty. Local-currency funding can reduce currency mismatch. None removes the need for a housing product and repayment schedule the household can sustain. Using an instrument against the wrong constraint can increase costs without improving access.

Mortgage markets and household access

A large mortgage market can reflect high incomes, secure property rights, low inflation, deep capital markets and abundant housing supply. A small mortgage market can reflect low incomes, informal work, expensive homes, weak title, shallow long-term funding or all of these at once. Raising mortgage-to-GDP is therefore a weak policy target on its own. The Central Bank of Kenya reported 30,762 residential mortgages at end-2025, worth KES 307.2 billion (about US$2.38 billion), with an average loan of KES 10.0 million (about US$77,300). The US dollar figures are my conversions at KES 129.3/US$, the bank's 2025 annual average. Average mortgage rates were 13.5 percent and average maturity 11.5 years. Nine institutions held 90.6 percent of lending. Non-performing mortgages were 16.3 percent of the gross mortgage portfolio. These figures describe the surveyed formal mortgage market. [R033] Those figures describe a formal mortgage market that remains small relative to the number of urban households. A larger mortgage book can help middle-income borrowers and developers. Reaching lower incomes requires smaller loans, lower transaction costs, better information about irregular earnings, and housing products whose prices fit those earnings. Kenya's refinancing institution illustrates an intervention directed at lenders' funding cost and maturity.

Choose instruments that fit lenders and households

Mortgage refinancing in Kenya

Mortgage refinancing can provide longer-term funding to primary lenders. Its additional effect depends on retail terms and on borrowers who would otherwise be excluded. This chapter uses KMRC's December 2024 annual-report series consistently below; later appraisal aggregates are not combined with it to infer the average size of new loans. New versus existing loans and income-band additionality require separate data.

Refinancing alone may leave informal earners and lower-income households without a suitable loan or home. The February 2026 appraisal describes proposed finance, land-administration and risk-sharing instruments. Its amounts and timetable are appraisal-stage information, not evidence of subsequent approval, signing, disbursement or household outcomes. Assess any current programme against its published implementation records. [R087, R033]

A wholesale institution is not protected from credit losses

Shelter Afrique's 2021 annual report records losses of US$12.68 million in 2016 and US$7.79 million in 2017, followed by further losses before a reported profit in 2021. It describes a 2018 agreement to restructure US$186 million of debt and the resulting constraints on new borrowing and business. These are historical institutional accounts, not a claim about current solvency. They show why a development mandate and government shareholders cannot replace loan quality, provisioning, liquidity management and a credible loss-allocation rule. Assess those conditions before attributing success to the wholesale model itself. [R477]

Wholesale housing finance in Tanzania

Tanzania's wholesale-finance programme demonstrates institutional development and lending reach rather than a complete measure of household welfare. The IDA-supported Housing Finance Project established the Tanzania Mortgage Refinance Company and a Housing Microfinance Fund. The first supplied medium- and long-term liquidity to mortgage lenders; the second supported smaller incremental housing loans. The results below describe market changes during the programme, rather than its isolated causal effect. World Bank reporting describes a roughly sevenfold nominal expansion in Tanzania's mortgage market, from TZS 77 billion in 2011 to TZS 508 billion in 2018. These equal about US$49.5 million and US$224 million at the respective annual-average rates of TZS 1,557.4/US$ and TZS 2,263.8/US$ reported by the Bank of Tanzania, my conversions. The number of mortgage providers rose from four in 2010 to 33 by project close in 2019. Rates fell from above 21 percent to about 15 percent, alongside favourable macroeconomic changes, and maximum terms extended from roughly 10–15 to 25–30 years. The project reported about 5,000 mortgages and 2,000 housing microfinance loans; women, including joint owners, represented about 34 percent of beneficiaries. [R088, R033] Its funding model must be assessed alongside the distinct barriers addressed by each lending product.

Wholesale funding and microfinance serve different constraints and require separate performance tests. IFC later invested in its equity and bonds. This demonstrates access to funding beyond the original credit line. Continued operation still depends on the cost of funds, loan quality, investor demand, and sufficient revenues. Tanzania used separate products for borrowers with different needs. Conventional mortgages require sufficient verifiable income and capacity for a long repayment obligation. Housing microfinance can support staged improvements with smaller loans. Evaluate the demand, cost, and repayment burden of each product; creating two funding facilities does not itself establish adequate coverage. These are programme-reported results, not a causal estimate of poverty reduction. Kenya's experience shows why the same funding channel may still leave informal earners unable to borrow. That limit does not mean refinancing failed at its liquidity objective. It means that income verification, repayment capacity and the cost of a suitable home require separate responses. Evaluate each product against the barrier it is intended to remove. [R088] (See sources 1–3.) A regional funding institution adds questions about whether local legal and lending conditions are sufficiently compatible.

Regional housing finance in West Africa

A common currency can support regional refinancing without making collateral enforcement or borrower risk identical across countries. That creates an opportunity a small national mortgage market cannot easily create alone. The regional mortgage refinancing company, CRRH-UEMOA, pools demand for long-term funding across lenders and countries. A US$155 million IDA-supported regional project enabled more than 12,000 people to become homeowners and helped CRRH-UEMOA raise an additional US$385 million through regional and international bonds. World Bank reporting says 86 percent of beneficiaries were first-time mortgage borrowers and three-quarters were low- or middle-income. Almost 100 banks and microfinance institutions received support. Regional refinancing can pool demand for funding and give smaller lenders access to longer terms. It also requires consistent loan information, servicing, and credit standards across participating institutions. Property and enforcement law may differ within the region. Test those differences at the loan level rather than assume a shared currency produces equivalent collateral protection. Informal-income lending raises a different information problem even in a deeper financial market.

Lending to informal earners in India

India's affordable-housing lenders illustrate how field assessment can replace some missing income documentation. Traditional salary-based underwriting misses households that may have stable cash flow without formal payroll documents. National Housing Bank data report outstanding individual housing loans of INR 36.07 trillion (36.07 lakh crore) in March 2025, about US$426.5 billion at INR 84.576/US$, the Reserve Bank of India's 2024/25 annual average, my conversion. Housing finance companies held roughly 19 percent. NHB reports that about 45 percent of their housing-loan portfolios consisted of loans up to INR 2.5 million (25 lakh; about US$29,600 at the same rate), compared with smaller shares for public and private banks. Loan size alone does not establish borrower poverty or informal-sector status. [R090, R033] Earlier World Bank support to NHB demonstrated the model. A low-income housing finance project refinanced about 15,000 mortgages by 2017; 82 percent went to borrowers working in the informal sector. The average beneficiary household earned about US$2,753 a year. The project helped a new class of affordable housing finance companies use field-based income assessment and smaller loans. That assessment must still establish capacity to repay rather than confuse absent records with adequate income.

Informal-income assessment can address missing documentation where a household has sufficient repayment capacity. Field visits and consented records may help establish turnover, expenses, residence, payments, inventory, and household cash flow. Such checks have costs and error risks. Compare them with simpler methods, and separate difficulty documenting income from income too low or volatile for the proposed loan. An interest subsidy can then be assessed against the remaining affordability gap and the supply of suitable homes.

Credit subsidies and housing supply in India

India's interest-subsidy rules define an eligible market but do not make all households within it able to buy. Under the cited PMAY-U 2.0 Interest Subsidy Scheme rules, eligible households may earn up to INR 900,000 a year (9 lakh; about US$10,640), borrow up to INR 2.5 million (25 lakh; about US$29,600), and buy homes priced up to INR 3.5 million (35 lakh; about US$41,400). The subsidy is 4 percent on the first INR 800,000 (8 lakh; about US$9,460) for up to 12 years. The maximum actual release is INR 180,000 (1.80 lakh; about US$2,130), in five annual instalments. Dollar figures are my reference conversions at the RBI's 2024/25 average of INR 84.576/US$, not current exchange-rate quotations. Apply the operative eligibility and disbursement rules to each application. [R077, R033] The policy lowers debt service for a borrower already close to the ownership threshold. Eligibility still depends on access to a lender, an eligible property and enough residual income to service the rest of the loan. The poorest households remain outside the instrument when the property price is far above their payment capacity. The distribution of the subsidy also depends on whether housing supply expands in response.

Supply conditions influence how much credit support reaches borrowers and how much increases prices. Global evidence shows that cheaper credit and interest subsidies can capitalize into house prices when housing supply is constrained. Swedish evidence found near-full capitalization of subsidized financing into asset values. U.S. evidence using conforming loan limits also finds that easier credit raises prices at the margin. The effect strengthens where new supply responds slowly. When designing buyer support, test whether the relevant submarket can add suitable homes and how quickly. With little supply response, some subsidy may increase sellers' receipts through higher prices. Publish the expected incidence, track prices and completions, and compare support for rental or incremental housing where ownership remains unaffordable. South Africa's first-buyer programme illustrates the need to follow support through to completed purchases and continuing affordability.

Housing finance for middle-income households in South Africa

First-buyer assistance should be evaluated through additional sustainable access, not approvals alone. South Africa's First Home Finance targets eligible first-time buyers earning R3,501–R22,000 a month (about US$195–US$1,225, my reference conversion at R17.96/US$, calculated from CBK's 2025 annual cross-rates). The Department of Human Settlements' 15 September 2026 release reports close to R2 billion disbursed (about US$111 million at that rate) and more than 32,000 subsidy approvals since 2019. Approvals and completed purchases are different outcomes. [R095, R096, R033] The scheme can reduce a deposit or mortgage balance and can support eligible construction on serviced sites through approved builders. It is most useful where the contribution closes a defined affordability or liquidity gap. Test whether the remaining payment, upkeep, and transport costs fit the household budget before treating approval as access to sustainable ownership. Measure whether the subsidy enables an additional household to buy or build, or mainly reduces debt for a household that would have proceeded without it. Track approval-to-purchase conversion, a credible estimate of access without support, arrears, resale, and the incomes of recipients. For households building in stages, a smaller incremental loan may be more appropriate than a mortgage.

Infonavit and the limits of payroll-based housing finance

Mexico's Infonavit shows how a statutory contribution can sustain a housing-finance institution. Its published guidance specifies an employer contribution equal to 5 percent of the worker's integrated salary, credited to the housing subaccount; this contribution must not be deducted from the worker's pay. Repayment deductions for a housing loan are a separate obligation. [R504] The institutional advantage is a recurring collection channel and a link between employment records, savings and credit. The statutory payer should nevertheless be distinguished from economic incidence: the rule alone does not establish how employers and workers ultimately share the cost through wages and employment.

A large housing-finance system can coexist with dwellings that households leave. The OECD's 2024 Mexico survey identifies inadequate services, distance from work and violence among the reasons for abandonment. It records thirteen cooperation agreements signed between 2020 and July 2023 by Infonavit, the federal urban-development ministry and municipalities, aimed at recovering about 131,000 abandoned dwellings. That is a recovery ambition, not a count of completed recoveries. The survey's national vacancy total covers all tenure and financing channels and must not be attributed wholesale to Infonavit. [R144] Loan origination therefore needs a companion account of serviced occupation, voluntary exit and the continuing value of the home.

Payroll finance transfers most readily where contribution records and borrower incomes remain dependable. My recommendation is to test coverage of households with interrupted contributions, the treatment of job loss, lender incentives over location and quality, and the cost of alternative provision for people outside the contributory route. At scale, report both the financing institution's performance and what happens to the financed stock. Arrears restructuring, vacant-home recovery, rental access and incremental improvements address different problems; a single mortgage-volume target can conceal them. Mexico's record supports preserving the collection mechanism while testing the housing and service outcomes it finances.

Microfinance for incremental housing

Housing microfinance can match staged improvements, but financing reach does not establish welfare impact. Low-income households often build in stages: foundation, one room, roof, second room, rental unit, services. Their financing need may be US$500 or US$3,000 at a time. Housing

microfinance offers smaller, shorter loans for staged building or improvement. Underwriting may use household cash flow and business information, with security other than a registered mortgage. Health, resilience, or rental-income benefits depend on the work completed and its quality. Verify the improvement and repayment burden rather than infer the benefit from disbursement. World Bank programme reporting records a Tanzanian commercial housing-microfinance market of TZS 30 billion within four years of the fund's development (about US$13.3 million, my illustrative conversion at the Bank of Tanzania's 2018 annual average of TZS 2,263.8/US$). This is a reported market outcome, not an isolated causal estimate; the reference conversion does not establish the exact observation date. [R088, R033] Separately, IFC reported US$44.1 million channelled to 41,505 families in the Kyrgyz Republic for housing construction and improvement over a decade, and US$15.7 million to 15,434 families for energy-efficiency upgrades. These totals describe financing reach, not measured welfare impacts. Its shorter repayment period creates a distinct affordability risk.

Short repayment periods can make small housing loans unaffordable. A US$2,000 loan paid over two years can have a higher monthly burden than a much larger mortgage spread over twenty years. The product should finance a defined safe stage, including necessary technical advice and inspection, with payments matched to household cash flow. Confirm the land right and service connection before lending for the structure. Repeat lending should follow verified improvements and repayment, rather than becoming permanent short-term debt. Guarantees address lender risk rather than this mismatch between payment timing and household capacity.

Guarantees and risk allocation

Partial guarantees should change lender behaviour while retaining incentives to assess and manage credit risk. The public sector agrees to cover a defined share of losses; the lender retains enough risk to preserve underwriting discipline. The instrument works best when the problem is risk perception, thin data or the cost of entering a new market. It performs poorly when the borrower simply lacks payment capacity. Guaranteeing a loan that a household cannot service shifts an expected loss onto the public balance sheet. Guarantees also create incentives. Lenders may select borrowers they would have financed anyway, a problem known as low additionality. They may relax underwriting if the public share is too high. Government should therefore price the guarantee, cap coverage, require lender risk retention, publish cohort performance and compare guaranteed borrowers with a credible non-guaranteed counterfactual. The decisive test is whether these tools expand access with acceptable realized losses. Longer-term investor funding requires a further set of protections and performance tests.

Secondary markets and investor confidence

Secondary-market instruments can diversify lender funding, but announced transactions do not establish lower borrower costs. Pension funds and insurers may demand long-duration assets, but a maturity match alone does not make housing loans suitable investments. Compare credit risk, liquidity, prepayment, inflation, and legal protections before expecting lower funding costs or longer fixed-rate loans. Investors need reliable loan files, underwriting, servicing, performance data, and enforceable rights. Recovery procedures must include borrower notice and due process. Weaknesses in these arrangements can raise funding costs or exclude loans from a pool. Standardisation should preserve material differences in risk rather than conceal them. In December 2025, IFC announced a commitment of up to INR 3 billion to residential mortgage-backed securities issued by Grihum Housing Finance, its first RMBS investment in India. This is about US$35.5 million at the RBI's 2024/25 average of INR 84.576/US$, my reference conversion. IFC reported more than 85,000 customers and an average loan of about INR 1 million (10 lakh; about US$11,800 at the same rate). The transaction seeks to diversify lender funding; the announcement does not establish a realised fall in borrower costs. [R094, R033] Their design must preserve responsibility for the quality of the loans being financed.

Securitisation may diversify funding and reduce its cost, but can separate loan origination from the ultimate bearing of credit risk. Require clear underwriting and servicing standards, lawful loan-level disclosure, suitable risk retention, and surveillance of arrears and prepayment. Evaluate the funding and borrower outcomes after the transaction. Public capital should therefore be allocated according to the additional access each instrument produces and the risks it retains.

Concessional finance and market development

Use concessional resources against an identified constraint and account for both expected cost and downside exposure. Compare these uses against the constraint they address, the additional housing service expected, and their full public cost. Private finance mobilised is one output rather than a complete measure of benefit. The West African project shows one form of leverage: US$155 million of IDA support helped CRRH-UEMOA mobilize US$385 million in additional bond finance. Tanzania used US$100 million of IDA financing to create institutions that later accessed private capital. A package combining refinancing, guarantees and land administration should be assessed instrument by instrument against the constraint each is intended to address. Private finance raised can overstate a programme's additional benefit. A guarantee may support a large loan portfolio while exposing the public budget to losses; a refinance line may replace funds banks would otherwise have obtained. Measure additional sustainable housing access per unit of expected public cost, and report the downside exposure separately. Guarantees require that distinction even when no immediate cash payment appears in the budget.

For a simple proportional guarantee, expected credit loss is exposure at default multiplied by default probability, loss given default, and the guaranteed share. Estimate these over the same period, account for recoveries, and add administration and funding costs net of guarantee fees. Caps, first-loss layers, and correlated downturn losses require a portfolio model rather than that simple formula. For concessional credit, estimate the present value of the funding concession against an appropriate risk-adjusted benchmark. Report expected cost and stressed contingent exposure even when no payment is due immediately. Household credit also needs a supply of homes from producers able to finance construction through completion.

Allocate risks and protect borrowers

Finance for housing producers

Housing finance must cover viable production as well as the eventual purchase or occupation of homes. Affordable housing also needs finance before the household arrives: land acquisition, infrastructure, construction, rental portfolios, small-landlord improvement and working capital for material suppliers. A developer facing expensive construction finance may require a higher selling price even when mortgage rates are low. A small landlord may have tenants ready to rent an extra room and no access to a US$2,000 construction loan. A social rental provider may need twenty-year debt because the asset repays capital slowly through rent. Map the payer and instrument for land preparation, shared services, staged household construction, rental operations and renewal. Keep municipal service finance separate from household debt. A gap at any stage can stop the chain. Buyer finance cannot compensate for a developer who cannot reach completion. The allocation of that support changes the interests of lenders, developers, landowners, and households.

Arrears, foreclosure, and borrower protection

Default arrangements must protect contractual reliability while recognising the costs of household displacement. A system with no enforceable collateral raises lender risk and interest rates. A system that evicts rapidly after a small shock can create severe social harm and political backlash. The design problem is to separate temporary distress from persistent inability to pay. Responses to distress can include rescheduling, temporary forbearance, term extension, insurance, voluntary sale, or targeted assistance. Lenders need clear recovery rules, and borrowers need notice, due process, advice, and an opportunity to cure arrears where feasible. Establish lawful shock-response procedures in advance, assess their fiscal and credit effects, and provide for households that cannot regain sustainable payments. The World Bank's February 2026 appraisal cites seven KMRC-participating lenders reporting an average realised mortgage loss rate of about 2.6 percent after recoveries, despite higher non-performing-loan ratios. This sample illustrates that arrears and final lender losses differ. It does not establish losses for the whole market or for newly included borrowers. Strong collateral recovery can still impose severe costs on displaced households, which a lender-loss measure does not capture. [R087] Preventing distress requires testing interest-rate, currency, and income risks before approval.

A mortgage system can fail through its indexation rule

Colombia's UPAC crisis shows how mortgage indexation can shift rate shocks onto households. The IMF's account describes the move from inflation-linked adjustment toward a short-term deposit-rate benchmark. When market rates rose in 1998, debt service increased faster than borrowers' incomes; capitalised interest and falling house prices left some balances above collateral values. Relief and institutional restructuring followed. This was not simply a shortage of mortgage funding: the rule allocating interest-rate risk to households amplified the shock. Stress the index, income path and balance as well as the initial instalment. [R467]

Interest-rate and currency risks

A low initial payment is useful only when the household can survive the path of rates and income. Variable-rate mortgages transfer interest-rate risk to borrowers. Foreign-currency mortgages transfer exchange-rate risk to households whose income is usually local. Long maturities amplify both when the reset is large. Kenya has moved modestly toward more fixed-rate lending: the Central Bank reported fixed-rate mortgages rising from 14.1 percent of loans in 2024 to 24.3 percent in 2025. Most mortgages still carried variable rates. Refinance companies can help lenders offer longer fixed periods when they obtain matching long-duration funding. Keep household debt in the currency of household income. Match lender asset duration with liabilities. Price fixed-rate options transparently. Stress-test payment-to-income ratios under rate and income shocks before approval. Digital underwriting can improve that assessment only if its data and decisions remain reliable and contestable.

Finance for irregular incomes and incremental construction

Mortgage depth is a poor proxy for access among low-income households. The Central Bank of Kenya reported 30,762 outstanding residential mortgage accounts worth KES 307.2 billion at the end of 2025, while many urban households earn through daily, seasonal, or mixed formal and informal work; a long amortization period cannot solve an income-to-price gap that is several times monthly earnings. The practical starting point is therefore the household cash-flow distribution and the stage of construction that needs finance.

Incremental housing loans can finance useful improvements at a scale that conventional mortgages miss. Habitat for Humanity reports that a partnership with six Kenyan and Ugandan

institutions helped more than 70,000 families access incremental housing loans and mobilized around US$50 million; Choda, Schoofs and Verrinder found that 95% of surveyed borrowers reported using labelled loans for intended housing improvements. These are programme and borrower-use findings rather than proof of the full causal welfare effect, which makes repayment resilience and housing-quality outcomes the next tests.

Interest subsidies help only when debt is otherwise appropriate. For an illustrative KES 3 million, 15-year loan, the monthly principal-and-interest payment falls from about KES 39,952 at 14% to KES 32,238 at 10%; a household earning KES 30,000 per month remains unable to carry either payment safely. The finance instrument must therefore follow affordability and tenure rather than define them, which connects housing credit directly to subsidy design and borrower protection.

Credit assessment and household risk

Housing credit commits a household to payments over many years. The lender must assess income shocks, property rights, and collateral risk; the household must consider fees, transport, services, and repairs. Long-term funding and functioning local services are necessary to sustain the agreement. Kenya's Central Bank counted 30,762 outstanding residential mortgage loans at the end of 2025. Their average size was about KES 10 million (about US$77,340 at the 2025 annual-average rate of KES 129.3 per US dollar, author’s conversion). The average interest rate was 13.5 percent, and 75.6 percent of loans carried variable rates. The ratio of non-performing mortgage balances to gross mortgage loans was 16.3 percent. The stock of loans had risen by just 746 during the year. These figures describe a relatively small, costly and stressed formal market, with substantial exposure to interest-rate changes. A typical low-income household seeking a room or a small starter home occupies a very different market. [R033] India’s larger market presents different institutions but still requires a precise diagnosis of the risk excluding a household.

Assess the household risks behind a housing loan

Mortgage lending and household risk

India’s National Housing Bank reports INR 36.07 trillion in individual housing loans outstanding in March 2025, including regional rural banks. The INR 35.61 trillion subtotal excludes those banks. A separate slab-wise portfolio, excluding pooled purchases, shows that loans up to INR 1 million account for 29.28 percent of accounts and 5.73 percent of value. Those shares describe that portfolio and loan size, not the income distribution of all borrowers. [R465, R090]

Separate the price of credit from the subsidy that makes it possible

For a fixed monthly payment, reducing the nominal annual rate from 14 to 8 percent over twelve years raises principal capacity by about 33 percent. Extending a 14 percent loan from twelve to twenty years raises it about 16 percent. Doing both raises capacity about 72 percent. These percentages use monthly amortisation and the same payment capacity; neither change removes a remaining gap between income and the cheapest adequate home.

Price a concession as the amount advanced minus the present value of expected repayments at the public funding benchmark, plus administration and risk costs. For example, an annual-pay CU 100 loan amortising over twenty years at 10 percent has a payment of CU 11.75. Discounted at a

hypothetical 14 percent public funding rate, the repayments are worth about CU 77.8, leaving a financing concession of roughly CU 22.2 before losses and administration. A government bond yield is a funding benchmark, not automatically the social discount rate. Identify the budget that bears the difference.

Inflation can tilt a fixed nominal payment toward the early years. With a CU 100 monthly instalment and income initially CU 400, the payment share starts at 25 percent. If income grows with 5 percent annual inflation while the nominal payment stays fixed, the share falls to about 15 percent after ten years. An informal earner whose income fails to keep pace gets no such relief. Approval should survive the first difficult years and a bad month, rather than rely on an assumed future decline in burden.

Assessing affordability and debt service

A loan calculation should expose the payment implied by the price, deposit, rate, and term before support is designed. Consider an illustrative Kenyan buyer seeking a KES 3 million home. At a 10 percent deposit, the mortgage is KES 2.7 million. At 13.5 percent for 11.5 years, the monthly repayment is about KES 38,623. The rate and maturity correspond to the average rate and average maturity reported in the Central Bank's 2025 survey; the property price, loan-to-value ratio and household are hypothetical. At a screening threshold of 30 percent of gross income, debt service alone requires earnings of roughly KES 128,745 each month. Service charges, insurance, transport and other debts would raise that requirement. [R033] Hold the house price constant and finance the same loan at 10 percent for 20 years. The payment falls to KES 26,056. This is a 32.5 percent reduction. It can bring in some households previously excluded by the repayment test. Yet the household must still assemble KES 300,000 upfront, pay fees, meet the bank's documentation test and find a house at that price in a place where it can live and work. The longer loan also extends exposure to income loss and other risks. The appraisal must still test lifetime affordability. Comparing that payment with actual lending and household incomes shows the size of the remaining gap.

Average mortgage terms can imply payments far beyond the households a housing programme intends to reach. At the Kenyan system's reported average loan size of KES 10 million, a calculation using the survey's average rate and maturity yields about KES 143,050 per month. It would be a mistake to call this a national average monthly payment: banks lend at many rates, and the 10-million figure is the average stock of loan principal, not the amount drawn at origination. The calculation instead shows why growth in aggregate mortgage lending can coexist with severe exclusion at the lower end. [R033] The same logic applies in India. Imagine a household with income of INR 25,000 per month and a cautious repayment limit of INR 7,500. At a hypothetical fixed rate of 9 percent over 20 years, the largest fully amortising loan is approximately INR 834,000 (INR 8.34 lakh). A bank may lend less after examining earnings shocks and other obligations. A home that costs INR 1.8 million (INR 18 lakh) remains far out of reach without substantial household equity, a cheaper plot, a grant or a smaller dwelling. An interest subsidy can bridge only a defined portion of that gap. The stress test below separates those calculations from lender offers and forecasts.

Loan illustrations should identify the binding deposit, price, and income constraint rather than imply that a lower rate resolves it. Exhibit 20.2 uses the two loan calculations as a stress test, not as lender offers or predictions. The binding constraint may be the deposit, the dwelling price or the month of lowest income, even after the advertised interest rate falls. The benefit must also be traced through funding costs, lender terms, and housing prices.

Illustrative buyer	Loan	Rate / term	Monthly payment	Gross monthly income at 30% ceiling
Kenya: conventional illustration	KES 2.7m	13.5% / 11.5 years	KES 38,623	KES 128,745
Kenya: longer, cheaper local-currency finance	KES 2.7m	10% / 20 years	KES 26,056	KES 86,852
India: maximum loan under INR 7,500 payment cap	INR 8.34 lakh	9% / 20 years	INR 7,500	INR 25,000

Credit support reaches households through changes in funding, loan terms, and the price of the home. First, a lower funding cost reduces the monthly price of borrowed money. Second, households submit more bids for scarce homes. Third, developers and landowners decide how much new supply to build and at what price. Where serviced land, permits and construction respond slowly, some of the credit benefit turns into a higher selling price. The borrower may receive only part of the subsidy's value if landowners or sellers capture the remainder through higher prices. Where documentation is the obstacle, underwriting rather than subsidy may be the appropriate response.

Match credit products to earnings and property conditions

Property rights and housing investment

Titling can strengthen investment and security without producing a corresponding expansion of credit. Titling is often presented as a route from informal assets to credit, associated particularly with Hernando de Soto. The studies discussed here find almost no credit expansion in the settings examined. Enforceable collateral, lender costs, income and demand still matter. That is a narrower and more useful conclusion than either declaring titles useless or expecting a mortgage market to follow automatically.

Registered title may improve collateral and encourage investment, but each link requires evidence. The studies below distinguish stronger tenure security, investment, and actual access to credit. In suburban Buenos Aires, some land occupiers received titles because the original owners accepted compensation; others waited because owners contested it. Sebastián Galiani and Ernesto Schargrodsky used this uneven process to study the effect of property rights. Titled households increased housing investment, reduced household size and improved children's education. The study found almost no corresponding improvement in access to credit. In Peru, Erica Field found that the rate of housing renovation rose by more than two-thirds of its baseline level following an urban titling programme; much of that investment occurred without loans. Her separate study found increased labour supply after titling, consistent with less time spent defending possession. [R333] [R334] [R335] Titles may improve security or investment without resolving lenders' remaining concerns.

A stronger recorded right does not establish affordable credit and can increase harm if errors become enforceable. A secure family may replace a roof because it expects to enjoy the investment. It may take a job away from home because it fears eviction less. Neither decision needs a mortgage. Credit also depends on repayment income, accurate valuation, foreclosure law, lender funding and the household's willingness to risk its principal asset. The value of a home does not by itself provide the cash needed for monthly repayments. African and Indian governments should draw two operational lessons. First, tenure programmes require an objective beyond mortgage counts: better security, safe

construction, investment and reduced conflict are valuable outcomes in their own right. Second, registries must record real claims. A digital map can show a roof and an approximate boundary while leaving unanswered who inherits, sublets, occupies, holds customary rights or contests an old allocation. Recording one party as owner can transfer power away from spouses, tenants and communities. Faster digitisation may harden an error into an instrument of foreclosure or displacement. Adjudication, appeals, and fair enforcement must therefore accompany collateral reform.

Collateral reform should establish valid rights and borrower protection while testing repayment and treatment directly. It must specify what happens to tenants and other users when a lender enforces a charge. Evaluate tenure reform through security and the ability to improve a home, while testing access to mortgage credit separately. The evidence thus separates two objectives: securing investment in a home and obtaining a loan against it. Field-based appraisal by Indian lenders offers an operating alternative for borrowers without standard income records, but the institutional accounts cited here do not establish its causal effect or its performance at national scale. Test repayment capacity and borrower treatment directly rather than infer them from title issuance or loan growth. [R331, R332, R333, R334, R335] Refinancing addresses a different constraint in the lender's funding structure.

Access to mortgage refinancing in Kenya

Refinancing can lengthen funding without ensuring wider geographic or income access. A mortgage-refinance company provides longer-term funding to lenders. It supplies long-term funds against an eligible loan portfolio, allowing lenders to offer longer and sometimes cheaper mortgages without funding twenty years of repayments from volatile deposits. Kenya's Mortgage Refinance Company (KMRC) reported KES 13.9 billion in cumulative disbursements to primary mortgage lenders and 3,855 refinanced mortgages by December 2024. Its 2024 report says 77 percent of loan disbursements went to Nairobi and the adjoining counties of Machakos, Kajiado and Kiambu. These are the institution's own administrative results. The reported 15,420 "households impacted" uses a wider definition and should not be presented as the number of directly refinanced mortgages. [R336] The Central Bank's 2025 survey provides a separate measure of the wider mortgage market. The share of mortgages with fixed rates increased from 14.1 percent in 2024 to 24.3 percent in 2025, while the market still counted only 30,762 outstanding loans. Surveyed banks named low income, high property prices, costly land, property registration and access to long-term finance among the principal obstacles. These are responses from lenders, not estimates of each obstacle's causal effect. [R033] KMRC addresses a defined funding constraint. Its refinancing can lengthen terms and reduce the funding-cost premium for borrowers who already meet mortgage criteria. Refinancing depends on eligible originated loans. Land disputes, unverifiable income, incomplete buildings and unaffordable purchase prices can still prevent origination. Common loan standards, lending through cooperatives, technical support and prudent guarantees may widen access, but their effects require separate measurement. Public support should therefore be assessed by who receives it and what alternatives the same resources could finance.

The distribution of refinancing benefits should be compared with other uses of scarce fiscal capacity. A national institution uses public and concessional resources, while participating banks choose which loans to originate. Existing bank relationships, property records and concentrations of lending activity may make metropolitan borrowers easier to serve. The contribution of each factor requires local evidence. A subsidy may therefore reach borrowers who would have obtained credit anyway. That creates a genuine public benefit if maturity improves and interest risk falls. Its additionality is smaller when the money merely refinances contracts without changing access, terms or the number and location of homes delivered. A useful appraisal must report the difference between the refinanced borrower and the next eligible borrower denied finance. It must also compare the public cost of a refinance against the cost of improving a serviced site, guaranteeing a small initial loss, or funding

an incremental building loan. These are competing uses of scarce fiscal capacity. A guarantee-backed capital-market structure requires the same accounting of public exposure.

Capital-market funding should disclose guarantees and losses that are otherwise hidden from the apparent cost of credit. The Nigeria Mortgage Refinance Company states that its business rests on uniform underwriting standards and bonds sold to investors. Its official account reports NGN 33 billion in cumulative mortgage refinancing through December 2024. A rating note identifies an unconditional federal guarantee behind a fifteen-year bond. Investors receive stronger protection because the sovereign stands behind the instrument; the government takes a contingent liability that may become a budget cost if the portfolio or issuer fails. The total guarantee ceiling is therefore a public-finance decision, even where the budget records little spending at issuance. [R337] [R338] A pension fund needs a lawful, well-priced, local-currency asset. A family needs payments that survive shocks. A mortgage-refinance institution can connect them, subject to a demanding set of conditions: transparent loan pools, reliable servicing, audited arrears, realistic prepayment assumptions, sufficient loss absorption and a fiscal authority willing to disclose the guarantee. Funding backed by an unpriced guarantee can understate the public cost of credit and leave taxpayers exposed to later losses. India's financing and subsidy arrangements show how several instruments can operate within one larger system.

Housing credit and public support in India

India's March 2025 housing-loan total is INR 36.07 trillion when regional rural banks are included. State and loan-size tables have their own coverage. Do not apply a ratio or regional share calculated on a narrower portfolio to the enlarged total without recalculation. Administrative loan aggregates describe lending, not households still excluded from credit. [R465]

Loan-size distributions show who receives housing credit more clearly than aggregate lending does. Examine the loan-size distribution separately. In the detailed loan-size table, balances up to INR 1 million (INR 10 lakh) accounted for 5.73 percent of the covered value and 29.28 percent of covered contracts. Loans above INR 2.5 million (INR 25 lakh) accounted for 69.87 percent of value. Large loans take a great deal of capital even though the number of large-loan accounts is lower. The figures do not prove that a small loan belongs to a poor household or a large loan to a wealthy one; loan balances change with repayment and property prices vary across districts. They do show why a housing-finance reform that increases total lending can leave the bottom of the market largely unchanged. [R090] Subsidy rules require a separate assessment of eligibility and timing.

An interest subsidy changes loan costs only for households that meet its conditions and receive it. The Union government's Pradhan Mantri Awas Yojana–Urban 2.0 interest-subsidy rules illustrate the distinction between a financing instrument and a house. For eligible applicants, the announced 4 percent interest subsidy applies to the first INR 800,000 (INR 8 lakh) of a housing loan, for up to 12 years, subject to a INR 2.5 million (INR 25 lakh) loan ceiling, INR 3.5 million (INR 35 lakh) house-value ceiling and INR 180,000 (INR 1.80 lakh) maximum subsidy. The programme specifies payment in five annual instalments. These are policy rules, and their reach depends on approvals, lender processes and actual disbursement. [R236] The payment schedule determines which immediate financing constraints remain.

Delayed subsidy payments do not remove the need to finance the initial deposit. A benefit released over five years has a different effect from a grant delivered at purchase. It may reduce the effective burden after credit has been approved. A family unable to pay the initial deposit still needs financing or assistance for that payment. A lender assessing the repayment obligation must decide how to treat benefits that arrive later and might be delayed. An agent can advertise the maximum advertised

subsidy while a buyer confronts the full sale price and immediate loan payment. Implementation rules should specify when money reaches the loan account, how arrears or early prepayment affect the benefit, and what recourse a borrower has if a subsidy claim stalls. Specialised incremental products address needs that the headline mortgage rate does not capture.

Assess finance through product fit and borrower outcomes rather than one average rate. A small self-employed borrower may need a INR 300,000 (INR 3 lakh) roof loan, then INR 500,000 (INR 5 lakh) for an extension, before ever purchasing a completed apartment. The lender can examine earnings through field appraisal. A city may have to certify that the structure is safe. A land authority may need to recognise a lease or occupancy right without forcing a speculative sale. A national interest subsidy designed around a completed home can miss this common sequence of building and repair. The most consequential test for India is whether the finance system can reach a larger set of safe housing paths: incremental building, shared ownership where lawful, small rental construction, modest formal home purchase and repairs that reduce disaster risk. A single mortgage rate is too crude a measure of that progress. Staged construction requires payment and inspection arrangements matched to smaller improvements.

Protect borrowers and assign the cost of shocks

Insurance, arrears, and financial shocks

Test housing credit against adverse income, rate, essential-cost, and care scenarios as well as a central forecast. Social protection and prudential rules matter when that forecast fails. An illness can cut earnings for three months. A major flood can destroy a family business and damage the same house pledged to the lender. A borrower with a variable interest rate can face a higher payment even if wages remain flat. In each case the borrower, bank, insurer or state must absorb a loss. Unclear loss-sharing terms can lead to litigation or place costs on households with limited ability to bear them. A prudent lender tests a severe but plausible month. For the KES 2.7 million mortgage, raising the hypothetical interest rate from 13.5 to 16.5 percent over the same 11.5 years raises the payment from about KES 38,623 to KES 43,774, an increase of about 13.3 percent. This is a sensitivity calculation, not a rate forecast or a claim about Kenya's contractual repricing rules. If a family starts at the maximum permitted debt-to-income ratio, the rise alone can force cuts to essentials. The test should also include food and transport inflation, unpaid care time and maintenance charges. Insurance and arrears rules should specify predictable treatment before a shock becomes default.

Insurance and default procedures need explicit coverage, exclusions, remedies, and household treatment. A flood affecting an entire district creates correlated claims. Insurance then depends on adequate capital, reinsurance, coverage terms and affordable premiums. A public guarantee can encourage credit where loan officers overestimate risk, but it can also weaken screening if banks retain little first loss. The government should retain an explicit maximum exposure, charge a fee where appropriate, require the originator to keep meaningful risk, and publish claims by borrower group and location. Any concessional foreign-currency loan to a local-currency mortgage institution adds exchange-rate exposure unless fully hedged; depreciation can increase costs borne by the institution, its borrowers or taxpayers. Workout rules are part of affordable housing policy. Before foreclosure, a lender should have a time-bound process for income verification after a shock, temporary rescheduling, partial payments, independent advice and orderly sale where needed. A public guarantee should never require instant eviction as its first enforcement step. Equally, open-ended debt cancellation can weaken repayment incentives and create unfunded public obligations. Fairness requires predictable treatment before default occurs. Climate exposure also requires affordable renewal and maintained physical protection.

A climate-resilient home also needs affordable renewal. A flood-resistant plinth or sound drainage costs money today and reduces expected losses later. Financiers can price that benefit only with credible site-level hazard data, building inspections and evidence on actual losses. Satellite imagery helps locate exposure; it cannot prove that a hidden foundation, buried sewer or insurance contract will perform. Good finance joins engineering, land records and household data with accountability on the ground. AI-based assessment should support these protections without concentrating unreviewable decision power.

Institutions for risk sharing

Finance reform should allocate costs and risks across households, lenders, producers, and public institutions explicitly. A mortgage bank wants predictable recovery and low-cost funding. A small lender wants affordable wholesale credit and leeway to assess irregular incomes. A developer wants pre-sales, serviced land and timely release of construction funds. A pension fund needs a safe local-currency asset. A finance ministry must contain explicit subsidies and contingent liabilities. A city needs property revenue and affordable infrastructure; its officials may also control permits that create valuable scarcity. A low-income borrower needs to retain enough income for essentials, employment changes and shocks. Each actor can block a different step. One possible coalition joins large developers, banks, established landowners and an agency that announces mortgage subsidies. Where its members already hold approved plots, financeable properties and documented clients, it may be able to launch quickly. Its weakness is distribution: it risks allocating public help to transactions that would have happened anyway, raising land values while renters and self-builders remain excluded. An alternative coalition brings small landlords, housing microfinance lenders, utilities, tenant groups and municipal planners into the same agreement. It requires coordination across additional agencies and can serve housing types common among low-income households. Evidence on rejected applicants should determine the first intervention.

Begin with rejection reasons and coordinate credit reform with supply and rights before support raises land values. First, map cash flows and feasible housing products across the bottom 50 percent in two employment corridors, including renters, women, recent migrants and informal workers. Second, audit the legal and physical readiness of plots, service capacity and the cost of commuting. Third, finance the next safe, serviceable stage of repair, household construction or rental additions; test completed-home purchase only where it fits the household budget. Fourth, commit public money to the demonstrable market failure: an infrastructure connection, lender verification costs, a capped first-loss guarantee, or interest support for a narrowly defined group. Fifth, publish aggregate subsidy allocations, rejection reasons, default experience and changes in land and housing prices, while protecting identifiable applicant and borrower data. Public-land allocation requires especially strong checks. If an authority transfers a valuable site to a developer at a concessionary price, publish the independent appraisal, competing bids, all costed infrastructure commitments, the eligibility agreement, the deadline for occupied homes and clawback terms. Where the state retains the land, long leases can preserve some public control over the agreed use. Where an owner sells, resale and rental protections need enforceable duration and realistic monitoring. Otherwise a capital subsidy can become an immediate land windfall. The agreement must also address documented opposition to complementary reforms.

Before choosing a credit subsidy, test whether disclosure rules, small-builder entry, permit discretion, or density changes face opposition. Record its basis and the decision power involved. A workable agreement needs predictable enforcement for lenders, protected resident claims, feasible compliance for builders, and a specified limit on public exposure. A local assessment can test whether the proposed package changes the right constraint.

Stress-test irregular income before approving debt

Credit assessment for irregular earners should use income distributions rather than a single monthly average. A household that averages KES 30,000 but falls to KES 17,000 in a weak month has a different safe payment capacity from a salaried household earning KES 30,000 every month, even when annual income is identical. Underwriting should therefore test bad-month income, essential spending, housing-service charges, maintenance, and a 20-30% shock before treating a loan as affordable.

Alternative data can improve verification while creating new exclusion risks. Transaction histories, mobile-money flows, utility payments, merchant receipts, and rent records can reveal cash flow that payslips miss, while automated models can penalize occupations, locations, or social groups whose data are sparse or volatile. Lenders and public guarantee programmes should publish the variables that determine eligibility, test error rates by relevant groups, and provide a human appeal route, which turns AI underwriting into an institutional accountability problem as well as a prediction problem.

Finance identifies the repayment gap but cannot justify public support by itself. Chapter 9 compares subsidies and traces their incidence, while Chapter 10 consolidates the public commitment.

Selected readings

Colombia mortgage indexation [R467]. Use the IMF account to examine the interaction of mortgage rules and crisis; it is a historical case, not a universal forecast for indexed lending.

Central Bank of Kenya report and conversion note [R033]. Consult the dated official source behind the Kenya illustrations; the exchange rates in the note are historical reference rates, not current quotations.

Mi Casa Ya budget response [R468]. Read the ministry's account of the funding interruption for risks borne by households and lenders; it describes a dated constraint, not abolition of the programme.

Judgment and transfer conditions

Credit solves timing and risk constraints; it cannot by itself close a resource gap.

Confidence: High for the arithmetic, conditional for programme reach. Revisit trigger: Additional low-income borrowers with sustainable repayment after all subsidies are counted.

Transfer finance that lets households use lawful, serviced land or improve an existing home without unsustainable debt. At roughly ten times the pilot scale, test additional access across the bottom 50 percent, arrears and borrower distress. At roughly one hundred times the scale, require long-term funding, clear loss allocation and supervision. Households unable to repay need funded assistance; more lending cannot substitute for it.

Exercise

Separate the rate and tenor effects for a household with fixed payment capacity. Price the concession at two funding rates and test a three-month income interruption.

Part IV Pay for services and close gaps

9. Housing Subsidies and Who Benefits

Which subsidy buys the intended housing benefit at a sustainable public cost?

Priority C directs assistance to a specific affordability gap and tracks who receives it. This chapter supplies evidence for reach (Test 1), household affordability (2), alternatives (3) and subsidy incidence (5). Compare feasible instruments, trace their eventual beneficiaries, and distinguish legal eligibility from a funded allocation that can actually be delivered. Trace the benefit through households, landowners, developers and lenders rather than treating the payment as the final outcome. Eligibility also needs a funded allocation and a workable delivery schedule. The chapter compares instruments, examines capture and exclusion, and tests continuing commitments against budget interruptions.

A housing subsidy reaches households through changes in prices, rents, borrowing costs, developer returns, and supply. The government may pay a buyer, developer, lender, municipality, or landlord; the household benefit can differ substantially from that payment. A mortgage interest subsidy can lower a borrower's monthly payment and simultaneously increase the amount she can bid for a scarce house. Free public land can lower a developer's cost and increase the developer's margin if the sale price remains unchanged. A tenant subsidy can reduce rent burden while the extra purchasing power raises market rents. A road built for a housing project can raise the value of adjoining private land. An explicit grant appears in the budget. A land concession, tax preference or state guarantee can be larger and absent from the reported subsidy total. Subsidy incidence explains why the recipient named in the budget may differ from the ultimate beneficiary.

Identify the gap public support should close

How subsidies reach households

The benefit of a subsidy depends on how prices, costs, and supply respond to it. A transfer's legal recipient and its economic beneficiary can differ. The division depends on which side of the market can adjust. When housing supply can expand, a demand subsidy can produce more homes. When well-located land and permissions are fixed, extra purchasing power competes for a fixed stock and part of the gain is capitalized into land and property values. Empirical work finds stronger capitalization where housing supply is more constrained.[R115] Estimating that benefit first requires a complete account of the public contribution.

The full cost of public support

Public support includes land, tax preferences, guarantees, infrastructure, and operating commitments as well as cash grants. Cash grants reduce the household's or developer's direct cost. Interest subsidies lower the price of credit. Guarantees shift credit risk to the state. Public land transfers reduce land cost. Infrastructure spending supplies roads, utilities and transit. Tax expenditures lower the tax burden on ownership, development or finance. Operating subsidies cover the difference between affordable rents or tariffs and the long-run cost of running the asset. Each should be converted to a present-value fiscal cost. A public parcel transferred at a nominal price has a subsidy equal to its opportunity value less the price paid. A guarantee has an expected fiscal cost based on probability-weighted losses, fees, and administration. Correlated defaults also require a separate assessment of

severe fiscal losses in a downturn. A tax exemption is foregone revenue. A maintenance liability is future expenditure. Once these costs are recorded, government can compare instruments on equal terms. The value of that support should then be compared with the duration and quality of occupancy it produces.

Compare subsidies through their full public cost and the sustained housing benefit obtained. A project on free land can look cheaper than a project that buys land, even when the public gives up a larger asset. A guarantee can look costless until a downturn. A low social rent can look sustainable until the roof, lift and pipes need replacement. Public finance should record the full lifecycle subsidy when the commitment is made. The useful denominator is home-years of adequate housing. A US$20,000 subsidy that produces twenty years of safe, well-located occupancy has a different value from the same subsidy attached to a peripheral unit that remains vacant, is sold informally, or deteriorates after five years. The choice of instrument depends on which financing or resource gap prevents that benefit.

Four types of financing gap

Subsidy design should distinguish inadequate resources from liquidity, information, and financing constraints. A resource gap exists when even the cheapest adequate housing in a viable location costs more than the household can sustainably pay. The remedy requires a real transfer, cheaper inputs, or a smaller housing product. A liquidity gap exists when the household can afford the lifetime cost but cannot fund a deposit, connection fee or construction stage. Savings matches, staged finance or deferred payment can work. A credit-risk gap exists when lenders cannot observe or price irregular income, collateral or repayment risk. Guarantees and better underwriting can help. A supply gap exists when land, planning, infrastructure or market structure prevents enough suitable housing from being produced. A government that uses an interest subsidy against a supply gap raises demand without fixing quantity. A government that gives a deep capital grant to a household facing a short-term liquidity problem overspends. A government that offers mortgage credit to a household with a resource gap can create debt stress without resolving the affordability gap. A long-term programme can then target support to the gap that remains after avoidable constraints are addressed.

Fund essential services and the affordability gap that remains after feasible cost reductions and realistic household contributions. In a long-term programme, prepare usable land, allow modest safe construction and resolve avoidable financing barriers. Price grants for safe additions, connection support or rental assistance against a completed-home subsidy for the same households. Include the cost of well-located land and upkeep. These actions may proceed together; urgent shelter or safety needs cannot wait for supply reform. Track rents, prices and occupation to establish the benefit retained by the bottom 50 percent, separately from gains to others. India's programme channels illustrate how the instrument changes eligibility and delivery.

Compare who benefits from each instrument

Subsidy instruments in India

India's housing subsidy channels differ in who qualifies, who delivers the home, and who may capture part of the benefit. The official dashboard, last updated on 30 September 2026 and accessed in October, reports 12.768 million houses sanctioned, 12.103 million grounded and 9.907 million completed under PMAY-U, with Rs 1.806 trillion in central assistance released and total investment of about Rs 8.96 trillion.[R105] These are administrative counts of approvals, construction starts, and completions. They do not establish occupancy or household welfare. PMAY combines several delivery channels. Beneficiary-led construction supports households that already control a site. In-situ redevelopment ties subsidy to slum land and developer economics. Partnership housing works through projects. Credit-linked subsidy works through lenders. PMAY-U 2.0 adds a distinct rental vertical. The

channels differ in eligibility, delivery arrangements, and the opportunity for benefits to accrue to landowners, lenders, or developers. The interest-subsidy channel makes this distinction particularly visible.

Interest assistance changes borrowing costs, while supply conditions determine whether part of the saving raises land or house prices. The current PMAY-U 2.0 Interest Subsidy Scheme illustrates the mechanics. Eligible households with income up to Rs 900,000, loans up to Rs 2.5 million and properties up to Rs 3.5 million can receive a 4 percent subsidy on the first Rs 800,000 for up to twelve years; the maximum subsidy released is Rs 180,000, paid in five annual installments.[R077] For a household close to the ownership threshold, this can change the decision. For a household that cannot pass underwriting or whose affordable home costs far more than its borrowing capacity, the same instrument does little. Beneficiary-led construction has a different incidence. When a poor household already possesses a viable plot, a grant can turn an incomplete structure into usable housing with relatively little land-price leakage. The household controls the scarce factor. In a developer-led project on scarce urban land, part of a buyer subsidy can appear in land bids or sales prices unless new supply can enter. Evaluation must follow the benefit to households rather than stop at sanctioned support.

Evaluate programme channels by additional access within income groups and by the household's actual control over the asset. Ask how many beneficiary households would have built, bought or rented without the subsidy; how much public land and infrastructure they received; and whether location, occupancy and household welfare improved. India also shows how subsidy design can alter intra-household distribution. Female ownership or co-ownership rules can strengthen women's claims to the asset. The gain depends on whether the legal right changes control over sale, mortgage, inheritance and household bargaining. Administrative compliance should be separated from substantive economic power. Kenya's dedicated levy raises the related question of how contributors and beneficiaries are connected.

Housing subsidies and public finance in Kenya

Kenya's housing levy requires a transparent account of who pays, who receives support, and which service obligations follow. Kenya's Affordable Housing Act 2024 created a dedicated Affordable Housing Fund and imposed a levy of 1.5 percent of an employee's gross salary, matched by the employer; people with gross income outside payroll are also subject to a 1.5 percent levy under the Act.[R106] The levy raises distributional questions: who pays, who receives support, where projects are built, and whether contributors obtain a housing benefit. Official Affordable Housing Board data report KES 73.2 billion collected in FY2024/25. Collections from July 2025 through January 2026 add about KES 44.8 billion, taking the recorded total for July 2024-January 2026 to roughly KES 118 billion.[R107] The Board manages the fund and supports affordable-housing delivery.[R108] Earmarking can support multi-year planning. It can create a more predictable stream for land, infrastructure and construction. It can support multi-year procurement. It signals commitment to developers and financiers. It also raises hard incidence questions. A formal employee who contributes for years may never receive a unit. A household outside formal payroll may benefit from social housing or upgrading. Employers bear a statutory matching cost. Developers and contractors gain from a predictable public pipeline. Counties face infrastructure and planning obligations. Project-level accounts are needed to test whether the resulting fiscal agreement is delivering its stated benefits.

A credible subsidy account should connect collection and procurement to allocation, occupation, and maintenance. How much comes from public land? Which income group occupies the unit? What is the transport burden? How much private capital is genuinely additional? What share of levy resources goes to households below market affordability thresholds? Kenya's digital Boma Yangu platform can make allocation more transparent. It can also turn a complex distributive choice into an

opaque scoring system if citizens cannot see the rules. Contributors need a public audit trail from levy collection to land acquisition, procurement, allocation, occupancy and long-run maintenance. South Africa's experience shows why location and future household costs belong in that account.

Subsidised housing and location costs in South Africa

Subsidised units, social rental, titles, and serviced sites deliver different benefits and require different cost comparisons. The Department of Human Settlements describes government-subsidized housing as a fully built house provided free to qualifying beneficiaries, who then remain responsible for municipal rates and service charges.[R109] First Home Finance serves households above the free-house threshold and below easy access to commercial mortgages; current programme guidance targets incomes between R3,501 and R22,000 per month.[R448] Millions of households have acquired formal housing assets since 1994. The location of subsidized homes also creates costs. Cheap peripheral land allowed more units per rand while placing households far from jobs and reinforcing apartheid-era urban form. Public money saved on land can return later as transport subsidies, household travel time, trunk infrastructure and weak municipal finances. The 2026/27 national programme illustrates the continuing fiscal weight of housing. The Department announced targets of 39,058 housing units, 2,878 social housing units, 21,918 title deeds and 25,186 serviced sites, backed by more than R15 billion in departmental allocation.[R110] Complete units, social rental, title registration, and serviced land require different subsidy arrangements. Serviced sites can reduce the initial public contribution while shifting construction and occupation costs to households.

Compare serviced-site support with completed housing using the household's full cost and ability to build. Current policy allows qualifying households below R3,500 income to receive serviced sites free, while higher bands pay differentiated amounts.[R111] This can shift the state from building every finished house toward supplying land and services, while households add the structure over time. The gain depends on access to construction finance, safe incremental standards and location. The incidence test should compare the full public cost of a free peripheral house with a well-located serviced plot, social rental unit or upgrading intervention. Include transport, service charges, and maintenance in that comparison. Chile's experience provides a further test of whether physical improvements produce broader household gains.

Santiago and the limits of housing subsidies without access

Chile's subsidy experience shows that expanded delivery and better services can coexist with weak wider household outcomes. OECD data show the share of households without housing or living in substandard housing fell from 23 percent in 1992 to 10 percent in 2011.[R112] OECD analysis finds that pressure to produce large numbers drove social housing to the cheapest peripheral land. Some peripheral settlements faced very long travel times and weak services. Housing production reduced the measured deficit, but its concentration on peripheral sites also created access and service costs.[R116] An Inter-American Development Bank evaluation of Chile's Progressive Housing Program found poor targeting, high under-coverage and leakage. The programme improved access to water, sewerage and electricity, yet produced no discernible gains in poverty, school attendance or occupational outcomes and worsened overcrowding.[R113] In this evaluation, improved physical services were not accompanied by measured gains in those household outcomes. The implication is to include location and neighbourhood opportunity in the benefit purchased by the subsidy.

Santiago shows why a response to segregation must address both project composition and access to opportunity. Brain and Sabatini's 2021 case study describes Chile's move towards social and urban integration projects, combining income groups through subsidies and developer incentives. Their account reports that the programme represented close to 30 percent of housing generated with ministry

support in 2018; that is a national programme share, not Santiago's share. They describe better project quality and report generally positive interactions in a ten-project assessment, while stressing that longer-term effects on residents' life chances remained uncertain. This is a case-study synthesis, not a causal estimate of income gains. [R505]

An inclusionary project can satisfy distance rules and still offer weak practical access. The same study reports that most programme projects in 2016–2017 lay in peripheral areas outside the Santiago Metropolitan Area, and that location requirements measured proximity to services rather than their quality. [R505] This finding qualifies the case for mixed-income development: a more diverse resident population cannot substitute for functioning schools, transport or employment access. Compare actual journey times, service capacity and recurring charges across the feasible sites before paying a premium for a project labelled integrated.

Santiago's experience supports buying usable access and testing who retains it. My recommendation is to make the subsidy contract specify service availability, household charges and post-occupation retention alongside income mix and construction quality. Track lower-income households separately, including those who leave, and distinguish voluntary moves from exits driven by costs or exclusion. Expansion requires developable sites in more than one price band, capable developers and funded municipal services. Public land can secure a location benefit when those conditions hold, provided its contribution is valued explicitly. The comparison is between feasible housing options over time, rather than a universal claim that every peripheral home harms its occupant.

The subsidy in public land

Public land can create a substantial unrecorded transfer in housing. A ministry can report a project cost that excludes the market value of the site because no cash changed hands. The public balance sheet still gave up an asset. Every public-land housing transaction should therefore show five numbers: market value before the project; price or rent paid by the developer; infrastructure added by government; affordable-housing obligations; and the value of the land after rezoning or infrastructure. Value the land concession and public works separately, and avoid counting an infrastructure cost again through the land-value increase it creates. A direct sale maximizes immediate revenue when competition is strong. A discounted transfer lowers project cost and creates risk of private capture. A long lease can preserve public ownership while trading land value for rent or income restrictions. Competitive tenders can ask developers to bid the lowest subsidy required for a fixed affordability and location outcome. The timing of public investment and acquisition influences how much of that value the authority must pay for.

Acquisition and allocation decisions should account for the land-value effects of announced public investment. Where lawful and financially justified, government should secure land or development rights before transit, infrastructure, or upzoning raises values. Acquisition still requires transparent valuation, consultation, compensation, and protection of occupants. If it sells first and invests later, taxpayers finance a gain captured by the buyer. If it acquires after announcing the investment, it buys back value created by its own decision. Tax preferences create another public transfer that can be less visible than a cash allocation.

Tax expenditures

Housing tax expenditures need the same distributional scrutiny as direct subsidy programmes. Mortgage interest deductions, capital-gains exemptions, reduced property taxes and tax-favored savings can move more money than direct housing programmes. Their beneficiaries often have higher income because the household must own a valuable asset and, in many systems, face a tax liability large enough to use the preference. U.S. evidence illustrates the distributional risk. Sinai and

Gyourko estimated a highly skewed geographic distribution of owner-occupied housing tax benefits; in many large metropolitan areas the top quarter of owners received 70 percent or more of the subsidy flowing to the metro.[R117] Even where tax systems differ, assess indirect subsidies using the same incidence and value-for-money tests as budget expenditure. Tax subsidies also build coalitions that are hard to unwind. Beneficiaries experience the preference as part of the normal tax system. Removing the preference raises recipients' tax bills. This helps explain why regressive housing tax expenditures can outlive targeted programmes for poorer households. Guarantees likewise create public exposure that may remain outside immediate expenditure figures.

Guarantees and contingent liabilities

The fiscal cost of a guarantee equals expected loss plus the risk charge plus administration minus fees. Stress correlated defaults separately: low average losses can coexist with a large public call in a recession. Evaluate the additional lending caused by the guarantee and who receives the benefit, not only its nominal coverage.

Mortgage guarantees can distribute benefits unevenly, so conclusions from one institutional model require local testing. A model of U.S. government-sponsored mortgage guarantees finds that eliminating the implicit interest subsidy can raise aggregate welfare by reducing a transfer that favors higher-income, higher-asset households.[R118] The result depends on the model and its institutional assumptions; distribution should be tested separately in other mortgage systems. Supply constraints help explain another route through which support may accrue to people other than the intended household.

Supply constraints and subsidy capture

The subsidy-capitalisation studies compared here concern high-income settings. Their range is useful evidence against a universal pass-through assumption, not a coefficient to insert unchanged into an African housing appraisal. Collinson and Ganong's published US analysis reports roughly 46–47 cents of rent increase per dollar of higher subsidy ceilings over six years in its principal designs. The smaller 13–20 cent same-address estimate answers a different question. Report the population, design and horizon with the number. [R458]

Subsidy incidence becomes easier to predict when the team identifies the factor that cannot expand. The comparison below identifies how different constraints can redirect the benefit.

Scarce factor	Likely capture channel	What to measure	Policy response
Well-located land	Higher land bids and residual land value	Pre/post land prices; developer land cost	Expand legal supply; reserve public land; capture uplift
Planning permission	Scarcity rent in permitted projects	Price gap between permitted and comparable sites	By-right density; reduce discretionary approvals
Developer competition	Higher margins / weak pass-through	Bid concentration; profit margin; price-cost spread	More entrants; open-book cost benchmarks; smaller packages
Mortgage funding	Lender spread or rationing	Rates, fees, approval by risk group	Wholesale liquidity; competition; transparent guarantee pricing

Scarce factor	Likely capture channel	What to measure	Policy response
Rental supply	Landlord rent increase	Voucher/upgrade rent changes; vacancy	Add supply; rent reasonableness; tenant protection
Utility capacity	Connection queue / developer payments	Connection time and charge	Fund trunk capacity; publish queue and capacity
Public land	Developer or buyer windfall	Market value versus transfer value	Explicit land subsidy and clawbacks

The extent of subsidy capture depends on local supply conditions rather than a universal rule about demand support. Assess the intervention's scale, safeguards, and initial tenure conditions. A voucher that helps an existing renter pay the same market rent can have little effect on aggregate demand. A subsidy that creates a new buyer with much greater bidding power in a tightly constrained ownership market can have a larger price effect. Incidence is an empirical question guided by supply conditions. Evidence from Sweden finds strong capitalization of subsidized interest rates into house prices. U.S. evidence using mortgage-market segmentation also finds that easier credit increases house values at the margin.[R097][R098] These studies do not provide a universal coefficient for Africa or India. They establish a mechanism worth testing whenever governments inject purchasing power into a constrained market. Those price effects also influence the political interests that form around a programme.

Homeowner interests and housing supply

Subsidy programmes can create constituencies whose interests differ from those of future entrants. An ownership grant turns a renter into an asset owner. The new owner gains from neighbourhood investment and from scarcity that supports property values. Over time, an owner-heavy electorate can become a constituency for restrictive planning, low property taxation and protection of incumbent asset values. Government subsidizes ownership. Asset values rise. Owners resist new supply. Scarcity raises entry prices. Government expands buyer assistance to restore affordability. If these responses occur, additional public support can raise prices without resolving restricted supply. Pro-housing coalitions, often called YIMBY ("yes in my backyard") groups, try to reverse this asymmetry by organizing renters, younger households, employers, developers, construction labor and transit interests around more supply. One representation problem is that potential future residents may lack a local address and a vote in the jurisdiction that decides whether their home can be built. The fiscal system can change the coalition. Infrastructure grants and local revenue sharing can compensate jurisdictions that accept density. Property taxation can give municipalities recurring revenue from additional floor space. Citywide or metropolitan targets can reduce the ability of one neighbourhood to veto benefits that accrue across the labor market. Even an eligible household may remain excluded if landlords, sellers, or allocation practices prevent access.

Discrimination and access to subsidies

A housing subsidy has value only if the household can convert it into a dwelling. Discrimination can break the conversion. Landlords may refuse tenants by caste, religion, race, ethnicity, migration status, occupation or family composition. Brokers can steer households. Lenders can price neighbourhoods or income sources differently. Housing societies can impose social screening after formal eligibility has been met. The Seattle Creating Moves to Opportunity experiment tests whether

search assistance improves outcomes beyond financial support alone. A bundle of information, short-term financial help, customized search support and landlord engagement increased moves to high-opportunity neighbourhoods from 15 percent in the control group to 53 percent in the treatment group. Full customized support produced far larger effects than information and financial incentives alone. [R114] Indian and African subsidy programmes should measure the share of eligible households that obtain housing. Among eligible households, who actually secures a unit, lease or loan? How long does it take? Who is rejected? Which neighbourhoods remain inaccessible? Where law and data permit, outcomes should be broken down by social group, gender, migration status and income source. Count successful access to suitable housing alongside approved benefits. Evidence on search assistance shows why the content and delivery of that support need careful attention.

A tested assistance package cannot be reduced to a leaflet without evidence that the simpler intervention will work. Its value lay in helping families complete a move that the voucher already financed. Chile's peripheral-housing experience provides a separate warning: better physical conditions do not guarantee access to opportunity. Subsidy design should therefore follow households through search, landlord acceptance, occupation and continued access to jobs and schools. [R114] (See sources 11 –13.) The same household-level tracking is needed when public upgrading changes the value of an occupied neighbourhood.

Upgrading and displacement risk

Upgrading can preserve access and networks while creating new displacement risks for tenants and other occupants. Its welfare advantage depends on whether the site can be made safe and adequately serviced. It also raises the value of land and structures. That gain can displace the households the project intends to help. The incidence depends on tenure. An owner-occupier gains an improved asset. A structure-owning landlord can gain through higher rent. A tenant receives better services and may face a higher rent. A shopkeeper can gain foot traffic or lose the premises. A land claimant can capture value without living on the site. Every upgrading project should therefore create a pre-investment tenure map: occupants, tenants, structure owners, land claimants, businesses and vulnerable households. The project should state who has return rights, who receives temporary relocation support, how rents will be monitored, and what new rental supply will be added. Record occupancy before investment changes land values or eligibility incentives. Sites that remain hazardous require a separate decision about risk reduction or relocation.

Hazard-related relocation must account for the household's livelihood and access losses as well as replacement shelter. Upgrading where risk is manageable; relocation where life safety or critical infrastructure requires it. Compensation should include the economic value of location: travel, customers, school continuity and networks. A replacement unit alone can leave the household poorer. Whichever location is chosen, the municipality will inherit service responsibilities that need funding.

Fund and administer the subsidy over time

Subsidy promises need a funded exit from the budget cycle

A household can be eligible for a subsidy and still unable to complete a purchase if the appropriation arrives after the loan or construction commitment. Publish committed, authorised and disbursed amounts separately, with the queue of approved beneficiaries. Stress a one-year interruption in new allocations and in already-promised payments. Do not fund an open-ended entitlement with a temporary revenue windfall. The programme should specify which commitments survive a budget cut and who bears cancellation costs.

Responsibilities across levels of government

Capital subsidy and municipal service finance should be agreed together across levels of government. A national ministry can maximize unit delivery by building where land is cheap. The municipality then carries the operating and maintenance cost. The household pays through unreliable services when that liability is unfunded. The apparent national subsidy understates the local fiscal burden. A sound project should calculate the present value of municipal operating costs and identify the revenue source. Capital transfers can be linked to density, service standards, asset-management systems and local revenue effort. South Africa's current move toward performance-based metro finance points in this direction. The broader principle is that national housing policy should compensate cities for the marginal cost of accommodating low-income residents in well-located areas while giving cities a recurring revenue stake in added floor space. Without that alignment, exclusionary local behavior can be fiscally rational. A jurisdiction that bears the service cost and receives little revenue has reason to resist housing. Intergovernmental finance can fund those service costs and reduce the fiscal incentive to exclude new residents. The development also needs an account of recurring costs within the housing itself.

Operating subsidies and maintenance

A capital subsidy does not fund every cost after occupation. Appraisal must identify how management, routine maintenance, and replacement will be paid for over the life of the home. Public and social rental require rent collection, routine maintenance, security, major repairs and a replacement reserve. Condominium ownership requires fees and collective governance. Serviced-site programmes require utilities to maintain networks. Upgraded settlements need drains cleared, roads repaired and lights replaced. A programme that cannot fund these functions risks delivering an initial benefit followed by declining housing quality. Chile's experience with low-quality peripheral housing and many global public-housing failures show why capital efficiency should be measured over the asset's life. Every investment should therefore publish a twenty-year operating model. State the annual cost, payer, collection assumptions, reserve, asset owner and fallback if collections fail. The net present value of any gap is part of the subsidy. Recognising those commitments makes reform harder to conceal but easier to evaluate against the interests sustaining it.

Subsidy accounting and accountability

An illustrative levy comparison shows why legal liability, economic burden, and receipt of housing benefits are separate questions. A formally employed cleaner sees a housing levy deducted from her payslip each month. A contractor has been awarded work on a large housing estate. A family renting beside the estate applies for a flat. The levy payer, contractor, and applicant have different claims on the programme’s resources. Kenya’s Affordable Housing Act established a levy of 1.5 percent of employees’ gross pay, with an equal employer contribution; the law also provides for a levy on other gross income. For a worker earning KES 50,000 a month, the employee deduction is KES 750 and the matching employer payment is KES 750. Across twelve months their combined statutory payments amount to KES 18,000. The employer’s ultimate economic burden may fall partly on wages or prices: the statute alone cannot tell us. [R342] Collection and audit figures need to be interpreted within those distinctions.

Tracking the full public contribution

The subsidy account must include resources that do not appear as a cash transfer. Cheap land, tax concessions, guarantees, favourable development rights and free infrastructure can transfer value or

create liabilities. Reconcile these with the fuller public-cost account introduced above, then trace how prices divide the benefit among households, landowners, developers and lenders. The next exhibit distinguishes that economic incidence from the legal recipient of support.

The distribution of housing support depends on land, development, household, and location prices. The land price affects the cost of obtaining a site in a particular location. The construction price rewards materials suppliers, workers, builders and developers. The financing price pays for capital and risk over time. The cost of residence includes rent, loan payments, service fees, transport, lost earnings and upkeep. Together these costs determine whether the household can stay. Public money can lower one price while pushing up another. Imagine a household offered a subsidized flat at a price below its construction cost. The offer has little value if the family cannot raise the down payment, the daily commute absorbs the saving, the building has no reliable water, or a management company collects fees that rise faster than income. Conversely, a modest grant for a household's existing plot can fund useful improvements when the family already has secure location, earning networks and water access. Equal subsidy amounts can yield different household benefits. The framework therefore separates financing, delivery, and welfare claims that require different evidence.

Exhibit 9.1. Points at which public support changes beneficiaries

Decision in the chain	Party with discretion or bargaining power	Typical route by which value shifts	Observable test
Site selection and land transfer	Landowner, planning authority, land agency	Site price rises; public land transferred below its opportunity value	Independent land valuation; title; comparable transactions
Density, use and permits	Municipality, local politicians, large neighbors	Permission creates private land value; delay favors connected builders	Rights granted; approval times; permit-to-completion rate
Roads, water, drainage	Utilities, public works agencies, landholders	Public works increase private site values and landlord rents	Before/after land and rent panels; network-service tests
Materials and contracts	Contractors, suppliers, procurement bodies	Concentrated supply and change orders absorb grant	Competitive bid spread; verified quantities; defects
Finance and guarantees	Banks, developers, fiscal authorities	Cheaper capital boosts bids for scarce land or shifts default risk to taxpayers	All-in interest and fees; stress losses; guarantee claims
Selection and occupation	Allocating agency, brokers, landlords, lenders	Connected or already-bankable households obtain the scarce unit	Applicant-to-occupant audit; income, gender and exclusion data
Upkeep and resale	Building manager, owners' group, utility, local government	Maintenance shortfalls erase value; resale restrictions push sales underground	Fee arrears; defects; resale and twelve-month occupancy

Analytical framework. These are channels to test, not findings that capture occurs in every project.

A programme's funding, additional housing, and household benefit should be evaluated as separate claims. Legal allocation asks who is entitled to a grant. Economic incidence asks whose welfare or profits rise after prices and behavior adjust. Additionality asks what would have happened without the programme. A family can receive a legal grant while a landlord captures some of its value through higher rent. A developer can build a subsidized flat that a household would have purchased anyway. A project can help its direct occupants while raising property values for nearby owners. Each is a different claim and requires different evidence. Price-support evidence illustrates why the amount paid cannot be equated with the benefit retained.

Price support and housing costs

A grant's effect depends on supply, market visibility, and the opportunities for price adjustment. Suppose a government promises each eligible buyer a KES 900,000 grant. If serviced land is abundant, permits are predictable and builders can add homes, competition gives sellers a reason to reduce net prices and increase output. If the best locations have a fixed supply of permitted plots, some of the subsidy can be bid into land values and asking prices. Owners who purchased land before the policy then receive a windfall. Developers who bought after the rise may have normal profits and still sell expensive homes. The appraisal should record when the subsidy was announced and when land changed hands. The same reasoning applies to rent assistance. The relevant parameter is the response of rents to a change in benefit: how many additional cents of rent follow an extra unit of public aid, for the same dwelling and household, compared with a plausible no-reform path? A rise in housing quality or a move to a better neighbourhood complicates the calculation. So does a benefit that is temporary or hard for landlords to observe. Rental-assistance studies provide differing incidence estimates under different designs.

Incidence estimates should preserve the difference between a benefit change, a ceiling change, and the market studied. Studies of rent assistance report different incidence estimates. Gabrielle Fack's study of a French reform estimated that 78 cents of each extra euro of housing benefit appeared in higher rents paid by new recipients. Scott Susin's earlier study of US vouchers estimated rent increases of 16 percent in the low-quality housing market of the ninety largest metropolitan areas under his model. These findings come from specific countries, periods and methods; neither number is a universal landlord share. [R351, R352] Other designs yield very different results. A 2026 Journal of Public Economics study of a Finnish reform estimated a rent increase of about 3.6 cents for an extra euro of allowance, with a standard error of 2.8 cents. This small estimate was not statistically distinguishable from zero at conventional levels. An earlier Finnish study also found little evidence of price changes at allowance thresholds. The authors interpret the small changes in recipients' housing choices as one reason rent responses were limited. In the United States, Robert Collinson and Peter Ganong found that a one-dollar increase in a voucher programme's rent ceiling increased same-address voucher rents by 13 –20 cents; a different Dallas ceiling design improved the neighbourhoods participants chose. A change in a ceiling is not identical to a one-dollar increase in a household's cash benefit. [R353, R354, R355] A local test needs information on vacancies, competition, household choice, and supply.

Exhibit 9.2. Evidence on housing assistance and rents

Evidence and design	What changed?	Reported rent response	What a policymaker should learn
France, Fack (2006), reform- based study	Additional housing benefit for new claimants	Around €0.78 per €1 benefit	Rapid supply response cannot be assumed; landlords may capture much of the gain

Evidence and design	What changed?	Reported rent response	What a policymaker should learn
United States, Susin (2002), metropolitan comparison	Voucher programme exposure	Modeled 16% rise in low-end rents	Marketwide effects on nonrecipients deserve measurement; identification differs from modern experiments
United States, Collinson–Ganong (2018)	Voucher ceiling changes; designs and horizons differ	Main estimates about $0.46–$0.47 per $1 over six years; earlier same-address estimate $0.13–$0.20	Do not substitute a same-address estimate for the overall response [R458]
Finland, Eerola and coauthors (2026), quasi-experimental reform	Increased allowances for affected units	€0.036 per €1; SE €0.028	Large transfers can accrue mainly to residents when housing choices respond little

These are different causal estimands and markets; figures should be read side by side, never averaged.

A subsidy designed to help poor tenants should be tested in a market with known vacancies, competing landlords, real tenant choice and a plan to increase well-located supply. Tight price ceilings may protect a treasury budget while preventing access to good areas; loose ceilings may strengthen landlords' bargaining position. Digital rent data can improve assessment, although incomplete records of cash tenancies and informal subletting will bias any model that observes only formal agreements. India's programme channels illustrate how the accounting varies with the route through which assistance is delivered.

Compare subsidy results and fiscal exposure

Mi Casa Ya shows the difference between eligibility and funded allocation

Budget interruptions can constrain housing allocations even when a programme remains legally in place. In its March 2025 response to Parliament, Colombia's housing ministry said the 2025 budget was more than 39 percent below 2024 and could not guarantee additional subsidies and interest-rate coverage. It described the temporary closure of application and preassignment platforms in December 2024. That is a dated budget constraint, not proof that the legal programme had been abolished. A 2026 resolution allocated 26 subsidies to previously preassigned households. Distinguish new intake, reserved cases and actual allocations: their interruption imposes different risks on households, lenders and builders. [R468, R469]

Comparing subsidy instruments in India

National programme totals should be reconciled with the household's remaining contribution and the obligations outside the grant. The programme's public dashboard, last updated on 30 September 2026, reported 127.68 lakh sanctioned homes, 121.03 lakh grounded for construction and 99.07 lakh completed, approximately 12.77 million, 12.10 million and 9.91 million

homes, respectively. It reported central assistance released of INR 1.80582 trillion (INR 180,582 crore). These are administrative stocks accumulated over the scheme's life, not an estimate of the net number of households newly housed, the total economic subsidy or the quality of occupied neighbourhoods. [R105] The programme routes determine who can use that support.

Different programme routes reach different households and exclude others. Under the original programme, beneficiary-led construction helped eligible families improve or build on their own land. Affordable Housing in Partnership routed public support through multi-unit projects; a credit-linked scheme helped households with mortgages; and in-situ slum redevelopment attempted to combine land, relocation and construction. These channels solve different problems. Beneficiary-led construction can make incremental investment possible and preserve jobs and social ties. Its binding condition is access to an acceptable parcel. The landless renter in a dense ward can be excluded from that route even if her need is greater than that of a titled owner. [R345, R346] Households that qualify must still finance their remaining contribution.

The household contribution can remain large enough to prevent completion. In 2023 a parliamentary standing committee reported that an average economically weaker section house under PMAY-U cost about INR 650,000 (INR 6.5 lakh) and that the average beneficiary contribution was around 60 percent. Those figures describe the programme and period examined by the committee; they do not represent every state, project or the later PMAY-U 2.0 design. At that benchmark, 60 percent means INR 390,000 (INR 3.9 lakh) from the household and other resources beyond the central grant. A nominal subsidy can therefore leave a family with a payment large enough to stop construction. The committee reported that missing state shares in some states increased the household burden. [R345] That gap must be addressed across the institutions responsible for delivery.

Construction-stage payments cannot substitute for coordination among governments, lenders, and households. The programme divides responsibilities across several institutions. The Union government can announce a uniform benefit and count sanctions. States must provide their shares and clear land. Cities must issue permits and connect services. Banks decide whether the household can borrow the balance. Families supply savings and labor, often before all agencies have delivered. Each actor can meet its own narrow target while a house remains unfinished. Release of national funds on verified construction stages reduces one information problem, but it does not by itself cover a household's remaining financing gap. Programme design rules then need verification through actual occupancy and use.

Eligibility and financing provisions specify intended delivery without proving that families occupy suitable homes. PMAY-U 2.0, issued in September 2024, makes some of these choices explicit. For beneficiary-led and partnership units in most states, the central government offers INR 150,000 (INR 1.50 lakh) and the state must provide at least INR 100,000 (INR 1 lakh); funding splits differ in some states and union territories. The interest subsidy reaches up to INR 180,000 (INR 1.80 lakh) under its applicable terms. The new rental vertical allows conversion of suitable publicly funded vacant housing and the construction, operation and maintenance of rental buildings. Applicants for beneficiary-led assistance must establish rights to the land, with states able to provide heritable, nontransferable rights to some landless applicants. None of these design provisions by itself proves that the intended family occupies a good home. [R346] Relocation evidence shows why household outcomes can diverge from construction and allocation records.

Programme appraisal should include relocation costs and households excluded before becoming eligible applicants. Winners received the opportunity to move from an urban slum to improved homes on the periphery. Fourteen years later, the researchers found better housing among winners, but no gains in income or human capital and weaker access to family and caste support. Thirty-

four percent of lottery winners never moved in; another 32 percent subsequently left. These were lottery winners in one programme, not PMAY-U beneficiaries. The results support measuring access to livelihoods and mutual help alongside physical housing quality when appraising relocation. [R161] Construction grants can increase the value of property already held by titled owners. Contractors receive paid work, while state and city agencies face matching-fund and infrastructure obligations. These benefits and costs should be recorded explicitly. Renters, seasonal workers, migrants, households lacking documents and tenants discriminated against on grounds of caste or religion may enter the process late or never. An application portal can make these exclusions harder to see if the denominator is defined as eligible applicants rather than all housing-insecure households. Two distinct audits are needed to examine delivery and inclusion.

Audit both recorded delivery and the households omitted or unable to use the benefit. One traces money through central government, state, city, developer and household accounts. The other traces people: eligible households, applicants, sanctioned beneficiaries, completions, actual occupants and those who sell, rent out or leave. Link the two only under legal consent and privacy controls. Without both, impressive construction figures and genuine beneficiary gains can coexist with serious exclusion. Kenya's levy programme requires the same distinction across land, contracts, occupation, and maintenance.

Housing levy accountability in Kenya

A levy-financed project needs the economic cost of its site and obligations, not only their book value. The compulsory levy pools contributions and finances a national building programme. Its financing design combines contributions from many people with benefits distributed over time: many people contribute, a smaller number obtain a home now, and the stock of affordable housing expands over time. Its justification depends on delivery, fairness to low-income contributors, and an allocation rule that citizens can scrutinise. Public accounts should show how recurring contributions finance completed, well-located and occupied homes. At the planning stage, the first risk is site readiness. A selected parcel must pass a chain of tests: public or private ownership, boundaries, rights of occupants, permissible use, access roads, trunk services, resettlement obligations, geotechnical conditions and the legal power to transfer sectional units. A public agency can list the land as free; if the land is disputed, unserved or occupied, a contractor inherits costs and delay that no single budget line properly owns. A site with a low book value can be expensive to society. Announced project counts must then be reconciled with readiness and contract commitments.

Delivery accounts should link prepared sites and construction contracts to the agencies responsible for use and maintenance. Cash can accumulate faster than projects absorb it. The Auditor-General's special audit found weak contract documentation, gaps in approvals and contractor supervision, and the lack of an integrated programme appraisal. Subsequent government work may correct these gaps. That possibility makes dated project-level reporting essential: publish the status as at the audit, what changed afterward and the independent evidence of correction. [R250, R251, R252] Procurement choices matter because a contractor's payment is not automatically a household's subsidy. Awarding multiple projects to a small set of contractors may bring economies of scale and speed; it may also exhaust working capital and supervisory capacity. A building programme may gain support from contractors and officials responsible for delivery. Local utilities and county officials face unfunded connections and maintenance obligations. Tenants in informal settlements may fear relocation. Construction agreements must therefore include the agencies and residents responsible for occupation and maintenance. The welfare assessment must follow the entire investment rather than one reported milestone.

Follow levy finance through verification, delivery, occupation, and household benefit. Does a low-income buyer qualify for the home and for finance? What deposit and monthly payment are required? Will the resident pay for transport, water storage, repairs and management? Are the units truly additional to market production? How does the allocation affect households who do not receive one? If a nearby landlord raises rents after roads and water arrive, part of the public investment goes to that landlord, although the physical works may still create social value. One straightforward reform would give each project a public subsidy record. It would join audited cash flows to land opportunity cost, contract changes, independent certifications, public eligibility rules, verified household occupation and the funded maintenance plan. The identification number would stay with the site when officials or contractors changed. Aggregate information would be public; sensitive records of individual households would remain protected. The audit findings make verification, coordination and enforcement necessary parts of programme administration. South Africa's housing evidence shows why location can change that benefit even under the same grant model.

Housing assets and job access in South Africa

Housing-asset programmes require parcel-level scrutiny of location as well as evidence of asset delivery. Grant-funded ownership has therefore been a prominent route to redress. Yet inherited urban geography puts inexpensive land far from many places where jobs and incomes are found. A government may hand over a debt-free asset and still leave a household worse placed to earn a living. The Gauteng City-Region Observatory mapped publicly supported housing against major economic centers using provincial data available in July 2008. Average distances between housing areas and the nearest selected centers varied sharply: near Midrand the mean was 7.8 kilometres; for sites on the outskirts of Pretoria and Johannesburg the mean reached 25.7 kilometres and 20.3 kilometres, respectively. These are distances to the chosen centers using an older project dataset, not measures of each resident's actual daily commute. They show the importance of checking location at the parcel level. [R349] Different employment findings make household circumstances and destination conditions central to the comparison.

The welfare effects of subsidised housing vary with household selection, location, and access to work. Simon Franklin used longitudinal household data and spatial variation in the location of housing projects to study households who received free government housing. His research found income gains driven substantially by increases in women's employment, suggesting that secure housing can ease constraints on work. Nathalie Picarelli used a fuzzy regression-discontinuity design around eligibility rules to study relocation. She found a decline in household labor supply two to four years after relocation, driven mainly by women's hours, with greater distance from opportunity an important possible mechanism. The designs, places, time horizons and treatments differ. Their findings should prevent a sweeping verdict that subsidized ownership always helps or always harms employment. [R347, R348] The national programme must also respond to differences in location and household need.

An applicant register cannot establish the location and service requirements of every household. In March 2026 South Africa's housing minister reported approximately 3.4 million households on the National Housing Needs Register, while cautioning against treating that number as the single official housing backlog. Applicants may value a formal allocation, but their needs differ by household and location. Peripheral sites can reduce land-assembly costs while increasing the cost of access and services. Standardised greenfield projects may simplify construction; the appraisal must also include the roads and utilities the local authority will operate. [R350] Rental institutions offer a different way to assign continuing responsibility for those requirements.

Regulated social rental housing connects asset management to continuing income, but its finances still have to work. South Africa also offers a useful counterpoint through regulated social

rental housing, where a professional housing institution retains responsibility for the asset. Better locations and sustained operating income can improve access and care. Such institutions face their own risks: debt service, collection failures, subsidies paid late and pressure to dilute income targeting. A tenure model that works in one rental market will fail in another if its cash flows cannot cover repairs and management. [R357] These alternatives should be compared through the household outcomes identified by the research.

Compare the value of the home with changes in earnings, access, costs, and mobility. A practical rule follows from the two studies. Before comparing a subsidized home with a rental room, value the asset and the change in earnings, household travel time, school continuity, informal insurance, health, upkeep and freedom to move. The household should make the trade-off with credible information. A grant of the same amount can finance homes with very different travel costs and employment access. Appraisal should retain both positive and adverse results when comparing the proposed home with the real alternative.

The contrasting employment results make household selection, care responsibilities and job access part of subsidy appraisal. They cannot be reduced to a clean experiment changing only location. Compare the proposed home with the household's real alternative and retain both positive and adverse findings when setting eligibility, location and tenure rules. [R347, R348] Public land introduces another contribution whose value and distribution can be missed in the cash account.

Public land contributions

Public-land subsidy should be valued explicitly and separated from restrictions that preserve scarcity returns. Suppose a government transfers a serviced city parcel to a developer for a nominal fee in exchange for 500 affordable units. The land could instead have been leased competitively, reserved for future schools or used to create more homes through smaller plots and higher density. Its opportunity cost equals the value of the best feasible alternative after taking account of public purposes and legal constraints. An independent appraisal should measure that cost before the agreement is signed. Land enters politics earlier than the building contract. A landowner benefits when zoning, water and a public road raise what others will pay for a site. Unequal access to information or discretionary allocation can give a developer favourable rights before competitors can bid. Public-land disposal can transfer decades of appreciation through a single cabinet decision. Planning committees, land registries, courts, incumbent occupants, neighboring owners and utility providers all hold veto points. The appraisal should distinguish the protection of legitimate rights from restrictions that preserve scarcity returns. Contract design can reduce capture while retaining feasible construction incentives.

Transparent valuation and enforceable obligations can preserve public value without assuming every concession reaches households. First, value land at its highest legally feasible use, with a recorded comparison to other social uses. Second, award sites through a transparent competition that specifies quality, lifetime affordability, location and number of homes, rather than choosing the developer and negotiating benefits afterward. Third, make affordable obligations enforceable for a fixed period, with clawbacks when units are diverted to higher-income buyers or price caps are breached. Public ownership or long leases can preserve land value for future beneficiaries, although those models require durable management institutions. Occupied sites also need representation and remedies for existing claims.

Land regularisation and redevelopment require explicit protection for tenants and other groups absent from formal ownership records. Counting legal titleholders alone misses the people who pay rent, earn locally and depend on the site. Thailand's Baan Mankong programme offers a contrasting institutional model: housing support and infrastructure money flow through community

organizations, complemented by savings and collective loans. CODI describes a package of roughly 80,000 baht per household with components for infrastructure, construction and community process, and cooperative land and housing loans at 4 percent before cooperative on-lending margins. Programme descriptions document its design; they do not provide randomized estimates of housing welfare. Independent scholarship shows both the achievements of collective bargaining and the conflicts within community groups. [R125, R356] The recipient of a subsidy gains authority over how it is used. A developer-led contract concentrates authority in the firm and the public agency. A community-held budget lets organized residents negotiate with landowners and contractors, while creating risks of elite control within the community and exclusion of new migrants or tenants. Neither institutional choice automatically represents everyone. The rules should provide representation and appeals for tenants, new migrants and other groups at risk of exclusion. A worked account shows how to consolidate these contributions before claiming a subsidy amount.

Subsidy accounting for a 1,000-home development

Use the same neutral price set as the 100-hectare, 5,000-home district in Chapter 4. Allocate CU 10 billion of original land value across 5,000 homes: CU 2 million per home. Infrastructure costs CU 4.75 billion, or CU 950,000 per home. Add CU 2.25 million construction and normal margin: the all-in benchmark is CU 5.20 million. This illustration allocates the whole district land cost, including public space; it does not value only saleable plots. Model scale: district account, with an independent hypothetical price level; these CU amounts are not comparable with the CU 20,000 small-home examples.

Exhibit 9.3. Public subsidy and household benefit: an illustrative model

Item	CU per home	CU million for 1,000
Construction and margin	2,250,000	2,250
Whole-district land allocation	2,000,000	2,000
Infrastructure	950,000	950
Benchmark all-in cost	5,200,000	5,200
Cash support	900,000	900
Noncash land and services	2,950,000	2,950
Gross public commitment	3,850,000	3,850
Household price	1,650,000	1,650
Benchmark price advantage	3,550,000	3,550
Unreconciled difference	300,000	300

All inputs are invented teaching assumptions. An unexplained CU 300,000 per home is a reconciliation question, not evidence of misconduct in any country or project.

Cash support of CU 900,000 plus land and infrastructure of CU 2.95 million gives gross public support of CU 3.85 million per home. Against a household price of CU 1.65 million, the

benchmark price advantage is CU 3.55 million. The CU 300,000 difference must be reconciled against scope, finance, timing, quality and returns before drawing an incidence conclusion.

Extra transport and upkeep of CU 4,700 a month equal CU 56,400 a year. At 5 percent real discounting with year-end costs, their present value is about CU 244,000 over five years and CU 795,000 over twenty-five. Against the revised CU 3.55 million benchmark price advantage, these leave CU 3.306 million and CU 2.755 million respectively before other benefits and costs. They are not a complete welfare calculation: financing, forgone rent, safety, services, income and resale value remain to be valued.

If only 700 of 1,000 completed homes provide qualifying occupation throughout the first year, gross public support of CU 3.85 billion costs CU 5.50 million per occupied home, versus CU 3.85 million per completion. Over ten years of stable occupation, that is CU 550,000 per gross home-year at 70 percent occupation or CU 385,000 at full occupation, before recurrent public support. These gross ratios still require a counterfactual to estimate additionality. Report the additionality and duration assumptions beside the fiscal ratio.

Make allocation and continuing obligations accountable

Measuring the benefits of public spending

Public reporting should identify the resources committed, the housing added relative to a credible alternative, the households retaining access, and the other parties receiving economic benefits. Fieldwork should make these claims traceable across locations and household groups.

A subsidy design still needs a credible public budget. Chapter 10 includes land and service obligations across agencies rather than treating the housing allocation as the complete account.

Selected readings

Santiago inclusionary housing [R505]. Read the case synthesis for the design and distributional questions in subsidy-supported inclusion; it does not estimate long-term household income effects causally.

Mi Casa Ya budget response [R468]. Use the distinction between applications, preassignments and funded allocations; a legal programme can persist while new allocations are constrained.

Salt River Market city account [R228]. Use the disclosed land concession and planned units to trace public support; an official project announcement is not evidence of completed occupation.

Judgment and transfer conditions

Trace the full subsidy and its incidence over time.

Confidence: High for the accounting principle; uncertain for local pass-through. Revisit trigger: Credible evidence of different price, rent or retention responses.

Transfer the subsidy that closes the identified land, service or affordability gap at a justified public cost. At roughly ten times the pilot scale, test added safe housing, prices, rents and retention for the bottom 50 percent. At roughly one hundred times the scale, require fiscal capacity, supply response and enforceable affordability. A larger construction grant is not justified merely because a smaller one failed to resolve a missing connection or unaffordable payment.

Exercise

Trace one grant through land price, construction cost, lender terms and household payments. What counterfactual would distinguish additional supply from a transfer to an existing owner?

10. Public Finance and the Full Cost of Housing

Can the public sector fund the housing commitment through occupation and upkeep?

Priority C requires the whole public commitment to be affordable and explicit. This chapter supplies the fiscal account for Test 5 and the funded delivery obligations for Test 6. Budget the public work needed to make land usable, household construction safe and adequate housing affordable. Separate network investment, technical services and targeted assistance from any public procurement of dwellings. Consolidate land and continuing obligations across agencies, identify who bears shortfalls and distinguish one-off land receipts from recurrent revenue. The examples show how an apparently affordable project changes when all public contributions are counted.

Cape Town's Salt River transaction illustrates why a land commitment must be distinguished from completed housing. In June 2026, Cape Town handed over the Salt River Market site, close to the city centre, for a planned 970-unit rental development. The scheme promised 300 regulated social rental homes and 670 other apartments described as affordable-market rentals. The municipality said it had discounted the land by 90 percent, a concession it valued at roughly R95 million. The social-housing developer, Communicare, expected about R127 million in capital support from South Africa's Social Housing Regulatory Authority; it also planned to put in R40 million of its own funds. These were reported commitments and plans. They did not establish that the flats were finished or occupied. [R228, R229, R079] The value of the land concession belongs in the subsidy calculation from the start.

Account for every public contribution and obligation

Competing claims on public land

The public-land contribution creates a subsidy whose distribution extends beyond the intended tenants. The land concession alone amounted to about R98,000 for each of the 970 planned apartments, averaged across the whole project. The separate R127 million social-housing grant amounted to about R423,000 per planned social apartment. The two calculations answer different questions: the first spreads a site-wide land concession across every apartment; the second assigns a stated grant to its 300 intended units. Neither tells us who will ultimately capture the benefit. A developer may absorb a subsidy through lower financing costs. A tenant may receive it through lower rent. Allocation rules may favour households with better information or easier access to documentation. A landowner nearby may gain when redevelopment raises local prices. Existing users and traders also have claims that the transaction must address.

A public-site appraisal should compare alternatives while accounting for the rights and livelihoods of existing users. Cape Town reported that 70 informal households had been moved to upgraded accommodation in Maitland in May 2026, following a long effort to resolve occupation of the property. The redevelopment also had to deal with long-standing market traders; the planned scheme reserved space for four produce traders. The relocation creates a question that a construction target cannot answer: what happened to the households' journeys to work, their costs, their claims, and their

choice of where to live? The municipality's description of the process and independent reporting establish the relocation and dispute. They do not provide a verified account of household welfare after the move. [R228, R230] The central site offers access to transport and creates competing public choices: sale, rental income, housing, facilities, or continued use. Compare these options while accounting for existing occupants and traders. Changes in the published project terms show why the complete agreement needs continuing review.

A housing transaction should be appraised through its final obligations rather than a single initial announcement. An earlier city announcement in 2022 described a different proposed unit mix (723 affordable units and 216 social units) before the revised 970-unit, 300-social-unit proposal was announced in 2026. Development decisions changed while the land remained public. Later reporting described the project's long history and repeated announcements. Land release remains a separate milestone from completion and occupancy. Development rights, social agreements, finance, design, approvals, building, and occupancy require separate entries in the project record. [R228, R231, R232] An agency's capital budget can omit costs paid elsewhere. A national subsidy may leave municipal service obligations unfunded. A public land concession may leave households facing connection fees and long journeys. Appraisal should consolidate these contributions and recurring costs before comparing alternatives. A housing programme needs a funded agreement across public agencies and private actors. It must value public assets, assign service costs, specify how publicly created gains are shared, and protect affordability after occupation. Six linked accounts can make the public, private, and household consequences visible.

Six accounts for a housing investment

A housing appraisal should cover land, construction, sales, subsidies, and recurring public costs, alongside the household's ability to pay, reach work, and remain in the home. Consider six ledgers that must be reconciled before calling a housing investment affordable. The cash account records grants, taxes, loans, debt service, rents collected by public owners, utility charges, and operating subsidies. Extend it beyond the annual budget to show later repair and service commitments. The land ledger records the market value of the parcel under lawful alternative uses, the value of a leasehold or freehold transferred, any change in its development rights, and the value retained by the public. A free transfer belongs in this ledger even when cash spending is zero. Valuation should use the rights actually available or credibly proposed under the counterfactual, with sensitivity tests for zoning; assigning the highest imaginable speculative price creates a different distortion. The infrastructure ledger covers access roads, bulk water, sewers, electricity capacity, drainage, waste collection, schools, clinics, and transport. Some expenditures are upfront; others recur each year. The wrong comparison places only the project's internal pipes on the developer's side and leaves the trunk network outside the calculation. The consolidated account must also capture contingent risks and transfers outside the project budget.

Risks, tax concessions, public assets, and future receipts belong in the full public-cost calculation. A contingent liability can be small in current cash terms and costly in a downturn. The household ledger follows rents or mortgage payments, deposits, energy bills, water tariffs, repairs, transport fares, travel time, lost work, school access, and eviction risk. A flat with a low price and a two-hour commute may be unaffordable once the household's travel costs are included. The distribution ledger asks whose welfare changes. Owners of appreciated nearby land, tenants, informal occupants, registered bidders, women living alone, people without formal identification, contractors, local politicians, and future taxpayers belong on separate lines. A land concession can be a good investment in inclusion while still producing large windfalls for actors the programme never meant to subsidize. The fiscal calculation should therefore begin with a consolidated view, alongside agency-specific cash flows: Net present public cost = cash subsidies + value of public land committed + public infrastructure and

operating costs + expected guarantee losses + tax concessions – public receipts – retained land or housing value – credible incremental public revenues. Each entry needs assumptions and responsibility that auditors and residents can inspect.

Every fiscal entry should disclose timing, valuation, uncertainty, and the institution responsible for the obligation. Do not count the land concession twice: if an appraisal already includes a below-market land price as a subsidy, its market value must be adjusted before adding a separate opportunity-cost line. Do not treat an anticipated rise in property-tax collections as a certainty; specify how much is truly incremental and which government is legally entitled to collect it. Nor should uncertain future house-price appreciation substitute for cash needed to maintain drains next winter. A full economic appraisal then adds welfare effects that fall outside the fiscal account: safer buildings, fewer flood losses, time saved reaching work, cleaner air, and the costs of displacement. Fiscal affordability and social value answer separate questions. Appraisal should establish both fiscal feasibility and expected net social benefit. Evidence and judgment. The six-ledger framework is an analytical proposal. The cited cases establish that capital grants, public-land concessions, municipal revenues, and long-lived affordability obligations are material and observable; they do not prove that this particular accounting template has been evaluated in a randomized trial. The template makes assumptions explicit for review by auditors and residents. A public-land example shows how the choice of contract changes what the contribution purchases.

Public land and developer bids

A land concession should be assessed against the additional housing benefit it secures and the alternatives forgone. Suppose a city owns a site worth 100 million in local currency if sold under its existing legal rights. A developer offers to build 500 apartments if the site is transferred for 10 million. The implied land concession is 90 million. That figure may be justified. It becomes a subsidy to low-income households only if contracts and market conditions cause households to receive the gain through better locations, lower housing costs, or rights that endure. The same logic explains why cash subsidies sometimes raise land prices. When scarce, legally buildable sites limit supply, a subsidy that increases what buyers can pay can also increase what developers bid for those sites. Part of the subsidy then moves backward through the chain, from buyer to developer to landowner. Where serviced sites and legal density can expand quickly, the market may instead produce additional homes. The size of each transfer is an empirical question. A city should compare land transactions and buyer prices before and after a subsidy, test supply responses, and distinguish the value of extra homes from increases in the price of existing sites. That benefit must be stated as an enforceable outcome before a legal form is chosen.

Public-land support should purchase specified affordability, occupancy, service, and protection obligations. A vague promise of "affordable housing" lets the recipient set rents near the market price, choose relatively wealthy tenants, or sell units after a short control period. The public then loses the asset and has few tools to keep the agreement. A clear contract instead states the number of homes reserved by income group, the rent formula, the period of restriction, the selection rules, the tenant's protections, service standards, the sanctions for breach, and the treatment of the asset at expiry. Different contract forms allocate the authority to enforce those obligations differently.

Choose the contract form after defining the outcome and the risks each party can control. A freehold sale with covenants brings cash immediately and leaves the city with limited future control unless covenants survive each resale and can be enforced against successors. A long ground lease keeps title public and can provide periodic income and reversion rights, but investors must believe that renewal and compensation rules will survive political changes. A development agreement with cross-subsidy uses profitable market units to help fund restricted homes; the private partner will negotiate the

market-rate share and may seek higher density later. A public or limited-profit housing owner can retain affordability for decades if it has patient capital, sound operating revenue, and independent oversight. [R233, R079, R234] Compare the enforceable rights under each instrument. A ninety-nine-year lease with unrestricted subletting may yield weaker public control than a properly recorded sale agreement. Public ownership with no maintenance budget may preserve title while allowing the asset to deteriorate. The state needs to specify the enforceable housing outcome before choosing the legal form. Procurement can then make bidders compete on a consistent public-benefit specification.

Where a development contract is the chosen route, a fair procurement asks qualified teams to compete over measurable public outcomes at a disclosed subsidy level: number of deeply affordable homes, rent ceilings, access for excluded groups, quality, carbon and flood performance, operating reserves, and date of occupancy. A bid that offers the highest land premium may win a public auction while delivering the fewest affordable homes. A bid that promises the most units may be selected without adequate scrutiny of its operating costs. The residual-land-value method is useful here: estimate revenue from allowable rents and sales, subtract verified building, finance, operating, and risk costs plus a reasonable developer return, and identify the land value that remains. Publish the assumptions and challenge them with independent comparables. Changes after award need the same scrutiny because they can alter the value and risk of the original agreement.

Public-land amendments should reconcile institutional responsibilities and update the financial model before approval. Ministries can hold title while cities must service the site. Officials may prefer a one-off sale because receipts help the current budget. Developers and intermediaries may seek a private allocation before new planning rights are granted. Nearby homeowners may support the public housing label and then oppose the density required to make it feasible. A transparent auction alone cannot fix these problems: it must be preceded by disclosure of rights, claims, valuations, and the public obligations attached to each bid. Changes after a land transfer can give a developer benefits beyond those priced into the original agreement. A city might discount land in exchange for low rents, then grant additional floor space while allowing those rents to rise. Contracts should specify how gains from rezoning, infrastructure, or changes in the affordable-housing mix will be shared. An independent valuer should update the financial model before amendments are approved. India's housing commitments illustrate why that reconciliation must extend across budgets and levels of government.

Test revenue instruments and continuing affordability

Housing commitments and fiscal capacity in India

National targets and grants should be reconciled with land, infrastructure, and recurring obligations before estimating subsidy per home. India's PMAY-Urban 2.0 sets national targets and financing commitments. Approved in August 2024, it envisaged assistance to ten million urban families over five years, total investment of about INR 10 trillion, and public assistance of about INR 2.30 trillion. Its routes include beneficiary-led construction, housing in partnership, rental housing, and interest subsidies. For beneficiary-led construction and partnership units in most states, the framework combines INR 150,000 of central assistance with a minimum INR 100,000 state contribution per home; other state and union-territory categories have different funding splits. [R346] These figures describe design and authorization; they are no measure of homes occupied or of poor households' welfare. [R235, R236] The next question is how those commitments are delivered locally.

National housing grants depend on state and municipal services to produce usable homes. The scheme assigns different fiscal responsibilities to national and subnational governments. The national government can transfer funds for a dwelling. States and urban local bodies must enable trunk

infrastructure and social facilities. The programme explicitly requires state or local resources to bring services to project sites. A flat can satisfy a central construction milestone before a municipality has the means to deliver reliable water, sewage, drainage, a safe road, or bus access. [R235] The ability to fund these services depends on municipal revenue.

Municipal revenue limits the services that can accompany new housing. Municipal finances constrain the ability to meet these obligations. In its November 2024 Report on Municipal Finances, the Reserve Bank of India reported municipal-corporation revenue receipts of only 0.6 percent of GDP in 2023–24; own taxes were around 30 percent of total revenue. Municipal bonds outstanding in March 2024 were about INR 42.04 billion, only 0.09 percent of outstanding corporate bonds. These totals cover the reporting municipal corporations, rather than every form of urban local government, and the receipts figure refers to budget estimates. These figures indicate the limited aggregate revenue available to the reporting corporations for services, including those required by new housing. [R237] A consolidated project account makes the resulting obligations visible.

A consolidated appraisal includes land, infrastructure, and recurring municipal costs alongside the construction grant. Follow a hypothetical project of 1,000 homes. Suppose each home requires INR 1 million of construction expenditure. The INR 1 billion construction bill is paid through INR 150 million of central assistance, INR 450 million of state or local support, and INR 400 million from households. The central share is INR 150,000 per home, matching the most-states scheme provision; the assumed state or local share is INR 450,000 per home, including INR 350,000 above the INR 100,000 minimum state contribution. These additional resources are an assumption of this example, not a national entitlement. Suppose public land worth INR 150 million is contributed outside the development budget. Suppose bringing mains, roads, and drainage to the site costs the city another INR 120 million. Recurring municipal service and asset-maintenance costs amount to INR 4,000 per unit each year over twenty-five years. Discounted at 5 percent, the recurring bill has a present value of approximately INR 56.4 million. The consolidated public commitment is therefore about INR 926.4 million, or INR 926,000 per planned home, before any offsetting tax receipts, charges, residual public asset values, or wider welfare gains. The worked figures illustrate budget boundaries rather than a forecast for an actual project.

A hypothetical consolidated account exposes obligations that can be hidden when agencies report separately. This example does not estimate PMAY-U's actual average cost. The construction bill is fully funded by the INR 150 million + INR 450 million + INR 400 million sources; land, external infrastructure, and maintenance sit outside it. The public total adds INR 150 million + INR 450 million + INR 150 million + INR 120 million + INR 56.4 million once each. At an assumed co-payment of INR 400,000 per home, a household with annual income below INR 300,000 still needs savings or credit that may be difficult to obtain. The national grant can therefore coexist with exclusion at the point of purchase or construction completion. In this hypothetical, payments and responsibilities are poorly sequenced. The ministry pays its share, the state contribution may be delayed, and municipal infrastructure depends on uncertain revenues. Financing costs rise while households wait for services. No budget holder has reserved money for repairs. The remedy is to reconcile the funding schedule and assign the remaining obligations before construction.

Synchronise housing and service budgets while allocating support across tenure forms according to need. National capital commitments should be paired with signed state and municipal service plans, land valuation, named financing for last-mile connections, and a twenty-year maintenance agreement. Funding tranches should depend on independently verified readiness and occupancy. Equalisation grants should reflect fiscal need: a poorer city with the deepest need and weakest tax base

should receive a larger predictable infrastructure grant, while every city should face incentives to disclose land, approve suitable density, and maintain assets. PMAY's beneficiary-led route also makes an important distributive choice. Assistance to build on already available land is useful to households that possess a buildable claim. Renters, recent migrants, informal occupants, women excluded from family title, and households whose land cannot pass the permit test need a different instrument. Housing rental and upgrading programmes should receive attention in proportion to need, rather than appear as residual categories after ownership targets are set. [R235, R236] A dedicated housing levy creates a different financing route but still requires the same distributional account.

Housing levy finance in Kenya

Kenya's levy finances housing through a tax whose contributors may differ from its beneficiaries. Under the Affordable Housing Act, 2024, the Kenya Revenue Authority collects a levy of 1.5 percent of an employee's gross salary from the employee and another 1.5 percent from the employer. The statutory design also reaches specified nonsalaried income. On a gross monthly salary of KES 50,000, the worker's deduction is KES 750 and the employer's assessed contribution another KES 750. The levy creates a recurring revenue source, with receipts dependent on earnings and compliance. It is also a tax claim on earnings, whose beneficiaries may be different from the people financing it. [R239] The economic burden also needs to be distinguished from the party legally required to remit it.

The burden borne in the economy need not match the party named in the law. Some employers may absorb the employer contribution; others may eventually reduce wage growth, hiring, or other compensation. The extent depends on labor-market conditions and cannot be derived from the statutory split. A low-paid salaried worker may pay the levy for years while failing to qualify for a mortgage, raise a required deposit, or secure a unit near work. A richer buyer may be better placed to make the initial payment for a nominally affordable home. A public programme that relies on formal payroll withholding also raises practical questions about reaching self-employed households and protecting precarious workers from arbitrary enforcement. Legal validity and distributional value are separate questions requiring their own evidence.

Kenya's Court of Appeal dismissed the constitutional challenges to the Affordable Housing Act on 25 September 2026. In Gikenyi B & 5 others, it upheld the statutory framework and levy, while maintaining the National Land Commission's legal role in public-land allocation. It held that the Commission on Revenue Allocation should have an opportunity to consider relevant financial provisions before parliamentary debate; on the evidence before it, the Court could not determine that this opportunity had actually been denied. This distinction matters: a statement of the required procedure is not a finding that a named institution breached it. [R240, paragraphs 149, 187–191]

The judgment's scope leaves the programme's delivery and distributional effects to separate evidence. The Court declined to admit additional evidence about post-judgment construction progress and treated the practical effectiveness of informal-sector self-assessment as outside the constitutional dispute. Its decision therefore cannot establish who ultimately receives housing or how the levy affects wages and consumption. [R240, paragraphs 7–16 and 136] A dedicated fund can support predictable financing; appraisal must still compare that commitment with alternative uses of revenue and count county service and maintenance obligations. Annual accounts should connect contributors, expenditure and sustained household benefits.

A credible levy-backed housing agreement would publish annual accounts that connect each class of taxpayer to each class of benefit. It would show contributions by income and employment status; the number of homes for renters versus owners; the income distribution of applicants, successful tenants or buyers, and rejected applicants; the full public subsidy per occupied home; loan arrears; resale

restrictions; and where the units sit relative to jobs and existing infrastructure. Administrators should not expose named household income records to the public. Independent auditors can publish distributions and conduct confidential checks while retaining rights of appeal for individual cases. The distributional case requires evidence: a national tax can help people who never obtain a unit themselves if it reduces the costs of urban poverty, improves labor mobility, and expands access to safe, accessible homes. That claim needs measurement. The governing test is whether the levy buys a housing service that low-income families could not otherwise secure, at a lower fiscal and social cost than realistic alternatives. Land-value capture provides another financing source whose distribution depends on the transaction design.

Keep land receipts separate from recurring service revenue

China's land-finance experience is a warning about maturity and revenue risk as well as an example of mobilisation. A one-time receipt can fund a network whose operating liabilities continue for decades. Put a recurrent budget, reserve and downside plan beside the capital account. Test a fall in land sales before borrowing against them; show guarantees and obligations to unfinished developments separately from direct municipal debt. These are appraisal implications of the mechanisms discussed in Chapter 2, not a prescription to copy China's institutions.

Land-value capture from infrastructure

An illustrative readjustment account shows how owners and the city can share value created by servicing. A plan changes its boundaries and permissions and connects it to roads and drainage. Appraisal should estimate the value created by those actions and specify how the owner's return and public infrastructure costs are shared. Gujarat's town-planning schemes offer a practical answer. In Ahmedabad's land-readjustment model, owners may surrender up to 40 percent of their original land for roads, public facilities, and land that can be sold to help finance infrastructure; they retain reconstituted serviced plots, often around 60 percent of the original area. Owners accept a smaller area in exchange for more valuable, buildable land. The city acquires corridors and sites that would be difficult to assemble through plot-by-plot purchase. [R242] The same exchange can exclude people whose claims are not represented in the ownership bargain.

Readjustment needs separate treatment of tenants, workers, and other affected users to avoid concentrating benefits among owners. Researchers Bishwapriya Sanyal and Chandan Deuskar found that registered landowners were the participants recognized by the process. Renters, landless households, and informal settlers had weaker channels of voice and claims. State procedures could delay schemes, while local authorities lacked control over key approvals and land auctions. Land readjustment worked as a mechanism for coordination among legally recognized owners; it could also harden the exclusion of people whose lives and livelihoods occupied the land without recognized title. [R242] These risks call for changes to the agreement and a comparison with feasible alternatives. Before drawing the final plots, authorities should enumerate occupants as well as owners; map informal livelihoods and tenancies; assess lost income and access; establish an independently funded grievance process; and reserve well-located plots or homes for households without title. The reconstituted plot register should be matched with a social-claims register. Compensation can combine cash, serviced land, rental assistance, replacement market space, and legally protected return rights according to the harm suffered. No one method fits every household. Infrastructure charges also need to align the agency collecting value with the one paying for services.

Land-value gains do not automatically reach the municipality that bears the infrastructure cost. Bogotá has long used betterment contributions to help finance infrastructure, and the OECD

reports that improved public transport can be capitalized into nearby land values; estimates cited in its 2025 assessment suggest uplifts of about 15–20 percent for transit access in Bogotá. These are estimates in a specific urban setting, not a reliable percentage a city can levy on every parcel. The same assessment notes disputes over assessed gains and the difficulty of implementing charges perceived as unfair. [R233] Capture instruments face three practical tests. First, additionality: did a public decision create or help create the gain, and can it be separated from background market appreciation? Second, liquidity: can the owner pay the levy without selling a modest home or driving out a tenant? Third, assignment: does the revenue reach the public agency financing the improvement? A city that creates value through a new road but cannot retain the proceeds may have too little revenue or incentive to finance such roads. A national agency that collects development charges while a municipality pays for drainage creates the same mismatch. A published sharing formula and payment schedule can address part of that mismatch.

Set feasible value-sharing rules before investment changes prices, while accommodating cash-poor owners and recurring service costs. A one-off charge is poorly suited to recurring operations. Recurrent land or property taxes, with protections for vulnerable owners, can support services over time. Betterment levies and plot auctions are better suited to identifiable capital works. Housing subsidy, infrastructure finance, and property taxation should complement one another, each matched to a different fiscal burden. Property taxation addresses a different part of that recurring financing requirement.

Property taxation and neighbourhood finance

Municipal revenue reforms need to be assessed through functioning services as well as reported collections. The question of municipal revenue therefore belongs inside the housing strategy. Freetown's property-tax reform is instructive. The city combined property mapping, computer-assisted valuation, better billing, and new payment methods. According to a May 2026 ODI review, registered properties doubled, potential revenue increased fivefold, and actual collections tripled within a year of reform. The least valuable 60 percent of properties saw average liabilities remain stable or fall; average liabilities for the most valuable 20 percent rose by 242 percent. A follow-up survey found about 70 percent support among property owners. These are reported reform and survey outcomes, rather than a clean causal estimate of long-run housing improvements. [R214] Tax design should distinguish property value from household cash income.

Property-based revenue can fund neighbourhood services, but collection and resident treatment must be evaluated together. Ghana’s February 2025 paper reports both the revenue gain and a substantial increase in reported bribes. The experiment is discussed in Chapter 1. Independent appeals, receipts and oversight belong in the service-finance design. [R222]

A housing-oriented fiscal agreement could link national infrastructure grants to transparent local tax effort, while avoiding a crude requirement that poor municipalities match grants at the same rate as rich ones. A practical grant formula would include expected serviced households, poverty, exposure to climate hazards, local fiscal capacity, and verified asset-maintenance plans. Performance payments should reward functioning services and safe occupancy after two and five years. Rewards based purely on the number of construction approvals can induce local governments to approve unserviceable sites. The housing development itself also needs financing that preserves affordability after the capital grant is spent.

Maintaining affordability over time

Initial affordability should be converted into obligations that can be checked through rents, turnover, arrears, and asset condition. What happens fifteen or thirty years later depends on

ownership rules, rent regulation, debt, repairs, and land values. South Africa's Social Housing Regulatory Authority offers an instructive blend of subsidy and operating conditions. Its published standard consolidated capital grant was R426,308 per unit, with the amount adjusted according to the share reserved for lower-income households. Its stated primary beneficiary income band is R1,850–R6,700 per month, and its subsidy design requires a minimum primary-market share. This encourages mixed-income schemes to support deep affordability while preserving revenue from somewhat better-off tenants. It also creates a risk: if financing costs rise, providers may press for a tenant mix that shifts away from the poorest eligible groups. The grant is a contractual starting point; actual outcomes require rent rolls, turnover records, arrears, and asset-condition data. [R079] Those obligations require several continuing revenue and reserve streams.

Post-completion finance must cover household payments, replacement reserves, municipal services, and operating shocks. A grant that closes the development financing gap cannot automatically close an operating deficit forever. Reserves should be sized against component lifetimes, including roofs, lifts, pumps, fire systems, and water networks, then held in ring-fenced accounts with independently reviewed withdrawals. Tenants need accessible information on charges and a working dispute mechanism. Vienna and Austria's limited-profit housing sector demonstrate how institutions can stretch public support through time. Vienna's publicly posted rental-housing financing terms provide provincial loans of approximately €910–€1,250 per square metre, generally at 1 percent interest, with repayment structured to finish within 40 years. Resident contributions and other private finance supplement those loans. The OECD's 2026 Austria review finds that for Vienna homes newly built since 2011, private for-profit rents were 91 percent higher than rents in the limited-profit sector. This comparison is descriptive and reflects differences in selection, regulation, and finance; it is no randomized estimate of the loan programme's effect. [R234, R145] The durability of restrictions and reinvestment rules determines whether that arrangement lasts.

Affordability depends on continuing financing rules and must be reassessed before restrictions expire. Limited-profit providers face controls on profit distribution and use surpluses to maintain and add homes. The model requires enforceable rules, competent management, reliable rent collection, cheap long-term funding, and a housing market large enough to maintain specialized providers. A city with weak land records, unstable tariffs, and no credible rental regulator would need to establish these functions before adopting the model. The United States illustrates the risk of time-limited affordability obligations. Low-Income Housing Tax Credit developments usually carry affordability requirements for at least thirty years, subject in some cases to routes for earlier exit. Using a database of active units, the Federal Reserve Bank of Chicago estimated in 2025 that roughly one-third of then-active tax-credit units were scheduled to reach the end of their restrictions by 2035; allowing for certain early exits raised the share at risk to about 40 percent. These are projections of restrictions ending, not counts of tenants actually displaced or units already converted to market rent. [R243] New contracts can specify what happens at expiry rather than defer that decision.

A city preparing a new subsidized project can reduce the risk of losing affordability when restrictions expire. It can keep land in a public or mission-locked trust, require recorded affordability covenants that bind successor owners, provide first-refusal or buyback rights, restrict conversion gains, create refinancing plans before covenants expire, and report household outcomes over decades. Each safeguard has a cost and may change bids. The appraisal must show the price of preserving affordability, as well as the price of losing it. The contrast concerns the duration and enforcement of obligations. Vienna’s observed rent differences do not isolate the effect of one rule; the US estimates identify future expiry risks rather than observed displacement. Test whether affordability, financing and renewal duties survive the original subsidy period. [R145, R243] Private investment then needs a credible revenue source consistent with those continuing obligations.

Revenue sources for private investment

Each participant needs finance suited to its expenditure timing and a credible source of repayment. These are separate markets with separate credit risks. Calling all of them "housing finance" hides who owes whom. A housing bond is a claim on future cash flows. If a municipality issues a bond to fund trunk infrastructure, bondholders need credible tax, tariff, lease, or transfer revenue for repayment. Selling municipal bonds against projected housing demand does nothing to create that revenue. India illustrates the scale of the constraint: the RBI's INR 42.04 billion municipal-bond figure was tiny relative to the corporate bond market in March 2024. Sound municipal finance requires audited accounts, predictable transfers, service costs, realistic revenue forecasts, and a way to handle default long before a bond prospectus is written. [R237] Delays and guarantees change that financing cost and determine who ultimately bears it.

Public risk support should address risks government can manage without shielding private parties from their contractual responsibilities. A social landlord can pledge rental income, but a lender may prefer tenants with secure wages and high rents, undercutting the target group. A housing fund can offer guarantees, yet a guarantee transfers risk to taxpayers if the underlying loan fails. A public-private partnership can shift construction risk toward the contractor when the contract contains an enforceable output specification; governments still retain land, regulatory, political, and much demand risk. International finance adds a further hazard. Borrowing in dollars or euros for projects whose rents arrive in shillings, rand, or rupees creates a currency mismatch. A devaluation can exceed the apparent saving from cheaper foreign loans. Guarantees and blended finance are useful when they address an identified risk that private lenders cannot efficiently bear, with the subsidy priced and disclosed. They become costly when they shield developers from risks they are paid to manage. A funding waterfall makes the order of payments and losses explicit.

The finance ministry should ask for a funding waterfall for every proposal: what money reaches the project first, which losses absorb private equity, when grants are released, whether government guarantees are called before or after lenders take losses, and where cash goes after sale or refinancing. The answer shows who holds bargaining power when costs rise. A developer that can renegotiate after the state has cleared land and relocated households may have greater bargaining power than the government that nominally owns the parcel. The allocation of those losses is part of the political agreement behind the project.

Agree the budget, distribution, and delivery commitments

Preparing a municipal finance agreement

Prepare a fiscal agreement through readiness conditions rather than fixed deadlines that ignore unresolved rights or approvals. Name the budget, tariff or operator revenue paying each obligation; stress-test collections and fiscal transfers. Treasury, housing agency and operator must reconcile commitments and verify compliance throughout the affordability period. Track public cost per safe affordable home-year, affordability retained at covenant expiry, renewal funding and contingent liabilities. A city that wants to improve its next affordable housing project can begin with one corridor, ten candidate public sites, and a joint team drawn from planning, finance, lands, utilities, housing, social protection, and the operator or lender. The mandate should be signed by the mayor or chief executive and the finance authority. It should carry authority to obtain records, engage current occupants, and stop a bad proposal. Use the following stages to prepare a bounded operation. The responsible agency should first cost staff time, specialist work, consultation, and verification, then choose the number of sites it can handle. Set dates after that review. Disputed rights, procurement, or statutory approvals may

extend the schedule; do not advance until the applicable legal and funding conditions are met. The first stage establishes the rights, alternatives, and public contribution.

Establish rights and compare alternatives before assigning the present value of land and service obligations. Stage 1: establish the rights and the alternatives. Shortlist sites within the team's appraisal budget, then map them and their legal owners, leases, occupants, traders, easements, flood risks, and utility access. Commission an independent valuation for the shortlisted transaction and a second review where material uncertainty or transaction rules warrant it. Cost serviced plots, household improvements and rental additions before reserving the site and budget for flats; record other public uses too. Publish a parcel-by-parcel decision sheet except for personal or commercially protected details; create a claims desk staffed with local civil-society observers. A disputed site can stay under review without halting work on the others. Stage 2: reconcile the six ledgers. Finance and utility teams prepare the full twenty-five-year cost and revenue model for each candidate. Use at least three rent or sale-price scenarios, two interest-rate cases, and a cost-overrun case. Estimate eligibility and ability to pay across the bottom 50 percent from household data, not a generic percentage of median income. Show what happens to the people occupying each site now. Publish the present value of public land committed and the agency responsible for each service. The procurement terms should then fix the affordable outcome and treatment of affected residents.

Set the agreement before bidding and test it with affected residents while respecting procurement confidentiality. Stage 3: set the agreement before the bid. Agree the affordable unit mix, allocation rules, lease or agreement length, permitted density, rights to return, maintenance reserve, tariffs, and beneficiary-protection rules. Decide who receives public revenues from land-value gains, and who carries any operating deficit. Resolve which approvals and service connections must be ready before a developer signs a binding contract. Agree escalation and dispute rules in advance. Stage 4: test bids against household outcomes. Invite competing development and operating proposals on a common subsidy and service baseline. Disclose a reference financial model and evaluate bidders on independently costed life-cycle performance. Reject offers that depend on an unspecified later zoning waiver or subsidy increase. Have tenant and disability representatives examine layouts, tenure documents, access and grievance procedures; keep commercially sensitive bids confidential until the proper publication stage. Approval should be limited to obligations that can be financed, enforced, and monitored.

Authorize a project only when its fiscal, household, and service commitments are jointly credible. Stage 5: authorize only what can be financed and enforced. Sign a multi-agency service agreement; commit ring-fenced maintenance provisions; complete resettlement planning with affected households; document third-party review of costs and concessions. Establish a public record of the promises attached to each parcel. Release construction funding in stages tied to services and verified work. Baseline rents and household travel costs before anyone moves; repeat the survey after occupation. A practical cabinet or MDB decision sheet can then show the following three numbers side by side: the net present public cost per additional safe occupied household, the share of benefits received by the intended income groups, and the number of affordable occupied dwelling-years expected over twenty-five years. The first is a fiscal estimate, the second an incidence estimate, and the third a long-term outcome. Show uncertainty intervals. A project can look strong on one number and weak on the others. The appraisal questions below test for gaps that a favourable headline subsidy figure can conceal.

Measuring sustained housing benefits

Consolidate the opportunity cost of public assets and continuing obligations before approval. Capital subsidies also create future service and maintenance obligations. Housing appraisal should therefore assess continued affordability, municipal operating revenue, and access for future households alongside the initial transaction. The remedy begins with documented property claims and complete

accounts. Each parcel requires a lawful use and a disclosed value. Each subsidy requires a named beneficiary and an enforceable duration. Each service needs a revenue source and a maintainer. Each project needs a household test that counts those displaced as carefully as those newly housed. Each public gain from new infrastructure or development rights creates an opportunity to finance the next neighbourhood, provided law and politics permit that gain to be shared. Cheaper capital is one part of housing finance. Appraisal must also identify the commitments made against future public assets and income. Land allocation limits alternative uses. A tax levy commits a share of household earnings. A loan commits rent or public revenue to repayment. A poorly specified contract can leave future governments liable for payments even when delivery falls short. These obligations should appear in the consolidated account before approval. Reporting must then show who receives the benefit and for how long.

Report the full public contribution, the households served, the duration of affordable occupancy, and the costs borne by existing residents. Update the appraisal when delivery, service costs, or eligibility changes. Next: Chapter 13, "Institutions and Procurement for Housing Delivery," examines procurement, programme management, administrative capability, and the contract failures that separate housing policy from homes occupied. A published distributional annex makes those benefits and costs traceable by affected group.

Publishing a distributional assessment

A distributional assessment should publish evidence and assumptions by group without exposing personal records or asserting unsupported motives. The housing team and finance analyst should prepare a group-level table before approval, publish assumptions and uncertainty, and update it when the site, subsidy, or contract changes. Use existing household samples, administrative records, and valuations first; commission additional work only where it could alter the choice. There are documented precedents for this form. The UK housing ministry's appraisal guide includes distributional analysis and an appraisal summary table. Transport Scotland's published National Speed Management Review 2024 contains a distributional assessment of modelled user benefits across income groups. These are appraisal and disclosure practices, not evidence that publication itself produces fair outcomes. Their transferable feature is a traceable comparison by affected group with stated assumptions. [R244, R245] A housing-specific format can make the comparison usable in an appraisal and later review.

Record the costs, benefits, uncertainty, and remedies for each affected group in a dated annex. In each row report the number affected, the counterfactual, expected change in income or costs, timing, evidence quality, and proposed remedy with its payer. Show unquantified effects such as loss of care networks separately. Do not add asset-value gains to capitalised rent benefits if that counts the same effect twice. Provide a short plain-language summary and an accessible local-language version where needed, with a date and channel for corrections. Publish aggregate results through the actual approval process, such as the council paper or disclosed project appraisal, and place the full calculations in an accessible annex. Track unresolved objections and the authority's response. Keep personal compensation files confidential while making eligibility rules and aggregate obligations public. The municipality also needs a marginal budget for the additional households it will serve.

The municipal budget for additional households

I would assess the municipal cost of additional households alongside their own affordability calculation. I would put a marginal municipal budget alongside the household affordability calculation. Estimate the additional capital and annual service costs, the revenue legally available to the municipality, the timing of transfers, and the cost of future replacement. Separate a temporary connection cost from a permanent operating gap. Do not count a national grant as municipal income

until the terms make it available for the required purpose. The fiscal instruments change different incentives. Property tax can give a municipality a continuing stake in a larger serviced tax base, but collection and valuation determine the actual revenue. A transfer linked to population or service need can help pay for additional residents, if it arrives predictably. An infrastructure grant can cover an initial network extension without paying for its operation. A service charge can fund use while excluding poorer households unless affordability support is explicit. Compare these instruments against the same marginal budget rather than treating them as interchangeable funding sources. A wider agreement may be needed where one municipality benefits from workers while another funds their services.

Metropolitan inclusion may require intergovernmental financing rather than a neighbourhood negotiation alone. Test a metropolitan arrangement that assigns feasible housing capacity across well-served areas and shares service costs. Require a published account of additional homes permitted, affordable homes occupied, operating revenue, and access to schools and transport. The arrangement must address genuine service costs without paying municipalities merely to abandon an exclusionary veto. Chapters 5 and 4 examine the coordination and infrastructure-financing constraints. The worked budget below shows how to distinguish the initial capital balance from the recurring gap.

Worked municipal budget for additional households

A marginal municipal budget should separate infrastructure capital from the continuing cost of serving additional homes. Consider 1,000 additional occupied homes within an existing municipality. The figures below are assumptions in millions of local currency units, at constant prices. They are not estimates for a particular city or recommended tariffs. The scope covers additional municipal access roads, drainage, public lighting, waste services, administration, and renewal. Water, electricity, schools, and health services sit in separate provider budgets in this example; those budgets must also balance before approval. Housing construction itself is financed separately. The two accounts below use explicit illustrative assumptions rather than a project forecast.

Exhibit 10.1. Illustrative municipal capital account. Positive figures are resources available for the stated works; the investment requirement is shown separately.

Capital item	Million local currency units	Budget treatment
Additional municipal works required	60.0	Costed capital requirement, including the defined local network works.
National or state capital grant	40.0	Available only for eligible capital expenditure under the assumed grant terms.
Developer contribution	10.0	Collectible contribution; test its effect on project viability and household prices.
Municipal capital allocation	10.0	Existing funded allocation, with its opportunity cost recorded. No new borrowing is assumed.
Total capital financing	60.0	Balances construction finance. It does not finance future operations.

Exhibit 10.2. Illustrative annual municipal account at full occupation. Renewal is a funded annual provision; do not also charge the same replacement cost to another line.

Annual item	Million local currency units	Assumption or result
Waste, local drainage and lighting operations	2.4	Additional operating cost within the stated municipal scope.
Administration and inspection	0.6	Additional staff and operating expenditure.
Asset renewal provision	1.0	Annual contribution derived from the assumed component replacement plan.
Total recurring requirement	4.0	2.4 + 0.6 + 1.0.
Property-tax receipts	1.2	Cash collected after exemptions, collection losses and applicable relief.
Service-charge receipts	0.8	Cash collected after affordability support and collection losses.
Locally financed resources	2.0	1.2 + 0.8; the remaining annual gap is 2.0.
Required additional recurring transfer	2.0	A proposed funding commitment, not an existing entitlement. Equivalent to 2,000 currency units per home annually.

A balanced capital account does not establish that recurring services are funded. The capital account balances, but the municipality still needs 2.0 million each year. Higher employment might benefit households and national revenue without generating an equivalent municipal receipt. Count only revenues the municipality is legally entitled to receive, at the time it can use them. Do not count national income, consumption, or corporate tax as local resources unless the applicable revenue-sharing arrangements actually transfer them. Stress the cash account before signing. If tax and service-charge collections are 25 percent below the assumed 2.0 million, local receipts fall to 1.5 million. An unchanged 2.0 million transfer leaves a 0.5 million annual shortfall. A late transfer can create a cash shortage even if the full-year budget balances. The finance officer should identify an affordable contingency and payment schedule; an unapproved future grant or an unaffordable fee increase is not a funding plan. South Africa offers an institutional comparison for linking service obligations to performance-based support.

Institutional funding arrangements should be tested against the marginal cost and actual quality of municipal services. The explanatory memorandum to the 2025 Division of Revenue Bill describes a basic-services component of the local government equitable share that supports services to households below an affordability threshold. Its formula incorporates maintenance, and its household estimates need not update immediately with new arrivals. [R246] This is evidence of a transfer design, not proof that every municipality receives enough or delivers the intended service. The transferable requirement is to connect service responsibilities to predictable revenue and report allocation lags. Calculate how to finance the services required by additional residents. Treasury and the municipality should compare a recurring transfer, broader revenue sharing, legitimate cost reductions, and an alternative serviceable location on the same household-access assumptions. A capital-only grant cannot close a permanent operating gap. Conversely, a locality should not receive compensation for inflated costs or unnecessary standards used to exclude households. Check the marginal cost against spare capacity and efficient service provision, then record the funded agreement and review it against actual

receipts and service quality. Fieldwork should verify those obligations before the housing grant is approved.

A funded commitment still needs institutions that can deliver it. Chapter 13 assigns the decisions and remedies from readiness to occupation; Chapter 11 follows the obligations after handover.

Selected readings

South Africa's revenue-sharing design [R246]. Read the published formula to understand how service obligations enter transfers; it is not an evaluation of outcomes or a statement of current entitlements.

Bogotá fiscal and land-value instruments [R233]. Use the OECD account to examine capture mechanisms and disputes; estimates and institutions remain specific to the setting.

Salt River Market city account [R228]. Read the land concession alongside the housing commitment; distinguish forgone land value from cash and planned homes from delivered benefits.

Judgment and transfer conditions

A capital receipt cannot be assumed to finance permanent service obligations.

Confidence: High for the fiscal distinction. Revisit trigger: A funded recurrent revenue stream with credible downside protection.

Transfer financing arrangements that fund usable land, services and household access through their full life. At roughly ten times the pilot scale, test cash timing, connection costs for the bottom 50 percent and contingent exposure. At roughly one hundred times the scale, require recurrent revenues resilient to weaker land receipts or higher borrowing costs. New flats should proceed only with a credible budget for delivery and upkeep, alongside the alternatives forgone.

Exercise

Stress a municipal budget with land receipts falling by half for two years. Which services remain funded, and what liability would otherwise shift to the next budget?

11. Maintenance and Long-Term Housing Affordability

What operating arrangement will keep the housing safe, usable and affordable after handover?

Priority C continues after a home is occupied. This chapter supplies evidence on household charges (Test 2), recurring public support (5) and maintenance duties (6). Keep existing homes usable by financing repairs, essential services and replacement before deterioration forces costly rebuilding. Match management duties to building type and resident means, including small rental properties and household-built homes. Charges cannot assume that every household can pay. Mumbai and the comparative cases connect upkeep to management, resident resources and accountability; the chapter tests reserves, targeted help and municipal responsibilities over the stock's life.

Majas and Lallubhai Compound are resettlement sites of the World Bank-financed Mumbai Urban Transport Project. The study and Inspection Panel record at the start of this chapter establish why formal completion and cooperative ownership cannot substitute for livelihood recovery, working services and financed maintenance. [R136, R453]

Measure housing losses and continuing costs

Costs after occupation

Additions to and losses from the housing stock

New construction can be offset by deterioration when repair and replacement obligations are left unfunded. A city adds homes through new construction, extensions, conversions and upgrading. It loses effective affordable housing through physical failure, vacancy, tenure insecurity, rising rents, displacement, hazard, and the withdrawal of subsidies. Some losses are reversible. A vacant unit can be repaired; a seized building can be recovered. Others, such as a household pushed away from its job market, can impose lasting damage. For a defined household group and period, usable affordable housing capacity at the end equals capacity at the start plus additions, less losses through deterioration, exclusion, vacancy, or change of use. Track this stock in occupied dwellings meeting stated standards. Over time, measure home-years of adequate, well-located shelter as the service produced. A sewer failure, rent increase, or flood can reduce usable affordable capacity even when the building remains. Capital grants buy assets at a point in time. Operating institutions determine how many years of shelter those assets produce. When a government rewards a housing agency for delivery at handover, the incentive can favor lower initial costs without accounting for later lift replacement or other repairs. The eventual bill falls on a cooperative, landlord, utility or household with far less bargaining power. Rising land values can conceal that deterioration while changing who can afford to remain.

Land values can rise while buildings depreciate. Better transport, safer streets, improved drainage and growing employment can make a neighbourhood more valuable. It also invites higher rents, redevelopment pressure and exclusion. The neighbourhood can become more successful as an asset and less accessible to the households the project was meant to serve. A replacement-reserve plan must therefore be tested against both operating cash flow and household affordability.

Financing replacement reserves

Regulatory benchmarks can support a maintenance stress test, provided hypothetical calculations remain distinct from project forecasts. Its 2025/26 Annual Performance Plan reports an earlier sector assessment in which rent collection fell from 90 percent in the second quarter to 85 percent in the third; vacancy improved from 8.6 to 7.2 percent. The regulator's benchmark was at least 95 percent rent collection and no more than 2 percent vacancy. These are historical quarterly figures reported in a plan published in 2025, rather than current October 2026 operating results.[R137] Consider 100 hypothetical rental flats with a monthly face rent of US$100. With 7.2 percent vacancy, 92.8 homes are billed on average; collecting 85 percent of billed rent yields US$7,888 per month. At 2 percent vacancy and 95 percent collection, the same buildings yield US$9,310. The gap is US$1,422 a month, or US$17,064 a year. These are hypothetical rents with actual reported sector ratios used as stress-test assumptions; they are not a South African project forecast. A funding gap must be resolved without treating tenant security and provider viability as separate problems.

Operating shortfalls threaten repairs and financial survival while poorly designed responses can threaten tenants. Reducing maintenance can conceal the shortfall for a few years. It raises future repair costs and weakens tenant willingness to pay, and further reducing revenue. Aggressive collection can improve accounts and also punish households suffering income shocks. The regulator therefore needs a dual test: financial survival of the provider and security of the tenant. Subsidy design can help align affordability with the discipline needed to maintain the asset.

Figure 11.1. Rental revenue under different vacancy and collection assumptions

Assumption or result	Reported Q3 conditions	Regulatory benchmark
Units / face rent per month	100 / US$100	100 / US$100
Vacancy	7.2%	2.0%
Collection of billed rent	85.0%	95.0%
Monthly cash received	US$7,888	US$9,310
Annual cash received	US$94,656	US$111,720
Gap from benchmark	US$17,064 a year	—

Illustrative calculation. SHRA historical ratios are used only as scenario inputs; no exchange-rate conversion or claim about a representative rent is made.

A maintenance subsidy should fund an auditable service obligation and a credible whole-life cost plan. A project may need a larger capital write-down so that sustainable rents can cover routine operating costs and a lifecycle reserve. Some households may also require income support. A maintenance reserve should be held in a ring-fenced account with approved uses, audited balances and a replacement schedule. Assigning maintenance to residents requires an estimate of affordable contributions, external support, and repair costs. The developer has incentives at design stage that differ from the operator's. Cheaper materials can lower the construction bid and increase future repair bills. A developer that also operates the buildings for twenty years internalizes more of the trade-off. Performance specifications and long-term warranties can partly replicate that incentive when construction and management are separate. At appraisal, finance ministries and lenders should demand

an audited whole-life cost model, rather than accept the lowest initial price. Owner-occupied buildings require a collective institution able to perform those tasks.

Match management arrangements to tenure and incentives

Mumbai makes the maintenance obligation concrete

Chaskin, Vyas and Jha explicitly identify Majas and Lallubhai Compound as Mumbai Urban Transport Project resettlement colonies. Their 2024 qualitative study includes 89 resident interviews, 31 in Majas and 58 in Lallubhai, alongside other material. It links formal housing to the practical burdens of cooperative management, charges and repairs. It is not a random sample or a causal estimate for every relocated household. [R136]

The World Bank Inspection Panel's 2005 investigation of the Bank-financed Mumbai Urban Transport Project identified failures concerning resettlement and livelihood protection, including shopkeepers and service conditions. The Panel also criticised the transfer of substantial implementation responsibilities to NGO partners without adequate capacity and support. Subsequent management action plans and progress reports form part of the record. The study sites are linked to the project; this does not establish that the 89 interviewees were the Panel complainants. [R453]

NGO participation and formal ownership do not discharge public duties for services, maintenance and livelihood recovery. An endowment needs a custodian, verified transfer, expenditure rules and a replacement schedule. Resident committees need enforceable access to public services and independent recourse. Maintenance is one part of resettlement accountability, alongside the recovery of livelihoods and access to the city.

Collective management in owner-occupied buildings

Collective ownership needs practical support for accounting, decisions, collections, and repairs after handover. The exterior wall, roof, staircase, lift, water pump and drain are shared assets whose maintenance requires collective decisions. A resident can withhold fees and still benefit when neighbors pay. A committee can divert money. An owner who plans to sell soon may oppose spending that preserves the building ten years later. A tenant may have no vote although she bears daily service failures. The Mumbai study interviewed 89 residents across Majas and Lallubhai. It found uneven trust and participation, contested elections, reports of favoritism, and heavy demands on unpaid leaders. The study describes relocated households being asked to assume the legal burdens of common-property management while facing income insecurity and incomplete state support.[R136] The policy fix begins before occupancy. Residents need an accurate asset register, an engineer's schedule of likely replacements, simple accounts in the local language, independent signatories, grievance procedures and a funded handover period. The authority should verify that the original endowment has reached the society and that the elected committee can procure and supervise repairs. Technical support should taper only when those tasks work in practice. Membership and voting rules determine whose priorities that institution represents.

Rules on membership and voting determine whose interests a housing association represents. Voting restricted to titleholders can exclude tenants, women not named on deeds, and migrants. Existing discrimination can also affect cooperative decisions. Residents need a way to appeal beyond the managing committee. Building management also depends on neighbourhood networks whose failure can make individual homes unsafe.

Neighbourhood drainage in Nairobi

Drainage and sanitation require operating agreements across households, utilities, roads, waste services, and wider catchments. In April and May 2024, heavy rain in Nairobi demonstrated how neighbourhood drainage and sanitation affect household safety. Water ran through settlements built along rivers and low ground, carrying waste from blocked drains and damaged sanitation systems. On 9 May, Nairobi City County estimated that 20,968 households had been affected and opened camps across seven sub-counties. A 2026 World Resources Institute study links the damage to rainfall interacting with settlement location, paved surfaces, encroached wetlands, waste blockages, weak drainage and split responsibility for risk management.[R138][R139] A household can repair its roof and still be flooded because an upstream drain is blocked. The landlord can improve a compound toilet and still face contamination because the downstream sewer fails. The city can install a drain that works on opening day and fails after two seasons because no agency keeps the channel clear. Environmental resilience is therefore an operating relationship among households, solid-waste collectors, water utilities, road departments and basin managers. Upgrading projects should record those duties and funding sources against each asset.

Infrastructure and tenure interventions need an asset record that names the operator, service duty, and recurrent funding. The programme reports about 1.36 million beneficiaries, 23,397 titles and 98 km of roads under its earlier phase. KISIP2 combines tenure regularization with infrastructure upgrading and institutional capacity under national and county arrangements.[R140] These output figures do not, by themselves, establish the lifetime condition of drains or the fate of tenants after an area improves. For each upgraded settlement, counties should agree an asset boundary with the water company and other providers: who owns the drain, who pays the sweeper, who clears illegal dumping, who repairs after a flood, and which budget releases emergency funds? A geotagged asset ledger should record an enforceable service duty, responsible operator, and recurrent funding source for each asset. Where risk still requires relocation, the agreement must also protect rights and livelihoods.

Relocation for climate safety also raises rights and livelihood questions. A home in a river corridor may impose unacceptable risk; leaving it in place can be indefensible. Demolition without safe, accessible alternatives can move households into another floodplain or force them into higher rents. Risk maps should trigger graduated decisions: protect in place where feasible, retrofit where risk can be reduced, and relocate where life safety demands it. Every route needs tenant enumeration, compensation, a feasible destination, lawful claims procedures, and transparent control of vacated land. In safer locations, public improvements can create a different risk by increasing the rent households must pay.

Repairs, rents, and landlord incentives

Neighbourhood improvements can raise rents and require a local assessment of who captures the benefit. Who receives the gain depends on tenure and competition. An owner-occupier enjoys the service and the rise in asset value. A landlord can raise rent or enjoy lower vacancy. A tenant may gain a cleaner street and lose the home when the lease ends. A structure owner in an informal settlement may capture public value even without holding the land title. Marie Huchzermeyer's study of Nairobi slum upgrading showed how commercialization of shelter and services complicates the distribution of upgrading benefits. Andrea Rigon's ethnographic work on a Nairobi upgrading programme found that participatory enumeration and community structures could entrench existing inequalities between landlords and tenants. These are qualitative institutional findings, not measured citywide estimates of rent pass-through.[R141][R142] Nor does every upgrade immediately raise market values. A study of Rio's Favela-Bairro found no statistically significant average increase in dwelling

values, while some initially disadvantaged properties appreciated. Legal tenure, security, access and the wider market all affect capitalization. A government should test the local incidence of improvement rather than assume a fixed coefficient.[R143] Tenant enumeration and an explicit protection strategy should precede the investment.

Before paving the street, enumerate tenants separately from structure owners. Record current rents, lease terms, deposits and households' contact details. Offer tenants notice, temporary relocation support where works require it, and a route to dispute arbitrary exclusion from return lists. Where rents rise quickly, expand legal low-cost rental nearby and consider a time-bound protective rule paired with supply expansion. Monitor who remains two, five and ten years later. The reform coalition must include small landlords as producers as well as tenants as consumers. Offer owners simple permits, staged loans and bulk service connections for added rooms in return for minimum safety, transparent rent terms and inspected work. A policy that threatens the entire informal rental business will struggle to survive; one that ignores tenant rights can spend public money to improve the bargaining position of landlords. Vacant housing presents another case in which existing buildings do not translate automatically into usable homes.

Housing vacancy and location in Mexico

Mexico's recovery programme illustrates why targets, intermediate actions, and homes returned to use must be counted separately. The OECD's 2024 economic survey reports that roughly one-seventh of the national housing stock, between five and six million units, was vacant, based on national data. The estimate includes housing of many kinds; it must not be equated with abandoned subsidized developments. Still, weak service access, distance from work and violence were important factors behind abandonment. Some social developments were in locations where households could not sustain the costs of living and reaching work.[R144] Repairing the stock has proved hard. In Tlajomulco, the municipal Renta tu Casa initiative had rented only 90 homes over three years against a reported stock of 17,000 vacant units. Agreements signed from 2020 to July 2023 aimed to recover about 131,000 abandoned dwellings nationally, yet the OECD noted slow progress caused by property disputes, municipal capacity limits and the politics of three-year local mandates. These are targets and partial implementation results, not recovered-house totals.[R144] Recovery also depends on restoring the neighbourhood conditions that make continued occupation feasible.

Vacant-stock recovery needs dedicated responsibilities, budgets, and measures of sustained occupation. Deteriorating services and security may cause further departures. A recovery plan must rebuild the service environment and address security, mobility and legal claims alongside repairing walls. Public money should enter only after a credible estimate of how many households will occupy the recovered homes, at what ongoing cost, and with what prospect of staying. Recovering abandoned housing requires property claims to be resolved, buildings and infrastructure repaired, and prospective residents' demand assessed. Those tasks differ from procuring new construction. The Mexico evidence supports giving recovery programmes their own budgets, responsible agencies, and measures of sustained occupancy.[R144] Vienna provides a contrasting example of institutions designed to retain and maintain housing over a long period.

Long-term housing institutions in Vienna

Austria's cost-rental institutions provide descriptive evidence of lower rents under a distinct long-term housing arrangement. Limited-profit housing associations hold or manage more than two-thirds of the country's social and affordable housing stock. They set rents on a cost-recovery basis that includes finance, management, maintenance and refurbishment. Profits are capped and earnings retained for housing purposes under a system of audits and regulation. The associations have an

institutional reason to preserve the asset rather than extract the highest possible current rent.[R145] The cross-sector rent comparison is descriptive; it does not isolate a causal saving for an identical apartment.[R145] Their transfer depends on the financing and reinvestment institutions that sustain that arrangement.

Cost rents require institutions able to collect income, reinvest, enforce obligations, and fund upkeep. Housing Europe's Housing2030 case study describes building-specific renovation funds alongside retained surpluses used to invest in additional housing. Revenue earned from a property can return to the property when major systems wear out. A provider with a stock of buildings, patient capital and regulated earnings can plan repairs and investment over long periods.[R146] The Austrian model also requires decisions about eligibility and allocation. Long-standing tenants may gain valuable security; outsiders may wait. Broad eligibility sustains a middle-class coalition and helps avoid deep concentrations of poverty, yet lower-income households still need access in high-demand areas. Public support, tax treatment and land allocation need scrutiny. Its transferable principle is the duty to preserve a long-lived affordable stock, backed by audited reserves and a stable provider balance sheet. Copying cost rents without institutions able to collect, reinvest and enforce would leave the proposed cost-recovery system without a workable operating basis. Comparing Vienna and Mexico helps identify the different obligations needed to preserve use and affordability.

The Vienna and Mexico cases support examining long-term operating obligations without treating their different measures as equivalent impacts. Vienna's providers collect and reinvest income over the life of their stock; recovering vacant Mexican homes requires resolving location, services and legal claims as well as repairing buildings. Their outcomes cannot be attributed to ownership form alone. A local adaptation needs a viable operating budget, usable location and enforceable responsibility for renewal. The rent comparisons above are descriptive, and Mexico's vacancy total includes housing beyond subsidised developments. [R144, R145, R146] Those obligations redistribute responsibilities among residents, providers, and government after occupation.

Fund renewal and protect residents

Renewal and resident protection

Renewal needs enforceable terms for temporary accommodation, return, costs, and disputes before redevelopment proceeds. Buildings require seismic strengthening, flood protection, new pipes or replacement. Neighborhoods need more floor space as household size, migration and jobs change. Governments then face a choice among rehabilitation, selective redevelopment, densification and relocation. Each route creates winners and losers. Rehabilitation works when the structure remains safe and the service system can be renewed. Selective replacement works when some buildings are beyond repair and temporary accommodation can be secured. Densification can finance better infrastructure through added development rights. It can also create a residual claim on land that prompts developers to remove lower-income residents. Peripheral relocation may lower immediate land costs while destroying access to work. A renewal contract should therefore contain a return agreement before a developer is selected: precisely which occupants qualify, how tenants and owners are treated, how long temporary housing is funded, what happens if the developer stops paying, and who bears the cost of delays. Land value and added floor space should be independently assessed. Release development rights or subsidy in stages against verified rehousing and service outcomes. Residents need a right to see the contract and a forum outside the developer's control for disputes. Negotiation must distinguish non-negotiable safety requirements from preferences and distributive claims.

Existing owner coalitions can also block beneficial density. A pensioner fears a levy for a new lift; an owner hopes for a high redevelopment payout; renters want security; neighbors oppose taller buildings; municipal officials may welcome land-value gains. Transparent valuations and a sharing rule for uplift make bargaining possible. The state should distinguish safety rules that cannot be traded from design preferences and distributional claims that can be negotiated. Climate change adds another reason to reassess whether continued repair remains sufficient.

Climate risk and maintenance

Future exposure and household operating costs should inform maintenance and renewal choices. Heavy rain, heat and changing flood paths shift the service standard. A drain sized for an earlier rainfall pattern may fail more often. A roof that was cheap to install may trap heat and raise the household's electricity burden. A wall that survives dry seasons may crack after repeated wetting. Climate risk changes the expected lifetime of assets and the amount that must be set aside for replacement. The World Bank's April 2026 review of resilient, green and inclusive buildings reports that Tamil Nadu's 2020–25 housing and habitat operation built approximately 15,000 affordable units while using resilient and green design and reforms to housing institutions.[R064] That experience points to a useful appraisal rule: price energy, cooling, flooding, insurance, repair and transport over time. Compare initial costs with households' recurring costs and expected losses. The preferred option must also account for its different effects on owners and tenants.

Assess how each risk-reduction option affects owners and tenants. Stronger drainage raises land value. Flood zoning can make some plots unbuildable. Household retrofits may be affordable to owners and unreachable to renters. Public investment can inadvertently speed displacement. Risk reduction needs a tenure plan, a safe location option and a source of money for continued operation. Reliable post-handover information is needed to detect those risks and assign action.

Neighbourhood management agreement

Management arrangements should match the building type, resident means, and actual cost of the promised service. Combine affordable contributions with transparent targeted operating support and funded replacement obligations. Operators must inspect and repair; municipalities must provide networks; regulators must enforce service and affordability commitments. Track occupied safe home-years, failures and repairs, reserves against forecast need, total fees, arrears and displacement after renovation. Governments should append a twenty-year management and affordability agreement to every major housing or settlement-upgrading investment. It is a plain institutional agreement among the asset owner, operator, local government, utility, financiers and residents. It links physical performance to social access. The questions below form a test for concept review, completion review and each five-year renewal review. A baseline allows later reviews to distinguish progress from deterioration and exclusion.

Exhibit 11.1. Neighbourhood management assessment

Gate	Question to put to the government and operator	Required evidence
1. Unit of success	How many adequate, affordable home-years will be sustained?	Occupied, adequate, serviced units by target group, tracked over time
2. Asset boundary	Who owns every common asset and off-site connection?	GIS-linked register, handover certificate, named operator

Gate	Question to put to the government and operator	Required evidence
3. Cost	What is the 20-year cash requirement?	Repairs, staffing, energy, insurance, climate allowances, renewal schedule
4. Reserve	Where is the replacement money held?	Ring-fenced account, actuarial schedule, independent audit
5. Affordability	Can the target household pay total recurring cost?	Rent/fees + energy + water + transport; shock scenarios
6. Collection and rights	What happens when a household cannot pay?	Arrears protocol, hardship support, limits on service cutoff, appeal
7. Tenant incidence	Who receives the value of public improvements?	Baseline and follow-up rents, leases, owner/tenant map, displacement
8. Inclusion	Who can enter, remain, and return after works?	Rules tested by income and relevant social group; tenant return rights
9. Hazard	Does the site stay safe as risks change?	Climate and structural risk map, trigger levels, financed response
10. Renewal	Who decides when to retrofit or rebuild?	Independent condition survey, votes, valuation, temporary housing plan
11. Local finance	Can city and utility fund recurrent services?	Tariffs, local taxes, performance grants, service contracts
12. Data power	Can digital records be challenged?	Purpose limits, public metrics, correction, offline access, independent appeal

Rating rule: a red gate that can interrupt water, safety, affordability or lawful occupancy blocks approval until a remedy is funded and assigned. A green construction schedule cannot offset an unfunded asset reserve.

The contract should begin with a baseline: household roster by tenure, rent and fee levels, service conditions, maintenance backlog, flood exposure, asset ownership and job access. By completion, identify every operator and fund the first years of upkeep. At year two, compare actual collections, vacancy, rents, repair time and displacement with the baseline. At year five, adjust the tariff, subsidy, design or provider. At year ten, commission an independent physical survey and plan renewal. Financing should follow performance over time. One option is to retain a modest share of the capital subsidy until a verified handover and operating reserve exist. Another is to tie municipal transfers to sustained occupancy, service reliability and inclusion, with protection for cities serving poorer households. Development banks can finance asset-management systems and rehabilitation alongside new units. Appraisal should value sustained use of existing homes alongside new delivery. The strength of the available evidence determines what those comparisons can establish.

Neighbourhood management after occupation

Handover must turn the maintenance requirement into enforceable operating duties. Establish who can accept each asset, who funds routine service and renewal, and what residents can do

when service fails. The following sections apply the chapter's financial tests to neighbourhood management and then to municipal service responsibilities.

Match neighbourhood management to local conditions

Resident associations after relocation in Ahmedabad

Resident associations can inherit maintenance duties before services and municipal obligations are resolved. Ahmedabad provides a qualitative study of the handover problem. Under the Basic Services to the Urban Poor programme, families displaced by infrastructure and urban development were allocated flats at resettlement sites. The rules called for resident welfare associations to take part through the life of the project and assume operating costs. In practice, the city sought to organize many of these associations after construction and allocation. The Mahila Housing SEWA Trust was asked to form associations in eight sites, ranging in size from 192 flats at Kesar-e-Hind Mill to 2,464 at Sadbhavna Nagar, Vatwa. Researchers Darshini Mahadevia, Neha Bhatia and Bijal Bhatt documented the association arrangements and residents' experiences. The residents had not chosen their neighbors. Some had been moved far from familiar networks; an allocation process had left empty flats scattered among occupied ones. Residents had grievances about water, theft and repairs. The municipality expected the new associations to collect fees, run water pumps, maintain lights, sweep common areas and pay for minor repairs. The study describes residents' reluctance to pay fees while municipal obligations remained unresolved. A legally demanding organisational form may then exceed residents' preparation and actual influence over decisions.

Formal association requirements should be matched by practical capacity and participation before design and allocation are fixed. The water network influenced association boundaries. An association was formed around the underground water tank it served. Sadbhavna Nagar had six tanks, and therefore six associations. The water network gave the organization a sensible service boundary. Yet the residents had been assembled by an administrative allotment rather than by ties of mutual obligation. The service boundary did not resolve the difficulties of organising households after administrative relocation. The city had already paid operating costs and wanted to withdraw. Residents were being asked for fees while repairs remained undone; many held an allotment letter without secure evidence of final ownership. The researchers found that creating associations after relocation shifted obligations to households least able to discharge them. Tenants were excluded from committee membership under the applicable cooperative form. The city could comply formally with a participation requirement while depriving residents of a credible voice at the stage when choices about design, location and allocation were still open. 1 Qualitative evidence identifies these mechanisms without establishing their prevalence in every estate.

Association performance should be judged through working services, reconciled accounts, repairs, and resident retention. This is a case study based on qualitative observation and interviews across eight sites. It does not estimate an experimental effect. It documents the sequence of decisions and the limits on each actor's authority. The municipal agency could stop supporting operations; the NGO lacked authority to repair defects or change allocations; the residents could withhold money but could not compel the city to finish its work; the banks and cooperatives demanded formal compliance. The associations received operating duties while their authority, funding, and residents' ownership documentation remained unresolved. An improved sequence would have begun before displacement. Households could have helped choose the location of shared facilities, the size of the service area, the rules for tenants and the first committee. The municipality would have identified which pipes and drains it retained, kept a defects reserve under its control, and offered transitional operating support declining only as the association proved capable of collection and oversight. Registration would be one milestone;

working water, reconciled cash, repaired defects and retained vulnerable households would determine success. A statutory transfer timetable is therefore insufficient without preparation and funding.

Policies for transferring maintenance should be tested against the recipient organisation's actual readiness. In April 2024, the Delhi Development Authority adopted a policy for certain new sale-scheme estates that envisaged transferring common-area maintenance and the remaining reserve to resident associations within a year of possession or earlier association formation. Previous arrangements had the agency maintain some common facilities for longer against an up-front contribution. This report concerns DDA sale-scheme flats, rather than the Ahmedabad resettlement programme, and offers no outcome evaluation. It shows that the timing and funding of the handover are still policy choices that deserve independent scrutiny. Baan Mankong offers a useful institutional contrast to these eight Ahmedabad sites. Organised groups help negotiate land and spending before occupation, with public finance and technical support. Ahmedabad's associations were often formed late and inherited unclear service boundaries. This is not a matched impact evaluation and does not prove that cooperatives always govern fairly. It supports preparing and funding an organisation before assigning it maintenance duties. [R131, R125] Predominantly rented settlements require a different agreement because owners, occupants, and service payers may be different people.

Infrastructure, land claims, and rents in Nairobi

Mukuru shows why infrastructure decisions must account for separate ownership, tenancy, and service-control interests. Across its three principal settlements, roughly 94 percent of residents are tenants. Many rent one small room from a structure owner who lacks title to the land. The landlord controls the room, the tenant pays for the water, an informal supplier may control the pipe, and a public company controls part of the main network. The African Cities Research Consortium describes residents paying 400–800 percent more per cubic metre for unsafe water than official county rates. These figures are a reported local price comparison, not a citywide household expenditure survey. Water supply involves several formal and informal arrangements. Thin hoses cross drains; a supplier manages the connection; a tenant buys small quantities at a kiosk; a structure owner can charge for water, shared sanitation or access. Some of these arrangements deliver a service where the public network fails. Others sustain market power, contamination, and coercion. Changing the pipe means changing the income of the people who control it. Changes in income and control can generate resistance; assess these interests alongside engineering feasibility. The price and welfare effects of a new connection need direct measurement.

Completed infrastructure should be assessed through remaining service gaps and the prices residents actually pay. The account reports completed infrastructure and remaining service gaps. In a June 2025 account, researchers reported about three kilometres of lateral sewers connecting 1,248 plots and benefiting about 12,500 families; they estimated that around 80 percent of residents still lacked plot-level sewer-connected toilets. The estimates have different denominators and should not be treated as a single calculated coverage series. Planned extensions required additional pipes, toilet interfaces, finance, and coordination among Nairobi City County, the water company, community organizations and other agencies. A pipe laid through a landlord-controlled plot creates a bargaining problem. Suppose public investment cuts the monthly cost of safe water by KES 500 for a tenant. If the landlord raises rent by KES 400, most of the benefit has moved to the structure owner. If a connection fee or mandatory improvement contribution excludes the poorest renters, the service may improve for those who stay while excluding those displaced. Both outcomes are hypotheses to test on the ground; the price effect cannot be assumed from the existence of a new connection. A household and plot ledger can establish who controls each obligation and benefit.

Record land, structure, occupancy, payment, and connection rights separately before assigning service duties. A contract should specify who pays installation, who maintains the lateral pipe, who empties or replaces a sanitation facility, how the water tariff reaches tenants, and what happens when a landlord blocks access. Municipalities can license and regulate kiosks where direct connections remain impractical. They can set standards and fair resale margins while offering a lawful path for informal suppliers to become service agents rather than treating every intermediary as a criminal. Mukuru also illustrates coordination among residents and service agencies. Community mapping gave tenants an organized voice and an evidence base. The Special Planning Area created a formal vehicle to bring agencies together, while community groups and NGOs supplied local knowledge and pressure to deliver. This coalition can still fail: landowners may contest rights, commercial landlords may capture improvements, utility budgets may falter, and residents may have no enforceable claim when prices rise. A sewer connection needs a service agreement and tenant protection if its welfare gains are to persist. [R182, R197] Backyard housing presents a related challenge when the original plot's service account covers additional residents.

Backyard rental housing and municipal costs

Backyard rental policy needs to recognise additional service demand without destroying affordable rooms and owner income. Subsidized houses have given many low-income families a valuable asset, even where jobs are distant and building quality varies. A homeowner may let an informal backyard room to help pay for food, school fees or municipal bills. Researchers Andreas Scheba and Ivan Turok describe a rental economy that has become increasingly commercial, alongside older forms of household support. In one cited Cape Town study, backyard tenants paid rents of R200–R250 a month and about R50 toward service charges at the time of fieldwork. Those are historical observations, not 2026 market rents. The income can improve a poor owner's ability to retain the main home. The added population also increases demand for water, toilets, refuse removal and electricity. A city that sizes its networks around the original subsidized dwelling may face more households than its records show. Charging the main titleholder for every service cost can be politically difficult and may lead to disconnections that harm tenants first. Exempting the entire property from charges can leave the utility without revenue for expansion. Trying to ban backyard accommodation may destroy affordable rooms and remove the owner's small source of income. A feasible agreement can combine recognition, safety, connection charges, and tenant monitoring.

There is a feasible agreement: recognize safe additional rooms, permit them in suitable serviced areas, require basic fire and sanitation standards, and state the cost of additional demand. Municipalities can offer upgrades and simpler approvals conditional on a service agreement and minimum tenant rights. A utility can place a lawful meter or submeter and provide an affordable lifeline tariff with clear resale rules. Lower-income landlords may need staged credit and technical advice; tenants need recourse when deposits, water charges or threatened eviction become sources of unaffordable charges or coercion. Developers, plumbers and local builders gain work from incremental upgrading; incumbent homeowners may resist if added density brings congestion or is associated with unwanted residents. An established homeowner may have clearer participation rights than a tenant in a backyard room. Zoning can protect property values for one group while rationing access for another. Include small landlords, tenant groups, builders, utilities, and employers when agreeing implementation responsibilities. Monitor whether new connections improve service and security, raise rents, or expose households to unofficial charges. Service quality should then be measured through residents' daily experience rather than installations alone.

Monitoring service quality

Convenience, reliability, privacy, and durability should be measured alongside engineering outputs. In Tangiers, Morocco, researchers randomly offered households an easier way to acquire a private water connection on interest-free credit. Take-up was 69 percent. Families already had access to public taps, often nearby. The new connections raised water use and wellbeing, yet the experiment found no improvement in waterborne illness, consistent with the lack of a change in drinking-water quality. The measured value came substantially through time, convenience and household satisfaction. The Tangiers experiment is about the adoption of private connections, rather than housing-estate maintenance. It found benefits from a service improvement without a corresponding change in the measured health indicator. A lift that works lets an older resident leave home; working streetlights can support safer journeys before dawn; an emptied drain can prevent missed days of paid work. Benefits should be measured against what households actually experience and value, with the cost and durability of the improvement tested alongside them. Work orders and installed assets need to be checked against the service they provide.

Count functioning services and resolved access disputes rather than equipment installed alone. Count the hours they function where pedestrians walk, the time before a reported fault is fixed, and the share of women and residents with disabilities who feel able to use the route. Counting toilets built says little about whether they remain clean, open, safe and affordable. A governing body may prefer a visible new facility; residents may prefer that an existing one work reliably every day. Some goods require choices that divide residents. A small play area, a community clinic, a place for street vending, a prayer room, parking and waste containers compete for scarce space. Established owners may want walls, gates and restrictions; poorer renters may need access for customers, domestic workers and deliveries. The rules for a shared courtyard decide whether the neighbourhood remains a place of work and social exchange or becomes an enclave of private titleholders. Neighbourhood management must address access and disputes alongside physical maintenance. Neighbourhood management also affects the work, care, and social networks that residents depend on.

Social networks and economic opportunity

Housing management should preserve access to livelihoods and networks as well as building condition. Relocation may save a family from flooding or give it a sound roof, while imposing longer journeys, lost customers, weaker childcare arrangements and unfamiliar schools. The Ahmedabad study records the loss of neighbourhood ties after relocation and difficulties in forming functioning associations. Neighborhood inclusion starts well before handover, with the decision about where and with whom people live. For neighbourhood management, the implication is to check whether location and service continuity support residents over time. Track schools, journeys, care networks, and tenant retention alongside repairs; building condition alone does not measure neighbourhood opportunity. [R159] Rules on representation and service access need to address exclusion within the neighbourhood.

Housing management can reproduce exclusion by caste, race, religion, migration status, gender or class. Resident committees can ration access to common spaces, veto tenants, exclude domestic workers from entrances and treat migrants as temporary guests. In India, cooperative rules and local social hierarchies can make participation unequal. In South Africa, apartheid's spatial legacy keeps many low-income households distant from economic centers. A formal apartment title alone cannot undo these restrictions. Inclusion must be reflected in by-laws, enforcement, an accessible grievance system, and the data collected about service outcomes, with continuing checks that the rules work in practice. Maintaining these commitments requires explicit provision for future asset replacement.

Fund renewal and enforce service responsibilities

Funding asset renewal

Replacement reserves should be based on the building's costs and financing rather than a percentage copied from another system. Pumps fail, paint fades, roofs leak, wiring deteriorates and lifts reach the end of their economic life. A renewal reserve spreads those future obligations across the years during which residents enjoy the assets. The alternative is a sudden special assessment, a plea to the municipality or a decision to leave the equipment broken. Such crises tend to harm the lowest-income residents first, because wealthier households can pay, move, or arrange private substitutes. Singapore is a useful institutional comparison. Its town councils manage common property in public housing estates and keep separate operating, ordinary sinking and lift replacement funds, subject to legal rules and government oversight. Under the Town Councils (Minimum Contributions to Sinking Funds) Financial Rules 2017, minimum quarterly allocations include 26 percent of relevant service and conservancy charges and grants into the ordinary sinking fund, and 14 percent into the lift replacement fund, subject to the rule's specified calculations. These figures describe a financing discipline backed by law and grants. They provide no evidence that 40 percent is the right percentage for an Indian or African estate. Audited accounts and external oversight can help distinguish current services from future renewal obligations.

Reserve rules need credible collection, accounting, and verification before their design can support a claim about results. Singapore also has resources, a high degree of public control and municipal institutions unlike those of most low-income urban districts. Copying a reserve percentage without copying the revenue, accountability and enforcement arrangements would achieve little. Thailand's Baan Mankong programme offers a different path. Community cooperatives pool savings, negotiate secure land arrangements and manage infrastructure and housing investments with technical support. Its published design includes an infrastructure grant per household, a community-management allowance of five percent of the infrastructure subsidy up to a ceiling, and concessional loans to cooperatives. Borrowing groups are required to maintain savings equal to at least ten percent of the loan. These are programme design rules and reported financing terms, rather than causal impact estimates. Collective ownership adds the need for representative authority, savings, and technical advice.

Collective ownership can strengthen bargaining power when a community has clear rights, a credible savings culture and access to engineering advice. It can also burden poorer members, exclude renters from decisions, or empower a few cooperative leaders to allocate scarce plots. Each cooperative needs open accounts, transparent entry rules, conflict resolution, and independent oversight. Baan Mankong's design budgets for social organisation and land negotiation before construction; this is a design feature, not an isolated estimate of its contribution to programme outcomes. A worked estate budget shows how these obligations translate into household charges and public support.

Neighbourhood management agreement

Choose the operating arrangement for the tenure and service setting, with separate tenant representation where needed. Cost routine management, emergency repairs and replacement separately, with targeted help for households unable to contribute. The operator must maintain accounts and repairs; the municipality must honour public-service boundaries; residents must have appeal rights. Track service uptime, repair completion, reserve adequacy, household fees, tenant representation and retention after upgrading. Use a simple repair and service schedule for an individual home or small rental property, and a fuller management agreement for shared buildings. Review it after first occupation and at major renewal. Households remain responsible for feasible private repairs; utilities retain network duties and targeted public help covers justified affordability gaps. Its purpose is to identify future

obligations early enough to revise the project and its financing. It is a proposed governance tool, not a finding from an evaluation. Five conditions should be binding. The first binding condition is clear ownership and responsibility for every essential asset.

1. Name the owner of every shared asset

Record each asset's owner, operator, acceptance condition, and duty before handover. Map the boundary between the building association, utility, developer and municipality. Record design life, warranty, spare parts, condition, and a responsible named official or legal entity. A gap in ownership is a reason to withhold the handover of that asset. The second condition is a funded operating and renewal forecast.

2. Fund life-cycle costs and test affordability

Stress-test long-term maintenance finance and show expected arrears and the support required for essential services. Set protected reserves and published audited accounts. Show the full private monthly cost separately for the bottom 50 percent, disaggregated by income decile, informal workers, persons with disabilities, female-headed households and renters. If the scheme requires fees beyond the target household's means, redesign the product or provide a funded, transparent subsidy. Show expected arrears explicitly and identify the funding needed to maintain essential services. The third condition is representation and access to remedies for every occupied unit.

3. Give tenants and weaker residents a voice with remedies

Every occupied unit should have a path to representation and complaint, including renters and residents whose tenure is contested. Protect residents from retaliatory eviction after reporting a defect. Make meetings accessible, decisions public, and management accounts reviewable. Establish a separate appeal route for charges, discriminatory use rules, service cutoff and forced relocation. Ensure that women and residents with disabilities can inspect facilities in safe conditions before they are declared fit for use. The fourth condition is a measurable service contract with independent checks.

4. Contract for service, performance and renewal

Tender maintenance against observable service standards and publish remedies for missed performance. Identify responsibilities for emergency repair. Pay against inspected results; keep warranty security and competitive access to parts. Require the municipality and utility to certify off-site capacity and take legal custody of transferred works. Publish remedial action when a standard is missed. The fifth condition is follow-up of the households and assets after handover.

5. Measure whether beneficiaries remain

Follow resident cohorts and stop transfers whose essential safety or operating obligations lack lawful funding and remedies. Distinguish voluntary moves from displacement. A rising property value is valuable information, yet its meaning depends on who holds the title, who pays more rent and whether original low-income beneficiaries still enjoy the neighbourhood. An upgrading scheme that pushes out tenants can report better pipes while delivering weaker inclusion. GO when shared assets have legal owners, an affordable and funded life-cycle plan, inclusive management rules, reliable service tests and a credible right of appeal. REPAIR when the deficit or unclear boundary can be corrected through a time-bound, financed agreement. STOP a proposed transfer when critical safety, utility ownership, relocation obligations or structural renewal lacks a lawful and funded remedy. The handover review should resolve the boundary and emergency authority for each service.

Handover should settle asset responsibility, acceptance, emergency powers, and funding before expanding collection sanctions. Begin with existing drawings, contracts, accounts, and a

joint site inspection; commission missing specialist work according to risk. The housing agency should assign a responsible officer and budget to unresolved items. Test water, drainage, lifts, fire access, and complaint routes before accepting the relevant works. Keep construction retention and warranty remedies enforceable. For occupied estates, apply Chapter 11's repair and financial triage before attempting a comprehensive renewal plan. This tool needs one lead institution with a defined authority to call meetings and enforce commitments. It also needs an independent inspector and an avenue for residents to challenge that lead institution. In a metropolitan system, a national housing ministry can condition new grants on municipal service acceptance and renewal funding; a municipality can offer matching support for low-income associations that meet disclosure and inclusion standards; a regulator can supervise service tariffs; and an MDB can finance capital works alongside time-bound improvements in operating discipline. The reform sequence should begin with verified service and trust, proceed to affordable dues and reserve accounts, and only then expand sanctions for persistent nonpayment. Long-term review should then test whether the arrangement preserves affordable, connected occupation.

Assessing long-term outcomes

Deferred maintenance should be evaluated through lost years of safe affordable use, not only the eventual repair bill. When service charges, reserves, and municipal responsibilities are unclear, repairs accumulate and residents face larger emergency bills. Later public grants may then pay for failures that could have been addressed through routine management. Effective management requires understandable bills, a process for correcting errors, accountable resident representation, clear ownership of shared assets, and funded replacement schedules. These arrangements determine whether homes remain safe and affordable. Assess neighbourhood management by the years of safe, connected, affordable occupancy it supports for intended residents, relative to its full public cost. Fieldwork can identify the operating and affordability gaps before arrears make the arrangement unworkable.

Municipal services and maintenance

Mumbai's reported maintenance findings show why the condition of resettlement housing needs review long after construction. In August 2026, a Mumbai-based organisation published a study of housing built for families displaced by public works roughly two decades earlier. Youth for Unity and Voluntary Action (YUVA) examined 38 cooperative housing societies in 53 buildings across four resettlement layouts. Thirty-six societies reported falling external plaster. Thirty-three reported blocked underground sewers. Six of the seven societies that had lifts reported that the lifts were out of service. Fifteen of the 38 societies said they had never received the maintenance corpus intended to support their buildings. A total of 204 of the 3,324 dwellings examined remained unallotted. The buildings had been built between 2004 and 2006. [R395] The figures are retained as reported in contemporary coverage; the original report was unavailable for direct verification. These figures remain attributed to the coverage. The study's coverage and attribution limit the conclusions that can be drawn from its counts.

Compare maintenance costs and institutional capacity

Utility, municipal finance, and maintenance constraints

Utility reform should distinguish connections, actual service, losses, and affordable lawful access. The Water Services Regulatory Board's Impact 18 report, covering 2024/25 and launched in June 2026, reported non-revenue water of 48%, up from 44% the year before. The reported metering ratio remained 97%. Average daily hours of water supply were approximately 18. A utility can know which customers have a meter while failing to know accurately where half the water it produces is lost,

consumed without billing or mismeasured. The regulator's figures cover providers across Kenya and cannot describe conditions in any particular housing estate. [R400] Some water leaks through old mains and poorly maintained connections. Some is delivered through illegal or unrecorded branches. Some is produced but never billed accurately. In informal settlements, a landlord or local broker may control a shared connection and profit from resale. A replacement pipe can reduce physical loss. A district meter may reveal where it occurs. Identifying an unrecorded connection can affect an intermediary’s income and expose residents without formal tenure to disconnection or enforcement. A plan to stop water theft without arranging legal, affordable access can punish the intended beneficiaries. Revenue and maintenance expenditure need to be traced separately.

Municipal income does not establish that the next repair has funding, authority, and procurement arrangements. WASREB's 2024/25 assessment reported average operations-and-maintenance cost coverage of roughly 103%, while its median provider remained below full cost recovery. An average above one does not demonstrate that most utilities are financially sound or that they are funding future pipe replacement. A water firm that covers salaries, chemicals and electricity can still be unable to renew pumps or respond to a major rupture. An affordable housing project should require a connection-level service agreement and test the receiving utility's asset and financial capacity. [R400] South Africa’s Auditor-General’s consolidated assessment of local government for 2023/24 found only 41 municipalities with clean audits. It reported that 113 municipalities, 44% of the total assessed, adopted budgets that were not funded, and found deficiencies at 87 of 113 infrastructure projects visited. These figures measure governance and implementation risks rather than a causal effect on any one housing project. They nevertheless show why a housing agency cannot safely assume that municipal maintenance will follow automatically once a subsidy-funded development is finished. [R402] Housing and rights findings reinforce the need to verify service performance after capital spending.

Capital works can coexist with service failures when operating systems, parts, and maintenance duties remain weak. In November 2024, the South African Human Rights Commission reported on failures affecting residents of subsidised housing. Investigating incomplete and inadequate subsidised houses in North West province, it substantiated systemic shortcomings across municipalities. It identified contract disputes, poor oversight, deficient design, delays in titles and failures to meet quality standards. It required a funded corrective plan, including budgets and time frames, and regular progress reports. The finding identifies delivery and oversight duties that require funded corrective action. [R403] Kampala’s road and drainage backlogs illustrate the need to fund connected networks together. In April 2023, Uganda's minister responsible for Kampala told Parliament that KCCA needed about UGX 2.2 trillion to address a backlog of 353 kilometres of paved roads in fair or poor condition and about UGX 610 billion for its drainage master plan. These were official estimates at that date, rather than independently audited cost-to-complete figures. Legislators asked how new roads could survive heavy runoff if drainage received no budget. Roads can be rebuilt, but without drainage and routine works their useful life contracts. In housing estates, the same failure appears when a paved courtyard sits above a blocked sewer or a newly installed pump runs without spare parts. [R404] Every new asset therefore adds an obligation that must be matched with operating capacity.

Additional capital investment can be essential, but it also increases the assets a city must maintain. These cases support linking new construction to verified operating capacity, clear duties and funded recurrent costs. Design choices determine the size and timing of those obligations.

Collection responds to the charge

For 600 homes costing CU 3,000 each per month to operate and renew, the annual requirement is CU 21.6 million. At 90 percent occupancy and 80 percent collection, the break-even

monthly bill is CU 4,167 per occupied home. If collection falls to 70 percent when bills rise, it becomes CU 4,762; at 60 percent it is CU 5,556. These are sensitivities, not behavioural estimates. A higher bill cannot be assumed to finance itself. Estimate affordability and collection jointly, with an explicit subsidy for obligations residents cannot fund.

Operating and replacement costs

Every housing design contains an operating-cost choice. A twelve-storey block with several lifts and mechanical ventilation is very different from a low-rise cluster with gravity-fed drainage and good natural airflow. Taller buildings can use scarce central land efficiently and reduce commuting costs; the economic gain may justify their mechanical systems. Yet the residents' ability to pay for lifts, pumps, security, electricity and eventual replacement must influence the design from the outset. Before choosing flats, compare these obligations with safe lower-rise additions or repair on serviced land. Finance the maintenance gap explicitly; an affordable tender price cannot pay the later bills.

Compare lifetime cost per safe home-year while separately testing whether households can pay bills when due. A University of Cambridge research profile, reproduced in Selwyn College's Summer 2020 magazine, describes Ronita Bardhan's survey of 1,244 households in Mumbai slum-rehabilitation housing. It reports residents spending around 40% of income on electricity in some observed settings, alongside increases in air-conditioning ownership after relocation. This is a research team's reported sample experience, not an estimate for all rehabilitation residents. A possible physical mechanism is that tightly packed buildings can trap heat and cooking pollution and require lighting and cooling where better orientation, ventilation and shared space could reduce demand. [R397][R399] A low electricity bill is therefore a matter of housing design, public health and household finance. So are stairs that can be used when the lift stops, roofs that can be repaired without destroying occupied rooms, a water system that can run during a short outage and drains that can be cleaned without breaking a concrete slab. Compare the cost of incorporating these features during design with the cost and disruption of later retrofits. The relevant comparison is the discounted lifetime cost per safe home-year, with a separate check that households can pay the bills as they arrive. The maintenance account should distinguish routine work, preventive action, major repairs, and replacement.

Maintenance budgets need separate cost categories and stress tests for collection and simultaneous failures. Routine care pays for cleaning, inspections, clearing drains and servicing pumps. Reactive work fixes a broken door, leak or electrical fault. Cyclical renewal replaces roofs, equipment, waterproofing and lifts at intervals. Major rehabilitation corrects structural failure or past design errors. The last two bills can be large and fall due many years after construction. A society that uses every month's dues for cleaning may appear solvent until the lift reaches the end of its life. A reserve fund can manage predictable replacement. It requires an asset-specific cash-flow forecast, deposits that stay in a protected account and clear rules for expenditure. Include inflation, equipment availability, interest rates, and premature defects in the forecast. A flat rule such as "put aside 2% of construction cost" may be a crude starting assumption; the right reserve follows the cost and expected life of actual systems. A six-floor walk-up and a twenty-floor lift tower need different plans. Reserves should be stress-tested against a sharp cost increase, collections below plan and simultaneous equipment failures. The resulting reserve contribution must be affordable or supported by an explicit funding source.

A reserve needs an affordable contribution schedule and a funded response when household payments cannot meet essential costs. Test targeted support, design changes, and procurement savings. Report the remaining gap openly; deferring repairs does not remove the obligation. The worked model below illustrates errors that can arise when those accounts are incomplete.

Exhibit 11.2. Operating and replacement costs for a 600-home estate

Illustrative parameter	Amount
Homes built; 90% occupied; 80% of billed charges collected	600; 540 occupied; 432 effective payers
Monthly costs per home: routine and utilities	KES 1,500
Reactive work and administration	KES 450
Safety and insurance	KES 150
Funded long-term equipment and fabric reserve	KES 900
Total monthly lifecycle requirement	KES 3,000 × 600
Total required annual revenue	KES 21.60 million
Break-even charge per occupied unit, at observed collection	KES 4,167/month
Revenue if billed fee is capped at KES 2,000	KES 10.37 million/year
Annual funding gap at that cap	KES 11.23 million

Illustrative model, not an estimate for a Kenyan project. All costs expressed in constant KES, ignoring inflation and investment returns. Effective payers = 600 × 0.90 × 0.80. Break-even fee = 21.6m ÷ (432 × 12). The reserve is a provision for future works, not money already spent.

Maintenance affordability depends on collection, timing, and institutional performance as well as building materials. First, a city may approve a fee of KES 2,000 because that seems affordable and then leave KES 11.23 million a year unfunded. Second, the manager may erase the KES 900 reserve to narrow the shortfall, reducing current expenditure while accumulating a KES 6.48 million annual renewal liability. Third, the government may treat vacancies and poor collections as minor administrative problems. In the model, they raise the charge needed for break-even from KES 3,000 under full occupancy and collection to KES 4,167, a 39% increase. The same building materials produce different long-term affordability because the institution's performance differs. A funding gap requires comparison of feasible subsidy, reserve, management, and design options.

Choose the funding mix against local markets, household means, and the ability to enforce the agreement. Each instrument has a different distributional effect. A grant paid per verified low-income home-year puts pressure on the operator to keep units safe and occupied. An unconditional grant tied to units built rewards an earlier decision, regardless of later performance. A one-time endowment exposes residents to investment risk and inflation. A cross-subsidy may require higher-value commercial space and create a conflict over whose amenities receive attention. The correct mix follows the area's market and the institution's ability to enforce agreements. Those choices also redistribute income and authority within the operating system.

Four institutional approaches

Singapore's separate operating and renewal funds illustrate a function rather than a contribution percentage to copy. Singapore's separate operating and renewal funds, described

earlier in this chapter, provide an institutional comparison. The municipal task is to verify actual component costs, contributions, public support, and the authority to spend the reserve. The statutory percentages cannot establish the appropriate contribution for another estate. [R406, R407] Regulated operators and collective organisations provide other ways to assign continuing responsibility.

Social-rental and collective-management models require legal rights, accounts, technical support, and municipal commitments that can be verified. The Social Housing Regulatory Authority's rules require accredited providers to show financial sustainability, maintain a property portfolio plan, inspect stock at least every three years, operate a complaint system that records response times and costs, and prepare for reactive and periodic large-scale works. The regulator requires ongoing reports and can intervene in cases of poor administration. This design assigns continuing responsibilities to a regulated provider; its suitability elsewhere depends on provider capacity, funding and enforceable resident rights. The regulations establish obligations; compliance monitoring and the operator's finances determine whether they are met. [R409] Delivery performance shows where these obligations meet capacity constraints.

Regulatory obligations do not remove financing and infrastructure constraints on delivery. South Africa's Department of Human Settlements reported that 1,364 social rental units were delivered in 2024/25 against a target of 2,699, citing delays in approvals, debt finance and bulk services among the constraints. An institution required to maintain its stock may have to move more slowly when a project's full financing is unavailable. Speed alone would be a poor performance measure if it left tenants in unsafe buildings. [R412] Community-led provision offers another way to organise implementation, with different capacity requirements.

Baan Mankong gave organised communities an implementation role backed by infrastructure subsidies and housing loans. Baan Mankong began in 2003 by channelling infrastructure subsidies and housing loans through organised communities that planned improvements with local authorities. The programme combined savings groups, collective tenure choices, community networks and negotiation with landowners. By December 2004, an early programme report recorded 137 approved projects serving 14,642 households; more than three-quarters of households in that initial portfolio were covered through forms of on-site improvement or reconstruction, and 9.3% through nearby relocation. These are contemporaneous administrative figures, not a long-run causal evaluation. [R413] Its early delivery record needs to be read alongside the conditions that sustained collective action.

Collective management requires support and safeguards against unequal influence within the community. The programme gave community organisations a formal implementation role. Neighbourhood organisations helped decide and manage works, giving residents a stake in common assets and a collective forum to challenge officials. The same source identifies risks of unequal influence through local intermediaries; citywide community forums can provide a broader negotiating body. Volunteer leaders may be influenced by particular groups, lack time for their duties, or be assigned technically complex works they cannot fund. Collective management works best when coupled with legal tenure, technical help, audited accounts and a clear municipal commitment to trunk infrastructure. A large public landlord can still face substantial repair gaps when those functions are underfunded or ineffective.

Choose the operating form by who can own, fund, inspect, enforce, and respond reliably to complaints. The New York City Housing Authority's 2023 physical-needs assessment put its twenty-year capital requirement at US$78.3 billion. The authority's later plans describe conversions of parts of the portfolio to funding and management models intended to raise repair capital while preserving long-term affordability and resident protections. The figure measures modelled repair needs, not an amount

appropriated or an estimate of avoidable past costs. It shows that formal public ownership, a sophisticated municipal government and a large tax base cannot, by themselves, prevent the accumulation of unfunded maintenance. [R405] These cases support assessing institutions against their responsibilities, finance and performance. A professional landlord can serve tenants well and can also neglect repairs. A cooperative can build ownership and can also be captured. A municipality can pool risk across neighbourhoods and can also ignore places with little political voice. The choice depends on what can be verified: who owns the assets, who pays, who can inspect, who can enforce, and how the system responds when a household complains. The Singapore–Mumbai comparison therefore concerns funded duties rather than the label or percentage of a reserve.

The Singapore–Mumbai contrast concerns funded duties rather than a reserve percentage. Mumbai's study is purposive, not representative of the city, and Singapore's funding rules operate within much stronger fiscal and administrative institutions. Before adopting those rules, cost the actual assets, identify public support and verify who can collect, spend and enforce. A separate fund helps only if it can meet the obligation. [R406, R407, R395] Municipal revenue arrangements must sustain those duties beyond the estate boundary.

Match revenue and accountability to continuing services

Municipal revenue and service obligations

Capital transfers are incomplete when they create recurring municipal liabilities without fiscal space to meet them. Municipalities inherit the street, drainage, solid-waste route, building inspection burden and the complaints. In many African and Indian cities, they have limited control over the taxes and transfers that could pay for those functions. A capital grant that creates recurring liabilities without giving the city recurrent fiscal space is an incomplete transfer. Budget and revenue evidence should be examined together to identify that mismatch.

Capital allocations and reported revenue reforms do not by themselves demonstrate reliable neighbourhood services. The World Bank estimated in 2022 that India required about US$840 billion of urban infrastructure investment over fifteen years. It found that the ten largest urban local bodies spent only about two-thirds of their available capital budgets across the years studied, and that urban property tax had averaged about 0.15% of GDP during 2011–18. These are estimates for capital finance and fiscal capacity, not a measure of housing maintenance funding. They show how difficult it can be for a city to turn additional investment into sustained service. [R151] Tax reform offers one route to a stronger local operating budget. Freetown's property-tax reform, launched after the 2018 mayoral election, mapped properties, changed valuation, digitised billing and improved payment channels. ODI's May 2026 review reports that, within a year, registered properties doubled and collections tripled; the least valuable 60% of properties generally faced stable or lower bills while the most valuable 20% experienced average increases of 242%. A follow-up survey found support from roughly 70% of owners. These are reported reform outcomes and survey findings, not a randomised proof that technology alone caused the change. Performance-linked support needs a rule that preserves essential service when intergovernmental conditions fail.

Revenue reform should link information, administration, and spending without making poor households bear failures between governments. Freetown's reported reform combined mapping, valuation, administration, and intergovernmental negotiation. Later movement towards a national platform raised questions about control of records and systems. Evaluate sustained collections and service expenditure separately; higher revenue alone does not establish better housing. A useful intergovernmental agreement would make four commitments. The national or state housing agency

finances the portion of lifecycle costs that the poorest households cannot bear. The municipality adopts specified public assets and publishes a service budget. The utility accepts connections only after independently tested handover, with agreed financing for capacity and renewal. The estate operator keeps separate, audited accounts and publishes service and repair performance. Payments should reward actual occupied and safe homes while avoiding rules that encourage harassment, eviction or artificial vacancy reductions. For a multilateral development bank (MDB), this implies a shift in disbursement logic. Capital construction remains necessary. Yet a housing operation can reserve part of its support for independently verified post-occupancy performance, asset adoption, audited reserve contributions and resident access to grievance redress. Such incentives require reliable baseline data, fraud controls and a mechanism to protect residents when their operator misses a target. The poor should never lose essential service because a government-to-government performance condition fails. Maintenance technology should support this operating agreement through a usable asset register.

Accountability over the life of housing

Use institutional comparisons to assign and verify each service obligation over the life of the housing. The choice must remain affordable to residents and funded over the asset life. Chapter 15 brings these obligations together with access to jobs, schools, and neighbourhood opportunity. Fieldwork should identify unfunded renewal needs before they become failures.

A reliable building can still leave households poorly connected to opportunity. Chapter 5 tests location, networks and household choices at metropolitan scale.

Selected readings

Mumbai relocation and self-governance [R136]. Read the Majas and Lallubhai study for the burdens of managing formal housing; its cases should not be treated as every relocation household.

Mumbai Urban Transport Project investigation [R453]. Use the Panel report to examine resettlement obligations and implementation findings; distinguish its record from later studies and follow-up.

Kenya water-sector Impact 18 [R400]. Read the administrative service and financial indicators for operating constraints; provider aggregates do not establish conditions in each housing scheme.

Judgment and transfer conditions

Maintenance determines whether today's completion remains tomorrow's adequate home.

Confidence: High for the lifecycle mechanism; collection behaviour must be measured. Revisit trigger: Observed costs, collections and component lifetimes outside the assumed range.

Transfer maintenance funding that keeps existing homes and shared services usable while households improve them. At roughly ten times the pilot scale, test collections, defects and whether residents in the bottom 50 percent can afford to remain. At roughly one hundred times the scale, require skilled operators, credible reserves and oversight that includes weaker residents. Do not expand a building form whose essential upkeep exceeds affordable charges and committed public support.

Exercise

Recalculate the 600-home maintenance budget at 70 percent collection. Build a replacement schedule for three critical components using documented lifetimes and costs.

12. Safer Housing and Recovery from Disaster

Which recovery or strengthening option restores safe housing and livelihoods at a justified cost?

Priority C funds safety and recovery where households cannot meet the cost. The chapter also tests land choices under Priority A and rebuilding support under Priority B, supplying evidence for alternatives (Test 3), responsibilities (6) and rights and safety (7). Enable households to repair or rebuild safely, with funded technical help and an assisted route where needed. Compare repair, strengthening and relocation against the same hazard baseline, rights and livelihood requirements. Price the safer design and essential services, test what households can contribute without unaffordable debt, and fund the justified gap. A grant without inspection or a safe home without working services leaves the recovery incomplete.

Housing reconstruction should restore livelihoods and resident control alongside safe shelter. In 2010, I wrote Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters with Jennifer Duyne Barenstein, Priscilla M. Phelps, Daniel Pittet, and Stephen Sena. We argued for reconstruction that restores livelihoods, gives affected communities a leading role, and combines household control with finance and technical support. We also warned against avoidable relocation and the exclusion of tenants and people without formal tenure. Those principles remain the starting point for the housing decisions examined here. [R191]

We tested the handbook with practitioners because much of the available reconstruction experience had not been documented well. While writing it in 2009–10, we drew on experience from Pakistan, Indonesia, Gujarat, and Colombia, among other places. We ran field tests with practitioners to check whether the messages were useful and grounded in the realities of implementation.

Reconstruct homes so households can recover

Reconstruction should restore safe, affordable occupancy and the means to earn a living. A programme needs to ask how long a family remains displaced, what it pays while waiting, and whether its rebuilt home supports its daily life. A completed structure is one milestone. The public objective should include working services, manageable household debt, and access to employment. These distinctions matter when the pressure to announce construction targets arrives before officials have agreed who qualifies for assistance or how rebuilding will be supervised.

Decide what to repair, rebuild, or relocate

Repairable homes should receive an explicit assessment before demolition or replacement is approved. Classify structural damage separately from the safety of the site. Compare repair and strengthening, rebuilding on the same plot, and relocation against the same life-safety requirements. Record the engineering judgment, the estimated cost, and the household's preference. Give disputed classifications a second technical review. A repair grant should pay for the identified strengthening

work. Replacing a repairable building should require an explanation of why repair cannot deliver an acceptable result.

Relocation decisions should account for the household's income as carefully as the replacement building. Compare the costs of transport, temporary accommodation, interrupted work, and reconnecting services. A home-based producer needs usable workspace. A trader needs access to customers. Where a site cannot be made acceptably safe, prepare the move with affected residents, document their claims, and establish what support will cover the transition. Publish the alternatives considered and the remaining risks. Cheaper land at the edge of a city is insufficient grounds for choosing it.

Put households in charge and fund the support they need

Household-led reconstruction requires a public delivery system. Residents can choose layouts, engage builders, and supervise spending while engineers set safety requirements and inspect critical work. The Independent Evaluation Group's review of reconstruction experience found advantages in homeowner control, alongside a need for specific assistance to vulnerable households. [R196] Governments should restore safe land access and shared services, then fund staged grants, designs, builder advice and inspections, with extra help for households unable to organise rebuilding. Contractor delivery may be appropriate for complex buildings or households choosing that option. Compare quality, total cost, completion and satisfaction, including outcomes for renters and the bottom 50 percent.

Gujarat's recovery after the 2001 earthquake shows both the reach and the limits of owner-driven reconstruction. The World Bank's 2009 completion report recorded 125,781 houses reconstructed and 41,751 repaired under the project phase it assessed. The programme supported training and linked payments to progress. Its evaluation also found that construction deadlines excluded some households unable to keep pace. Rising costs then made completion harder. These are administrative outputs and implementation findings, rather than a controlled comparison with contractor delivery. The report also records material banks closing and project technical staff being absorbed into regular administration before all homes were finished. Any decision to withdraw dedicated support should include a funded completion plan for the remaining eligible households. [R192]

Nepal made inspection a condition for releasing reconstruction finance. Following the 2015 earthquakes, eligible households received grants in three instalments, with later payments tied to approved construction at the plinth and roof-band stages. The World Bank's 2024 completion report recorded 319,621 reconstructed core houses under its project by June 2023. It also described technical assistance and inspections, including at completion. This establishes substantial delivery under a monitored construction system. It does not establish how every house will perform in a future earthquake, or whether every household recovered its income. The figure is the project total, not the total for Nepal's national reconstruction programme. [R193]

A technically compliant house can still leave its owner with an unaffordable financing gap. A 2021 study published by the United Nations Development Programme found that only 8.4 percent of surveyed homeowners in eight municipalities of Gorkha district had built within the housing grant. Vulnerable households progressed more slowly, and the study described delays between construction stages and payments. Its findings concern those municipalities during reconstruction, rather than the national programme at closure. They support a practical safeguard: price the minimum adequate dwelling locally and establish how a poor household will finance each stage before requiring it to begin. [R194]

The grant schedule should follow a realistic construction and cash-flow plan. Provide an initial payment sufficient to start, publish inspection deadlines, and track the interval between a passed

inspection and receipt of funds. Establish an appeal route when certification is refused. Reserve targeted assistance for households whose labour, disability, care responsibilities, or lack of savings prevents completion. Review grant adequacy when verified material and transport costs change. Technical advice should arrive before work is concealed or expensive to correct. This is a proposed operating standard, to be costed against local staffing and fiscal capacity.

REKOMPAK's community model depended on sustained technical and organisational support. In Indonesia, household groups managed rebuilding with block grants and help from facilitators responsible for construction, finance, and community organisation. The programme's 2012 account describes training, supervision, and checks on materials and workmanship. It also records shortages and turnover of facilitators in Aceh, with resulting delays and weak quality control in some communities. The evidence supports investing in the support system alongside household responsibility. It does not justify transferring construction risks to residents while removing the staff who help them manage those risks. [R195]

Reconstruction capacity should be budgeted in workers and inspections as well as money. Estimate how many active sites each engineer can visit, how far staff must travel, and which tests local laboratories can undertake. Train masons in the techniques the programme will actually fund. Publish material specifications and check suppliers rather than assuming that a purchased input meets them. Compare procurement costs after counting transport, storage losses, and household labour. Community contributions should be recorded and valued, so an apparent public saving does not conceal an unaffordable demand on residents' time.

Include residents and restore the neighbourhood

Eligibility rules should distinguish housing need from proof of property ownership. The 2010 handbook explicitly included owners, tenants, and people without legal status in its reconstruction framework. [R191] A recovery census should therefore record occupants as well as structures. Establish a documented procedure for corroborating claims when records are missing, with independent review of contested cases. Protect privacy when publishing eligibility decisions. Recognition for emergency assistance should not silently become a final judgment on a disputed title, nor should a title dispute automatically suspend all help with safe accommodation.

Tenants need a funded recovery route of their own. Programmes should budget for temporary rental assistance and the repair of affordable rental rooms, alongside support for owner-occupiers. Assistance to a landlord can carry clear conditions on former tenants' return, rents, and minimum habitability, subject to local law and enforceable agreements. Track whether those tenants actually return. Record people who shared rooms, sublet informally, or lacked a written lease, and give them access to review. Otherwise, an apparently successful rebuilding programme may restore a landlord's asset while leaving its former occupants displaced.

Housing completion and service restoration need a common schedule. The REKOMPAK account records houses in Aceh that remained unoccupied while water or electricity connections were missing. [R195] Each neighbourhood plan should therefore name the agency, funding, and completion date for water, sanitation, access roads, drainage, and electricity. Check the services people can use, including their charges and reliability. Align reopening of schools, markets, and transport with return. Assign maintenance responsibilities before the construction team leaves and record who will fund recurring costs.

An empowered reconstruction authority needs clear obligations to residents and other agencies. In my 2019 account of lessons from disaster recovery, I stressed capable institutions, protection for vulnerable people, and strategies fitted to local conditions. [R190] Applied to housing, that

means published assistance rules, delegated spending authority, a route for resolving cross-agency delays, and accessible complaints. Central coordination should settle obstacles that municipalities cannot resolve alone. Local teams still need staff and money to implement the decisions. Any temporary authority should have a funded handover of records, unfinished claims, and inspection responsibilities.

The recovery scorecard should follow households after the building is handed over. Report completed and occupied homes separately. Track time displaced, unresolved defects, service outages, rent, debt, earnings, and travel costs against a documented baseline. Separate owners from tenants and identify who remains outside the programme. Independent sample checks should test construction records and household accounts. Future events can provide evidence of performance, while engineering compliance remains an intermediate measure. These proposed indicators test whether a household can occupy a safer home, meet its recurring costs, and remain connected to work.

Identify household exposure and the costs of safer housing

Climate-adjusted housing policy must decide whose risk evidence governs and how protection costs and rights are allocated. A settlement close to jobs may sit in a floodplain; a safer site can be two bus rides away. A metal roof may cost less than a cool, durable one; higher indoor temperatures may increase illness and lost work. Insurance can protect a lender while excluding the household whose home is hardest to insure. Climate measures can change land values, bargaining power and the boundary between places where poor households may live and places from which they are excluded. Affordable housing therefore needs a climate-adjusted location agreement. The state must estimate future hazard and service costs, finance safety where improvement is feasible, offer credible nearby alternatives where it is not, and protect renters and informal workers whose claims are easy to erase. Better maps can make these choices clearer. Implementation requires deciding whose map governs, who bears the bill and who can challenge the decision. The Msimbazi basin illustrates how that decision combines flood management with livelihood access.

Flood risk and the cost of relocation

I had no role in the Msimbazi project. This discussion relies on the published project and accountability records cited below. It does not draw on internal project information or represent an institutional finding.

Flood-reduction projects should distinguish expected protection benefits from verified outcomes after delivery. In Dar es Salaam, the Msimbazi River basin connects an expanding city to its center. The same corridor holds busy roads, public transport, market activity and neighbourhoods where people live close to their livelihoods. The valley also carries floodwater, creating a conflict between occupied land and flood-conveyance capacity. The World Bank describes a basin containing about 1.6 million people, with significant floods in seven of the ten years preceding its 2023 account.[R172] The project combines engineering, land, and resettlement measures. Tanzania and its partners planned river-channel works, flood retention, a safer Jangwani transport crossing, a city park, institutional reforms and preventive resettlement. A US$200 million IDA credit anchors the 2022-2028 programme. The published project objective is to lower flood exposure for more than 300,000 people; this is an expected benefit, subject to delivery and verification.[R172] The households affected by land and river works also need a livelihood and tenure assessment.

The Msimbazi public record includes an unresolved resettlement complaint. The Inspection Panel records a request submitted in April 2026 by two individuals representing 412 people, alleging compensation and resettlement harms. Management maintained that applicable policies had been followed and identified further measures, including a third-party resettlement audit. The Board

authorised an investigation in September. These are allegations, management responses and procedural decisions, rather than completed findings on compliance or household recovery. [R495]

The parties agreed to pursue dispute resolution on October 19, 2026. The Accountability Mechanism reports that the Panel investigation is on hold while this process proceeds. As of this edition's November 5, 2026 cutoff, that agreement does not establish a settlement, payment or restored livelihoods. The case therefore illustrates why expected flood-protection benefits and the treatment of affected households require separate evidence and follow-up. [R496]

Flood-management design should resolve compensation, occupancy, and livelihood questions alongside hydraulic requirements. The publicly disclosed March 2022 draft resettlement and livelihood plan reports that over 90 percent of the trades described in its livelihood assessment were informal and unregistered. Petty trading, vending, employment, and gardening were the main activities reported. The relocation appraisal therefore needs to include livelihoods. A family that gains a safer roof but loses a market stall, customers or a reliable commute may become poorer. Appraisal should examine both hazard-related land-price discounts and the livelihood value of proximity, rather than assume either determines the price. A river project can also create a new development rent. Regraded land, improved transport and restored public space raise the value of adjoining parcels. Which parcels can be built upon after the works? Does the public retain land for affordable rental housing? Who receives compensation, and who is recorded as a tenant? How will the city stop settlement from returning to land reserved for floodwater? Resolve these land, compensation, and occupancy questions alongside the hydraulic design. The wider risk assessment must distinguish the physical hazard from the development decisions that create exposure.

Urban development and disaster exposure

Climate hazards become housing risk through settlement patterns, building conditions, poverty, and the capacity to respond. Urban policy determines how many people and assets sit in their path. A drainage channel blocked by fill raises upstream flood depth. A wetland converted to housing removes storage. A bus depot built in a river corridor creates a public asset that becomes a physical barrier when floodwater rises. A zoning decision that excludes low-cost rental rooms from safe neighbourhoods sends households toward precarious land. A peer-reviewed 2022 global analysis using flood maps and poverty data across 188 countries estimates that 1.81 billion people, or 23 percent of the world population, live in places exposed to more than 15 centimeters of water during a 1-in-100-year flood. India accounts for around 390 million of them. Eighty-nine percent of exposed people live in low- and middle-income countries; of the 170 million people facing both extreme poverty, defined in the study as living on less than US$1.90 per day, and significant flood exposure, 44 percent are in sub-Saharan Africa.[R170] Modelled exposure estimates are useful only when their uncertainty and decision purpose remain explicit.

Exposure models identify potential risk rather than settle which intervention or institution should address it. They tell us where to look; they do not predict that 1.81 billion people will be flooded in any single year. They also omit much of the damage a flood causes through failed sewers, closed bridges, interrupted wages and disease. Poor households can lose several days of income from water that never enters the dwelling. A useful causal chain has five links. Climate and upstream land use change the hazard. Zoning and land prices influence exposure. Building quality and services influence physical vulnerability. Savings, insurance, and social networks influence recovery. Government decisions redistribute the loss among homeowners, tenants, utilities, taxpayers and future residents. At each link, a different actor may hold the power to reduce risk. Households' reasons for accepting exposure must also enter a stay-or-move comparison.

HAZARD	EXPOSURE	VULNERABILITY	RECOVERY
Rainfall, river flow, heat, drought	Land price, zoning, access to jobs	Materials, drainage, indoor heat, water	Income, tenure, credit, insurance, transfers
Hydrology and forecasting	Planning and land policy	Standards and local services	Social protection and finance

Households may accept physical risk to retain affordable access to work, so safety and livelihoods need joint appraisal. Such sites can lie outside formal land markets and offer small, flexible rental units. Declaring them unsafe without providing accessible alternatives can exclude low-income residents from employment locations. Risk policy should apply consistent standards and account for the different protection available to higher-income developments. An accurate risk map is therefore a necessary input and an incomplete housing policy. The other map shows jobs, transit, fares, tenure, rent, schools, employers, household debt and informal commerce. Every stay-or-move decision requires both. Chennai shows how disputed land and environmental records can complicate that appraisal.

Land records and wetlands in Chennai

Chennai's wetland disputes illustrate the need to distinguish reported legal proceedings from settled rights and final judgments. The 2015 floods exposed how much of Chennai depends on wetlands, tanks, channels and the unobstructed flow of water across a low-lying plain. A remote-sensing study estimated that 18 percent of the metropolitan area was inundated, directly affecting around 21 percent of its population. Those are model-based estimates for a particular event and spatial method.[R174] The Pallikaranai marsh has become a test of state capacity. Hydrologists see flood storage and feeder channels. Developers and landowners see registered parcels. The planning authority relies on zoning and revenue records. The environmental authority must delineate an ecologically connected wetland. These records have not always agreed. According to the news reports cited here, following a National Green Tribunal order on 24 September 2025, Chennai planning authorities paused construction approvals in and around the Ramsar wetland pending a scientifically grounded assessment of its influence zone. Developers challenged the restrictions in the Madras High Court in March 2026, arguing that the blanket buffer lacked adequate legal and scientific basis and restricted land already classified for urban development.[R175] These are reported procedural developments and submissions by the challengers; they do not establish the legal merits or a final judgment. The planning response must reconcile the records and make the allocation of costs reviewable.

Inconsistent land and environmental records require legal review and engineering evidence before restrictions or compensation are applied. A hydrologically important channel can cross land that was recorded years ago as private, developable property. Existing rights create legitimate expectations and political power. Sudden prohibitions can destroy value and strand projects; permissive approvals can shift flood costs downstream onto households who were never part of the transaction. The technical task is to map flow paths and retention needs at parcel level. The legal task is to give those maps authority through clear procedures, hearings and review. The fiscal task is to price any restriction, acquisition, restoration or development-right transfer. Advance expansion planning should identify safe buildable land alongside land that requires protection. Angel's public planning framework calls for protecting high-risk areas, drainage channels and ecological assets while preparing land for urban growth. Each proposed restriction should have a stated legal basis and an assessment of the people and livelihoods affected. The World Bank's guidance distinguishes broader land-use planning from project-induced displacement; the applicable assessment and safeguards depend on what is financed and implemented. I would include compensation or assistance where required, accessible remedies, and

affordable alternatives for affected households in the plan's costs. Chapter 5 explains how this assessment connects with road reservations and local subdivision. [228, p. 131; 230, pp. 6–8] Heat and water stress require a different set of housing and service responses.

Gabiley's expansion plan linked road reservations with protection of flood-prone open space. Sub-Saharan Africa's Urban Awakening describes 46 kilometres of arterial roads opened since 2022 under the city's urban expansion plan. Municipal engineers subdivided private and communal land, and the plan was adjusted to address concerns raised by residents and clan and subclan leaders. It identified open spaces, mainly floodplains, for protection. Roads were being upgraded gradually in response to demand. This is an implementation account, not an independent evaluation of housing affordability, tenure security, or flood losses. Road opening should therefore be distinguished from fully serviced streets, with funding and protection of affected rights assessed separately. [246, p. 89, box 3.2]

Heat, drought, and housing conditions

Heat exposure reaches households through the dwelling, home-based work, and the ability to recover at night. Heat and water scarcity cross nearly every neighbourhood, although their effects vary sharply by income. Insulation, ventilation, and affordable cooling can reduce indoor heat. Small rooms under metal roofs may offer less protection, particularly when nights remain hot. Exposure can continue through home-based work and sleep. Ahmedabad's heat response helps distinguish warning systems from improvements to housing conditions.

Heat warnings and housing quality in Ahmedabad

Heat-action plans need practical resources for protection near vulnerable households as well as warnings. Ahmedabad adopted South Asia's first city heat-action plan after the deadly 2010 heatwave. The plan joined forecasts to public warnings, health-system preparation and outreach. An ecological evaluation comparing 2014-2015 with a 2007-2010 baseline estimated an average of 1,190 deaths avoided annually in the post-plan period, with a wide 95 percent confidence interval of 162 to 2,218. This is a before-and-after association, with possible confounding from population, health systems, and other changes. When the authors excluded the unusually hot year 2010 from the baseline, the estimated decline remained but was no longer statistically significant.[R176] A warning helps a household only when someone can act. A construction worker may lose wages by staying home. A child or older person inside a poorly ventilated room may have no cooler place to go. A landlord receives no automatic return from coating the roof of a short-term rental. A municipality may have a heat plan yet lack a budget for public shade, reflective surfaces, drinking water and cooling shelters near informal settlements. Cool-roof evidence should be tested through indoor exposure and health over repeated seasons.

Measured temperature reductions from exploratory cool-roof research require local testing before a wider performance claim. An exploratory 2024 Ahmedabad study found cool-roof treatments associated with indoor temperature reductions of roughly 1-1.5 degrees Celsius on peak summer days. The study also found that ventilation, ceiling height, adjacent trees and open space mattered. The observed effect should be treated as site-specific; it is distinct from measured causal effects on mortality or earnings.[R177] The policy logic is to combine low-cost passive improvements with labor protection and neighbourhood design. A government can subsidize reflective roofs on rented rooms, set performance standards for new low-cost housing, protect shade and public space, and trigger worker protections through clear heat thresholds. The final test is indoor exposure and health, measured over seasons, with special attention to older residents, women working at home and children. Cape Town's water crisis provides another example in which exposure and capacity to respond differ by income.

Water conservation and inequality in Cape Town

Cape Town's water-demand evidence shows why income and household use patterns matter for conservation policy. Cape Town's 2018 "Day Zero" crisis threatened emergency rationing as reservoir levels fell. The city combined warnings, restrictions, tariff changes and conservation; per-person limits reached 50 liters per day during the emergency period. The political conflict arose from differences in consumption and access. Some households had lawns, pools and private tanks. Others had shared taps and had used little water long before the drought made national news.[R178] A 2021 study analyzed 14.9 million monthly billing observations covering roughly half a million households from 2014-2018. It found that the top 10 percent of household water users in the billing sample consumed 31 percent of the water delivered to that sample before the drought, and that citywide consumption fell about 50 percent during the crisis. The link between income and water use rose strongly in outdoor-watering seasons.[R179] Housing approvals and utility planning need to reflect those differences in their demand assumptions.

Water-saving measures should be designed around household use, affordability, and a shared utility operating forecast. A flat per-person restriction appears even-handed while imposing different costs on households with private storage and those carrying water from a communal point. New housing projects add long-lived demand to constrained water systems. Developers may sell homes that connect to an unreliable network, while the utility and tenants inherit the shortage. Resilience requires water balance sheets at the growth-corridor scale: firm supply, nonrevenue water, demand by income group, drought triggers, reuse, wastewater services and the marginal cost of connecting new homes. Water conservation reduces billed volumes in the short run and can weaken utility revenue unless tariffs and transfers adjust. Resilience investments fail when a water utility has incentives to sell more water to finance its existing debt. Housing approvals and utility capital plans must therefore share a demand forecast and an operating model. The flood, heat, and water cases therefore support different mechanisms rather than one general adaptation prescription.

EVIDENCE AND LIMITS The global flood counts are modeled exposure estimates [R170]. Ahmedabad's mortality findings are observational [R176], and its cool-roof study is exploratory [R177]. Cape Town's billing analysis draws on actual household-level records [R179]. These three types of evidence answer different questions and should never be presented as though they carried the same causal certainty.

Water conservation, heat protection and flood-risk studies support distinct claims and cannot be treated as equivalent evidence. Cape Town's conservation result does not establish equal access or equal sacrifice. Ahmedabad's heat-plan evaluation associates implementation with fewer deaths, but its before-and-after design cannot isolate the plan's effect. The Chennai evidence concerns flood exposure and disputed development controls; it is not a matched test of either response. Adapt the specific supported mechanism, whether water-demand reduction, heat protection, or risk-sensitive land use, and measure its distributional effects. [R179, R176, R174, R175] A project appraisal must select among protection, adaptation, and relocation using the mechanism relevant to the site.

Compare adaptation, protection, and relocation

Comparing protection, adaptation, and relocation

Compare physical risk-reduction options using explicit safety thresholds and independent review of borderline cases. Each answer changes land rights, income and public finance. The practical choice sits between four strategies: reduce exposure through drainage or restoration; reduce building vulnerability through retrofits; create safe new housing in connected locations; and move households

when residual life-safety risk remains intolerable. The first step is to sort risk by whether it can be credibly managed through the life of the dwelling. A home above an unstable slope or inside a flood-conveyance channel may be impossible to make safe at acceptable cost. A home exposed to shallow, infrequent surface water may be protected through drainage maintenance, local elevation, safe electrical installation and better emergency routes. Building permits and subsidy eligibility should reflect this distinction, with an independent review route for borderline cases. Beira demonstrates how engineered works and ecological assets can form part of that comparison.

Drainage infrastructure in Beira

Combined drainage and ecological protection require both capital works and continuing control of land use and maintenance. A World Bank account published in March 2025 describes drainage rehabilitation, flood-control stations, a retention basin, mangrove restoration and a 17-hectare green park. The programme reports reduced flood risk for over 234,000 people, close to 40 percent of the city's population.[R181] The numbers describe programme reach and reported risk reduction; they do not establish avoided losses in a randomized comparison. A retention basin needs land protected from new construction. Drains need regular clearance. A park can defend that land through public use, while open space raises surrounding property values. The city must decide who maintains it, who can vend there, which edge parcels may be developed and how flood safety and new land value will be shared. Nature-based solutions can be cheaper and more flexible in some basins, yet they carry real land and maintenance costs. A wetland or retention park without a legal boundary and a budget can be filled when the next housing shortage arrives. Protecting flood storage requires enforceable land-use rules and continuing maintenance funding. Resident knowledge can help establish how the system actually operates within occupied neighbourhoods.

Community risk information in Mukuru and Freetown

Community risk information can improve statutory planning and negotiations when residents can influence its interpretation. Residents, the county and more than forty partner organizations worked on a plan covering roughly 100,000 households. The structure of local consultations moved from cells of ten households to neighbourhood clusters and larger forums. Residents could identify flooded passages, absent sewers, dangerous industrial edges and the households most exposed to displacement.[R182] A participatory plan changes what government can know and agree upon. It does not, by itself, provide land titles, funded drains or completed upgrades. Mukuru's fragmented ownership and service arrangements still demand fiscal and legal decisions. Public claims about plan coverage should be distinguished from measured completed-service outcomes. The IPCC records a related experience in Freetown, where the urban-poor federation and local research partners mapped flood and coastal hazards. In Cockle Bay, community organizations used this knowledge to agree on limits to further land reclamation, mark a settlement boundary and build drainage channels. Negotiation with the environment ministry reduced eviction threats.[R171] The same information needs safeguards against uses that expose those residents to exclusion.

In both cases, residents help explain why water moves where it does, who bears the risk and what land is actually used for. Community mapping also creates a disclosure risk: a detailed occupancy database can help an authority identify whom to evict. Data governance must set limits on disclosure and use, and give residents control over corrections and challenges. A larger flood programme also requires durable land, finance, and enforcement institutions.

Flood management and public finance in the Netherlands

The Netherlands' flood programme illustrates institutional requirements that must be distinguished from its unusually strong fiscal capacity. Between 2006 and 2019, national and regional authorities undertook interventions at 34 locations for approximately EUR 2.3 billion, improving flood safety for about four million people. Measures included moving dikes, lowering floodplains and creating flood bypasses, with residents involved in local design and compensation processes.[R183] Adaptation in African and Indian cities requires legal authority and funding. Giving a river space requires government to acquire rights, compensate some owners, protect new boundaries and keep the waterway functioning over decades. A poor city can adopt the principle of flood storage and planned growth on safer land. It also needs financing, a land-rights process and institutions capable of protecting the result against future encroachment. Housing finance must account for the residual risk that remains after public protection.

Climate risk and housing finance

Climate exposure affects property value and financing over time, so appraisal should use scenarios rather than a single precise forecast. Developers look at the cost of capital, expected sale price and delivery time. Renters calculate monthly payments and proximity to work. Banks examine collateral, insurance and repayment probability. Municipalities see infrastructure expense and property-tax revenues. Climate risk reaches each through a different channel. A developer who can buy exposed land at a discount may still earn a high margin if risk disclosure is weak or public flood defenses are expected. A builder using cheap metal roofs may sell quickly while the household bears higher future heat costs. A mortgage lender may insist on insurance, pushing high-risk borrowers outside formal credit. A municipality that extends sewers into a floodplain creates both a service liability and an expectation that the land is safe to build on. The correct price of a home includes its lifetime hazard exposure and the cost of recovery, in addition to construction, land and finance. It also includes the social cost of moving away from employment. These amounts need scenario ranges. Twenty-year projections based on a single flood-frequency map or a single climate pathway can create false precision. Insurance prices and availability provide another indication of how that risk is allocated.

Insurance cost and availability

Risk-based insurance can signal danger while making protection unaffordable or unavailable to exposed households. They can also become a barrier to ownership when premiums rise above a low-income household's budget. An Australian actuarial study found that, by March 2024, 15 percent of households, or 1.61 million, faced home-insurance premiums exceeding four weeks of gross income. An estimated 5 percent of mortgaged households were under insurance affordability stress, covering about A$57 billion in loans.[R184] Australia has deep insurance and mortgage markets, making the effect visible. Many African and Indian low-income households have little or no formal disaster cover. They self-insure through savings, rotating credit, family networks, emergency sales and forgone consumption. Without insurance, households still bear disaster losses, often when their income and savings are already under pressure. Subsidising that protection creates a trade-off between immediate assistance and future development incentives.

Insurance support should protect vulnerable households without concealing incentives to continue building in dangerous locations. A purely actuarial price may force the poorest households to move before safe alternatives exist. Research by Carolyn Kousky and Howard Kunreuther argues for means-tested vouchers paired with mitigation finance, rather than broad premium discounts that hide the risk signal.[R185] The fiscal design should separate frequent losses, rare catastrophic losses and immediate liquidity. Households can cover small repairs with savings and targeted grants; cities can

fund maintenance and contingency reserves; governments can arrange emergency liquidity or risk transfer for large shocks. Insurance payouts should be linked to repair capacity and social protection so that liquidity reaches households, renters and small landlords after a disaster. Parametric insurance adds basis risk: an event can cause household loss without triggering the index, or trigger a payout where little damage occurred. Mortgage and capital-market contracts also need to recognise how exposure changes over their term.

Credit and capital-market exposure

Long-term credit should account for changing climate exposure and the division of residual losses between owners and public budgets. A 25-year mortgage on a low-lying home may face rising losses or insurance costs. Appraisals should test those changes and consider how abrupt withdrawal of lending could affect existing owners. Green or resilience finance changes incentives only when verified physical performance underpins the label. A cheaper bond for a "climate-smart" project may produce little benefit if the developer captures the interest saving while household prices stay fixed. A publicly subsidized retrofit loan should document lowered indoor heat, flood entry, expected loss or insurance premium, alongside the distribution of savings among owners and tenants. The state has a balance-sheet problem too. Public guarantees shift loss to taxpayers. Flood defenses create ongoing commitments to maintain and upgrade them. When land values rise behind a defense, government has an opportunity to recover part of that uplift through betterment charges, land leases or property taxation. Appraisal should identify how public protection changes development incentives and how residual disaster costs are shared between owners and public budgets. Adaptation also changes which locations are desirable and who can afford safer land.

Access to safer land

Safer land and public protection can create gains and exclusion pressures that need a distributional assessment. A new risk map can reduce the value of a parcel by placing it in a no-build zone. A new dike or reliable water connection can raise adjoining property values. A relocation programme can create a construction pipeline and new public-land opportunities. Political conflict follows these changes in asset value. Four sets of interests should be assessed. Exposed owners and developers ask for protection, compensation or permission to build. Some incumbent owners in safer, high-opportunity neighbourhoods may resist density that would let displaced or migrating households move in. Poor renters and informal workers need safety without losing location and networks. Utilities, transport agencies and municipalities bear costs that national housing budgets often omit. Identify which groups receive the benefits and which pay the costs. A workable reform must therefore provide safe capacity near jobs as well as restrict dangerous development.

Actor	Asset or institutional interest	Veto or influence	Possible agreement
Exposed landowner / developer	Public defenses and rezoning can restore land value	Land litigation, permits, political access	Publish risk and value; allow safe intensification elsewhere; transparent compensation
Safe-area homeowner	Scarcity supports asset price and neighbourhood control	Local hearings, elections, zoning objections	Fund services and offer citywide, by-right infill with design protections
Informal renter / worker	Cheap access to jobs; flexible space; weak documentation	Collective action, local knowledge, low formal power	Right to return, portable rental aid, nearby serviced alternatives, earnings protection

Actor	Asset or institutional interest	Veto or influence	Possible agreement
Structure-owning landlord	Rental income from low-cost rooms; benefits from upgrading	Can raise rent or withhold occupancy records	Co-fund safer retrofits with rent and habitability conditions
Utility / municipality	Revenue, network performance, tax base, liabilities	Connections, rates, maintenance, permits	Long-run O&M; transfers and revenue from added safe density
Contractor / insurer / lender	Construction margin, premium, loan security	Procurement, underwriting, rate setting	Open bids, shared risk data, additionality checks, independent verification
Public authorities / land intermediaries	Authority over relief eligibility or influence over land transactions	Allocation, enforcement, legal change	Public transaction log, appeals, independent audit and multi-year funding with legal authority

The first test of a reform coalition is whether it can produce safe housing capacity in locations with jobs. The second is whether the original poor households can use that capacity. A new planning rule that allows apartments but leaves financing, water and landlord discrimination untouched may preserve exclusion. Relocating traders from a river corridor to unaffordable premises can reduce flood exposure while increasing livelihood and rent insecurity. Race, caste, class and migration status matter because social exclusion changes access to the safer housing stock. South African spatial separation makes long commutes costly. Indian renters can encounter discrimination by caste, religion and family status. In African cities, migrants and tenants may be absent from compensation records because their claims are neither titled nor readily documented. Every climate-resettlement programme needs a record of these people before announcing the intervention. A technically sound prohibition can also be politically fragile. Without fair notice, compensation, an appeal mechanism and nearby affordable alternatives, affected owners organize to reverse it. Without protection against tenant displacement, environmental restoration can displace the residents it is meant to protect. The durable agreement finances safer supply, respects due process and retains the public benefit from restored land. Digital risk information can support that agreement only when its classifications are checked and contestable.

Fund and verify a feasible risk reduction programme

Price the safer design before declaring it unaffordable

Published safety-cost benchmarks need a specified baseline. FEMA's 2020 US synthesis reports the following incremental new-construction costs. They are useful reference points for asking an engineer and quantity surveyor to price a local design; they are not quotes for African or Indian housing, retrofit estimates, or assurances against every event. [R489, p. 8]

Hazard and measure	Reported added construction cost	Interpretation
Earthquake: additional stiffness	0.7%	US benchmark; soil, structural system and hazard level affect the required design.

Hazard and measure	Reported added construction cost	Interpretation
Hurricane wind: tie-downs and opening protection	1% in the narrative; 1.5% in the illustration	The source gives two presentations. Retain the distinction rather than imply a universal precise premium.
Flood: raise the ground floor to provide freeboard	1.2–1.7%	Applies to the described new-construction measure; a dangerous site may still require relocation.

The local cost comparison should preserve the same dwelling and hazard standard. Price the incremental materials, labour, design, inspection and maintenance against a named baseline; distinguish new construction from strengthening an occupied building. Record residual risk and who pays each cost. Test whether a grant or construction redesign can meet the safety requirement before treating a household's inability to borrow as evidence that protection is uneconomic. The hypothetical five percent premium below remains a teaching assumption, separate from the published benchmarks.

A Nepal engineering comparison shows how strongly the safety premium depends on the baseline. Schildkamp and Araki compared mountain-school designs using local price evidence. Against unreinforced, unfinished designs, earthquake-resistant features added 55.4 percent for rubble-stone masonry and 54.7 percent for concrete-block masonry. Adding finishes raised the total increases to 85.0 and 92.9 percent respectively; those larger totals must not be labelled seismic costs. These are design cost comparisons for schools, rather than dwelling quotations, retrofit prices or measured disaster losses. [R498, Table 7]

A dwelling-level study provides a more directly relevant cost comparison, with important exclusions. Upadhyay and colleagues modelled a two-storey stone-and-mud-mortar home in Lwang, Nepal, with a 10.9 by 6.12 metre plan. Using Kaski material prices for Nepali fiscal year 2081/82 (2024/25), they priced added gabion-wire jacketing at NPR 100,000 (about US$730), or NPR 120,000 (about US$880) with plaster. The reinforced reconstruction alternative added NPR 160,000 (about US$1,170) above its unreinforced baseline. These are alternative material increments per modelled dwelling, not sums to add together or complete project prices. The dollar amounts are the paper's rounded equivalents, implying about NPR 137 per US dollar; no conversion date is stated. [R501, pp. 24, 36]

The dwelling estimates exclude labour and transport and cannot establish a universal safety premium. The paper evaluates seismic performance numerically rather than observing post-earthquake outcomes; its authors identify limits in representing material degradation and local failures. [R501, pp. 36–37] A procurement budget must also price assessment, design, supervision, temporary accommodation where required and site access. Require the engineer to state the performance achieved by each option. A materials-only comparison helps identify the cost mechanism but cannot determine what a household must borrow or what a government must fund.

Local housing decisions still require a priced comparison at equivalent service quality. The dwelling study adds housing-specific evidence to the US benchmarks and Nepal school comparison, while leaving a clear gap in fully installed local costs. Specify the hazard, baseline structure, safety intervention, finishes, labour, transport and inspection separately. Obtain a dwelling-level bill of quantities and actual procurement or completion costs, then test how the additional payment affects the intended households. A high estimated premium calls for assessment of design and financing alternatives while retaining the required life-safety performance.

The presence of a code is a different question from construction that meets it. The World Bank's 2023 review of 48 Sub-Saharan African countries identified some legally adopted regulatory components in 45, but legally adopted building design standards in only 25. Its footnote qualifies the three unverified cases: the team could not confirm legal adoption in two and lacked data in one. The study combined legal review with questionnaires and interviews, receiving 112 responses from 556 questionnaires. It did not physically test the safety of the region's building stock. [R490, pp. 20–22, 51–52] These findings support checking inspection resources and actual compliance alongside legal adoption, without turning incomplete data into a country performance ranking.

For each hazard, compare a specified baseline design with an engineer-certified alternative: incremental capital cost, recurrent inspection and repair, failure probability and consequences. An invented CU 1,000 strengthening cost on a CU 20,000 home is a 5 percent premium; it says nothing about actual earthquake or flood performance. If the household cannot finance the premium, the next question is whether design changes or public support can meet the safety floor. Do not turn a low willingness to pay under poverty into evidence that protection has low value. Model scale: small-home teaching example; CU is hypothetical and is not comparable with the district-account price level.

Report reconstructed homes as inspected against the programme standard where that is what records establish. Inspection and compliance are valuable intermediate outcomes. They do not prove performance in a future earthquake, flood or fire. Keep household rebuilding costs, network reconstruction, relocation costs and contingent public liabilities in separate lines before comparing options.

Comparing the costs of safety options

Adaptation costs should be compared with relocation and residual losses using common assumptions and separate safety gates. A housing minister asks how many units can be provided. A city manager asks whether the utility can support them. A low-income household asks whether it can still get to work and pay the rent. All three need the same appraisal. For a defined group of households, compare three classes of options: (A) in-situ upgrading with drainage, safer electrical systems, cool roofs and maintenance; (B) relocation to an available peripheral site; (C) relocation or infill on safer, well-connected land. For each option, count public capital and operations and maintenance, private building costs, expected disaster losses, recurring transport and income effects, insurance or recovery cost, and the value of any asset surrendered. Test credible future climate scenarios and severe tail events. Exclude options that fail life-safety standards even if their present-value cost looks low. Here is an illustrative per-household calculation for twenty years using a 5 percent real discount rate. All figures are constructed examples in constant US dollars, not measured costs for a named city. Assume the options deliver equivalent basic housing services and that upfront values are net of any residual asset value. The annuity factor is approximately 12.46. The worked example below shows how travel and livelihood costs can change the apparent ranking.

Incremental cost per household	A: protect on site	B: move far	C: move near jobs
Net capital / relocation now	$5,000	$13,000	$15,000
Annual residual risk + O&M;	$400	$180	$200
Annual livelihood / travel penalty	$0	$820	$0
20-year present value	$9,985	$25,462	$17,492

A location that looks safer in a flood model may impose household costs that require a different feasible solution. The added transport and income burden makes it the most expensive option in this constructed example. Protecting the present site costs least if residual life risk can be brought to an acceptable level. A near-jobs move may be necessary when a flood channel or landslide slope cannot be made safe; its larger capital bill purchases both safety and access. Present value alone cannot settle the decision. The model should include fatalities and serious illness, disruption during transition, uncertainty in future hazards and the distribution of costs. A single expected-loss number can conceal an extreme event that the household cannot survive. The option screen should use a separate life-safety gate, sensitivity to climate change and a household-consent or due-process gate. The same calculation can help test how much extra cost an accessible safe site could justify.

A safer site can justify a higher purchase price when avoided losses and access costs exceed its annualised premium. At a 5 percent real rate over twenty years, paying an extra US$5,000 for an adequately serviced safer site costs about US$401 a year when annualized. If the cheaper site imposes US$450 in expected disaster losses and US$500 in added transport burden, the safer site may be a good public investment even before health and avoided disruption are considered. This is an arithmetic illustration, with no claim that those figures describe a particular market. Financing should then assign the cost to the beneficiaries and institutions able to sustain the protection.

Financing risk reduction

Risk-reduction finance should match the benefit and distinguish institutional progress from completed housing outcomes. Developers can pay for site drainage and code compliance through transparent standards; households can finance affordable repairs when tenure and cash flow are secure; municipalities can fund catchment drains and operations and maintenance from transfers, tariffs and property revenue; national government can finance major flood defenses and compensate households asked to surrender rights for public safety. Where necessary safety work exceeds a poor household's payment capacity, assess a targeted grant rather than an unaffordable repair loan. Donor and climate finance can support public goods and the early costs of better risk information, with explicit mechanisms to keep the gain from bypassing low-income residents. Kenya offers a fiscal example. The Financing Locally-Led Climate Action programme runs across all 47 counties with roughly US$294 million in total programme funding according to the National Treasury, combining national and partner finance with county climate institutions and ward-level planning.[R187] A 2024 World Bank account reports counties meeting key institutional conditions rising from nine to 45 within two years. These are institutional results, not proof that the programme has already produced affordable climate-resilient homes.[R188] Shared platforms can fund the network and maintenance components that individual housing projects cannot provide alone.

Shared climate finance can support drainage, local hazard mapping, ward investments and maintenance capability. Housing agencies should then bring tenure, building safety and relocation or retrofit finance. A shared outcome for climate and housing budgets is additional low-income home-years of safe occupancy within reach of work. The assessment must verify that these shared commitments meet the social and safety conditions for proceeding.

Climate and housing assessment

Investment review should make risk evidence, household consultation, and routes to challenge decisions explicit. A team seeking a housing investment or flood-mitigation loan should present a household-level record, an engineering model with uncertainty, a livelihood model, the public-

land implications, a credible operating institution and a political coalition. It should show how rejected alternatives compare. Affected households need a documented consultation process and an accessible way to contest errors or proposed treatment. Hard safeguards must remain binding even when another part of the appraisal scores well.

Gate	Question for the approving authority	Proof required
1. Hazard	What event and future scenarios define risk?	Model limits, return periods, climate ranges, upstream effects
2. People	Who is exposed, including renters and migrants?	Verified occupancy and tenancy census; correction and appeal
3. Safety	Which parcels can be made acceptably safe?	Independent engineering and life-safety thresholds
4. Location	What happens to job and school access?	Household travel time, fares, earnings, social networks
5. Land	What claims, rights and rents change?	Parcel, public-land, compensation and value-uplift ledger
6. Planning	Is replacement safe floor space legally available?	Permitted density, serviced inventory and affordable-rent pipeline
7. Housing	Can incremental and rental homes be improved?	Retrofit designs, landlord terms, tenure rules, workmanship checks
8. Utilities	Will water, drainage, power and sanitation last?	Network capacity, hazard service standard and maintenance owners
9. Construction	Can firms deliver at transparent cost and quality?	Competitive bids, material compliance, supervision and repair markets
10. Finance	Can owners, tenants, and small landlords pay?	Grants, repayment, insurance, guarantees and disaster liquidity
11. Public finance	What is the full 20-year public obligation?	Capex, O&M;, contingent liability, tax and land opportunity cost
12. Distribution	Who gains from safer land and who can be displaced?	Incidence by income, owner/tenant, gender and social group
13. Politics	Who can veto and what coalition will sustain reform?	Actor-rent-veto map, compensation, hearing and escalation rules
14. Digital	Which model or map influences an adverse decision?	Field accuracy, bias test, explanation and human appeal
15. Outcome	What result will be independently verified?	Safe occupied home-years; commute, service and loss tracking
16. Adaptation	What happens when the hazard or the city changes?	Review triggers, future upgrade funding and reversal or retreat plan

Treat gates 2, 3, 4 and 12 as hard social safeguards. A project can score well on flood depth and construction speed while harming displaced renters, removing market access or pricing poor residents out of improved neighbourhoods. A red life-safety risk may justify relocation. It cannot justify leaving livelihoods out of the compensation and placement plan. The implementation sequence should resolve those safeguards before commitments become irreversible.

A staged implementation sequence

Begin implementation with local hazard, livelihood, and tenure evidence under published data-use rules. Fund drainage maintenance, health response and utility revenue stability as well as protective construction. Planning, utilities, health and emergency services must rehearse responsibilities and disclose failures. Track exposure and actual losses separately, service continuity, heat outcomes, recovery time, displacement and total household costs. Use the following stages to prepare a bounded operation. The responsible agency should first cost staff time, specialist work, consultation, and verification, then choose the number of sites it can handle. Set dates after that review. Disputed rights, procurement, or statutory approvals may extend the schedule; do not advance until the applicable legal and funding conditions are met. Stage 1: prepare linked hazard and household-access maps. Name a city-level accountable lead. Combine hazard and service layers with jobs, transit, tenure, rents and occupancy. Select a manageable shortlist of neighbourhoods where risk and poverty overlap, and record what information remains uncertain. Make the data-sharing and privacy rules public. The next stage should trace households and agree treatment, funding, and remedies.

Household tracing should establish compensation, placement, service access, and emergency support responsibilities. Stage 2: trace households and decisions. Conduct sampled engineering checks, tenant-inclusive household fieldwork and a process trace for selected locations: a site suitable for upgrading, a site requiring significant drainage, and a site where relocation is a serious option. Record every approval and agency veto. Stage 3: price alternatives and agreement. Prepare a twenty-year balance sheet for each option. Publish public-land values and relocation costs. Test whether safe, well-connected land can accommodate additional rental and incremental homes. Negotiate utility operating commitments, landlord conditions, financing and independent verification. Stage 4: prepare measured demonstrations. Launch a limited adaptation or safe-housing pilot with a feasible comparison design only when required consultation, safeguards, financing, and procurement are complete. Record baseline indoor heat, flood occurrence, commute, rent, earnings, water reliability and grievance outcomes. Reserve an external review and adjustment point before scaling. Design an emergency liquidity and post-disaster livelihood support channel. The result should be a funded agreement whose obligations can be checked by residents and government.

The agreement should fund safe land access, restored services and a workable household rebuilding schedule. Name who releases each grant, connects each network and verifies safety. Where direct reconstruction is necessary, document land control, delivery capacity and upkeep funding. Households need enforceable rights and choices; Treasury needs the lifetime public cost. Review those commitments as hazards, costs and recovery conditions change.

Implications for housing investment

Climate-sensitive housing policy must combine safer locations, viable protection, and the institutions that sustain affordability. Poor households will still need to live near jobs. The practical task is to expand safe, connected housing supply while protecting the social and economic value that existing neighbourhoods already create. Appraisal should assess flood exposure, heat, water reliability, disaster losses, access to work, and the households likely to remain after improvements. These measures allow planners to compare physical protection with its full household and fiscal consequences. It

assesses the rules, finance, and services needed to improve safety and affordability in this stock. Fieldwork should test those conditions against observed housing and hazard experience.

Finance safety before disaster and protect recovery after it

Reconstruction performance should be measured by safe return and livelihood recovery rather than completed structures alone. Nepal's Earthquake Housing Reconstruction Project financed more than 320,000 disaster-resilient homes and used digital damage surveys, bank transfers, and engineer-certified construction milestones; subsequent assessments also identified debt and livelihood gaps for some households. The case shows why owner-driven delivery can achieve scale only when grant adequacy, technical assistance, land claims, local materials, infrastructure, and household cash flow are treated as one recovery system.

Pre-disaster spending needs a recurrent financing model as well as a capital project. Drainage channels, retention areas, slope stabilization, safer structures, maintenance, and household-level retrofits create benefits over different geographies and time horizons, while municipalities often bear operating costs that national programmes do not fund. The appraisal should therefore record expected avoided losses, the maintenance budget, who pays each year, and how risk reduction changes land values and rents before deciding how much public subsidy is justified.

Risk reduction can also displace the households it is intended to protect. Better drainage or a newly protected site can raise rents and land values; relocation can reduce hazard exposure while increasing transport costs and destroying customer networks; digital hazard maps can erase informal claims when occupancy data are incomplete. A resilience programme should track the original residents through improvement, relocation, and at least the first years of operation, which turns disaster policy into a test of inclusion and long-term municipal capacity.

A recovery option still needs lawful and workable treatment of residents. Chapter 14 develops the rights, livelihood and distributional tests for redevelopment and upgrading.

Selected readings

Safer Homes, Stronger Communities [R191]. Use the reconstruction handbook to connect household control, institutions and technical support; guidance is not an estimated effect for every recovery programme.

Nepal seismic housing study [R501]. Read the dwelling models and material-cost comparisons closely; labour and transport are excluded, so these are not fully installed costs.

FEMA's Building Codes Save [R489]. Use the US benchmarks to frame a locally costed comparison; their geography and the differing wind-premium presentations limit transfer.

Judgment and transfer conditions

Finance inspected safety and recovery while measuring actual performance separately.

Confidence: High on the distinction; hazard-specific benefit magnitudes vary. Revisit trigger: Post-event performance or engineering evidence contradicting the design assumptions.

Transfer recovery support that restores safe land access and services while financing inspected household repair or rebuilding. At roughly ten times the pilot scale, test engineering quality, contractor capacity and timely assistance reaching the bottom 50 percent. At roughly one hundred times the scale, require contingent finance, material supply and maintained protection. Assisted delivery and rental support must remain available to households unable to rebuild themselves.

Exercise

Compare repair, strengthening and relocation for one specified hazard. Separate the safety floor from the monetised benefit calculation and identify the engineering evidence still needed.

Part V Deliver and protect

13. Institutions and Procurement for Housing Delivery

Who has the authority, resources and obligation to complete each step to occupation?

All three priorities need an institution that can deliver each promised result. This chapter supplies the responsibilities, contracts and remedies for delivery (Test 6), resident protection (7) and verification (8). Assign public duties for land, services, household building support and targeted assistance before choosing a delivery institution. A household-led route needs timely grants, accessible advice and inspections; a contracted development needs procurement and commissioning. Both need funded connections, enforceable rights and upkeep. Give each handoff an accountable owner and remedy. Payment deadlines protect suppliers but cannot substitute for statutory public duties.

My work in Vietnam and Indonesia raised the practical question of how to scale upgrading without removing local choice. As the World Bank's East Asia and Pacific urban manager responsible for the two countries, I worked with programmes trying to reach large numbers without requiring every neighbourhood to accept the same solution. I regarded Vietnam's work as an outstanding programme. That is my assessment as a practitioner, to be tested against evidence of who benefited, who moved and which institutions could sustain the improvements. The country cases below examine that record separately from my recollection.

A completed task in one agency may leave the household without a usable home. A registered parcel may lack permission; a permitted building may lack a funded connection; a completed apartment may lack an affordable operating agreement. The six-stage teaching model later in this chapter shows how losses accumulate across the sequence. Its assumed pass rates illustrate a method; actual delivery performance and dependencies must be measured.

Give each agency a funded duty before work starts

Agree what each agency must deliver

Strengthening an already effective step will not resolve a different binding constraint. Cheaper mortgage money cannot cure disputed land. Faster permits cannot cure missing sewer capacity. Better construction cannot cure a relocation site that separates households from work. The state has to manage the chain and measure whether its components produce a usable home. Government coordination has four practical functions in managing that dependency.

Government must resolve rights, services, finance and verification

Coordination should establish common information, resolve authority, and turn repeated negotiation into clear rules. First, it defines a single household outcome. The target is an occupied, safe, serviced dwelling with access to work and a funded operating model. Unit starts and budget disbursement become intermediate indicators. Second, it establishes a common, dated evidence base.

Agencies need the same parcel identity, ownership and occupancy record, planning rights, infrastructure capacity, hazard information, approval status, subsidy status and construction progress. When each agency works from a different map or beneficiary list, meetings cannot repair the underlying information conflict. Third, it sets decision rights and clocks. Every handoff needs an owner, a rule, a deadline and an escalation route. Coordination fails when all agencies may comment and none must decide. Co-locating offices will not remove a delay caused by incompatible approval rules. A genuine integration reform converts recurring negotiation into rules and auditable exceptions. Those arrangements need financing incentives tied to the outcome the agencies must deliver together.

Public funding should reward the agreed delivery result while fitting the responsibilities of each institution. Budget incentives influence agency decisions. A housing agency rewarded for unit counts may prioritize cheap land. A utility rewarded for financial health may delay low-revenue connections. A municipality that bears service costs and receives little new revenue may resist density. Intergovernmental transfers, capital grants, tariffs and subsidy rules need to reward the same outcome. These four jobs are separable. Singapore performs them through unusually integrated public institutions and state control over land. Ethiopia uses performance grants to align municipal incentives. Odisha's Jaga Mission creates a mission structure and community partner. Thailand's Baan Mankong assigns implementation responsibilities to community cooperatives. South Africa is using performance-linked fiscal transfers to repair service institutions. The institutional form differs because the underlying state is different. A responsibility map can reveal where the agreement still depends on an unresolved handoff.

Name the authority responsible for each decision

Link	Required decision	Common failure	Potential beneficiary of the failure
Land	A legally and socially usable site is identified	Conflicting records, acquisition delay, hidden occupants	Brokers, insiders, speculative owners
Planning	Enough floor space is legal	Discretion, sequential reviews, obsolete standards	Scarce permit holders, incumbent owners
Infrastructure	Trunk and local capacity arrive on time	Separate capital plans and budgets	Owners of already serviced land
Procurement	A competitive supplier is selected and paid	Bid concentration, claims, payment delay	Connected contractors and intermediaries
Finance	Capital matches project and household cash flow	Title, tenor, risk and income records do not align	Bankable households, incumbent lenders
Allocation	The right household gets the right tenure	Opaque lists, patronage, weak demand evidence	Brokers, politically connected applicants
Occupancy	The household can actually use the unit	Remote location, high transport, service gaps	Agency still counts delivery at handover
O&M;	Assets keep working for decades	No owner, reserve, tariff or staffing plan	Capital agency avoids future liability

The responsibility map is a diagnostic of decisions, budgets, and authority rather than a substitute for resolving them. Fragmentation can create income from privileged access. Unclear handoffs can create demand for someone who knows how to move the file, secure an exception, identify

a public parcel, accelerate a utility letter, or influence a beneficiary list. Such intermediation can add costs without resolving the underlying administrative problem. Integration reform can change the value of information, access, and discretionary powers. Assess which decisions and revenues move between institutions, who may object, and what rules and review procedures will govern the new arrangement. A software platform alone cannot resolve conflicts over statutory authority or budgets. Vietnam and Indonesia show how those responsibilities can be divided between national programmes and neighbourhood decisions.

Choose a delivery institution that can perform its assigned duties

Scaling upgrading in Vietnam and Indonesia

Vietnam's upgrading programme connected community choices to city infrastructure and finance. The Vietnam Urban Upgrading Project operated in four cities between 2004 and 2014. Community Upgrading Plans linked resident priorities to design consultants and utilities. Local investments were accompanied by primary and secondary infrastructure, housing microcredit and relocation where necessary. The World Bank's case review reports approximately 3,000 households relocated. The programme emphasised in-situ upgrading, but some households still had to move. [R132] The results need to be read alongside municipal obligations that community implementation cannot replace.

Reported upgrading benefits do not remove the need for continuing municipal spending and coordinated investment. The Bank's project brief reports about 7.5 million people benefiting directly or indirectly. That figure includes the wider reach of infrastructure investments; it should not be read as 7.5 million households receiving new homes. Neighbourhood improvements depend on the networks serving them. A local drainage plan cannot work if the downstream system is absent or overloaded. [R133] Indonesia's National Slum Upgrading Project, supporting KOTAKU, used a national platform with local government and community institutions. Its January 2024 completion report records 8.9 million direct beneficiaries, above a revised target of 7.2 million but below the original 9.7 million target. Its definition includes people benefiting from services and people engaged as project workers. These administrative counts demonstrate reach under that definition; they are not a controlled estimate of income gains or proof that all residents retained access. [R134] The Independent Evaluation Group identifies an unresolved weakness in Indonesia: local budget limits constrained operations and maintenance after project closure. It also reports difficulties aligning the implementation and budget cycles of upgrading and housing support. A successful community process does not remove the need for municipal spending or coordinated investment. [R135] The division of responsibilities should follow which decisions residents can make and which require wider authority.

The shared principle is to distinguish decisions that residents can make well from obligations that require wider authority. Residents can identify where access is blocked, what service fails, and which layout would disrupt daily life. The city must decide network capacity, engineering interfaces, and continuing service obligations. National government can fund a repeatable process, common safeguards, and technical support. Each level needs a defined task and a budget. For an African or Indian adaptation, I would start with the connection between the neighbourhood plan and the municipal capital programme. Identify the utility officer who accepts the connection design, the budget that pays for the trunk works, and the operator who inherits the asset. Put these decisions before procurement. Let residents choose among technically feasible options and give renters and people without formal title a way to contest exclusions. Expansion then requires enough facilitation and technical review to preserve the quality of those local decisions.

At ten times the scale, facilitation and engineering review can become the constraint. Count the caseload per facilitator, the time to resolve a disputed alignment, and the share of completed assets with funded maintenance. Expand the support system as well as the works budget. Community participation cannot substitute for those resources. This is the difference between repeating small projects and sustaining a national programme. Performance-linked municipal grants offer another way to align resources with verified delivery capacity.

Municipal performance incentives in Ethiopia

Performance-linked grants can connect municipal funding to institutional improvements when compliance is independently verified. The World Bank's 2026 synthesis of urban performance grants reports that participating Ethiopian cities increased local revenue from about US$68 million in FY2020 to US$156 million in FY2023. The same model has reached approximately 150 million people across low- and middle-income countries. In Uganda, participating municipalities recorded an 83 percent cumulative increase in own-source revenue; Ghana's participating secondary cities recorded 148 percent.[R126] The 2018-2024 Ethiopia Urban Institutional and Infrastructure Development Program paired institutional conditions with substantial capital funding. It operated in 117 cities, financed more than 2,700 km of roads and 2,700 hectares of serviced land, and the World Bank reports improved living conditions for more than 6.6 million people. Arba Minch reported a 262 percent rise in municipal revenue over five years.[R040] The design seeks to align incentives. Central government wants cities to budget, audit, procure and maintain assets better. City leaders want roads, markets, public space and serviced land. The performance grant makes institutional reform the price of capital. Independent verification checks whether the conditions for funding have been met. The strength and fairness of that incentive depend on its size and on municipalities' ability to respond.

Grant thresholds from a synthesis should be tested against local fiscal conditions rather than copied mechanically. The World Bank's 2026 synthesis argues that performance-linked allocations generally need to reach at least 20 percent of the discretionary capital or development grant available to a local government before the incentive becomes strong. This is a programme-design rule of thumb, rather than an estimated threshold that applies to every local government.[R126] These figures are administrative programme results rather than randomized estimates of causal impact. They show large changes in revenue, systems and infrastructure during programme periods. The mechanism - tying meaningful resources to verified institutional performance - should be assessed against local fiscal capacity, verification costs, and the risk of excluding weaker municipalities. Odisha illustrates a different coordination problem: bringing residents' knowledge into land and upgrading decisions.

Local knowledge and implementation in Odisha

Odisha's Jaga Mission illustrates why formal parcel administration needs residents' knowledge of occupancy and local conditions. Odisha created a state-wide mission around land rights, upgrading and community governance. The official programme covers 2,919 slums. World Habitat reports a target population of roughly 1.7 million people; by the 2023 award cycle, 707 slums in 30 cities had been upgraded and eight cities declared slum-free.[R120] The mission joins three actions that usually sit in separate silos. Eligible households receive land rights. Settlements receive infrastructure. Slum Dwellers Associations participate in planning and are framed by the state as a fourth tier of governance. The state supplies law, finance and engineering. Residents supply information about occupation, local networks, drainage failures, vulnerable households and the social cost of relocation.[R121] Community institutions can supply information that official records omit. A cadastral map may show structures. Residents know who rents, who sublets, who runs a shop, who arrived recently, which path floods, and which claimant would be excluded by a title issued to the wrong person. Resident participation still requires safeguards against exclusion and unaccountable local representation.

Mission structures need representation, records, grievances, and external review to remain accountable. Railway land, forest land, major hazard areas and private ownership can fall outside the mission's effective authority. A housing mission cannot resolve another agency's legal mandate through meetings alone. Cross-government disputes need a formal escalation path with a decision-maker above the participating agencies. Community power also needs checks. A Slum Dwellers Association can represent residents and can reproduce local hierarchy. Migrants, tenants, women or minority groups may have weaker voice. Representation rules, public records, grievance systems and external appeals provide ways to review decisions and challenge exclusion. Thailand's community-led approach provides a further test of how authority and assistance can be combined.

Community-led delivery in Thailand

Community-led delivery depends on organised residents, finance, technical support, and safeguards within local organisations. The Community Organizations Development Institute channels infrastructure subsidies and housing loans through organized community cooperatives. Communities survey housing problems, negotiate land, manage budgets, select technical support and oversee construction. The state finances and sets the frame; organized residents perform a large share of implementation. Current programme summaries report households through collective finance; see the dated counts in the redevelopment chapter. The historic subsidy package averages around THB 80,000 per household, with infrastructure support, a house construction grant, technical assistance and community management support combined with repayable finance.[R122] Community savings groups and cooperatives create a local balance sheet, a negotiating counterparty and a source of information. Collective tenure can protect households who would remain too weak as individual claimants. In canal and railway settlements, the same organization can negotiate with public landowners while redesigning the settlement to preserve infrastructure access. The state gives a legal route and finance to an organization that has information and enforcement capacity at the block level. The risk is capture within the cooperative. Transparent budgets, elected committees, grievance channels and external technical review are essential because local organizations can also exclude residents. Ahmedabad's resettlement experience shows why those capacities cannot simply be assumed after construction.

Participation needs to influence decisions before residents inherit obligations they cannot manage. Associations were asked to manage services after relocation without comparable authority, preparation or clear public-service responsibilities. Baan Mankong places organised residents in land negotiations and spending decisions, supported by public finance and technical help. This institutional comparison is not a matched impact evaluation. It supports building residents' capacity and authority before delegating duties, while retaining safeguards against local exclusion. [R125, R131] Performance systems must therefore measure service and inclusion outcomes as well as institutional activity.

Performance-based support in South Africa

Performance-based support should use measures that remain valid descriptions of the service being delivered. Chapter 4 describes the service constraints that housing inherits from municipal networks. South Africa's Metro Trading Services Program addresses the institutional side through results-based intergovernmental finance. Here the implementation question is which agency must change its operating and financial practice to meet the conditions. [R042] The World Bank operation provides US$925 million inside a larger government programme, with US$2.31 billion of national contribution. Metro grants are released when verified institutional and service results are achieved. The targets include revenue management, asset management, governance, procurement and service quality. Disbursement depends on the applicable verified results and programme rules.[R042] Housing appraisal must account for the utility's operating capacity. A new connection has little value if

the utility cannot maintain pressure, bill users, repair pipes or replace assets. Service reliability should therefore be assessed alongside the dwelling. Results-based finance creates its own risk: gaming the metric. Linking finance to an indicator can reward improvements in the measured value without equivalent improvements in the service. Good design requires measures that reflect the service, independent verification, periodic revision, and enough flexibility to stop measuring a proxy after it ceases to describe the problem. Post-construction evidence from Rio shows why that verification must continue after handover.

Construction and maintenance institutions in Rio de Janeiro

Rio's upgrading experience demonstrates the need to verify operators, recurrent budgets, and asset condition after construction. The second phase upgraded 88 favelas between 2000 and 2008. A ten-year follow-up by the Inter-American Development Bank found that the treated favelas had, on average, returned to maintenance conditions similar to the control group. Sewerage, garbage collection and electricity scored significantly worse in the treated group. Residents reported sewage overflows, accumulated garbage, electrical failures and broken streetlights.[R127] The study identifies several possible contributors to deterioration. Rio's favela population grew nearly 27 percent between 2000 and 2010 compared with 3.4 percent in the rest of the city. Dense topography raised maintenance needs. Violence and deliberate destruction affected access and infrastructure. The assessment supports stronger maintenance arrangements, but does not isolate their effect from population growth, topography, or violence.[R127] Capital approval and recurrent service budgets operate on different schedules. Roads, drains, and public spaces require staff and repair funding after construction finance ends. The Rio findings support identifying the responsible operator, expected service demand, and recurrent budget during project design, then checking whether these arrangements continue after handover.[R127] Singapore offers a different institutional arrangement for coordinating those obligations over time.

Integrated institutions in Singapore

Singapore's housing system illustrates the powers a delivery agency must possess to coordinate housing and services. Chapter 15 contains the historical record, my recollection of discussions with Cheong Koon Hean, and the evidence on land, finance, clearance and estate management. Here the implementation test is whether the proposed agency can secure decisions from transport, utility and land authorities, and fund the resulting obligations.

A city should test the powers behind a coordinating agency before copying its organisational form. Give the agency duties for usable land, service connections and household finance before giving it a construction target. Require transport, schools and upkeep commitments, with accountable delivery to the bottom 50 percent. If an agency lacks authority over a necessary input, name the institution that has it and agree an enforceable handoff. A one-stop office earns its place by resolving those decisions.

One-stop approval systems

A one-stop shop should reduce discretionary handoffs rather than add another office above them. The device can work when it changes workflow. Historical World Bank evidence on permit reform shows systems that consolidated reviews, imposed time limits, recorded the officer responsible and escalated delays to supervisors. Evaluate the workflow through decision times, rework, and the availability of review.[R130] A one-stop shop fails when it adds a new coordinating office while each underlying agency keeps the same veto. The applicant submits one form and waits for the same sequential approvals behind the screen. Concentration can also increase the value of the gatekeeper. If exceptions remain discretionary, the new office becomes a more valuable point of influence. Assess the

approval process itself. Record how many agencies can stop the project, which decisions run in parallel, how long each clock can run, which reasons justify a refusal, and who hears an appeal. Publish the exception log. Integration should reduce the number of discretionary junctions. Its records must also represent occupants and uses that a title-centred system can miss.

Recording informal housing and occupancy

Housing administration needs occupancy and service information alongside registered ownership. Informal settlements contain people whose claims do not align neatly with those fields: tenants, subtenants, structure owners, customary claimants, traders, recent migrants and households sharing a structure. A parcel database can be accurate and still miss the people most affected by a project. The integrating state therefore needs two linked records. The parcel record describes land, legal rights, hazards and planning. The household and use record describes occupancy, tenancy, livelihoods, vulnerability and service needs. Neither should automatically overwrite the other. Infrastructure raises asset values. If only owners appear in the record, tenants disappear from compensation and return rights. A title can improve security for one claimant while increasing rent for another. Enumeration before investment preserves evidence of existing occupancy and claims before land values change. Service provision can often be separated from final title adjudication. Water, sanitation, drainage and fire access can be justified by public health while land claims continue through due process. Making title a precondition for basic service can turn an administrative dispute into a health hazard. Changing which records govern a decision also changes institutional power and requires explicit accountability.

Give residents and agencies enforceable remedies

Identify who can resolve a blocked decision

Actor	Institutional interest / rent	Veto	Illustrative concern (not a quotation)	Reform agreement
Housing agency	Unit count, budget, political credit	Site and subsidy rules	We need speed	Reward occupancy, access and lifecycle cost
Land agency	Control over valuable parcels and records	Transfer, valuation, title	The land is strategic	Public inventory, valuation, timed escalation
Municipality	Local control and fiscal balance	Permits, roads, waste, local plans	Growth will overload services	Recurring revenue + performance transfers
Utility	Financial health and network control	Capacity and connection	There is no capacity	Joint capital plan + funded O&M;
Developer	Margin and predictable pipeline	Can defer, litigate, switch segment	Risk makes the project unviable	Clear rules + competition + fast clocks
Contractor	Claims, utilization, payment certainty	Bids, variation orders	Costs changed	Benchmarks + prompt payment + open change orders

Actor	Institutional interest / rent	Veto	Illustrative concern (not a quotation)	Reform agreement
Treasury	Fiscal control and leverage	Transfers, guarantees, budget	Housing is one spending claim	Tie money to end-to-end verified results
Community group	Security, services, local voice	Legitimacy and local access	We know the settlement	Formal role + representation + appeals
Broker / patron	Information and exception rent	Access to lists, records and officials	I can unblock the system	Rules, public queues, auditable exceptions
Digital operator	Control over data and workflow	Access, scoring, architecture	One platform will solve it	Open standards, audit, correction and appeal

Coordination reform redistributes authority and should make representation, decision rights, and review procedures explicit. Changes to authority can therefore create institutional disagreement. Moving land approval into a housing mission can transfer authority from the land agency. Creating a metropolitan utility can transfer duties from municipal departments. Publishing queues can reduce reliance on intermediaries. A shared parcel database can expose allocations that depended on ambiguity. City leaders need specified benefits, such as capital funding. Utilities need a credible route to recover costs. Communities need secure standing. Developers need predictable rights. Treasury needs independent verification. Future residents need representation through citywide targets because they cannot appear at today's local hearing. For an institutional reform, record each new decision right, the rule limiting it, and the person or body able to review it. Check whether residents can use that review route in practice. Tenant and migrant representation must be designed before land and allocation decisions are settled. The same review must test apparently neutral rules for unequal effects on access.

Check whom eligibility and allocation rules exclude

A delivery process can exclude households even when each agency follows a formally neutral rule. Income documentation can exclude informal workers. Credit models can penalize neighbourhoods that correlate with caste or race. Homeowner hearings can block rental housing through parking, density or design objections. Public-land allocation can favor groups with political access. Informal settlement committees can exclude migrants or tenants. The integrating institution should track conversion at each gate. Who receives land rights? Who obtains planning approval? Who passes lender underwriting? Who is allocated a unit? Who remains after relocation? Who bears a rent increase after upgrading? A final beneficiary list hides where exclusion entered the chain. This suggests an inclusion ledger alongside the financial ledger. For every gate, record eligible households, approvals, rejections, reason codes and appeals. Where lawful and necessary, use protected data to test outcomes by gender, caste, race, class, migration status, and tenure. Limit collection, access, and retention, and publish aggregates that do not identify households. The aim is diagnostic: find the gate where apparently neutral rules generate unequal access. Some barriers arise because the service obligation and the public funding sit at different levels of government.

Secure transfers before municipalities incur obligations

Intergovernmental agreements should match each housing-related service obligation with authority and funding. National government captures broad tax gains from urban growth. Municipalities bear much of the marginal cost of local roads, drainage, waste, public space and service interfaces. A mayor who sees added low-income housing as a service liability can resist density for rational budget reasons. Performance grants can change the agreement. Ethiopia uses capital to reward stronger city systems. South Africa now links metro transfers to service performance. Kenya's earlier urban support programme used performance-based grants across participating municipalities and reached about 3.6 million urban residents, according to the World Bank's 2026 cross-country synthesis. [R126] Housing-specific transfers could reward legal serviced floor space in high-opportunity locations, fast rule-based approvals, affordable rental supply, occupancy, property-tax effort and asset maintenance. The indicator should sit within the recipient's control and connect closely to household welfare. Transfer design should also account for spillovers. A municipality that accepts dense rental housing can bear local costs while the metropolitan labor market receives the gain. A metropolitan or national grant can compensate the host jurisdiction. The agreement should specify the service obligation and the transfer that funds it. The operator responsible after occupation needs resources and workable management arrangements of its own.

Name and fund the operator before handover

Maintenance requires an accountable organisation as well as a budget allocation. Someone must own the drain, inspect the roof, collect the rent, procure the repair, enter the settlement, answer the complaint and carry the political responsibility when the service fails. Every affordable-housing project should identify six items before capital approval: the asset owner; the service standard; the staffing model; annual operating cost; major replacement reserve; and revenue source. For social rental add tenant management and arrears. For condominium ownership add association governance and reserve contributions. For upgrading add municipal access and security. This requirement changes project economics. A design with lower capital cost and high maintenance can be more expensive over twenty years. A peripheral site with cheap land can require a costly new utility district. A low service tariff can be unaffordable to the utility. Lifecycle affordability belongs in the appraisal. Digital workflows can support that organisation when records correspond to decisions it can actually make.

Use delivery records to find the blocked step

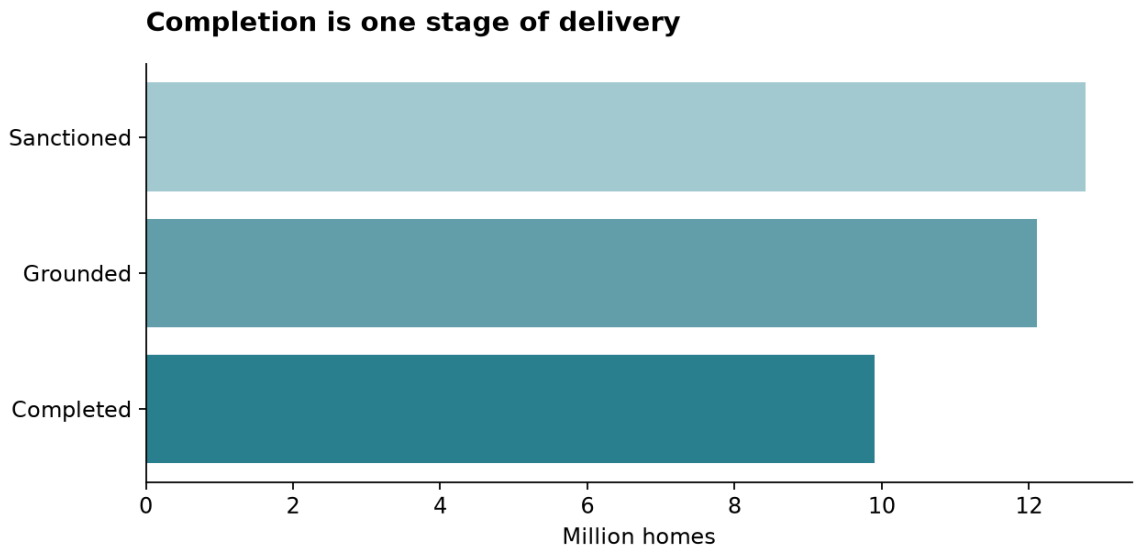
Implementation needs repeated diagnosis because resolving one bottleneck can expose another. Once title improves, finance may become the bottleneck. Once planning is liberalized, trunk infrastructure may bind. Once infrastructure expands, developer capacity or construction finance can become scarce. Review spending as the main constraint changes. The integrating institution should therefore run a quarterly constraint review. For each major city or programme, identify the next binding gate using observed data: time to developable land, approval queues, network capacity, construction cost, unsold inventory, rent burden, mortgage rejection, occupancy, commute, service reliability and maintenance. Budget and policy should follow the constraint. When supply is blocked by planning, spending more on buyer subsidies risks price capitalization. When permits are abundant and developers cannot obtain construction finance, liquidity facilities can matter. When completed units are vacant, investigate their location, price, condition, tenure, and service access before financing more of the same product. Vacancy in one segment does not establish adequate supply for every household. This is where a shared information system becomes economically useful. It enables government to stop treating every housing shortage as a shortage of money. Changing the response may disturb existing authority and benefits, which must be addressed openly.

Prepare for delayed services and failed suppliers

Institutional reform needs lawful authority, published decisions, and review because it changes established interests. Public land inventories threaten opaque allocations. Parallel approvals reduce agency vetoes. Shared data expose inconsistencies. Performance grants may withhold resources from municipalities that fail the conditions. User charges can anger residents. Property-tax reform can raise taxpayers' bills. Maintenance budgets compete with politically attractive new construction. Three design moves improve feasibility. First, pair the loss of authority or resources with a specified benefit: capital grants for municipalities, faster approvals for developers, tenure and services for communities. Second, sequence reform so affected actors can adapt: phase new standards, grandfather defined commitments, and move new budget growth toward the better system. Third, publish performance and exceptions. Public reporting allows residents and oversight bodies to challenge departures from those rules. Conflicts over land, utility finance, and municipal powers may require decisions beyond the authority of technical staff. The lead institution needs lawful authority to resolve disputes, and its decisions need published rules and independent review. Delegation should follow demonstrated capacity and funded public obligations.

Verify the site before committing construction funds

National construction totals and project audits show why sanctioned, completed, and usable housing must be distinguished. By 30 September 2026, India's official PMAY-Urban website showed 12.768 million homes sanctioned, 12.103 million grounded, and 9.907 million completed across the programme. These are reported programme milestones. The displayed headline figures supply no matching count of homes verified as occupied, safe, serviced, and accessible to livelihoods. Construction and sustained occupancy require separate measures. [R261] South Africa offers a second view of the same problem. In March 2026, its Auditor-General reported findings on 23 of 24 housing projects examined, with a combined value of R5.67 billion. Twenty of the 24 projects had suffered delays; 15 had poor construction quality; six had shortcomings at commissioning. Some housing was signed off without electricity, water, or sanitation. These are results from an audit sample, selected for scrutiny; they do not establish that 96 percent of all South African housing projects have failed. They identify service and quality shortcomings in the audited projects after substantial public commitments. [R249] Correcting the gap requires a diagnosis of the particular decision that remains unresolved.



Teaching figure 7. PMAY-U administrative snapshot, 30 September 2026, as cited in the delivery chapter. Occupancy is unknown in this series, not zero.

Require the procuring authority to verify readiness

Bind seven delivery steps to named institutions

Each delivery route needs a lawful, funded sequence from land rights to safe occupation. Establish claims, resettlement duties and the right to build; permitted use, density and environmental conditions; network capacity and access; design, materials, inspection and defects; financing and payment schedules; eligibility, appeals and possession; and long-term service and repair duties. These decisions sit with land and planning authorities, utilities, treasuries, builders, lenders and residents, often on different timetables. For household building, name who releases staged funds, provides advice and inspects work. Construction requires its own lawful preconditions and a credible funded service schedule; occupation requires essential services to work. The housing department need not perform every task, but the agreement must assign each one. The following calculation shows how losses at successive handoffs can undermine delivery.

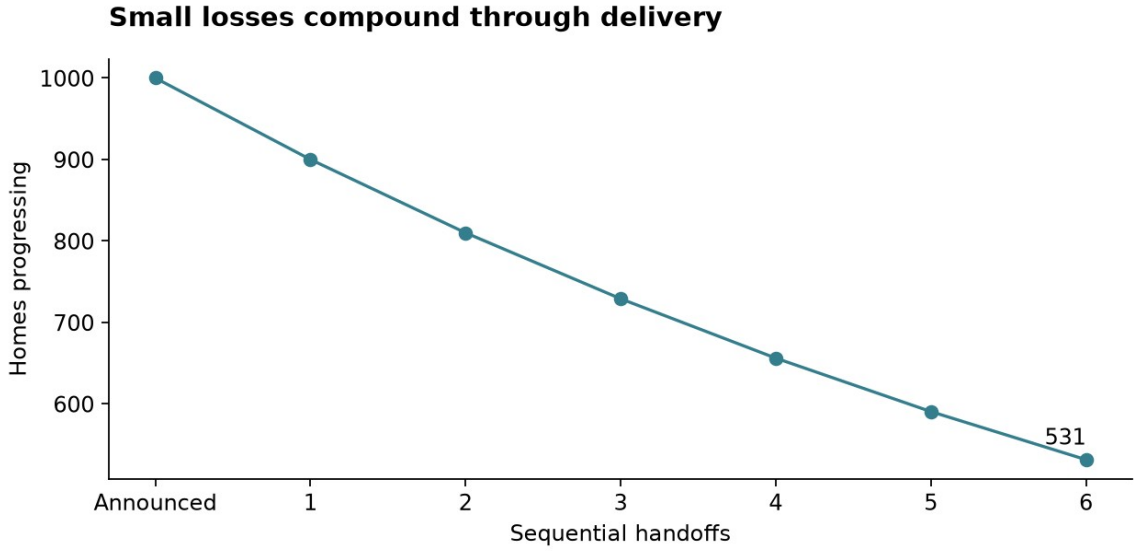
Figure 13.1. Responsibilities in the housing delivery chain

Secure site →Approved plan →Funded services →Safe structure →Fair allotment →Occupied home

Each stage needs an accountable institution, an enforceable decision, independent evidence, and a funded remedy. Track the stages separately and verify safety, services, lawful possession, and occupancy before reporting a usable home.

Multiple required handoffs can reduce delivery reliability, subject to the stated assumptions about their dependence. Consider an illustrative calculation in which each of six essential handoffs succeeds with probability 90 percent, independently of the others. Of 1,000 homes announced, the expected number clearing all six would be 1,000 × (0.9)^6 ≈ 531. This is a model assumption, not an estimate for a national programme. Actual failures may be correlated: insecure title can delay utility agreements and finance together. Without independence, the joint completion probability depends on that relationship and cannot be calculated by multiplying the six marginal probabilities. Resolving one shared constraint may address several risks. Starting physical work before essential legal and service

conditions are settled can increase later costs. If construction begins before title, service capacity, and relocation terms are settled, sunk costs change the parties' bargaining positions. A developer can demand an extension because the water utility has delayed a connection; an official can argue that stopping now would waste public money; residents can face eviction because the project has already mobilised contractors. Assign these risks and remedies before works begin and become costly to stop. A common agreement should assign each handoff and its remedy before construction starts.



Teaching figure 8. Illustration: each of six conditional handoffs passes 90% of the homes reaching it. 1,000 × 0.9^6 = 531. This is an arithmetic scenario, not observed attrition.

A delivery agreement must bind each responsible institution to funded, lawful obligations. It should name the landholder, the municipality, the infrastructure operator, the implementing agency, the funder, and the resident representatives; state each party's contribution; and make each party's signature conditional on the relevant budget and legal authority. A coordination memorandum should specify enforceable obligations. A signed obligation to install a functioning water main by a specified date, backed by an appropriation and a dispute procedure, changes the developer's risk and the household's prospects. India's programme experience shows how recorded construction and actual use can diverge when responsibilities remain divided.

Require agencies to account for unoccupied homes

Completions and occupation in India

A national housing mission can mobilise construction while leaving site-level obstacles to occupation unresolved. Its centrally supported structure can set goals, release funds, record beneficiary-led construction, and encourage states to build at scale. Different programme components, however, demand different kinds of state capability. A family improving a house on land it occupies needs staged cash, structural advice, and service connections. A new apartment development on public land needs a lawful site, a qualified developer, roads, utilities, a completed allotment list, and long-term management. A slum-redevelopment project must also negotiate the claims of tenants, owners, traders, street vendors, and people excluded from old enumeration lists. Central assistance for the AHP and slum-redevelopment components could support construction even where state governments lacked the money or authority to provide trunk services on time. The parliamentary committee found exactly this: states had yet to provide required infrastructure in many schemes, and allotment remained incomplete

in others. The result was substantial recorded construction with a lag in actual use. [R248] Those obstacles need distinct certification and accountability arrangements.

Certification should separate construction, legal occupation, and service readiness and remain independent of the contractor's invoice. This division of responsibilities can separate reported performance from the costs borne by other parties. A national ministry may be assessed on sanctions, investment, and completion. A state agency can award construction contracts while pushing the cost of off-site connections onto another budget. A municipal body may inherit water, roads, and solid-waste obligations without a matching revenue stream. Each office can defend its formal compliance. Households can bear the combined cost in rent paid elsewhere, longer travel, waiting, and lost income. The operating rule should be simple: approval of a housing block must carry an infrastructure financing plan signed by the entities that will build, own, and operate the services. Design review should test whether a water utility can supply the expected population at peak demand and where wastewater will go in the dry season and the wet. The project budget should show last-mile connections, utility deposits, access roads, pumping power, open-space upkeep, and the cost of service until full occupancy. A building-completion certificate and an occupancy permit should trigger separate entries in the management system; neither should be issued by the same contractor who invoices the works. A hypothetical project illustrates the cost of allowing these obligations to fall between budgets.

Delayed occupation can create substantial public and household costs even after construction expenditure is recorded as complete. Consider a hypothetical 1,000-home scheme costing INR 1 billion to build. Suppose the homes are physically complete while connection to trunk sewerage takes six more months. At an illustrative annual financing cost of 10 percent, carrying the full INR 100 crore during that period costs INR 50 million in simple interest. This assumes that the full amount remains financed throughout the six months; actual carrying costs depend on the drawdown and capital structure. Families bear their own costs during the wait, and unoccupied buildings may require protection and maintenance before lawful occupation. Compare this delay cost with the cost of coordinating sewerage before completion and with other construction savings. The amounts here are worked assumptions, offered to show the mechanism rather than to describe a particular Indian project. Recovery should therefore diagnose empty homes by cause rather than pressure households to accept unsuitable allocations.

An occupancy-recovery portfolio needs different remedies for location, services, rights, defects, and household constraints. An occupancy recovery programme would treat the December 2024 backlog as a portfolio of distinct problems. Buildings with functioning services and missing allotments need a different response from buildings where the water main is five kilometres away. Buildings that residents reject because jobs are too distant require a transport and economic-access test before another household is pressed to accept the unit. Some projects may merit adaptation to rental use, institutional housing, or mixed tenure. Others will need legal remedies and, in exceptional cases, an admission that an unsuitable site represents a sunk loss. A ministry should publish the cost per additional safe occupant-year recovered, rather than treating every empty flat as a failure that can be solved by additional pressure to accept an allotment. Administrative tracking can support that diagnosis when it is checked against inspections and residents' accounts.

Geotagged construction records require independent checks of occupancy, services and residents' rights. Coordinates can show where a building stands. A time-stamped photograph can document visible works. Neither proves that a named woman can use the water point at night, that a disabled resident can enter safely, that the landlord has not taken possession, or that the person allotted the flat actually lives there. A verifiable system combines administrative records with independent inspection and a right for residents to contest the state's account. [R260] South African audit findings identify further failures across quality, utilities, and commissioning.

Housing project audit findings in South Africa

Project audit findings should be traced to the specific delivery stage and institution able to correct them. The Auditor-General's detailed 2024–25 account records 20 of 24 projects delayed, 13 with cost issues, 15 with poor build quality, and six with commissioning shortcomings. Different projects appear in more than one category. The prevalence of defects in the audited portfolio reflects failures in planning, contracting, monitoring, and intergovernmental coordination. A grant assessed chiefly by expenditure can miss these delivery failures. [R249] A provincial human-settlements department may procure a settlement under a conditional grant. Municipal engineers must accept the roads, pipes, streetlights, and drains, even where staffing is thin and maintenance funding is scarce. An electricity distributor must confirm capacity and connect households. A property office must establish legal rights. An inspection team may cover dozens of scattered construction sites. The building contractor can finish the bill of quantities while the settlement remains unusable. Even when the builder bears responsibility for part of the works, a missing water connection can delay certification of everything else. Contracts must distinguish the milestones on which payment and acceptance depend.

Construction completion, commissioning, handover, and occupation need separate acceptance conditions. A road laid with asphalt has reached construction completion. It becomes a functioning service after drainage works, safety checks, access, and formal acceptance. A water network reaches commissioning after pressure tests, water-quality checks, legal connection and an operator's sign-off. Homes reach handover when households receive lawful keys and know who pays for which service. Occupation can then be checked after three, six, and twelve months. Reporting the stages separately allows officials to identify delays and failures after construction. Corrective action requires funding and enforceable authority. A municipality that refuses to accept a defective network must have the capacity to inspect it and a legal path to require correction. A province must be able to withhold final payment without triggering an unmanageable dispute over work performed. The national government must face the possibility that annual disbursement targets will suffer when unsafe or unusable projects are stopped. Performance assessment should allow a delay needed to correct unsafe work, while tracking the resulting occupation and durability. The incentives facing certifiers and contractors should support correction of defects rather than premature closure.

Review payment and certification incentives alongside independent quantity, quality, and utility checks. Contractors are often paid by quantities installed; municipal residents care about services that work. A contractor can earn more from a variation order when the design was incomplete. A supervising engineer may face pressure to certify against a delivery deadline despite unresolved defects. Restricting variations by decree can lead builders to walk away or conceal problems. Better design, third-party checks, published change orders, and predictable dispute resolution reduce the room for opportunism on either side. Independent verification has experimental support outside housing. Across more than 600 Indonesian road projects, raising audit probability from 4% to 100% reduced measured missing expenditure by about eight percentage points. Greater grassroots participation had smaller overall effects and did not reduce missing material expenditure. This supports technical verification alongside resident voice, but does not establish the same effect size in housing. The South African findings show where to apply that discipline: quantities, quality, utilities and commissioning, as well as approvals. [R258, R249] Kenya's audit experience shows why the same discipline must begin before tender.

Project readiness in Kenya

Site-readiness audits should distinguish unresolved preparation conditions from evidence of a finished, usable project. In a special audit issued in March 2026, covering project status at 31 March 2025, the Auditor-General examined legal documents, procurement, site progress, and programme

preparation. Subsequent reporting on that audit described unverified land records, pending approvals, delayed payments, contractor and consultant overextension, and gaps in supervision. The audit also questioned the absence of a consolidated programme appraisal, a formal affordability-threshold analysis, and documented cost-benefit assumptions before rollout. [R250] [R251] One widely reported audit figure deserves careful handling. 269 of 394 projects examined lacked the specified land-ownership documents at the audit stage. These 394 included markets, lighting, and other works alongside housing and social-housing projects. The number cannot be used as a claim that 68 percent of housing projects alone lacked title. Land-document deficiencies may also have changed after the audit: officials subsequently reported progress in assembling records. The finding nevertheless identifies a serious source of preventable implementation and buyer risk. [R252] Published project lists should reflect that distinction.

Keep non-ready sites in preparation until the responsible authority resolves their recorded legal and service conditions. Announcement can create pressure to proceed before those conditions are met. A county official may hope that a future budget will bring the access road. A developer may proceed in expectation of future approvals. A land claimant may demand compensation when works begin. Contractors with many simultaneous awards may stretch supervisors across sites. These are distinct conflicts, yet each can arise because someone with little power to stop the announcement had the decisive information about readiness. The solution is a pre-tender readiness certificate with evidence attached. It should establish the legally recognised land interest; disclose unresolved customary, community, tenant, and public-land claims; record design approval; identify affected households and traders; confirm environmental and safety permissions; attach signed service-capacity letters; and identify who will finance connections. The certificate should carry an expiry date and an accountable signatory. A public portal can publish a redacted version without exposing residents' personal data. Projects that fail the readiness check should remain in preparation until the responsible authority resolves the recorded conditions. Procurement review must also test whether competition and contract packaging support credible delivery.

Procurement concentration requires evidence on market participation, capacity, and quality rather than assumptions about motives. A single skilled contractor working on several sites can cut costs through shared suppliers and labour. Excessive concentration may overwhelm supervisors and increase the disruption and cost of replacing a failing supplier. An award committee should therefore assess aggregate committed capacity, recent delay rates, cash flow, site staff, and common beneficial owners across bidders. A tender that records competitive prices while ignoring the contractor's existing pipeline may underestimate delivery risk despite competitive bid prices. A housing programme can use a cohort record: every planned development should remain traceable from announcement to land clearance, procurement, serviced construction, independent certification, sale or rental contract, verified occupation, and defects repaired. A programme can then tell Parliament how many households moved into safe homes from each annual cohort, and what public value, including land and infrastructure, was spent per household. Such evidence makes the reasons for deferring or refusing approval reviewable. The contract then needs to allocate each delivery risk to a party able to manage it.

Make the contract lead settle allocation and handover duties

Separate the contractor's payment rights from agency duties

An illustrative contract can require certification within 14 days of a valid claim, payment within 28 days of certification, automatic interest on overdue undisputed sums and expedited independent adjudication. These are proposed starting terms, not statutory deadlines or a claim about every FIDIC or NEC form. Select the applicable standard form and edition, reconcile its notice and

dispute provisions, and state how verified subcontractor claims can be paid directly without paying twice or overriding local law.

Withhold construction acceptance for defects and obligations within the contractor's control. A public utility connection or resident allocation failure should instead trigger a sponsor-funded commissioning reserve and a dated escalation to the responsible agency. Give one institution accountability for each outcome even where several contribute. A transfer intercept requires legal authority and safeguards for essential services; it is not a substitute for identifying the missing appropriation.

Assign each risk to the party that controls it

A contract decides who has authority, who carries risk, and the remedies when an obligation is not met. These decisions determine whether housing becomes affordable before construction starts. Poorly specified risk either raises bid prices or reappears as a claim later. Contract wording cannot give a builder control over state decisions, such as resolving public title or deciding disputed zoning. Rational bidders will price it, refuse to bid, or seek to renegotiate after mobilisation. A design–bid–build contract can work where the government owns detailed designs, has a ready site, and can supervise quantities. It struggles when utilities, soil conditions, and rights-of-way remain unknown. Design–build can place greater responsibility for technical integration with the contractor, provided performance requirements are clear and the government has the skill to test them. A developer-led partnership can mobilise finance, land, and marketing, yet creates opportunities to renegotiate unit sizes, affordability rules, tenure restrictions, and public-land value. A community-managed upgrading contract gives residents more control over design and sequencing; it also needs accounting systems, technical support, and safeguards against benefits being concentrated among influential members. Contract choice should follow the capacity to prevent or absorb each risk.

Allocate risks according to control and capacity, with public guarantees justified by an explicit expected benefit. The land authority should bear responsibility for the lawful site it provides. The developer should bear the cost of defective design it controls and of workmanship that fails an objective test. The utility should commit to dates and capacity over which it has authority. The government should retain transparent responsibility for changes in law and for relocation that only it can authorise. Residents should hold enforceable rights concerning selection, accessibility, temporary accommodation, and remedy. Lenders and insurers should price credible residual risk, with public guarantees used only where the expected public gain can be shown. Procurement and audit evidence can test which oversight arrangements improve actual delivery.

Exhibit 13.1. Allocating delivery risks and responsibilities

Failure point	Best placed to control it	Required evidence before money moves
Unclear title or community claim	Land authority and independent adjudicator	Search, claims register, legal instrument, grievance window
Insufficient trunk water or sewer	Utility, city, and project sponsor	Capacity letter, funded works, commissioning date
Unsafe foundations or fire design	Designer, contractor, independent checker	Ground tests, approved drawings, inspection hold points
Escalation in material prices	Shared under a transparent formula	Named indices, thresholds, capped contingencies

Failure point	Best placed to control it	Required evidence before money moves
False beneficiary list or exclusion	Implementing agency with independent appeals	Public rules, protected audit trail, resolved challenges
Unfunded building maintenance	Future operator and public sponsor	Reserve policy, fees/grants, service contract, handover inventory

Proposed contract-design principles. Allocation is context specific; this table is a decision aid, not a universal standard form.

Procurement technology and independent audits address different risks and should be assessed through their measured effects. A study of electronic procurement in India and Indonesia found no clear reduction in government prices following adoption. It did find improvements in the quality of Indian roads and fewer delays in Indonesia, consistent with wider entry by higher-quality firms from outside local contracting networks. The evidence concerns public works; housing programmes should test the same mechanism rather than assume that a portal will reduce home prices. [R253] A separate road-procurement study examined political connections. In an Indian rural-roads study using close elections, the share of awarded contractors with surnames matching the elected politician rose from about 4 to 7 percent after the politician took office. The researchers linked political influence to greater costs and a higher chance of missing roads. Shared surname is an imperfect proxy for social or kinship ties, and the result relates to road procurement. It supports testing housing-procurement safeguards through monitoring of beneficial ownership, repeat bidding patterns, sudden contract amendments, and conflicts of interest. [R255] A useful anti-corruption system has at least three parts: open competition, competent engineering checks, and credible sanctions. Indonesia's randomised experiment on more than 600 village roads found that raising the probability of a government audit from 4 to 100 percent cut measured missing expenditures by roughly eight percentage points. Greater community monitoring alone had smaller average effects. For housing, this supports testing independent quantity and quality audits while giving residents accessible ways to report defects; community voice and technical verification address different problems. [R257] Housing allocation requires additional safeguards because construction oversight cannot establish fair access.

Give applicants published rules and an appeal

Allocation rules need scrutiny for exclusion and unequal access to information or appeal. Allotment determines who receives a subsidised asset, and the value of that asset may be substantial. Unchecked discretion can permit preferential allocation or unofficial charges. Landowners can classify tenants as temporary occupants and seek compensation for themselves. A developer can persuade a city to raise prices, waive affordable-unit obligations, or release units to a higher-income market. Incumbent homeowners can delay denser or mixed-income housing through planning objections. Test whether caste, class, ethnic origin, race, disability, gender, or migrant status affects access to allocation and appeal procedures. Eligibility, selection, and possession should be treated as separate decisions.

A fair allocation process should make eligibility, selection, and possession independently reviewable. First, which households qualify under a published objective, such as very low income, displacement by public works, rental need near jobs, disability-related housing needs, or disaster risk? Second, which of the qualified households receive scarce units, and in what order? Third, who verifies that the intended household can take and keep possession without coercion? A digital registry can help match applications and detect duplicates. It also gives the operator new power to freeze eligibility, infer identity, and make errors hard to challenge. A family without a formal address or accepted document

may be excluded unless alternative evidence and assisted applications are available. For in-situ upgrading, a census must distinguish landowners, structure owners, tenants, subtenants, traders, home-based workers, and people who use shared spaces. Eligibility dates create sharp incentives for brokers to buy claims or add names. The remedy combines advance publication of rules, independent grievance hearings, community-supported verification, and protection against retaliatory eviction. An appeals body should have access to underlying records and the authority to correct the list. Women should be able to register independent claims; documentation rules must recognise lawful but non-standard forms of tenure. The location offered must also be suitable for the household's work and social needs.

A fair allocation process must allow households to reject homes whose location makes them unaffordable. A household offered a remote apartment with poor transit may refuse it rationally. Penalising refusal can push the poorest into accepting high commuting costs and lost work. Programme managers should record offers declined, with stated reasons, as useful evidence about product design. A home that requires a two-hour commute can be inexpensive to construct but unaffordable once travel costs and lost earnings are included. The governing outcome is the household's total cost of housing and access to work, with safety and social ties included, rather than the administrative act of issuing a key. Singapore and Thailand illustrate different ways to coordinate those delivery and allocation obligations.

Choose who will lead delivery and who will verify it

Singapore demonstrates coordinated authority while retaining distributional and political questions that integration alone does not resolve. Its public housing agency and the wider state have long connected land assembly, planning, infrastructure, finance, household allocation, and estate management. In 2023 about 80 percent of resident households lived in Housing & Development Board flats, with homeownership among those households above 90 percent. Supply-chain shocks still disrupted construction during the pandemic. By September 2024, the government reported that roughly 94 percent of delayed flats had been completed after coordinated action on contractors and materials. [R259] Singapore assigns responsibility for linked decisions from land development through maintenance. Its conditions are distinctive: unusually strong administrative and fiscal capacity, extensive state control over land and infrastructure, a high share of formal employment, and institutional arrangements developed over decades. An agency's name or organisational chart does not provide the land powers, finance, or operating capacity on which this arrangement depends. Nor does integration remove the political risks of compulsory acquisition, control over neighbourhood composition, or subsidising those already well placed to purchase. Thailand offers a contrasting division of authority between residents and public institutions.

Community-led delivery requires inclusion, viable finance, technical support, and enforceable rights. Under Baan Mankong, the Community Organizations Development Institute (CODI) channels subsidies and loans to organised residents, who negotiate land tenure, choose designs, and manage much of the work through cooperatives. CODI describes a traditional subsidy package of roughly 80,000 baht per household, split among infrastructure, construction, community management, and technical support; cooperative loans complement savings. The dated national and railway programme counts are consolidated in the redevelopment chapter. These are programme-reported cumulative reach figures, not evidence from random assignment that each intervention caused a given increase in income or housing quality. [R125] [R122] Residents can negotiate as a group through a representative organisation. The community becomes a buyer of technical assistance, a manager of subsidies, and a counterparty in land talks. This gives poor households bargaining power, though cooperatives can exclude tenants, migrants, or dissenters unless their rules and leadership are contested. Progress can also slow when many negotiations require local consent, landowners hold out, or recurrent public finance is thin. The model changes control over decisions and information. Its effectiveness

depends on inclusion, financial viability, technical support, and enforceable rights. A city can combine those functions without copying either institutional form wholesale.

Cities can combine centralised land and infrastructure finance with resident-led neighbourhood design. It may centralise land and infrastructure finance while devolving neighbourhood design and upgrading choices to residents. It may create a single government programme office that signs enforceable service agreements, while municipal inspectors and independent engineers retain the authority to stop unsafe work. The choice depends on which institution holds useful information, who can be trusted with discretion, and what accountability can survive a change of government. Digital tools should support the selected responsibilities through reliable shared records and verification.

Prepare a funded delivery plan for 1,000 homes

Adapt packaging to local capacity while retaining independent verification and readiness conditions. Fund supervision, defects and dispute resolution upfront; compare these costs with credible expected losses. The employer must clear sites and utilities, certify work honestly and enforce remedies; residents need an independent complaints route. Track occupied serviced homes, defect closure, delays by responsible agency, verified quantities and exclusion at allocation. Imagine a secondary city offered a national grant for 1,000 apartments. A developer proposes public land on the urban edge. The ministry has construction finance, the city promises access roads, the utility expects a treatment plant upgrade, and a state bank says mortgages can follow allotment. Before tender, compare the apartment proposal with feasible serviced plots, assisted household building, rental additions and repair. Proceed with apartments only on well-located land under lawful public control, with credible delivery and maintenance finance, and a demonstrated advantage for the intended households. The proposal still lacks confirmed services and finance and must remain in preparation. The first preparation step is a common set of site, service, household, and financing records.

Prepare the maps, claims, funding, and demand evidence needed to test a complete delivery plan. The maps show lawful land interests and disputes; employment access by affordable transport; existing and planned trunk-service capacity; and flood, heat, slope, and environmental risks. The lists name every institution with power to delay handover and each household group likely to gain or lose. Those six objects define the actual investment proposal. A layout of 1,000 apartments comes later, when the land and household market have been tested. Next, write a single project balance sheet covering public-land value, direct grant, infrastructure, temporary relocation, private finance, buyer equity or rent, operating subsidies, maintenance reserves, and contingent liabilities. It should contain three cases: timely delivery, a twelve-month service delay, and a 15 percent construction-cost increase. It should model which actor runs out of cash, what happens to affordability, and the government's maximum exposure. An overly optimistic sales forecast can leave an unfunded gap, unfinished homes, or pressure for additional public support. Residents should then be able to understand the commitments and the remedies for failure.

Make delivery obligations visible to residents and retain enforceable rights to correct or replace defective work. A sample of eligible renters and prospective buyers should see the actual travel time and total monthly cost of moving. Ask whether they would live there, what they would lose, and which alternatives they prefer. Verify the answers against observed prices and behaviour where possible. Enrolment numbers collected before people see the transport and payment terms are weak evidence of effective demand. The procurement should be released only when the land, environmental, and service conditions are contract-ready. Bid evaluation should test experience delivering occupied serviced homes, financial capacity across the bidder's entire contract portfolio, track record on safety and defects, and credible prices for standardised quality. The winning bid should be published with the

reasons for award and the contract's future adjustment formula. During construction, an independent certifier should check foundations, structural stages, utilities, accessibility, and safety before payment. The authority must retain documented rights to suspend, correct, and replace works when tests fail. Handover also requires an operating and reserve-funding agreement.

Handover must settle household rights, operating duties, charges and remedies before occupation. It names the title or lease instrument for the household, the utility account, operator for shared spaces, defects procedure, monthly service charges, water and sewer obligations, expected tax or service subsidy, and a resident representation mechanism. Inspection should occur before occupation, again after twelve months, and thereafter on a risk-based schedule. The programme must budget for the first years of operation and reserve funds for long-lived assets. An accountable delivery lead should coordinate those obligations while remaining separate from verification.

Delivery readiness assessment

STOP: Site rights are disputed; safety or resettlement duties lack lawful remedy; trunk services have neither confirmed capacity nor funded delivery; procurement papers cannot assign material risks; or intended households have no fair route to claim a home.

PREPARE: The constraint is solvable with specified engineering, finance, consent, or legal work. Name the owner, due date, evidence, budget, and the official who can lift the hold.

TENDER: All critical preconditions have been independently documented, households have tested the product, and the full public value and lifecycle obligations are disclosed.

PAY: An independent inspector verifies the relevant milestone, safeguards are met, prior defects are corrected, and the contractor's security remains valid.

COUNT: A household has accepted lawful possession; the home is safe and connected; basic services work; and its actual cost and access to employment meet the programme's stated rules.

This is a proposed management tool. Its gates can be built into a city–state–national compact or an MDB project implementation manual.

A delivery officer needs authority to resolve problems and stop non-ready projects, with independent checks on the solution. The role should carry a published performance agreement, a small multidisciplinary team, and access to the finance ministry. It must remain accountable to an independent inspection and grievance process. Concentrating all decisions in one office without outside checks would concentrate discretion and weaken independent verification. The governing discipline is a narrow common mission, delegated authority to solve problems, and separate authority to verify the solution. Public performance reporting should follow each cohort through to sustained safe occupation.

Track households through occupation and upkeep

Track each delivery route through safe occupation using milestones appropriate to it. For contracted homes, record site readiness, tender, start, completion, commissioning, lawful allocation and occupation at 90 days and twelve months. For household grants, record verified rights, payment, inspected building stages and safe use. Report conversion, delays and the responsible agency at each stage. Disaggregate by tenure, income and other relevant household characteristics where lawful. Include displacement, grievances and existing homes lost. Public cost per additional safe home-year can compare results, with grants, land concessions, infrastructure, expected guarantee costs, administration

and maintenance support in the numerator. State the counterfactual and time horizon; distinguish discounted costs from physical years and test occupancy, asset life and upkeep assumptions. Report travel, household costs, safety and tenure separately: one ratio cannot capture exclusion or lost community ties. Lenders and development partners should assess these outcomes alongside financial progress.

Evaluate finance and delivery through verified occupation, quality, services, and costs that persist after the original team leaves. A programme with slow initial disbursement and a credible serviced pipeline may outperform one with high spending and unusable buildings. Performance reporting should distinguish these outcomes rather than reward disbursement alone. An evaluator should ask which changes came from the reform rather than from the economy, weather, or a new mayor. Some interventions permit phased or random rollouts: digitised inspections across comparable districts, independent engineering checks across lots, or alternative resident-notification methods across sites. Others, such as a single metropolitan water-main agreement, need careful before-and-after process tracing and comparison with similar projects. Publish negative results and implementation costs. Learning requires knowing when an attractive reform has failed. Delivery requires enforceable commitments among agencies with different responsibilities. The proposed arrangements identify who can prevent an unready project from starting, resolve service connections, correct defects, and respond to residents' complaints. Their performance should be assessed through occupation, safety, service reliability, and costs over time, including after the original programme team has left. Physical completion and safe use should remain separate entries in that assessment.

Report physical completion separately from safe occupancy in a functioning neighbourhood. Both measures are needed to identify the remaining work and guide later investment. Fieldwork before procurement and handover should identify the remaining conditions between those two milestones.

Check the records and visit the site before procurement

Verify readiness, certification, household access, and operating responsibility before accepting handover. Review title, permits, utility commitments, designs, bills of quantities, financing, allocation readiness, and contractor performance. Reconcile certified quantities with paid invoices and independently inspected work. Include cancelled tenders and contract amendments. The South African audits and the Indonesian verification evidence above make checking delivered work a distinct task from checking whether procurement procedures were followed. The procuring agency, engineers, utilities, land authority, finance team, and future operator should sign a readiness register. Record each unresolved condition, its owner, and the consequence for tendering or mobilisation. Residents should review access, allocation, and complaint arrangements before the contractor begins work. Use version-controlled designs and dated inspection records to connect variations to cost and schedule. Flag unusual bids or ownership links for investigation, without treating a flag as proof of misconduct. Release payments against independently verified milestones. Before occupation, test services, fire access, accessibility, as-built records, defect remedies, and management funding. Track days from physical completion to safe occupancy and explain the longest delays. Chapter 11 examines the management agreement that must work once residents move in.

Resident knowledge should complement independent engineering and enforceable contract management. Independent measurements, credible audits, and consequences for non-compliance connect payment to delivery. Community participation cannot replace engineering checks, and paperwork cannot establish service readiness. Copying an audit rate or concentrating construction authority will not resolve disputed utility handoffs or absent contractual remedies. When project volume increases, test the supply of independent engineers, auditor conflicts and the authority to stop payment without freezing all delivery.

Occupation transfers the problem from delivery to continuing operation. Chapter 11 tests who can maintain assets, collect affordable charges and fund renewal.

Selected readings

Indonesia upgrading completion report [R134]. Use the report to distinguish original and revised targets and beneficiary definitions; the cited review checked indexed official text rather than the inaccessible raw PDF.

IEG on Indonesia's urbanisation support [R135]. Read the maintenance and programme-alignment findings to examine what survives project completion; they do not isolate a single institutional effect.

South Africa housing project audits [R249]. Use the documented delays, quality issues and commissioning gaps to test readiness; the audit sample is not an estimate for every project.

Judgment and transfer conditions

Each handoff needs one accountable owner, finance and a remedy within that owner's control.

Confidence: Moderate; implementation evidence is less causal than the diagnosis. Revisit trigger: A simpler arrangement delivering equivalent safe occupation at lower administrative cost.

Transfer delivery responsibilities for land, services and finance with the authority and remedies needed to fulfil them. At roughly ten times the pilot scale, test connection delays, inspection, procurement and grant payments reaching the bottom 50 percent. At roughly one hundred times the scale, require institutions that can support dispersed household building as well as justified public projects, resolve disputes and sustain services. Expansion should pause when those duties are unfunded.

Exercise

Draw the actual handoffs for a named project. Assign one accountable owner to each, distinguish contractor from sponsor obligations, and specify the remedy for one missed payment.

14. Redevelopment and the Rights of Existing Residents

Can redevelopment protect existing residents while improving the neighbourhood?

All three priorities must protect residents when a neighbourhood changes. This chapter supplies evidence for alternatives (Test 3), rights (7) and follow-up of the original population (8). Compare resident-led repair and upgrading with replacement before committing land to redevelopment. Usable land includes occupied neighbourhoods whose services and homes can be improved safely. Secure enforceable treatment and finance for tenants and other affected residents under every option. The cases test eligibility, temporary accommodation, livelihoods, return rights and remedies. Better buildings or higher land values cannot establish a gain for people whose subsequent outcomes are unrecorded.

The Joe Slovo case demonstrates why redevelopment decisions must distinguish a housing promise from enforceable treatment of existing residents. In June 2009, South Africa's Constitutional Court authorised a supervised removal of residents from Joe Slovo, an informal settlement beside Cape Town's N2 highway. The eviction order came with a timetable, minimum standards for temporary accommodation and duties to consult. Roughly 20,000 people were affected. The government said the land had to be cleared so permanent housing could be built. In March 2011, the same court discharged the eviction and supervisory provisions while retaining the costs order. The state had changed its plan. It now intended to improve the site while residents remained there. The removal order no longer matched the government's revised plan [R296, R298]. The judgments illustrate why redevelopment must assess outcomes for existing residents. A new building can improve living conditions. It can also make an existing tenant homeless. Removing a settlement from a hazardous strip of land can save lives. Relocation to a distant estate can reduce residents' access to the work that paid their rent. A government may announce a right to housing while the rules used to allocate new homes exclude the claims of the people most dependent on the site. An appraisal therefore needs a separate record of their rights, uses, and potential losses.

Record the claims and livelihoods that redevelopment could change before choosing the intervention. Include tenants and occupants without registered ownership, and document access to work, schools, customers and support networks. Some losses lack market prices; omitting them can still distort the choice between upgrading and relocation.

Establish rights and household exposure before redevelopment

Occupancy and overlapping land claims

Settlement records must include the livelihood and care relationships attached to occupied space. In Nairobi's Mukuru, Muungano's introductory account describes about 300,000 residents. Its acreage differs from the planning archive, as noted in Chapter 1; neither figure should be used for precise density or per-acre comparisons without reconciling the boundary. Muungano's account reports

that around 230 landowners held virtually all the land and that 94 percent of residents were tenants [R198]. A cadastral system showing 230 owners would still fail to describe the housing market. Between the title holder and a household paying monthly room rent may stand a structure owner, a caretaker, a rent collector and a service broker. Their rights and responsibilities require separate records; a deed will not identify them all. The room is also a workplace in many households. A shop may open on the pavement; tools and stock may be stored beside the bed; a worker may depend on an employer reachable by foot. A child's school and an aunt who provides childcare make the location productive. Clearance can disrupt these livelihood and care arrangements even when a household holds no land title. Mumbai illustrates similar layers of claims that a simple ownership entry cannot represent.

Eligibility surveys can reveal overlapping claims while increasing official control over who receives assistance. The official Dharavi redevelopment website says its survey assigns each structure a 15-digit identifier, uses lidar mapping of lanes and collects documentary proof from households. The data help the authority decide who qualifies for rehabilitation. The survey therefore informs eligibility decisions [R290]. A newly recorded building can strengthen the state's ability to plan services. The same survey can give officials and developers greater control over which households qualify for assistance. They should therefore supplement, rather than be replaced by, the formal property register.

Exhibit 14.1. Claims and interests on an occupied parcel

Person or body	Asset or dependency	What conventional property data can miss
Registered owner	Title, land rent, option to redevelop	May live elsewhere; a title says little about occupants.
Structure owner or landlord	Rent from shacks or rooms; control of access	May occupy land informally and still collect substantial rent.
Tenant or subtenant	Affordable location and continuity of occupancy	Often no recorded lease or entitlement to new ownership.
Home-based worker	Foot traffic, inputs, customer ties, storage	Loss of livelihood can exceed the value of the walls.
Neighbourhood / public body	Road, drainage, school, networks and access	Public investment may raise private rents before costs are recovered.

The categories are analytical. They may overlap in one household. A defensible inventory records people, uses and claims separately; ownership is one dimension of exposure.

A property register is not a complete record of people at risk from redevelopment. Its omissions have distributional consequences. Compensation tends to follow legible assets: land, permanent walls, a registered shop. Households with weaker documents may receive a moving allowance while losing a daily wage, an informal workshop or the right to return. The problem deepens when a scheme ties compensation to a date: rights become a contest over old utility bills, voting records, ration cards and testimony from intermediaries who may charge for helping produce the evidence. Public spending or increased permitted density can raise expected returns to land. Owners seek a higher sale price; structure owners seek a higher rent; developers bid for redevelopment rights. Tenants hold a shorter contract, face higher costs of organising and can be replaced one household at a time. Land-value gains may occur before residents receive the promised housing and services. Displacement can occur through several channels even when no household is directly cleared.

Four channels of displacement

Resident protection must address physical removal, price changes, eligibility exclusions, and other mechanisms that shift access and bargaining power. A second channel is the market. A paved road, safe drainage and legal electricity make a neighbourhood more desirable. Without tenant protections or greater housing supply, landlords can increase rents and replace poorer tenants. The third channel is administrative: a household keeps living there until an eligibility cutoff, a missing document or an impossible contribution excludes it from the new scheme. The fourth is the slow exit. School fees, commuting costs, service charges and building maintenance can make a new unit unusable even when its transfer was formally free. These channels need different instruments. A court can stop an unlawful demolition and still leave rising rents untouched. A tenure certificate can protect an owner against eviction and leave the owner's tenants exposed. A relocation grant can pay for a truck while a household loses its customers for years. A price cap may help an existing tenant and deter a landlord from maintaining or adding rental rooms. Each instrument changes bargaining power; the policy must track where that power moves. Household relocation evidence helps value losses that the project budget can overlook.

Forced moves require their own long-run evidence

Chile's historical clearance evidence identifies costs to displaced children that persisted into adulthood. Rojas-Ampuero and Carrera study Chile's 1979–84 clearance programme, comparing displaced children with children whose settlements were redeveloped in place. Their June 2026 working paper estimates 0.62 fewer years of schooling and 10.2 percent lower earnings around forty years later for displaced children. The findings concern this historical policy and comparison, not every relocation. They nevertheless establish why voluntary lottery evidence cannot stand alone in a chapter on compulsory removal. Childhood exposure and social disruption can leave costs beyond a five-year project evaluation. [R474]

Household costs of relocation

Takeuchi, Cropper and Bento's published Mumbai model produces different net welfare results for different relocation groups. Table 10 reports the following mean total compensating variations in original-study rupees per household per month, with housing payments held unchanged. These totals combine modelled housing and location effects; they do not subtract programme capital costs or constitute a cost-benefit net present value. They are simulated preferences, not causal estimates of post-relocation earnings or outcomes for the Mumbai Urban Transport Project. [R288, p. 80]

Modelled monthly household welfare change in Mumbai

Scenario	Section 79 INR / household / month	Section 80 INR / household / month
Relocation, distance to work; current job fixed	−89	1,194
Relocation, job access specification	216	1,315
In-situ improvements	474	591

The model favours in-situ improvement for Section 79 and relocation for Section 80. Changing the job-access specification also reverses Section 79's relocation result. These comparisons support testing household alternatives and employment assumptions rather than assigning one effect to

all relocation. The table retains the paper's historical rupee units to preserve the reported results; it is not a current-price housing budget. [R288]

Brazil's Minha Casa Minha Vida lottery evidence shows employment losses on average alongside gains for a disadvantaged subgroup. Belchior, Gonzaga and Ulyssea find a fall in average formal employment but a 2.3 percentage-point gain for the disadvantaged sample. Access to labour markets explains much of the difference across the three neighbourhoods studied. The result is heterogeneous: neither the average loss nor the subgroup gain can stand for every beneficiary. [R307]

These findings do not support a universal rule for or against relocation. The Ahmedabad lottery improved housing without income gains; the US experiment found benefits for children exposed to better neighbourhoods young, with different results at older ages. Neither justifies forced displacement or guarantees gains for an individual household. Before clearance, test whether the destination preserves livelihoods and networks or provides usable alternatives, and whether residents can sustain the move. [R161, R159] Mumbai's redevelopment rules show how eligibility can determine which households obtain that opportunity.

Compare protection arrangements and distributional effects

Redevelopment eligibility in Mumbai

Redevelopment financed through development rights creates incentives that need to be examined without presuming misconduct. Mumbai's Slum Rehabilitation Scheme has offered a development-rights financing arrangement since the mid-1990s. A private developer finances rehabilitation units and receives development rights for saleable space. The World Bank's description of the early scheme records free on-site units for eligible occupants, consent requirements and restrictions on resale [R292]. In economic terms, the developer uses the market value of a scarce building right to pay for some of the existing residents' new homes. The city can add formal units without writing a construction cheque for each one. The arrangement creates a distributional trade-off. Revenue comes from the floor space that can be sold at high prices. The costs of providing rehabilitation rise with the number of people who receive rights. The scheme therefore has strong financial reasons to draw an eligibility boundary and to retain valuable land for the sale component. It also gives a developer an interest in accelerating clearance and a resident association bargaining power through consent. Discretion over beneficiary lists creates a risk of preferential allocation or unofficial charges. These are incentives implied by the structure; they do not establish misconduct in every scheme. Published eligibility rules must specify the treatment of each occupancy and business category.

Eligibility cut-offs can create sharply different outcomes for households sharing the same redevelopment area. Dharavi's official programme site states that ground-floor residential tenements existing on or before 1 January 2000 qualify for 350 square feet within Dharavi. It sets different terms for ground-floor tenements dating from 2000–11 and for later or upper-floor structures. The entitlement page offers 300 square feet under specified payment, metropolitan-area or hire-purchase arrangements to other categories, while the general FAQ describes eligible tenements in Dharavi and others outside it [R290]. The official pages should be reconciled with binding resolutions for individual cases; an online FAQ cannot substitute for a household's written determination. As a programme design, the cutoff dates and distinctions between floor levels do three things. They help establish a finite fiscal obligation; they favour households able to document older occupation; and they create sharp differences in value between people who may live next door, or above and below each other. A home-based garment workshop can be financially and socially different from a legal residential room. The public authority must therefore publish the treatment of tenants, subtenants, upper floors, mixed residential-commercial

premises and those who lack standard paperwork before construction makes old claims hard to recover. Credible protection requires rights and funding before removal rather than a later promise of assistance.

Resident organising and litigation illustrate the consequences when relocation terms fail to provide acceptable alternatives. Rishi Jha's 2025 fieldwork on Mumbai resettlement documents how households sent to hazardous peripheral locations used community organising and legal action to press for alternatives [R294]. The study uses qualitative research, with more than 100 interviews, to examine relocation and residents' responses; it does not estimate an average treatment effect. Once an agency has paid to clear a site and a developer has sold the future right to build, the bargaining power of displaced residents falls. Credible rights must be agreed and financed before removal. The project's financial incentives help explain why treatment of claims must be settled before clearance.

Amaravati includes two distinct accountability records

The 2017 Inspection Panel request concerned an earlier proposed Amaravati operation. The Panel recommended investigation in 2019; the financing request was withdrawn and that operation did not proceed to approval. In July 2019 the Board approved the Panel's revised recommendation not to investigate after withdrawal. This chronology matters when land-pooling participation is presented as an unqualified success. Landowner participation alone cannot establish livelihood restoration for landless workers or adequate treatment of other affected people. [R463]

The later Amaravati Integrated Urban Development Program, P507508, has a separate Panel case. A request received in October 2024 was registered in December, before programme approval. In April 2025 the Board approved the Panel's recommendation not to investigate: at that early stage the Panel could not establish a plausible link between the alleged harms and the new programme. This was not a finding that all land-pooling practices were harmless. Keep allegations, findings and programme dates separate. [R464]

Land values and eligibility incentives

The residual value available for redevelopment depends partly on which claims and obligations are recognised. An additional rehabilitation household increases the project's cost and reduces that residual. Tighter development rights, weak off-site infrastructure or high interest rates raise the temptation to narrow eligibility. More saleable floor area can cover more rehousing, although the new floor area also demands water, sewage, schools and open space. Public land or an infrastructure contribution that the state calls "free" still has an opportunity cost, as Chapter 10 showed. Developers bear construction and financing risks; titleholders and courts can affect acquisition; eligibility certificates can change residents' interests in redevelopment. Renters and newer arrivals may lack comparable representation. Test these decision powers and claims alongside engineering feasibility before approving the scheme. Payment milestones should therefore include verified rehousing and return where promised.

A fair agreement must specify the treatment of every claimant before land is cleared. It can offer in-place reconstruction in phases, nearby temporary accommodation with a binding return right, rental tenure that does not demand a mortgage, protected ground-floor trading space, and a funded mechanism to correct exclusion errors. The developer should face verified occupancy and return targets in addition to construction milestones. Payment conditions tied only to physical completion omit whether eligible residents have been rehoused. In predominantly rented settlements, owner compensation alone cannot establish that upgrading benefits occupants.

Mukuru requires a cohort account across upgrading and demolition

Mukuru's Special Planning Area work and its resident enumeration are important examples of organisation and participatory planning. They must be read alongside displacement. In November 2021, the Muungano Alliance reported demolitions in Mukuru kwa Njenga and estimated that 18,988 households, or 75,952 people, had been made homeless by 17 November. These are the federation's reported figures. They concern a specific eviction episode and geography, not a measured effect of every SPA investment. [R460]

The federation's 2021 Mosque Road water and sanitation account also describes the practical limits of participation, including absent residents and tensions around road works. Enumeration is a means of organising and claiming rights, not simply a database for an implementing agency. Publish who can amend the register, how tenants are represented, and what happens to people absent on survey day. A successful service pilot and an eviction can coexist; neither cancels the other's record. [R461]

The 2024 riparian-eviction litigation is a separate episode from the 2021 Mukuru kwa Njenga demolitions. The accessible opening of Sheria Mtaani na Shadrack Wambui v CS Interior & 3 others identifies Environment and Land Court Constitutional Petition 2 of 2024 and discusses Mathare, Gwa Kairu, Mukuru kwa Ruben and Kiamaiko. Contemporary reporting describes a compensation and reporting remedy. The case citation remains provisional. The full signed judgment and operative orders have not been verified for this edition, so the reported remedy is not used here as an established legal holding or evidence of compensation paid. [R493, R494] An assessment of implementation must match the exact judgment, affected households and subsequent compliance record.

For evaluating an upgrade, keep the original residents in the denominator. Track rent, service charges, involuntary exits and destination conditions on improved plots and credible neighbouring comparisons. The proposition that a service subsidy can capitalise into rents and displace tenants is a hypothesis to test, not a demonstrated outcome for every Mukuru connection. A court finding must be identified by the exact case and judgment; reports of other proceedings cannot establish the legal status of a particular eviction.

Distribution of upgrading benefits in Nairobi

Upgrading in a rental settlement needs explicit evidence on tenants' costs, safety, and ability to remain. In Mukuru, the tenants who would benefit from safe water and sanitation may be renting structures on private land. Public infrastructure can make these rooms more valuable. As long as there are too few legal, serviced alternatives, the landlord may have the power to convert a large part of the gain into rent. The tenant receives the new tap and loses some of the income saved by no longer buying expensive water. The title holder may benefit through land value even when the household using the infrastructure pays for the connection. Mwau and Sverdlik's research in Mathare shows why Nairobi's rental market cannot be treated as an accidental feature of informal settlement. The authors describe growing multi-storey tenements, alongside single-storey shacks, and the role of caretakers, investors and informal intermediaries. Their 2020 paper estimated that nearly 70 percent of Nairobi residents were renting single rooms, using the sources available to the authors; the figure should not be conflated with the 94 percent community-specific estimate for Mukuru [R286]. The market responds rapidly to demand for centrally located rooms, yet weak regulation can leave tenants in dangerous buildings. The operating agreement must connect infrastructure gains with tenure and fair access.

Upgrading requires coordinated land, service, fiscal, and resident-protection arrangements rather than connections alone. Wainaina and co-authors found that weak routines for learning from implementation reduced the programme's ability to adapt; another study of upgraded facilities traces why residents accepted some new infrastructure and struggled to sustain other parts [R295, R297]. These qualitative studies do not estimate how much a new sewer raises rent. They show that an effective upgrading coalition has to survive the handover from consultant to county, from county to utility, and from the neighbourhood committee to the landlord and tenant who use the facility. The practical solution starts with a roster of occupants, updated independently of land ownership, and a rent baseline before the investment is announced. Community organisations need both tenants and structure owners represented; otherwise a committee can turn into an owner-dominated body. Residents need rights to challenge the roster, report retaliatory evictions and receive utility bills that show who pays which charge. Landlords need a credible path to lawful investment and cost recovery. The city needs a means to recover a share of uplift through its fiscal system without allowing informal brokers to become monopoly gatekeepers. A hypothetical neighbourhood account shows how rent changes can redistribute the benefit.

Model of a 1,000-household neighbourhood

An upgrading appraisal should test how higher rents affect the many households that do not own the improved assets. Consider 1,000 occupied rooms in a hypothetical Nairobi upgrading area, with 940 renter households, mirroring Mukuru's reported tenant share. Assume every renter pays KES 3,000 a month before the works. After drainage, lighting and a water connection, suppose rents rise by KES 800 a month. The extra rent received from 940 tenants would be KES 752,000 a month, or KES 9.024 million a year. At a 5 percent real discount rate over ten years, that stream has a present value of about KES 69.7 million. These are illustrative assumptions, not measured rents or a forecast for Mukuru. Inflation, vacancies, quality improvements and changes in the supply of rooms would alter the result. The resulting rent transfer must be distinguished from payment for genuine additional quality and maintenance.

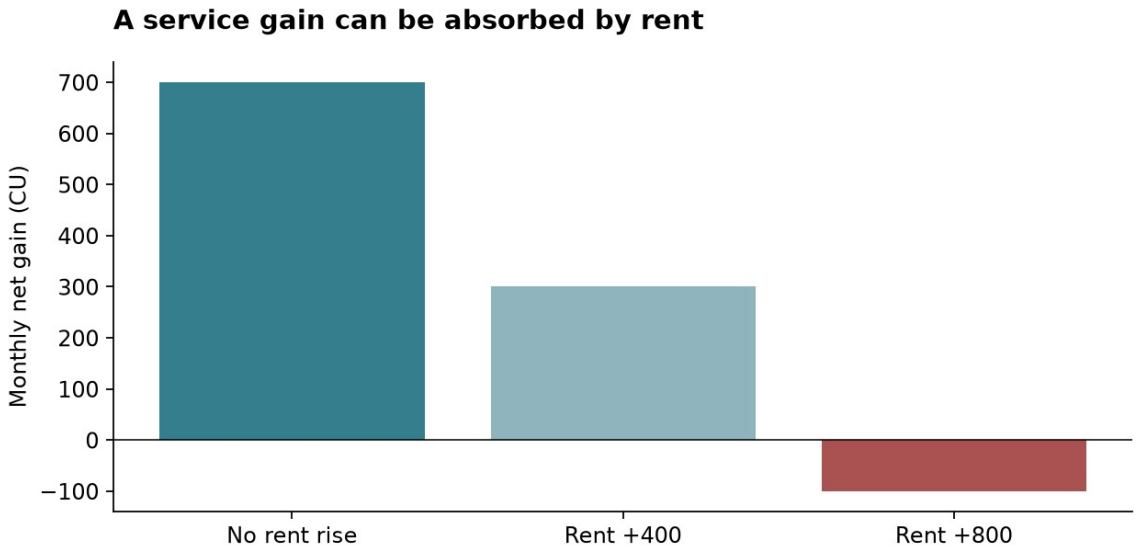
A connection count cannot establish affordability when rent changes and landlord investment are unmeasured. Estimate the rent increase attributable to each component. Suppose a tenant's water spending and monetised lost time previously totalled KES 1,000 a month, and the new service cuts that measured burden by KES 700. A KES 800 rent increase would raise the combined monthly burden by KES 100 before counting unmeasured health, safety, and reliability gains. Report cash savings and time savings separately. Landlords could be gaining, tenants could be gaining in non-cash ways, and the city could be receiving little of the value it created. A design that looks successful by counting connections can fail an affordability test. Policy should test alternative protections rather than presume a universal rent cap will resolve the trade-off.

Exhibit 14.2. Distributional outcomes of a public improvement

Illustrative outcome	Tenants' monthly monetised net benefit	Implication for the public agreement
Rent rises KES 800; service saves KES 700	−KES 100	Measured burden rises by KES 100; unmeasured health, safety, or reliability gains may remain.
Rent rise limited to KES 400; service saves KES 700	+KES 300	Tenant gains, but maintenance and landlord incentives need a funding plan.

Illustrative outcome	Tenants' monthly monetised net benefit	Implication for the public agreement
New competing rental supply limits rent rise to KES 200	+KES 500	Supply response allows more savings to remain with tenants.

All values are hypothetical sensitivity tests, not observed outcomes. Service savings combine water spending and monetised time; report the two components separately. The same service benefit may have distinct distributional effects because of rent regulation, competition and landlord bargaining power.



Teaching figure 9. Invented sensitivity: service savings of CU 700 per month, including monetised time, less rent increases of 0, 400 or 800. Excludes other health, safety and reliability gains; not an estimate for Mukuru.

Compare locally feasible tenant protections with their enforcement costs and supply effects. A time-bound rent-transition agreement may help existing tenants while the city adds serviced rental supply. A targeted cash payment can offset short-term shocks if rents are monitored and households can actually find rooms. A formal lease and a grievance system can lower arbitrary eviction risk. Each option has costs and enforcement problems. Permanent rent restrictions can protect incumbent tenants while affecting maintenance and entry into rental supply; relying only on market adjustment can expose current tenants to rent increases after public investment. Government must specify the sequence, costs, and enforcement arrangements for its chosen approach. San Francisco's evidence illustrates why incumbent protection and future rental stock require separate measures.

Rent regulation can protect current tenants while changing the housing available to future renters. After a 1994 change in rent-control coverage, protected tenants were almost 20 percent more likely to stay in their homes, while affected landlords reduced their rental stock by about 15 percent through conversion or redevelopment. A structural model in the same study estimated a 5.1 percent increase in citywide market rents from the reduced stock [R081]. These are estimates for one unusually expensive US city; they establish a mechanism, not a predicted effect for Nairobi or Mumbai. Assess incumbent retention alongside changes in the stock available to new renters. Mumbai's regulatory history provides a different setting in which to test those competing effects.

Rental reform should measure effects on vacant rooms and new entrants alongside sitting tenants. Tandel and co-authors describe how the city's long-standing rent-control regime favoured some sitting tenants while weakening incentives for maintenance and formal rental investment [R301]. Attempts to rewrite these terms meet organised resistance: incumbents fear losing their homes, landlords seek higher returns, and small tenants fear informal eviction even when a legal safeguard exists. A feasible reform sequence protects low-income incumbents during a defined transition, opens lawful space for modest new rental housing, and makes landlords responsible for basic safety and upkeep. A city should measure the effect on vacant-room supply and new migrants alongside the effect on current leases. Formalisation also changes security and investment incentives, with results dependent on the rights actually created.

Baan Mankong combines collective finance with difficult land choices

CODI's Baan Mankong model channels support through organised communities and accommodates on-site upgrading, reblocking, reconstruction and relocation. Its railway and Bangkok canal programmes show why a single beneficiary total is insufficient. Land needed for infrastructure or water management can constrain staying in place. CODI's 2019 canal account describes collective 30-year leases and both nearby and on-site solutions. Institutional reports explain the arrangements; they do not establish equal welfare gains for every member. [R462]

The design questions are who holds the lease, who owes the loan, how the cooperative handles arrears, and whether tenants and the poorest residents can enter. Record the distance of moves, tenure duration, full repayment and service charges, and the rights to exit or inherit. A community-held budget can change bargaining power, but collective liability can also transmit one member's difficulty to others. Date counts, distinguish national coverage from canal or railway subsets, and follow people excluded from membership. The transferable mechanism is resident control backed by finance and technical support, conditional on accountable representation and enforceable rights.

Tenure formalisation and housing security

Tenure interventions can affect investment and work, but the cited effects belong to specific programmes and populations. Erica Field's study of Peru's urban titling programme found that housing renovation increased by more than two-thirds relative to its baseline level after titles strengthened tenure security. Much of the additional investment came without bank credit. In separate work, she found that titling was associated with about 17 percent more household work hours, alongside reductions in home-based work and child labour [R302, R303]. These estimates draw on programme rollout patterns and comparison groups; implementation and local labour markets matter. A natural experiment in the suburbs of Buenos Aires points in the same direction. Galiani and Schargrodsky compared families whose land became titled with otherwise similar families whose former owners contested expropriation compensation. Titled households invested more in structures and their children's education. Credit access did not explain the main effect. The authors' analysis reported around 12 percent more built space and a 37 percent rise in a housing-quality index in the treatment group [R305]. They do not establish that every titling instrument is preferable to other forms of security.

Choose tenure instruments according to local claims and enforcement rather than presume that one title resolves every conflict. Households invest when their expected right to enjoy the return becomes credible. That assurance can come from different legal forms: individual ownership, collective lease, occupancy agreement or an enforceable right to return. A title can also make a plot mortgageable, saleable and attractive to outside investors. An owner may then sell voluntarily to meet a

crisis or be pressured to sell. If the tenant has no parallel right, formalising the owner's claim may raise the likelihood of the tenant's displacement. The choice of instrument should follow the problem. Where eviction risk prevents repairs, durable occupancy is valuable. Where the land has a dangerous flood exposure, indefinite tenure in place may entrench loss of life. Where a city owns well-located land, a long lease with affordability conditions can keep part of the uplift public. Where land belongs to a customary authority or several disputing families, a registry cannot adjudicate every conflict by assigning the first name it finds. Legal remedies can also change the redevelopment option itself.

A livelihood right does not erase the legal question of occupation

In Olga Tellis, India's Supreme Court treated livelihood as part of the right to life while declining to establish an unrestricted right to occupy pavements. The judgment addressed lawful procedure and the timing and conditions of removal. Its importance for housing appraisal is the need to examine livelihoods and procedure together; it should not be cited either as a blanket prohibition on eviction or as a blanket permission to clear settlements. Rights in a current case depend on its law, facts and applicable decisions. [R476]

Legal remedies and alternative redevelopment plans

Legal review can preserve alternatives and collective negotiating capacity before removal becomes irreversible. The 2009 court permitted removal only with detailed safeguards, including safe temporary accommodation and a process of engagement. By 2011 the state had adopted an in-place approach and the court discharged the removal provisions, retaining the costs order [R296, R298]. The case involved resident organisation, judicial proceedings, and a revised public development plan; the judgments do not isolate the contribution of each to the change. The case does not prove that every community can be rebuilt while fully occupied. It demonstrates that the supposed engineering necessity of removal can depend on a contestable project design. The Lagos evictions illustrate failures of resident protection. Amnesty International documented the forced eviction of more than 30,000 residents from Ilubirin and Otodo-Gbame during 2016–17, including destruction of homes, loss of livelihoods and actions taken in defiance of court orders [R300]. A Lagos High Court ruled against further evictions without alternative arrangements and called for consultation [R299]. Where courts cannot bind implementing agencies and land is highly valuable, compensation rules on paper offer thin protection. Eviction can destroy the collective organisation needed to negotiate a future project. Baan Mankong offers another way to recognise residents within land and finance negotiations.

Community-led redevelopment requires recognised negotiating authority and duties to include less powerful households. CODI reports that its community-led programme had covered 142,763 households by 2026 [R287]. Communities organise savings groups, negotiate collective tenure, choose among upgrading and nearby relocation, and borrow through cooperatives. A separate railway-side programme reported 3,229 supported households across 76 communities as of August 2025 [R289]. These are administrative programme counts, not estimates of net household welfare. They show what changes when the community becomes a contracting and planning party, rather than a list of future allottees. A coalition can still exclude people. A cooperative may prefer long-established members to late arrivals; male household heads may control membership; an owner-occupied solution may exclude renters who cannot service debt. Baan Mankong itself recognises the risk of borrowers falling behind after illness, lost wages or disaster, and has experimented with community housing insurance [R291]. The transferable feature is the way residents gain a recognised seat in land and finance negotiations,

coupled with duties to include the least powerful households. The political appraisal should identify losses that are otherwise absent from the project account.

Grootboom and provision for households in crisis

Grootboom requires a reasonable housing programme to address households in desperate need. In Government of the Republic of South Africa v Grootboom, the Constitutional Court held that the programme before it lacked reasonable provision for people with no access to land, no roof or intolerable housing conditions. Its reasoning requires attention to responsibilities, resources and implementation, and to short-, medium- and long-term needs. Statistical progress alone cannot establish reasonableness if the programme ignores those most urgently in need. [R499, paras. 39–44, 99]

The judgment does not create an immediate individual entitlement to a home on demand. It requires reasonable measures within available resources and a coordinated programme that includes crisis relief. My appraisal inference is that emergency accommodation and support need an identified authority, budget and route of access alongside long-term construction. A programme's aggregate home-years cannot justify excluding households whose legal protection requires action. The judgment establishes a legal standard; it does not establish later compliance or household outcomes. [R499, paras. 95, 99]

Enforce resident protection throughout delivery

Discrimination and rights of return

Resident protection should test unequal access by identity, tenure, and household position rather than price alone. South Africa's long history of racial dispossession placed many workers far from jobs; a relocation that is affordable to build can reproduce that pattern. In a Delhi online rental audit, landlords replied to 35 percent of upper-caste Hindu inquiries and 22 percent of Muslim inquiries. The same study found no similarly clear callback penalty for Scheduled Castes or Other Backward Classes [R308]. A migrant without older documents may also fail a redevelopment cutoff [R290]. In a redevelopment ballot, a formally equal vote can conceal unequal consequences: a property owner may gain an appreciating flat while a renter loses an affordable room. Welfare analysis must separate these positions. It should also test whether women can hold a tenancy, title or cooperative membership independently. A legitimate safety need still requires comparison with feasible less disruptive options.

Resident protection requires a defensible response to unsafe housing, including relocation where in-situ renewal is infeasible. Overcrowding, unsafe structures, contaminated soil and blocked drains impose severe costs, especially on children. In-situ renewal can sometimes be impossible at present densities or hazards. A government must then demonstrate the physical constraint, the alternatives considered, and how affected households will retain access to livelihoods and services. A claimed safety emergency should face independent technical review. The review should distinguish a documented safety need from redevelopment choices that can be addressed through less disruptive alternatives. Digital records should support that comparison without accelerating exclusion before due process.

Resident protection agreement

Recognise overlapping claims through locally valid procedures and specify remedies before redevelopment commitments. Fund interim rent, compensation, moving costs and ongoing services as part of the project, with provision for delay. The redevelopment authority must track claims and delivery; an independent mechanism must enforce remedies before irreversible clearance. Track original-

household retention or voluntary relocation, time to return, rent and travel burdens, livelihood recovery and unresolved claims. A city should begin by replacing the vague phrase "beneficiary household" with a list of people and enforceable claims. The agreement is a pre-investment contract among government, the project company, utility providers, recognised resident bodies and an independent grievance authority. It governs existing occupants during construction, the allocation of finished units and the cost of staying afterwards. It is a proposed operational design, subject to local law and fiscal capacity. International project standards offer relevant protections whose applicability must be stated accurately.

The World Bank's Environmental and Social Standard 5 distinguishes physical from economic displacement and addresses project-related livelihood losses, including for affected people without formal land rights. It applies to covered land acquisition and land-use restrictions in Investment Project Financing under the Environmental and Social Framework, with the scope and exclusions specified in the standard. The accompanying guidance explains implementation, including the risk that relocation improves tenure while worsening access to livelihoods. Governments considering similar protections elsewhere must establish the applicable legal requirements and funding. [R285] A staged operation can translate the applicable duties into site-specific decisions and funding.

A staged implementation sequence

Begin with a bounded operation, resident records, and specialist assessment of identified hazards. The responsible agency should first cost staff time, specialist work, consultation, and verification, then choose the number of sites it can handle. Set dates after that review. Disputed rights, procurement, or statutory approvals may extend the schedule; do not advance until the applicable legal and funding conditions are met. Stage 1: establish the denominator and the authority. Have the competent authority establish lawful protection against retaliation and contested removal while a full list of households, tenants, subtenants, businesses and vulnerable people is prepared. Create the parcel–structure–occupant link, with community enumerators, third-party checks and offline appeals. Collect sex, migration status, and disability information only where lawful and necessary, with informed consent where applicable, protected access, and a documented retention period. Screen for fire, flood, structural and contamination risks, then commission the specialist assessments indicated; publish hazards without revealing personal identities. The next stage compares actual alternatives and tests their financing and occupancy conditions.

Compare feasible options before tying financing and payments to the promised resident outcomes. Stage 2: test whether secure rights, shared services and financed repairs can make the occupied neighbourhood safe. Compare that route with on-site rebuilding, nearby rehousing, rental additions and distant resettlement. For a representative sample of households, record door-to-door job travel, fares, earnings, childcare, school and health access, commercial turnover, current rent and service costs. For every site, calculate welfare for the bottom 50 percent separately under at least two employment scenarios. Draw up a rent and vacancy baseline in nearby markets. Stage 3: finance the full agreement. Price household grants and shared services for an upgrading route; where a developer is involved, have an independent adviser calculate the developer's residual land value and the public value of land, density rights and new infrastructure. Price temporary accommodation, rental bridges, livelihood assistance, affordable commercial space, replacement assets, maintenance and operating funds. Set aside protected financing for these obligations before financial close. Test whether lenders will accept release of some payments only after verified return and occupancy. Rights, services, and remedies then need enforceable agreements before works proceed.

Make the treatment of residents enforceable within one auditable delivery plan. Stage 4: make rights enforceable. Publish eligibility categories and their evidence requirements; grant a dated appeal decision and a stay mechanism for contested removal. Sign a return or relocation offer with each

affected household, identifying the floor space, tenure, maximum initial housing cost, services, time frame, remedy for delay and whether a business can reopen. Provide separate representation for tenants, women, migrants and disabled residents, since their interests may diverge from those of title holders. Stage 5: contract construction and stewardship. Tender or amend works in phases that minimise forced movement. Require verified service capacity and safety inspections before occupancy. Set a condominium, cooperative or rental management structure and a funded reserve. Put the city, utility, estate manager, residents and developer under one auditable delivery plan, with specific remedies if a promised service fails. Public monitoring should follow the original households through the resulting moves and occupation.

A redevelopment result remains unknown without records of affected households' subsequent housing and livelihoods. Stage 6: create the public test. Launch the first phase only after an external verification confirms baseline coverage, compensation funding, agreed design, grievance independence and viable alternatives for those whose original homes are unsafe. Budget regular aggregate follow-up of the baseline cohort, including renters who left; choose intervals and duration from the expected effects, and report attrition; protect identifiable household records. A completed building without this record is an output whose social result is unknown. The evaluation should include people who leave, lose eligibility, or do not return.

Monitoring resident outcomes

Exhibit 14.3. Indicators for evaluating redevelopment

Outcome measure	Operational definition	Failure signal
1. Baseline coverage	Share of independently estimated residents, renters and enterprises rostered	Structures counted; tenants absent.
2. Tenure/security	Written enforceable claim and appeal available by claimant type	Approval status depends on a broker.
3. Neighbourhood retention	Share of original households within agreed travel-time catchment at 1, 3, 5 years	Success reported only for eligible owners.
4. Affordability	Housing + service + commute cost as share of disposable income, by decile	Free unit with unaffordable monthly dues.
5. Livelihoods	Real earnings, hours, travel time, lost trading days and business survival	Stable physical shelter, falling incomes.
6. Renter market	Rent distribution, vacancy, lease renewal and new room supply	Sharp rent rise after infrastructure works.
7. Distribution of uplift	Land sale value, rents, tax, developer return and net tenant benefit	Land gains opaque; service costs public.
8. Claims and fairness	Appeal time, reversal rate and outcomes by sex, caste/race where lawful	High rejection and no effective remedy.
9. Stewardship	Water/sanitation uptime, verified structural safety, funded reserves	Occupancy before networks or operations and maintenance.

Suggested management indicators; local baselines, legal safeguards and thresholds must be set before approval. All rates use the full baseline population as a tracked cohort.

The strongest test follows the people the project originally affected, including households that chose a different address, lost eligibility or moved out after rent increases. It compares outcomes with similar, independently sampled communities where possible. A randomised phasing experiment may be feasible for some infrastructure or rent-support instruments; it would be unethical to withhold emergency safety work from a known high-risk site. A credible evaluation can use staggered delivery, matched comparison locations, independent rent surveys and transparent attrition reports. The aim is a plausible counterfactual, not a neat causal claim from weak data. The cases can then inform a conditional approach to improvement rather than a general preference for clearance or preservation.

Improving neighbourhoods while protecting residents

Redevelopment should combine evidence of physical need with funded rights, alternatives, and follow-up of affected residents. Their practical use is to test whether affected households have enforceable claims, usable alternatives, and access to decisions before redevelopment proceeds. Record the remedy and responsible institution for each unresolved claim. Check the omissions that can distort redevelopment appraisal: tenants absent from title records, lost customers excluded from compensation, commuting costs beyond the relocation grant, and rent increases after service improvements. Record these effects alongside land, construction, and infrastructure costs. Residents need a route to challenge both their own record and the assumptions used to assess the project. A city must create space for newcomers as well as protect people already there. Incumbent rights can be drawn so tightly that no new worker can enter, and redevelopment can be carried out without adequate protection, displacing low-income residents. A durable settlement gives existing residents a fair claim, adds competing housing supply, assigns the costs of services, and lets households choose between credible ways to improve their lives. It also accepts that some dangerous sites must change, with evidence, compensation and workable alternatives. Refugees, displaced households, and host communities require additional attention to durable access outside designated camps.

Refugees, displaced households, and host communities

Urban displacement responses should follow housing outcomes and unresolved claims across renters, hosts, and informal settlements. Start by checking the rights that apply locally to residence, work, renting, assistance, and documentation. Distinguish refugees, internally displaced people, other migrants, and host households; their legal positions and assistance channels differ. Assess the rental market, available services, and host-community pressures before choosing rental assistance or construction. UNHCR's integration guidance treats housing access as a combination of suitable accommodation, support, information, and links with housing providers. Its resettlement context is not a universal model for every displacement emergency. [R309] The proposed local task is to establish lawful tenancy evidence, a safe complaint route, access to schools and work, and a plan for assistance expiry. Check rents and evictions for both recipients and comparable host households. Keep protection records separate from public housing lists and restrict onward sharing. Where documents were lost, obtain specialist advice on acceptable alternative evidence. After a disaster, distinguish temporary shelter from repair, rebuilding, and voluntary relocation; verify land claims and fund the transition before temporary support ends. Report durable housing outcomes and unresolved claims, not just emergency places provided. Fieldwork must track those households at their destinations as well as within the original project boundary.

Protecting existing residents is part of a wider inclusion task. Chapter 15 also asks who can enter well-served neighbourhoods and whether households can remain and use their opportunities.

Selected readings

Joe Slovo judgments [R296, R298]. Read the 2009 and 2011 decisions together so that the later order qualifies the earlier record; they are not interchangeable summaries of relocation law.

Grootboom judgment [R499]. Read the reasoning on reasonable measures and urgent need; it does not promise an immediate dwelling to each claimant.

Collective Housing in CODI [R462]. Use the account to examine leases, organisation and collective housing; institutional reporting does not establish net household welfare.

Judgment and transfer conditions

Follow the original residents and their rights through redevelopment.

Confidence: High for the accountability requirement; programme welfare effects are heterogeneous. Revisit trigger: Independent cohort evidence changing the balance of gains, losses and remedies.

Transfer improvements to occupied neighbourhoods with secure rights, funded services and finance residents can use. At roughly ten times the pilot scale, test retention, livelihood recovery and claims for the bottom 50 percent, including tenants. At roughly one hundred times the scale, require independent remedies and finance beyond construction. Replacement housing must have a demonstrated need, a viable location and funded protection for every affected household.

Exercise

Construct a resident cohort register that includes tenants, absent residents and rival claims. Design follow-up for people who leave, and explain why a volunteer lottery cannot replace that cohort.

15. Inclusive Neighbourhoods and Access to Services

What prevents households from entering, remaining in and using a well-served neighbourhood?

All three priorities must give households in the bottom 50 percent usable access to neighbourhood services. This chapter tests entry (Test 1), location (4) and rights (7), including the conditions behind Singapore's public provision. Make serviced neighbourhoods accessible to households who build, rent or require continuing assistance. Usable land and more rooms do not by themselves ensure entry, fair treatment or affordable charges. Test school access, everyday mobility, landlord behaviour and retention alongside supply. Assess Singapore's land powers, finance, service institutions and displacement costs before deciding what can transfer. Include people outside programme registers and households unable to remain.

Choose the inclusion strategy according to the barrier households face. Enabling entry into well-served areas, improving underserved neighbourhoods with resident protection, and providing relocation where safety or household choice requires it solve different problems. Test landlord acceptance, tenant retention and access to livelihoods within the chosen route. The location evidence helps establish which opportunities the programme can plausibly improve.

Define inclusion through usable neighbourhood opportunities

Access to neighbourhood opportunity

How location affects household outcomes

Location affects households through work, schools, safety, travel, stability, and social networks, with effects that differ by age and disruption. These channels work at different speeds and vary across adults and children. A higher average income in an improved area is insufficient evidence of benefit if poorer residents have left. The US Moving to Opportunity experiment provides evidence that neighbourhood exposure can affect children's later outcomes. For children younger than thirteen at random assignment whose families used an experimental voucher, estimated earnings in their mid-twenties were 31% higher than the relevant control mean. Results for older children were much weaker and could be negative. The age pattern supports attention to exposure and disruption; it does not establish that every low-poverty destination works or that forced relocation is justified. [R159] Ahmedabad's relocation evidence shows why a better building can fail to deliver gains through those channels.

Improved physical housing does not establish improved livelihoods when relocation weakens access and support networks. Its relevance is not a universal argument against moving. A household must be able to sustain the move and use what the destination offers. Voluntary mobility and in-situ improvement should be compared with the costs of losing existing connections. [R161] Inclusionary housing seeks a different route by securing affordable homes within better-served areas.

Inclusionary housing and school access

Montgomery County's outcomes reflect a combined institutional and development arrangement rather than a transferable percentage requirement. Its housing authority also acquired dispersed homes for very-low-income residents. A moderately priced unit may still be unaffordable to the poorest household, so a separate public-housing route may be needed. The policy history and requirements have changed over time, so a percentage taken from one period should not be treated as a timeless design rule. [R417] Heather Schwartz followed children in dispersed public housing during 2001–07, using the housing-assignment process to compare school environments. Children attending the lowest-poverty schools reduced their initial maths achievement gap with non-poor peers by about half by the end of elementary school. The study found weaker benefits as school poverty increased; not every estimate was equally precise. Housing stability, school access and exposure operated together. The result is not an estimate of the effect of adopting an inclusionary percentage in another city. [R415] Comparisons with other inclusionary programmes help identify the feasibility conditions behind that arrangement.

Inclusionary obligations need predictable rules and sufficient development value to fund the intended access. HUD's comparison of Montgomery and Fairfax counties found that both programmes added affordable units, while emphasising predictable rules and economic feasibility. Programme age, market conditions, design, and exemptions differed. The comparison does not establish that adopting the same inclusionary percentage elsewhere would produce the same result. Evaluate actual completions, household access, and project viability under local conditions. [R420] These findings suggest that inclusionary housing needs viable development, predictable requirements, durable affordability rules and institutions that connect eligible households to useful services. Public acquisition and school access helped reach very-low-income families in Montgomery County. The studies do not identify a separate causal effect for each condition. A city should test where that chain could fail: too few viable projects, exemptions that reduce delivery, units beyond the poorest households' means, or inadequate school and service access. These are local appraisal questions, not all effects established by the two-county study. Set affordable-housing obligations against the development value public action creates. Model several building types, land prices and market conditions before choosing a percentage. Publish the assumptions and allocation rules. Where the available value cannot fund the intended access, provide explicit subsidy or choose another feasible approach. Redevelopment evidence adds a further test of whether improved neighbourhoods benefit the households exposed to them.

Redevelopment and access to improved neighbourhoods

HOPE VI evidence should distinguish estimated outcomes from the proposed peer-interaction mechanism and the study's design limits. A January 2026 HOPE VI working paper uses matched comparisons and exposure analyses to study revitalised US public housing. Its main child results concern families moving into developments after revitalisation. The study estimates better later outcomes for these children, but no detectable causal improvement in incumbent adults' earnings. The paper cites earlier programme research reporting that 27.6% of original households had returned by 2014; this is a programme return statistic, not the new study's causal estimate. The evidence therefore supports benefits for children gaining access to redeveloped places; it does not establish that redevelopment improved the welfare of all displaced residents. The authors present increased interaction with nearby peers as an important mechanism, rather than a separately randomised treatment. [R421]

Housing displaced people near jobs

Connect housing decisions to local livelihoods

Housing for displaced people should provide secure shelter and practical access to local jobs. For internally displaced people (IDPs) settling in cities, assess the home together with the work, services, and support networks available from that location. Emergency accommodation may be essential for immediate safety. Longer-term decisions should compare rental support, neighbourhood upgrading, and new construction against households' ability to earn and meet recurring costs. Apply the same test to low-income residents already living in the receiving neighbourhood.

Secure tenure can improve housing stability while leaving access to jobs unresolved. Samuel Hall's 2026 evaluation of Norwegian Refugee Council housing, land, and property programmes in four Somali cities used 27 key-informant interviews and 16 focus groups with 96 participants. In Garowe's Hoodale settlement, the evaluation documented housing and tenure support alongside roads, water, lighting, a school, and regular transport connections. Participants reported better shelter and safety, but also continuing weaknesses in access to markets and income opportunities. In Mogadishu, participants identified paying rent after subsidy withdrawal as a continuing constraint. [R442] These are qualitative findings, without an untreated comparison group or an estimated employment effect. They identify operating conditions to verify: the services and transport must function, households must be able to reach customers or employers, and rent must remain affordable after support ends. Completed dwellings and tenure documents should be recorded separately from sustained livelihood outcomes.

Refugees and internally displaced people require different legal checks within the same neighbourhood assessment. IDPs remain within their country's borders; internal displacement does not confer refugee status. Refugees cross an international border, and their recognition, residence, and access to employment operate under a different legal framework. OECD and UNHCR document barriers involving registration, identity papers, and access to services for both groups. [R443] Establish the applicable rules before offering a tenancy, training place, or employment referral. Help households obtain missing documents without treating their absence as evidence that the household has no rights or needs.

Map actual earning opportunities before selecting land or a housing package. Ask households where they work, seek work, sell goods, obtain supplies, and receive help with care. Check employers' vacancies and recruitment requirements, alongside the places where casual labour and small businesses operate. Compare those locations with available homes using actual fares, journey times, service hours, and safe walking routes. A short distance on a map can conceal an unaffordable or unreliable journey. Assess women's access separately, and include people with disabilities and households whose members cannot work. Income support remains part of the response where employment is unavailable or inappropriate.

Combine secure housing with access to work

Compare housing options using the household's full recurring budget and its ability to remain. Rental assistance may offer access to established neighbourhoods where suitable vacancies exist. Repairs or safe extensions may add rooms without requiring a move. New serviced plots or completed homes may be appropriate where tenure, infrastructure, and access are credible. Test each option against rent or repayments, water, energy, transport, care, and income interruptions. Require evidence of usable employment access before selecting a remote site because its land is inexpensive. Where relocation is necessary for safety, fund the connections and livelihood support needed at the destination before occupation.

Secure occupancy should be designed alongside any public investment in the dwelling. Record who owns, occupies, rents, or uses the property, including tenants and households with informal agreements. Choose locally enforceable arrangements that specify charges, notice periods, repairs, and dispute resolution. Legal assistance and a written tenancy may be more immediately useful than waiting for an ownership transfer. Check women's interests and competing claims before recording rights. For publicly supported landlord improvements, specify the agreed period of affordable occupancy and monitor compliance. Assistance at the destination should preserve lawful claims to property left behind and avoid compelling households to abandon a future voluntary return. For IDPs, the UN Guiding Principles provide a benchmark for property protection and voluntary return or resettlement. [R446]

Transport and care arrangements belong in the housing programme's operating plan. Verify that buses or other affordable services run when shifts begin and end, and that routes remain usable during seasonal disruption. Budget for safe walking access, lighting, and necessary service improvements. Check the cost, hours, capacity, and location of childcare and schools with caregivers themselves. A training offer or vacancy is of limited practical use when the household cannot arrange the journey and care responsibilities. Identify the agency responsible for each gap, its funding, and the date by which the service will operate.

Employment support should respond to identified demand and existing skills. Assess prior work, literacy, recognised qualifications, and the skills needed by local firms before commissioning courses. Where justified, combine skills recognition or short training with recruitment, apprenticeships, transport, and care support. Include safe, lawful routes for home-based production, trading, and other small enterprises rather than assuming that every household will obtain a salaried job. Consider workspace, storage, electricity, customers, and access to supplies. Apply labour protections, and measure sustained work and earnings after assistance ends. Course completion and temporary construction employment should be reported separately from lasting livelihood outcomes.

Expand affordable supply and services for both populations

Colombia's experience shows why housing-market monitoring must distinguish income groups. Emilio Depetris-Chauvin and Rafael Santos studied IDP inflows and rents in 13 Colombian cities during 1999–2014. Their analysis estimated rising rents for low-income housing and falling rents for high-income housing. Their working paper also found a response in construction licences outside the social-interest category, but found no statistically detectable response for social-interest housing. [R444] The study uses an instrumental-variables strategy; its interpretation depends on the validity of that design. It does not establish that additional building will reach displaced households. The planning implication is to track the price and availability of homes they and poorer established residents can actually occupy.

A randomised trial in Jordan shows why rental relief should not be assumed to produce employment gains. Tamim and colleagues evaluated housing assistance across 2,870 Syrian refugee households in Irbid and Mafraq. The programme combined roughly a year of rent support with housing improvements, generally in existing homes; it did not test moving families closer to jobs. Take-up was 33% among surveyed treatment households, with housing eligibility and landlord reluctance among the obstacles. The study found lower housing expenditure and some short-run physical improvements. Follow-up one to two years after assistance ended showed no detectable sustained economic improvement and a persistent adverse effect on children's socio-emotional well-being. Host-neighbour attitudes also worsened, although a causal link to the child outcome was not established. [R445] Pandemic-period implementation, low take-up, and differential attrition limit interpretation. Before scaling rental support, verify landlord participation and eligibility, coordinate with other assistance, monitor children and neighbours, and test the employment component separately.

Public support should address the receiving neighbourhood's housing and service constraints. Pair household assistance with a local assessment of vacant homes, safe conversions, landlord repairs, serviced land, and infrastructure capacity. Set transparent eligibility rules that include vulnerable established residents, while recognising displacement-related losses and protection needs. Track rents, overcrowding, evictions, and service access for both populations. If assistance increases demand while affordable vacancies remain scarce, review supply measures and programme terms rather than assuming that a larger payment alone will solve the shortage. Treat these as locally testable responses, not interventions whose effectiveness the two studies have already demonstrated.

Assign continuing responsibilities before emergency funding ends. National authorities, municipalities, service providers, and aid agencies should agree who funds housing support, maintains infrastructure, resolves occupancy disputes, and updates population estimates. Publish the division of responsibilities and a funded transition plan. Involve displaced and established residents in reviewing performance, with an accessible complaints process. Use the book's programme tests to follow household costs, tenure stability, usable services, and sustained livelihoods after occupation. Report outcomes for people who leave as well as those who remain. Singapore offers a different institutional setting in which to examine sustained responsibility for neighbourhood provision.

Examine how Singapore coordinates neighbourhood provision

Singapore joined housing provision to neighbourhood access

Singapore offers an institutional example of housing delivered at scale with continuing responsibility for neighbourhoods. Housing & Development Board (HDB) flats accommodated about 3.19 million citizens and permanent residents on 31 March 2024. That figure excludes non-residents and should not be presented as coverage of everyone living in Singapore. [R422] My reading of the history is that other cities should examine the functions connecting production, household access, and continued occupation, then establish who can perform each under local conditions. Its history began with a rental supply response before household savings became central to purchase finance.

My conversations with Cheong Koon Hean highlighted the links between housing, services and public space. This is my recollection of discussions during her time as HDB chief executive, rather than a quotation or an evaluation. The scale is documented separately: HDB reported more than 1.25 million flats built and 76.4 percent of the resident population housed as at 31 March 2024. [R123] The practical question for another city is which institutions can sustain the same connections.

Rental construction preceded CPF-financed purchase

Singapore's transition from basic rental construction to purchase finance depended on wider institutions and household savings conditions. HDB began in 1960 by building basic rental flats. The Home Ownership for the People Scheme followed in 1964. In 1968, households gained permission to use Central Provident Fund (CPF) savings for housing. [R423] Initial construction therefore preceded this financing channel. The chronology supports retaining rental provision and other ways to meet urgent needs while institutions for ownership finance develop. It provides no basis for requiring every household to become mortgage-ready before receiving adequate housing. CPF linked housing payments to employment-related savings. Under the current employee system, employers remit the contributions due for eligible citizen and permanent-resident workers, including the employee share where applicable. Coverage includes qualifying part-time and casual employees. The self-employed have a different compulsory contribution arrangement centred on MediSave. [R426] The mechanism to examine is

reliable contribution collection. Part-time work alone does not imply exclusion from Singapore's employee system. For households with irregular earnings in India and African cities, I would compare rental assistance, serviced plots, and incremental construction finance against a finished-flat mortgage. Repayments should be tested against income interruptions and essential consumption. Diverting more savings into housing also requires an explicit assessment of retirement adequacy. Production capability also had to develop alongside the financing system.

Procurement helped develop construction capability

Procurement can help build contractor capability when the programme sustains learning, standards, and credible demand. A contemporaneous ministerial speech records that HDB introduced its core-contractors scheme in January 1982. Selected firms received improved terms and a guaranteed workload in exchange for commitments on annual production, professional staffing, and worker training. HDB also awarded prefabrication contracts to overseas firms while training Singaporean engineers and technicians. [R427] These are documented institutional arrangements, without an identified estimate of how much each increased output or reduced costs. The reciprocal commitment is potentially adaptable: a funded pipeline gives firms a reason to invest in equipment and skills, while contracts specify what they must deliver. That is a mechanism to test locally. Guaranteed work can also protect incumbents, so renewal must depend on independently checked performance and continued competition. Industrialised methods require sufficient demand to sustain the investment. Land assembly supplied another part of the system, with substantial distributional consequences.

Land assembly requires a distributional account

Singapore's acquisition arrangements reduced public costs partly by limiting compensation, a historical choice later changed. In his 11 April 2007 parliamentary speech, Deputy Prime Minister S. Jayakumar explained that compensation had been capped using the lower of values at the acquisition date and an earlier statutory date, with further restrictions. He described the caps as contentious and proposed compensation at prevailing market value. [R428] The Singapore Land Authority's published process now provides market-value compensation, an inquiry at which owners can submit claims, and an appeal route. [R429] Those fiscal savings must be recorded alongside the losses borne by people surrendering property.

Singapore's clearance record and resettlement costs

Singapore's clearance record also concerns people who did not own the land. The Centre for Liveable Cities' 2019 administrative history records 866 clearance cases in 1957–1959: 344 moved to rural resettlement areas, 185 to Singapore Improvement Trust accommodation and 337 found their own accommodation. These are case counts, not a representative welfare survey. The account describes reluctance to move because replacement housing could be farther from work and carry higher rents and service charges. [R491, pp. 30–31]

The later administrative series records a much larger clearance programme but cannot be read as a household welfare census. The Centre for Liveable Cities' appendix reports 282,912 HDB clearance cases in its 1960–1990 series: 2,961 assigned rural resettlement, 155,711 HDB accommodation and 124,240 finding their own accommodation. Its footnote includes residential, industrial and commercial accommodation. Cases therefore cannot be equated with displaced people or households, and finding one's own accommodation does not establish either adequate rehousing or homelessness. These categories require follow-up evidence on costs, security and livelihoods. [R491, pp. 134–135]

Better physical housing could bring recurring costs that some resettled households struggled to meet. The same history records three-year rental rebates introduced in 1971 and an account of

families returning from HDB accommodation because living costs were difficult to bear. It also describes improved sanitation, electricity and neighbourhood amenities, and changing assistance for displaced farmers. The record therefore includes gains, hardship and policy adjustment. It does not establish that every affected household benefited. [R491, pp. 32–37]

Singapore's clearance process combined assistance and appeals with powers to compel departure. The official history describes a Resettlement Appeals Committee, a one-month Notice to Quit and court warrants to dispossess occupants. It says warrants were rarely exercised and extensions could be granted; it also recounts removal of doors and demolition around remaining occupants to press departure. In the river clean-up, it records physical eviction and demolition after warrants, within an operation covering 46,537 residential, business and farming cases during 1979–1987. Those cases are part of the broader clearance history and should not be added to the HDB total as a separate population. [R491, pp. 22–23, 72–75]

Resettlement also changed which livelihoods could continue. The 1979 policy ended replacement farmland allocations; subsequent support included cash and priority access to premises for other trades. The history records additional compensation for some farmers displaced a second time. [R491, pp. 50–53] These adjustments show why replacement accommodation and restored earning capacity require separate evidence. In assessing transferability, document consent, disputed eligibility, access to an effective remedy and the feasibility of livelihood alternatives. Administrative completion of a clearance establishes neither voluntary agreement nor recovery of the original household's standard of living.

Historical research cautions against treating the category "squatter" as a complete account of residents' rights or contributions. Loh Kah Seng's archival synthesis, published by Singapore's National Library in 2014, notes that many informal residents paid rent and built their homes with landowners' permission. It examines the work and social relations sustained by those settlements. This historical interpretation complements the administrative record; neither supplies a single causal estimate of the net welfare effect of clearance. [R492] The transferable requirement is to follow renters, businesses and people who find their own accommodation, including their subsequent housing costs and livelihoods.

The fiscal saving from a compensation restriction has a distributional counterpart: some of the cost falls on those surrendering property. That is an inference from the valuation rule, and it should be reported alongside the housing delivered. Acquisition also requires attention to tenants, businesses, and residents whose claims are absent from title records. For adaptation, the World Bank's Environmental and Social Standard 5 provides a published safeguard benchmark covering displacement avoidance, replacement-cost compensation, livelihood restoration, and specified assistance to eligible people without legally recognised land claims. Its entitlements differ by claim and loss category. [R430] These standards govern covered World Bank Investment Project Financing; they are not a description of every country's law. Housing access also depends on the shared spaces and everyday institutions created within the neighbourhood.

Shared spaces complement affordable entry

My experience in Singapore and Tharman's Brookings discussion draw attention to shared neighbourhood life alongside affordable entry. I lived in Singapore for ten years, and I remember Tharman Shanmugaratnam's public discussion of housing and inclusion at Brookings. On 30 November 2015, the then deputy prime minister said, in the institution's uncorrected transcript, "It must be attractive to the middle class and the upper middle class to want to live in that neighbourhood." His argument connected mixed-income housing with public spaces that different income groups would want to use. Earlier in the discussion, he described rental blocks near larger flats in his constituency, with

shared amenities. [R431] This is a policymaker's account of design and experience. It does not establish that proximity alone raised incomes or produced friendships across social groups. My inference is that mixed-income housing needs shared services residents can actually use. Fees, inaccessible routes, or restrictive admission rules can defeat that purpose. The neighbourhood studies earlier in this chapter address the evidence on usable access and exposure. Income mixing and ethnic allocation rules nevertheless need separate evidence and distributional review.

Allocation restrictions should be assessed for their distinct objectives, household costs, remedies, and legal basis. Singapore's Ethnic Integration Policy sets limits at block and neighbourhood levels. HDB acknowledged in its 2021/22 annual report that these limits could make it harder for some owners to sell at a reasonable price, and announced buyback assistance for eligible constrained owners. [R432] That documented cost belongs in any assessment of the policy. Cities considering ways to reduce segregation should first appraise locally lawful options such as dispersed affordable rental homes and common services. Any allocation restriction needs a distributional assessment, a remedy for affected households, and legal review. Estate technology offers a different means of improving daily conditions that should be judged through operating results.

Testing technology through estate operations

Greenprint illustrates environmental improvement of existing estates with operating teams needed to act on the technology. Singapore's Climate Action Plan records a 2012–15 pilot covering 38 blocks and about 3,200 households in Yuhua, followed by extension to Teck Ghee. This establishes implementation and reach; it does not, by itself, measure the effect of every feature on household welfare. [R438] The Smart HDB Town Framework announced in 2014 brought together planning, environmental monitoring, estate operations, and in-home infrastructure. It proposed modelling combinations of solar power, lighting, greenery, water, and waste systems, and using sensors to inform maintenance. The announcement distinguished proposed trials from established results. The transferable approach is to compare combinations by their cost and performance, then test them under operating conditions. Fund the team that will respond to sensor findings before purchasing the equipment. [R439] Later programmes should be assessed separately rather than attributed retrospectively to the original pilot.

Different HDB initiatives address distinct service and environmental problems and require their own maintenance arrangements. HDB's February 2025 announcement reported results from cool-coating trials on about 130 blocks in Tampines, begun in 2021, and set out an extension to existing estates by 2030. It also announced electrical sub-meters for monitoring common services such as lifts, pumps, and lighting. These are an agency-reported pilot and a rollout commitment, not proof that all estates already received the improvements. [R440] Nature also has an operating role. HDB's account of its Biophilic Town Framework considers people, plants and animals, outdoor comfort, water, and soil together. Its Punggol examples treat greenery as part of neighbourhood design rather than decoration alone. [R441] For another city, the practical questions are which routes need shade, where water must drain, who maintains planted areas, and whether residents can safely use them. Do not adopt site-design features without funding their maintenance. An adaptation should start with one locally defined operating problem.[R440][R441]

In adapting these examples, I would start with one service problem and its operating budget. For overheated common space, compare shade, ventilation, and surface treatment before buying sensors. For pump failures, first establish who receives an alert, holds spare parts, and can authorise a repair. Ask the operator and residents to verify the result under actual use. The Singapore examples show an institutional approach and successive trials; they do not justify purchasing an entire smart-town package. That operating discipline must continue through the funding of repairs and renewal.

Maintenance is part of the housing commitment

Singapore's continuing housing commitments include both new supply and asset stewardship. URA's Master Plan 2025 places homes near job nodes, transport and amenities; Bidadari was planned for about 10,000 households with links to two MRT stations. [R128] HDB's FY2024 account reports S$532 million in upgrading and S$570 million in ancillary residential functions; its 2025 completions were about 19,600 flats and its 2026 programme planned another 19,600 BTO flats. [R129, R124] These are dated institutional accounts. Their relevance is the continuing commitment to services and renewal alongside construction.

Estate management is part of the housing commitment and requires lifetime support for necessary services and renewal. The Centre for Liveable Cities documents separate operating, sinking, and lift-replacement funds, supported by resident charges and government grants. [R433] Chapter 11 examines this division of responsibilities. The transferable requirement is to assign and fund future obligations before occupation. A city should cost routine services, major repairs, and component replacement, establish who collects and controls the money, and make accounts available to residents. A reserve percentage cannot establish adequacy without those costs and revenues. Ownership also has a defined term. A typical new HDB flat carries a 99-year lease, with ownership rights lasting for that period. [R434] A comparison with freehold housing must account for that difference. For any adaptation, households need understandable information about tenure, resale restrictions, maintenance charges, and the treatment of major renewal. Public support should be assessed across the life of the asset, including assistance for residents unable to meet necessary service costs. Other countries can adapt these functions through their own land and tenure institutions.

Adapt the functions to local rights and incomes

India can use existing land instruments to secure public functions, provided reserved land is actually financed and operated. Ahmedabad's town-planning schemes pool and reconstitute land, deduct space for roads and public purposes, and return smaller serviced plots to owners. A 2020 World Bank case study describes consultation and valuation procedures and also notes procedural delays. [R435] This provides an institutional example of assembling serviceable neighbourhoods through land readjustment. It does not establish that all occupants benefit. As Chapter 2 explains, adaptation requires enforceable treatment of tenants and other non-owner claimants, credible infrastructure finance, transparent valuation, and a workable dispute process. Reserved land only provides an amenity when someone finances and operates it. African upgrading programmes may perform similar functions without requiring immediate purchase of a finished flat.

Upgrading can preserve access while improving services, with protected relocation where hazards cannot be mitigated. South Africa's published upgrading programme combines community participation, basic and permanent services, and tenure security, covering both in-situ upgrading and relocation. [R436] This is evidence of a policy design, without establishing its outcomes. Where a site can be made safe and serviced, I would compare upgrading with relocation using household costs, livelihood access, tenure protection, and municipal operating requirements. Where hazards cannot be mitigated, relocation requires the safeguards discussed above and a destination residents can use. Both approaches need a realistic account of municipal and national powers.

Municipal powers and national institutions

A municipal housing agency cannot reproduce powers and fiscal resources held by a city-state through organisational design alone. Singapore's planning system coordinates housing, transport, utilities, and national land requirements. [R437] CPF rests on national legislation and

contribution collection from covered wage employment. [R426] Its land-acquisition history included compensation rules that an Indian or African municipality cannot simply adopt. [R428] Public finance also remains essential: HDB's 2023/24 report states that a government grant covers its annual deficit, while estate-management grants supplement resident charges. [R423, R433] My judgment is to establish those land, service and financing functions first. Direct construction needs well-located public land and institutions able to deliver and maintain the homes. Municipal adaptation needs a division of powers. Where local law permits, land readjustment can assemble serviced neighbourhoods, community upgrading can improve existing settlements, and contracts with funded reserves can assign maintenance duties. These substitute for particular functions of the Singapore system. A CPF-style savings mandate requires the government responsible for employment and pension legislation. Public-land transfers need the consent of the competent land authority. Where affordable resident payments and municipal revenues fall short of housing and renewal costs, any required national or state subsidy must be secured before commitments are made. A new municipal housing agency cannot create those legal powers or fiscal resources through its organisational design. The resulting neighbourhood should therefore be tested through residents' daily access and experience.

Inclusion must be measured outside the preferred register

Singapore demonstrates the importance of linking housing, services, finance and long-term management. Its institutional achievement does not by itself answer who bore the costs of land assembly and clearance, or who remains outside access rules. China raises the same distinction at a far larger scale: an extensive housing stock can coexist with unequal service eligibility for migrants. Compare entry, retention and everyday use of schools, transport and public space, not only the physical integration of a master plan.

Housing success should be judged for displaced and untraced residents as well as those who receive new homes. Publish the original population and the population now served. Distinguish owners who received compensation, tenants who obtained alternatives, and people who left without a recorded destination. The missing group is often the one whose experience could reverse the conclusion.

Testing social integration in daily use

Income or tenure mix is a design input, not proof of integration. Examine whether residents can use the same entrances, gardens, play spaces, schools, and community facilities on affordable terms. Compare lease conditions and service charges across tenures. Separate entrances or restricted amenities can preserve hierarchy inside a nominally mixed development. Specify equal access in allocation and management agreements, provide a remedy for exclusion, and test actual use with residents after occupation. Race, caste, religion, class, gender, and disability can affect access even where formal eligibility is identical. Test the particular barrier locally through confidential interviews, application outcomes, and lawfully designed paired application audits where appropriate. Collect sensitive identity data only with a justified purpose and protection. Do not impose a universal demographic quota or assume that living nearby eliminates discrimination. Measure safety, equal service access, resident choice, and sustained occupancy alongside the income mix. Evidence on nearby households adds a distinction between neighbourhood change and gains for the original residents.

Neighbourhood effects should be measured for existing tenants and new entrants separately. Diamond and McQuade's study of Low-Income Housing Tax Credit developments estimated nearby house-price increases of 6.5 percent in low-income neighbourhoods and decreases of 2.5 percent in higher-income areas, with different population and amenity effects. These are setting-specific neighbourhood effects, not a universal forecast or a complete measure of tenant welfare. [R358] The

comparison helps explain why nearby owners may respond differently to the same instrument. It does not justify excluding affordable housing from prosperous areas. Read that evidence alongside Montgomery County, Seattle, and the relocation comparisons above. Investment in a poorer neighbourhood and entry into an already prosperous one serve different households and can both be worthwhile. Protect existing tenants during improvement, open usable opportunities to newcomers, and report both outcomes. Their interests can conflict and require an explicit distributional assessment.

Adapt the approach and measure who can enter and remain

Who gains and who loses

Inclusion policy should assess residents' displacement risks and the barriers they may impose on prospective entrants. Distinguish owners seeking to preserve asset values from tenants seeking security, and distinguish legitimate safety concerns from rules whose practical effect is exclusion. Future residents need representation through citywide plans, transparent capacity requirements and allocation criteria, because they cannot all attend today's neighbourhood hearing. A mixed-income programme requires agreements among owners, developers, municipalities, residents, and service providers. Owners may accept more housing in exchange for reliable services and predictable rules. Developers need viable returns and timely approvals. Municipalities need resources for additional residents. Low-income households need enforceable affordability and access. Schools and transport providers need capacity before demand arrives. None of these obligations should depend on an unrecorded future negotiation. South Africa's contrasting employment studies, discussed in Chapter 9, show why location and household circumstances must be examined rather than presumed. India's relocation evidence adds the value of networks. These findings do not identify a single universal distance threshold. They require project teams to measure usable access, lost livelihoods and care responsibilities before treating a dwelling allocation as an opportunity gain. [R348, R161] Technology can help identify access gaps but cannot resolve these distributive choices on its own.

Technology and access

Digital records can reveal exclusion and service failures if people can contest errors and obtain repairs. Ghana's trial shows why collection gains and reports of bribes belong in one evaluation. Neither mapping nor automated eligibility establishes a person's legal entitlement. Keep accessible applications, independent review and remedies alongside administrative efficiency. [R222]

Designing and expanding an inclusive programme

An inclusive programme should compare voluntary mobility, improvement, and protected redevelopment through enforceable household access. Seattle's experimental search-support evidence supports tailored help in its setting; it does not establish that information alone or an underfunded national counselling service will reproduce the result. Review landlord participation, local supply and the fiscal cost of sustained access. [R114] For improvements in existing neighbourhoods, agree tenant protection, service finance and eligibility before works raise expectations and land prices. Follow original households even after they move, distinguishing voluntary moves, household changes and displacement. Where local rights cannot protect a tenant's access, price that limitation into the decision and provide a workable remedy. For unavoidable relocation, demonstrate the safety case and compare feasible alternatives. Cost interim housing, travel, school continuity, livelihood recovery and delays. A signed compensation receipt does not establish restoration of opportunity. Give households credible information and enforce the agreed terms before irreversible clearance. Accessibility and care requirements must then be tested in daily use by different residents.

Accessibility, care, and safety in daily use

Neighbourhood access must be tested with residents facing different mobility, care and safety constraints. Walk routes with people with disabilities, older residents, caregivers, and women travelling at relevant times. Check entrances, gradients, toilets, lift reliability, lighting, public transport, school and care opening hours, and the cost of assistance. A dwelling can meet a floor-area standard while remaining unusable for its intended occupant. Carry the findings into drawings, allocations, service contracts, and budgets. Record who will correct a barrier and when, then ask affected residents to verify the result. Provide a confidential route for harassment and domestic-violence concerns with appropriate support providers. Allocation and inheritance arrangements also need a check of women's enforceable rights. These are proposed design and service checks; the actual technical and legal standards depend on jurisdiction. The same test should determine the feasible contribution of prosperous, well-served neighbourhoods.

Assessing the contribution of prosperous neighbourhoods

Opportunity areas should contribute usable affordable capacity under transparent safety, service, and rights constraints. High property prices alone are an inadequate definition. The metropolitan or other competent planning authority should publish proposed housing capacity by area and show the evidence behind exclusions. Set the allocation through the applicable planning process, with resident protections and a route to challenge factual errors; this book does not prescribe a universal percentage. Report three stages separately for each area: feasible additional capacity in the adopted plan; net homes completed after demolitions; and homes occupied affordably by the intended lower-income households. Add retention and access to shared services. An affluent district can permit expensive apartments without widening low-income access, while a peripheral district can supply many subsidised homes with poor access to work. Compare obligations against developable land, infrastructure capacity, demand, and public support. A cash contribution elsewhere should not automatically discharge an area's responsibility to provide access within its own boundaries. A staged programme can establish which route delivers that access and can be repeated.

A programme for the first year and the following decade

I would use the first year to improve a few consequential decisions and test a feasible route before expanding it. The horizons below organise commitments; they are not deadlines for solving land disputes, passing legislation, or completing major networks. Emergency repairs, essential services, and lawful protection against displacement must proceed while longer-term reform is prepared. Consider workers renting rooms near an employment area. If safe extensions are lawful, pair small-landlord approvals with affordable connections and finance for additional rooms. Verify spare network capacity or fund the required expansion. If the rooms are unsafe but upgrading is feasible, repairs and tenant protection take priority. If rights are disputed, resolve the relevant claims before offering collateral-based credit. Where no viable supply can serve the poorest at an affordable price, an explicit grant or operating subsidy remains necessary. The diagnosis determines which branch of the programme starts first. A short decision register should keep the responsible authority, evidence, funding, and next review visible.

Exhibit 15.1. A conditional reform programme. Proposed sequence, to be adapted to legal powers, budgets and the diagnosed constraint.

Horizon and decision	Responsible authority	Evidence needed to advance
First year: choose a bounded intervention; establish rights, household costs and service constraints; cost the baseline and test delivery.	A designated programme lead, with finance, planning, utility and resident-protection counterparts. Use existing staff where feasible and budget missing expertise.	One workable route from application to safe occupation or restored service; recorded costs, errors, exclusions and unresolved duties. Process results do not establish long-term welfare gains.
Years two and three: expand a proven route in stages; fund connections and support for producers; adjust planning, rental or subsidy rules where the diagnosis warrants it.	The agency with the legal power to change the rule, treasury for recurring commitments, and operators responsible for services.	Repeatable delivery beyond the first team or site; viable producer finance; tenant retention, affordable charges and an operating budget. Evaluate a credible comparison where feasible.
Years four to ten: sustain the stock and extend networks; establish durable metropolitan finance, rental management, renewal and suitable long-term funding.	Municipal and national budget authorities, utilities, housing providers and the relevant regulators.	Actual collections and service performance through successive budgets; funded replacement; net affordable occupation and household outcomes. Capital-market finance follows assets, cash flows and oversight that can support it.

Maintain a decision register and test whether expansion serves the original target households rather than narrowing eligibility to preserve results. Do not launch a citywide census or data platform simply to populate the register. Use a small diagnostic sample first; commission representative data only for questions whose answer would change the programme. Chapter 1 explains how to protect the baseline before works and announcements alter behaviour. Expansion in years two and three should test whether delivery survives ordinary staffing and budgets. Increase the pipeline by a tranche that utilities, inspectors and providers can actually serve. Compare the second tranche with the pilot on final cost, delays, errors, rents and incumbent retention. If the benefit depends on exceptional subsidy, a single facilitator, unpaid volunteer work, or temporary spare capacity, price the replacement arrangement before proceeding. Tightening eligibility to preserve a success rate is not evidence that the original programme scales. Long-term reform must then secure the institutions that outlast the project team.

Predictable revenue, networks, property administration, rental institutions, and metropolitan cost sharing sustain the results of individual projects. Secure the necessary intergovernmental or statutory agreement instead of leaving these duties to a project coordination unit. Review the programme when service costs, land prices, household incomes or the governing legal framework materially change. Publish why an intervention is continued, altered or stopped, including the effects on households already relying on it. The cases explain why this sequence is conditional. Chennai supports judging serviced neighbourhoods over years, while also checking who could wait and who left. Vietnam shows why expansion cannot repair a missing baseline retrospectively. Singapore's rental provision preceded the use of CPF savings for housing; an ownership-finance institution need not be a prerequisite for all assistance. Cape Town's small-producer support offers an administrative entry point that does not require acquiring every site. These cases do not establish a common implementation timetable. Together they support starting with a feasible route, testing its distributional effects, and securing the institutions needed for continued use. My own experience leads me to assess a programme through these continuing responsibilities and household outcomes.

My experience with IAY, sites and services in Chennai, upgrading in Vietnam, and Singapore's HDB informs how I would assess a housing programme. I would identify the households it should serve, agree and fund the responsibilities for delivery and maintenance, and collect evidence on household outcomes before and after the investment. The final field assessment turns that approach into a decision about the households and neighbourhoods the programme will serve.

The cases now feed a practical sequence of decisions. Chapter 16 returns to the three policy priorities and shows how to act while testing the remaining uncertainties.

Selected readings

Singapore's Resettling Communities [R491]. Read the administrative history for clearance, compensation and institutional sequencing; it is not a household-level net welfare evaluation.

Moving to Opportunity follow-up [R159]. Read the age-dependent findings on children's exposure; they do not establish that every household benefits from relocation.

Montgomery County MPDU programme [R417]. Use the rules and legislative history to understand allocation and affordability provisions; distinguish current rules from the historical programme evaluated elsewhere.

Judgment and transfer conditions

Inclusion requires entry, retention and usable opportunity.

Confidence: Moderate; showcase institutions do not transfer automatically. Revisit trigger: Outcomes for excluded or displaced people that overturn the reported success.

Transfer access to well-served neighbourhoods through usable land, affordable finance and services that residents can actually use. At roughly ten times the pilot scale, test entry, retention, service reliability and voice for the bottom 50 percent. At roughly one hundred times the scale, require fair allocation, accessible amenities and continuing budgets. A public-building programme must meet these same conditions and account for displaced as well as incoming households.

Exercise

Choose a neighbourhood improvement and define entry, retention and daily-use outcomes. Identify one excluded group whose results could reverse the apparent success.

Part VI A practical agenda

16. A Practical Agenda for Affordable Housing

What should a policymaker do differently?

The three priorities must survive comparison with the evidence. This chapter brings all eight outcome tests into a sequence of decisions, reviews and funded commitments. Organise the next housing commitment around three priorities: usable land, household-led building and improvement, and public funding for essential services and specific affordability gaps. Identify which first removes a barrier facing the bottom 50 percent. The eight outcome tests then assess household outcomes, full costs, distribution, rights and delivery responsibilities. They help decide what deserves funding, redesign or further investigation.

Judge success through households and time

Start with land, services and finance before committing scarce public resources to flats. Where budgets and delivery capacity are weak, public construction can serve fewer families while leaving the constraints on household building unresolved. Enable households to build and improve, fund services and close specific affordability gaps. Build directly where government controls well-located land and can deliver and maintain safe, affordable homes. Test the choice against repair, serviced plots and rental support on full cost, reach, access and rights.

A home-year is one year of adequate housing service for one household under explicitly stated conditions. An appraisal must define adequacy, safety, affordability and the counterfactual before counting additional home-years. The measure helps compare a repair that extends a home's usable life with a new dwelling that becomes occupied later. It does not make every household interchangeable or cancel legal duties. Report the distribution of gains, exclusions and displacement separately, and show how the result changes when the expected service life or occupation rate changes.

Three numbers should accompany each major housing commitment. Report the full present value of public support; the additional households and home-years meeting the published conditions; and the number of original residents who lose housing, income or effective access to services. Keep their definitions visible and distinguish forecasts from observed results. A low fiscal cost per home-year can be misleading if a programme selects only easy cases or transfers costs to residents and utilities. The three numbers begin a decision; household rights, safety and distribution determine whether the proposed route is acceptable.

What the strongest evidence changes

Priority A is supported by long-run evidence on planning and services, with a limit that matters for distribution. Michaels and coauthors examine sites-and-services areas in seven Tanzanian cities developed in the 1970s and 1980s. Decades later, areas initially developed on vacant land had better housing and urban form than adjacent comparison areas. [R451] This supports preparing land and infrastructure before fragmented occupation makes provision harder. It does not establish retention of

every original low-income beneficiary or a universal advantage over upgrading. Chapter 4 supplies the evidence; Tests 1, 3 and 8 require an original-household record, a feasible alternative and follow-up.

Household choice and letting rights change the benefits of a housing asset. In Addis Ababa, lottery winners could let their homes, faced a five-year sale restriction and were followed after three and eight years; more than half occupied the home at both follow-ups. The working paper finds no detected adverse effects on employment, income, education or non-housing consumption, while early network and amenity losses improved over time. [R449] Mumbai's lottery evidence at three to five years reports housing, income and human-capital gains with an option to let the asset. [R450] These findings change the appraisal: record ownership value, letting rights and the household's chosen residence separately. Neither study identifies household building as the superior route. Chapter 5 links these findings to Test 4.

Priority C requires measuring what a subsidy buys for households after prices respond. Collinson and Ganong's published US voucher analysis reports about 46–47 cents of rent increase per dollar of higher subsidy ceilings over six years in its principal designs. The smaller same-address estimate concerns a different comparison. [R458] Chapter 9 uses the result to challenge automatic pass-through assumptions. It supplies no coefficient to import into an African or Indian appraisal. Tests 2 and 5 therefore need local rent, quality and household-payment evidence, alongside the intended grant or rental-assistance amount.

Direct building needs land, services and institutions that can sustain the homes. Singapore's scale demonstrates what coordinated land, public finance and estate management can achieve; its clearance record also requires a separate account of displaced residents. Franklin's South African study records employment-related income gains from government housing. [R423, R348] These gains do not remove the delivery test. Government should build where it controls well-located land and can fund construction, services and upkeep at a justified cost for the intended households. Those conditions belong in Tests 1, 5, 6 and 7.

Remove the constraint that prevents usable housing

The first practical task is to establish what prevents a feasible home from becoming available to the intended household. In one market it may be serviced land; in another, rental rules, a repayment schedule, an unsafe structure or a missing transport connection. A mortgage subsidy cannot repair every constraint and a construction target cannot reveal which one binds. Begin with household and producer evidence, identify the responsible institution, and compare at least two feasible responses. The counterfactual should include the repair or adaptation of existing stock where that option is realistic.

Location must be assessed through household options, rights and adjustment over time. The evidence discussed in this book does not establish a universal ranking of central upgrading, peripheral ownership, serviced plots and renting. A move can alter commuting, tenure, asset value and the ability to rent out a dwelling; the balance differs across households and time horizons. Keep those channels distinct in appraisal. Where relocation is proposed, assess livelihoods and services before commitment and follow the original cohort afterward, including people who reject an offer or leave the new site.

Finance should address a demonstrated timing or risk constraint without obscuring the household's payment capacity. Irregular income may require a different repayment schedule, smaller stages or a grant component. Public guarantees require priced exposure, retained lender risk and evidence of additional access. For small builders, a predictable payment date may matter as much as the interest rate. Compare the proposed instrument with a simpler alternative and record who absorbs losses

in a downturn. A large volume of mobilised finance is insufficient evidence that additional adequate housing has become affordable.

Count the full cost and identify who benefits

Compare the complete public commitment with the additional housing benefit and its distribution. Include land, infrastructure, guarantees and recurring service obligations alongside the budget transfer. Follow the benefit through prices and rents, and record who pays more or loses access. An instrument that is cheap for one agency can impose an unaffordable obligation on a municipality or household; Chapters 9 and 10 provide the accounts needed to expose that transfer.

Make rights and delivery responsibilities enforceable

Resident protection must be settled before irreversible land and construction decisions. Record owners, tenants, informal occupants, livelihood users and disputed claims, and provide a way to correct the record. State eligibility, compensation, temporary accommodation and return arrangements in forms that affected people can use. Community organisations can help establish claims and negotiate implementation, but public duties and independent appeal cannot depend on membership in a particular group. A household that cannot save, borrow or document a long residence still needs its position assessed under the applicable law.

Emergency need requires a funded response alongside the long-term housing pipeline. Grootboom's reasonableness standard gives a concrete reason to examine who remains outside an otherwise expanding programme. Its legal holding does not supply a universal delivery model for other jurisdictions. The transferable appraisal question is whether an identified authority can provide an appropriate response to intolerable conditions while longer-term options are developed. Budgeting only for future completions can leave present need unaddressed. [R499]

Each institutional handoff needs an owner with authority, funding and a remedy for non-performance. Before procurement, confirm land access, permission, network capacity, inspection and allocation arrangements. Before occupation, settle service charges, defects, maintenance reserves and access to redress. A coordinating committee can expose a missing commitment, but it cannot substitute for an agency's lawful authority or a utility's funded investment. The delivery agreement should show what happens when a connection is delayed, a contractor fails or the intended households cannot sustain the proposed payments.

Fund delivery and upkeep before scaling

A useful first step is to audit one programme against its original households and full obligations. This is a proposed implementation sequence, rather than a claim about an evaluated intervention. In the first three months, reconstruct the baseline cohort, public assets committed, outstanding claims and expected operating costs. Identify missing information that could reverse the investment decision. Assign responsibility for correcting those gaps and record which commitments should wait until they are resolved. The exercise should change an approval, design, budget or remedy; otherwise it is merely an additional report.

The next step is to compare two feasible designs using common assumptions and adverse scenarios. Through the following six months, test household payments, take-up, service reliability and supplier capacity. Show the effects of delayed occupation, lower collections, higher maintenance costs and a failure of expected land receipts. Treat safety and resident rights as requirements within which

alternatives are compared. Publish the assumptions that determine the preferred option, the strongest case against it and the evidence that would cause a change. Large irreversible commitments should follow the resolution of those questions.

At the end of the first year, review evidence at the stage the programme has actually reached. An early-stage project cannot demonstrate years of retention, and a completed building cannot establish livelihood recovery on handover day. Report outstanding claims and households lost to follow-up alongside verified progress. Require a dated plan for later checks of occupation, affordability, repairs and fiscal exposure. Where evidence contradicts a key assumption, revise the instrument or stop expansion while the problem is addressed. A review date is useful only if someone has authority to act on its findings.

Keep measurement proportionate and decisions contestable

The preferred route should change when costs, rights or household outcomes favour another option. Land scarcity, complex structures or care and income constraints can favour organised rental or direct public provision. Count the costs borne by households under every route. Keep reporting proportionate: a small set of auditable records and independent resident recourse is more useful than indicators nobody acts on.

Confidence should attach to a stated claim and change when the relevant evidence changes. My confidence is high that full-cost accounts and explicit resident rights improve the questions put to a housing proposal. Confidence that a particular instrument will improve delivery depends on local institutions, demand and implementation evidence. Revisit the decision when costs, take-up, displacement or service performance breach the limits specified in the appraisal. An institution should be able to explain why it continued, changed or ended a programme without relying on its original announcement as evidence of success.

Selected readings

Tanzania's long-run planning evidence [R451]. Return to this study when deciding how early service and land decisions may shape later outcomes; transfer the question and mechanism, not its effect size.

Safer Homes, Stronger Communities [R191]. Return to the handbook when assigning delivery and recovery responsibilities; its guidance still requires local engineering, finance and rights assessments.

Grootboom judgment [R499]. Return to the judgment when testing whether a programme accounts for people in urgent need; legal requirements cannot be replaced by a favourable aggregate benefit calculation.

Transfer the mechanism and fund the conditions for scale

The transferable approach is to make land usable, fund services and enable households in the bottom 50 percent to build, improve or rent safely. Transfer an instrument only after identifying the mechanism that produced its result and the conditions on which that mechanism depends. Collective tenure needs credible internal rules and protection for weaker members. Serviced plots need demand, access and continuing network provision. Industrial production needs viable orders and supplier continuity. A showcase can help identify these questions; it cannot establish that another city possesses the required conditions.

At roughly ten times the pilot scale, test the next suppliers, neighbourhoods and households rather than assuming the original participants are representative. Examine inspection quality, dispute resolution, collections, maintenance and the administrative burden of follow-up. The next group may have less secure income, harder land claims or more expensive connections. Expansion should include the cost of serving those cases. If the model excludes poorer households within the bottom 50 percent, redesign it or fund a separate response; do not present selective reach as a general solution.

At roughly one hundred times the scale, test whether the wider housing system can sustain delivery. Network investment, recurrent revenue, skilled labour, finance and accessible remedies must support a continuing pipeline. Price these obligations and exposure to downturns instead of multiplying the pilot budget. The standard remains additional years of adequate housing that people can sustain, at a transparent public cost and with residents' rights respected.

Compare three routes using a common household group

This illustration shows how a city team would compare routes; every input is assumed. Consider the same 100 eligible households in the bottom 50 percent over ten years, with common safety, service, location and affordability thresholds and one hypothetical price level. Plots require CU 500,000 of initial public cost and CU 10,000 at each year-end; incremental assistance requires CU 250,000 and CU 5,000 annually; public units require CU 1 million and CU 20,000 annually. Initial costs include land opportunity cost, capital and administration; annual costs include net services, renewal support and expected public liabilities. Costs are discounted at a real 5 percent; physical home-years are undiscounted. This is a teaching model, not a result for a named city.

Under the assumed base case, incremental improvement has the lowest public cost per additional home-year. Plots produce 700 qualifying home-years against 300 without intervention, giving 400 additional home-years at a present public cost of CU 577,217, or CU 1,443 each. Incremental assistance produces 650 against 300: CU 288,609 for 350 additional home-years, or CU 825 each. Public units produce 850 against 300: CU 1,154,435 for 550 additional home-years, or CU 2,099 each. Public units deliver the largest gain for this cohort; incremental assistance has the lowest average public cost. Neither comparison alone chooses the programme.

The ranking reverses when additionality is weaker than assumed. If 550 of the incremental route's 650 home-years would occur anyway, its gain falls to 100 and its cost rises to CU 2,886 per additional home-year. Public units then outperform it on this measure. At a 3 percent discount rate, the base-case costs per additional home-year are CU 1,463 for plots, CU 836 for incremental assistance and CU 2,128 for public units; at 10 percent they are CU 1,404, CU 802 and CU 2,042. The city must verify whether the same households can use all three routes and count their cash and labour contributions. Where plots exclude households unable to build, compare eligible groups separately and report who remains unserved. Rights and safety remain requirements for every option.

Appraisal and teaching tools

A common appraisal for the whole book

Use the eight outcome tests below to assemble the chapter findings into one decision. The baseline and counterfactual belong in Tests 1 and 3; household affordability in Test 2; location in Test 4; full public cost and incidence in Test 5; responsibilities and upkeep in Test 6; rights and safety in Test 7; and verification and review triggers in Test 8. Chapter checklists deepen these tests. They do not create a second set of approval requirements.

The eight outcome tests

Before committing public money, a government should establish whose housing conditions will improve, why the proposed intervention will work, and what it will cost. A programme may complete its buildings while leaving these questions unresolved. The assessment must therefore examine household circumstances, the alternatives available, and the obligations that continue after construction.

I would use eight tests to decide what to fund, change or establish before proceeding. They apply to new construction, settlement upgrading, serviced land, rental assistance and housing finance. The evidence required will vary with the intervention and the scale of the commitment.

1. The programme reaches the households it is intended to serve

Define how the programme will reach households in the bottom 50 percent before choosing the housing product. Record their incomes, income variability, household size, tenure, savings and livelihood needs. Distinguish households that can afford a serviced plot from those that need a rental room, an improvement to their existing dwelling, or continuing assistance. State the reference population and income measure; show who remains unserved within the lower half.

Eligibility rules can exclude informal workers through documentation, deposit and loan requirements. A programme can admit informal workers in principle while excluding them through requirements for regular payslips, deposits or loan approval. Examine eligible people who never apply and applicants who withdraw or are rejected. The income profile of successful applicants alone cannot establish that the programme reaches those with the greatest need.

A sound design explains how each intended group can obtain and retain suitable housing. If a substantial part of the target population cannot enter the programme, the product, subsidy or delivery mechanism needs to change.

2. Households can meet the full cost over time

Affordability includes the deposit, repayments or rent, utilities, service charges, maintenance and travel. Assess what remains for food, education, health and other essentials. Test budgets across the bottom 50 percent, including the poorest deciles; report residual income alongside expenditure ratios. The same ratio can leave a better-off family with adequate resources and a poorer family without enough to eat.

Test difficult months as well as average earnings. Specify what happens when income falls, a repair becomes necessary, or a household needs to move. A longer loan term or lower interest rate cannot resolve every mismatch between the price of a dwelling and the purchaser's resources.

Highly concessional credit still requires a repayment capacity that many poor households lack. A 2008 evaluation of Chile's Progressive Housing Program reports that its publicly provided, interest-free mortgage component was eliminated in 1996 following high arrears associated with beneficiaries' low incomes. [R113]

3. The chosen intervention performs better than feasible alternatives

Compare ways of making land usable, enabling households to build or improve, and funding essential services and specific affordability gaps. Compare the same households in the bottom 50 percent; state public action, responsibility and household contributions. Include direct public provision where feasible, with the same tests of cost, safety, space, access and upkeep. Record why a household-led or existing-stock option is unsuitable if it is excluded.

Thailand's Baan Mankong programme illustrates a design that accommodates several options. Its official framework channels subsidies, loans and technical support through community organisations and allows on-site upgrading, changes to settlement layouts, reconstruction and relocation. This establishes that a programme can support different responses to different settlements. It does not establish that every community-led intervention is cheaper or more effective. [R032]

The appraisal should explain why the proposed mix is preferable locally. Where a claim depends on uncertain costs or demand, test how far those assumptions can change before another option becomes preferable.

4. The location supports livelihoods and access to services

Assess housing locations within the area where people work, trade, study and obtain care. Test travel time, fares, reliability and safety against budgets and livelihoods in the bottom 50 percent. For a household enterprise, relocation may also change access to customers, suppliers, storage and working space.

Location must be evaluated through access, household options and the value of the housing offer. Peripheral land may lower the capital cost while increasing travel and service costs. Lottery evidence also shows that letting rights, asset gains and longer follow-up can change the result. Compare those mechanisms rather than infer welfare from distance alone. [R449, R450]

A proposed location should have usable services and access to livelihoods, or a funded and credible plan to provide them before occupation. Employment targets attached to a master plan are insufficient evidence of future jobs.

5. The public subsidy is explicit and its distribution justified

Count the full public contribution. Include the opportunity cost of land, infrastructure, tax concessions, below-market finance, guarantees and future operating obligations. A low recorded construction subsidy can conceal substantial support elsewhere in the public accounts.

Identify who receives the benefit. Some may reach occupants through lower housing costs. Some may accrue to landowners, developers, lenders or better-off purchasers. Report the share reaching the bottom 50 percent and the poorest deciles; justify other transfers and limit unintended gains. Where

mixed-income development is expected to finance housing for poorer households, show the cash flows and test them against lower sales and higher costs.

The reach of a housing programme must be assessed against unmet need and the opportunity cost of its budget. Show how many underserved households the available budget can assist and what provision is made for those outside the programme. Intensive support for a small group may be justified, but its opportunity cost should be visible.

6. Delivery and maintenance fit the institutions and resources available

A credible programme identifies who will resolve land claims, procure works, connect utilities, allocate housing and maintain shared assets. Fund staff, authority and upkeep, including the gap between essential service costs and what the bottom 50 percent can pay. An agreement between agencies should specify what each must deliver and what happens when it does not.

Resolve access rights and service obligations before construction. Construction should not depend on unresolved access rights, unfunded drainage or a utility connection that nobody has accepted responsibility for providing. Formal title is one form of evidence about land rights. It does not replace investigation of occupation, tenancy, customary claims or disputes.

Scaling requires a separate assessment of delivery capacity. Establish whether contractors, materials, infrastructure networks and administrative teams can support the proposed volume. A successful pilot provides limited assurance when its staffing, subsidy or access to land cannot be sustained across the wider programme.

7. Improvements protect residents' rights and safety

Establish who occupies and uses the land before deciding how it will change. Include tenants, informal occupants, businesses and people whose livelihoods depend on the location. Specify how the programme will address displacement, compensation, temporary accommodation and access to suitable alternatives.

Hazard assessment must influence the design and location of housing. Where occupation is unsafe, identify feasible protection or relocation measures and their costs. Where risks can be managed, restrictions should reflect that evidence. A map alone cannot resolve either engineering uncertainty or people's rights.

Track existing residents after improvements, with separate results for the bottom 50 percent. Better services or greater development potential may increase rents and land values. The assessment should establish whether intended beneficiaries remain, move voluntarily, or lose access. An increase in property values is insufficient evidence of improved conditions for poorer residents.

8. Results can be verified and the programme can be corrected

Measure occupation, costs, services, safety and livelihoods for the bottom 50 percent and poorest deciles, alongside programme totals. Keep these outcomes separate from contracts awarded, money spent and units completed. Count temporary construction employment separately from sustained changes in employment and earnings.

Evidence may support some benefits without supporting others. A March 2026 study of 4,000 households in eight selected Ethiopian cities found better service access in matched comparisons near new arterial roads, but no statistically significant improvement in formal employment. Non-random

exposure and differences between households limit causal interpretation. These findings support examining service gains without assuming that they establish an employment effect. [R162]

Set review points before committing the full programme budget. Identify which findings would trigger changes to locations, prices, eligibility, financing or the intervention itself. Assign an authority that can make those changes.

Map power once and use it throughout

For each decision, record who can approve, delay, finance or veto it; the gain or loss each actor faces; who represents future residents and tenants; and the enforceable remedy. Distinguish a documented incentive from a claim about an individual's motives. Publish unresolved conflicts rather than conceal them in a multi-owner row.

Five questions for a digital intervention

Digital housing interventions need tests of decision value, magnitude, distribution, power and remedies. What decision constraint changes? How large is the measured gain? Who receives it? Who acquires power over eligibility, money or land? What errors and risks arise, and how can affected people obtain a remedy? The Ghana trial shows why revenue and resident treatment must appear in the same answer.

Glossary

Additionality. The difference attributable to the intervention against a stated counterfactual.

Capitalisation. A subsidy or service gain reflected in the price of land, housing or rent.

Counterfactual. The outcome expected without the intervention.

Debt-service coverage. Net operating income divided by scheduled debt payments, using the same period.

Filtering. Movement of housing through price and occupant segments over time; neither immediate nor necessarily accompanied by adequate quality.

Home-year. One home-year meeting the specified safety, service, affordability and eligibility conditions.

Incidence. Who ultimately gains or bears costs, beyond the legal recipient or payer.

Opportunity cost. The value of the best feasible alternative use of a resource.

Real discount rate. A rate applied to cash flows expressed in constant purchasing power.

Residual income. Income remaining after housing, essential services and access costs.

Supply elasticity. The percentage supply response to a one-percent price change over a stated period.

Whole-life cost. Capital, financing, operation, renewal and disposal costs within an explicit boundary.

Consolidated bibliography

R keys are unique across the book. Dates and evidence types belong to individual sources. Inclusion records the evidence used; it does not mean every inherited source has been newly re-evaluated. Stable publication links are printed for use outside the electronic edition.

[R001] UN-Habitat, World Cities Report 2026: The Global Housing Crisis: Pathways to Action https://unhabitat.org/world-cities-report-2026

[R002] Government of India, Ministry of Housing and Urban Affairs, PMAY-Urban public monitoring portal, accessed October 2026. Sanctions, starts, completions; live figures may change. https://www.pmay-urban.gov.in/

[R004] Ministry of Panchayati Raj, Government of India, SVAMITVA Scheme https://svamitva.nic.in/

[R005] Press Information Bureau, SVAMITVA progress data, 2026 https://www.pib.gov.in/PressReleasePage.aspx?PRID=2 294 294&lang=1&reg=48

[R009] UN-Habitat, Strategic Plan 2026-2029 adoption: Africa housing deficit and slum share (2025) https://unhabitat.org/news/30-may-2025/united-nations-habitat-assembly-adopts-strategic-plan-2026-2029-to-advance-adequate-housing-for-all

[R010] Towards Resilient and Prosperous Cities in India. World Bank, July 22, 2025. Urban population, housing needs, infrastructure investment and climate exposure projections. https://www.worldbank.org/en/news/press-release/2025/07/22/india-has-a-critical-opportunity-to-drive-resilient-urban-development-says-new-world-bank-report

[R011] UN-Habitat (2026). World Cities Report 2026. Executive Director's introduction and affordability findings. Global estimates use different units and definitions. https://unhabitat.org/sites/default/files/2026/05/wcr_2026.pdf

[R012] OHCHR and UN-Habitat. The Right to Adequate Housing, Fact Sheet 21/Rev.1. Adequacy dimensions; apply local law and standards. https://www.ohchr.org/sites/default/files/Documents/Publications/FS21_rev_1_Housing_en.pdf

[R013] World Bank, Africa's Cities: Opening Doors to the World (2017) https://www.worldbank.org/en/programs/africa-regional-studies/publication/african-cities-opening-doors-to-the-world

[R014] World Bank, Kinshasa: Harnessing Nature-Based Solutions for Urban Resilience (2024) https://www.worldbank.org/en/news/feature/2024/08/23/kinshasa-nature-based-solutions-rapid-urbanization-climate-change

[R015] World Bank, Why should Ethiopians care about urbanization? (2019) https://blogs.worldbank.org/en/africacan/why-should-ethiopians-care-about-urbanization-jobs-infrastructure-and-formal-land-and-housing

[R016] World Bank, Ethiopia Investment Climate Assessment, urban land evidence (2007) https://documents1.worldbank.org/curated/en/9 499 514 680 30 574 203/pdf/386 621ET0v20REVISED.pdf

[R017] Access to Land in South Asia: World Bank Guidance Note. World Bank, 2024. Gujarat Town Planning Scheme statutory land contribution and affordable-housing reservations. https://documents1.worldbank.org/curated/en/0 990 328 240 93 529 033/pdf/P17 838 718a9a5c05 519d5915cc4addfec50.pdf

[R018] World Bank, Planning, Connecting and Financing Cities - Ahmedabad evidence (2013) https://documents1.worldbank.org/curated/en/5 263 414 682 67 004 528/pdf/wps6267.pdf

[R019] World Bank, Transforming Cities with Transit - Ahmedabad case
https://documents1.worldbank.org/curated/en/9 472 114 681 62 273 111/pdf/Main-report.pdf

[R020] World Bank, Urban land value capture in Sao Paulo, Addis Ababa and Hyderabad (2020)
https://ppp.worldbank.org/library/urban-land-value-capture-sao-paulo-addis-ababa-and-hyderabad-differing-interpretations-equity-impacts-and-enabling-conditions

[R021] Government of India, Digital India Land Records Modernization Programme
https://dolr.gov.in/en/programmes-schemes/dilrmp-2/

[R022] Government of India, DILRMP MIS 3.0, August 2026 https://dilrmp.gov.in/dilrmpold/

[R023] Government of Kenya, State Department for Lands, digital transformation update, September 2026
https://www.lands.go.ke/state-department-lands-accelerates-digital-transformation-land-services

[R024] Government of Kenya, National Stamp Duty Module rollout, February 2026
https://www.lands.go.ke/index.php/state-department-lands-rolls-out-nsdm-countrywide-making-land-transactions-faster-and-transparent

[R025] South Africa's Fragmented Cities: The Unequal Burden of Labor Market Frictions. Baez and Kshirsagar, World Bank research reproducibility package, 2025/2026. Spatial labor-market comparisons against 20 global peers. https://reproducibility.worldbank.org/catalog/424

[R026] Mahadevia, Darshini, Madhav Pai and Anjali Mahendra (2018), "Ahmedabad: Town Planning Schemes for Equitable Development - Glass Half Full or Half Empty?" World Resources Institute.
https://www.wri.org/research/ahmedabad-town-planning-schemes-equitable-development-glass-half-full-or-half-empty

[R027] Cámara de Diputados. Ley Agraria, consolidated text with reform of 14 November 2025, articles 44-46, 75, 81-82. Legal routes, not a project approval. https://www.diputados.gob.mx/LeyesBiblio/pdf/LAgra.pdf

[R028] Reyes Carranza, M., Hoefsloot, F., Datta, A., and Agraz Joya, R. (2026). Urbanizing Commons Lands: Ambiguous tenure regimes and the challenges of land regularization in Guadalajara Metropolitan Region, Mexico. Land Use Policy, accepted manuscript. Qualitative case research; repository abstract and manuscript record. https://discovery.ucl.ac.uk/id/eprint/10 224 906/

[R029] Livesey, B. (2012). Housing development on Māori land: Two case studies in developing and retaining Māori land. Māori Law Review, November. Interview-based research, with reported completion dates; no causal impact estimate. https://maorilawreview.co.nz/2012/11/housing-development-on-maori-land-two-case-studies-in-developing-and-retaining-maori-land/

[R030] Controller and Auditor-General (2011). Government planning and support for housing on Māori land, Part 6, paragraphs 6.4-6.8. Historical lending and programme-design findings.
https://ao.parliament.nz/2011/housing-on-maori-land/part6.htm

[R031] Controller and Auditor-General (2014). Government planning and support for housing on Māori land: Progress in responding to recommendations, paragraph 1.7. Approved loans and grants, not completed homes.
https://ao.parliament.nz/2014/housing-on-maori-land

[R032] Community Organizations Development Institute. Baan Mankong Urban. Programme description of land negotiation, collective finance, and upgrading; not an independent impact evaluation.
https://en.codi.or.th/baan-mankong-urban/

[R033] Currency conversions are the author's calculations at dated reference rates, not current quotations. Central Bank of Kenya, Bank Supervision Annual Report 2025, table 15: KES 129.3/US$, KES 146.1/euro, KES 7.2/rand; implied cross-rates about US$1.13/euro and R17.96/US$. Government of India, Economic Survey 2025–26, Statistical Appendix, table 5.4 (RBI source): INR 84.576/US$ in 2024/25. Bank of Tanzania, Economic Bulletin March 2015 and Monthly Economic Review April 2023: annual averages TZS 1,557.4/US$ in 2011 and TZS 2,263.8/US$ in 2018.
https://www.centralbank.go.ke/uploads/banking_sector_annual_reports/1 241 268 828_ANNUAL%20REPORT%202 025.pdf

[R036] World Bank, Financing Transit-Oriented Development with Land Values: Adapting Land Value Capture in Developing Countries (2015), discussion of Ahmedabad town-planning schemes and land value capture: . https://documents1.worldbank.org/curated/en/4 685 514 681 65 570 019/pdf/936 860PUB00ISB0TransportDevLV0final.pdf

[R040] World Bank (2 September 2025). Ethiopia Urban Institutional and Infrastructure Development Program. Administrative outputs for 2018–24. https://www.worldbank.org/en/news/feature/2025/09/02/ethiopia-urban-institutional-and-infrastructure-development-program

[R042] World Bank, South Africa Metro Trading Services Program FAQ, November 2025. https://www.worldbank.org/en/news/factsheet/2025/11/09/south-africa-metro-trading-services-program-frequently-asked-questions-faqs

[R045] Greenaway-McGrevy, R. and Phillips, P. C. B. (2023). The Impact of Upzoning on Housing Construction in Auckland. University of Auckland, Economic Policy Centre Working Paper https://www.auckland.ac.nz/content/dam/uoa/auckland/business/about/our-research/research-institutes-and-centres/Economic-Policy-Centre--EPC-/006WP%20-%204.pdf

[R046] Quasi-experimental estimates of permitted dwellings, not net occupied stock. https://cdn.auckland.ac.nz/assets/business/about/our-research/research-institutes-and-centres/Economic-Policy-Centre--EPC-/006WP%20-%204.pdf

[R047] Freemark, Y. (2020; first published online 2019). Upzoning Chicago: Impacts of a Zoning Reform on Property Values and Housing Construction. Urban Affairs Review 56(3), 758– https://doi.org/10.1177/1 078 087 418 824 672

[R052] World Bank. Metropolitan Ahmedabad: Scaling Up with Contiguous Replication of Town Planning Schemes. Case study. https://documents1.worldbank.org/curated/en/2 906 716 052 94 532 766/pdf/Metropolitan-Ahmedabad-Scaling-Up-with-Contiguous-Replication-of-Town-Planning-Schemes.pdf

[R054] www.worldbank.org — world bank supports first program for results in south africa to boost urban service delivery https://www.worldbank.org/en/news/press-release/2025/11/07/world-bank-supports-first-program-for-results-in-south-africa-to-boost-urban-service-delivery

[R057] Libertun de Duren, N. R. and Osorio Rivas, R. (2020). Bairro: Ten Years Later. Inter-American Development Bank. Assessment of infrastructure maintenance in 88 Favela-Bairro II settlements; beneficiary focus groups. https://publications.iadb.org/publications/english/document/Bairro-ten-years-later.pdf

[R059] Gulyani, S. (2016), Success when we deemed it failure? Revisiting sites and services 20 years later, World Bank, 23 June. Follow-up research: Owens, Gulyani and Rizvi (2018), World Development 106, 260–272. The 2016 account reports a selected 15-site revisit. https://blogs.worldbank.org/en/sustainablecities/success-when-we-deemed-it-failure-revisiting-sites-and-services-20-years-later

[R060] van Eerd, M., and Schelkshorn, D., Longitudinal insights on a sites and services resettlement project. The case of Ambedkar Nagar in Chennai, India, published online 24 April 2024, International Journal of Housing Policy 25(4), 645–669 (2025 issue). Survey composition is not a causal estimate of displacement. https://doi.org/10.1080/19 491 247.2024.2308721

[R061] Buckley, R. M., and Kalarickal, J., eds. (2006), Thirty Years of World Bank Shelter Lending: What Have We Learned?, executive summary and chapters 1–2. Lending categories combine sites and services with upgrading. https://documents1.worldbank.org/curated/en/9 580 914 681 59 898 471/pdf/362 170PAPER0re101OFFICIAL0USE0ONLY1.pdf

[R064] World Bank (2026, Apr. 23), “Resilient, Green, and Inclusive: Better Buildings for a Changing World,” building-sector challenge and 48-country African code assessment. https://www.worldbank.org/en/results/2026/04/23/better-buildings-for-a-changing-world

[R066] housingfinanceafrica.org — housing chronicles in huruma slum upgrading programme lessons in cost tracking scaling social housing https://housingfinanceafrica.org/library/housing-chronicles-in-huruma-slum-upgrading-programme-lessons-in-cost-tracking-scaling-social-housing/

[R067] www.worldbank.org — world bank approves 190 million to support affordable housing for the poor and vulnerable in the indian state of tamil n
https://www.worldbank.org/en/news/press-release/2022/06/30/world-bank-approves-190-million-to-support-affordable-housing-for-the-poor-and-vulnerable-in-the-indian-state-of-tamil-n

[R068] House of Lords Built Environment Committee (26 January 2024). Modern methods of construction in housing. Letter and findings submitted to the Secretary of State. Evidence on business failures is not a controlled comparison of construction systems.
https://committees.parliament.uk/publications/43 073/documents/214 242/default/

[R070] Planning Commission, Programme Evaluation Organisation (1992), Indira Awaas Yojana: A Quick Study. National construction total and field-study coverage from the NITI Aayog library abstract.
https://digitallibrary.niti.gov.in/items/3d46c306-204a-4491-b15a-5905c89adf07/full

[R071] Government of India, Ministry of Rural Development (June 2013), Indira Awaas Yojana Guidelines, sections 3.2.1 and 4.10. Text reproduced by IELRC; this is a later policy document, not evidence of the early-1990s local rule. https://www.ielrc.org/content/e1307.pdf

[R072] Niazi, Z. (March 1996), Indira Awaas Yojna: Quo Vadia?, pilot survey report, Development Alternatives. Nine-case study; not the author's field encounter. https://devalt.org/newsletter/mar96/of_2.htm

[R073] City of Cape Town, Local planning support, official guidance and resources for small-scale rental units and affordable housing, accessed 26 October 2026. Describes the support offered; not an impact evaluation.
https://www.capetown.gov.za/work-and-business/planning-portal/online-planning-and-building-resources/local-planning-support/

[R076] Barnhardt, Field and Pande, Moving to Opportunity or Isolation?, NBER Working Paper 21419
https://www.nber.org/papers/w21 419

[R077] Government of India, PMAY-U 2.0 Interest Subsidy Scheme release, February 26, 2026 https://pmay-urban.gov.in/uploads/sanction-releases/2025-2026/HUDCO-3 071 541.pdf

[R079] Social Housing Regulatory Authority. Capital Investment: Consolidated Capital Grant standard quantum R426,308 and affordability-mix adjustments. Current published guidance checked November 2026.
https://www.shra.org.za/about-investment/capital-investment/

[R081] Diamond, R., McQuade, T. & Qian, F. (2019). Effects of Rent Control Expansion on Tenants, Landlords and Inequality: Evidence from San Francisco. American Economic Review 109(9):3365–3394.
https://www.nber.org/papers/w24 181

[R082] Diamond, R., McQuade, T. and Qian, F. (2019). The Effects of Rent Control Expansion on Tenants, Landlords, and Inequality: Evidence from San Francisco. American Economic Review; NBER Working Paper 24181. Version note: the https://web.stanford.edu/~diamondr/DMQOld.pdf

[R085] Goering, P., et al. (2014). National At Home/Chez Soi Final Report. Mental Health Commission of Canada, p. 17 and chapter 4. Randomised Housing First comparison in a specific population and service setting.
https://mentalhealthcommission.ca/wp-content/uploads/drupal/mhcc_at_home_report_national_cross-site_eng_2_0.pdf

[R087] World Bank, Kenya Housing Finance, Lands and Sustainable Investments Project appraisal document, 2026 https://documents1.worldbank.org/curated/en/0 990 303 260 95 530 473/pdf/BOSIB-df9941a7-dbe0-45ab-a04d-d4d6687a9521.pdf

[R088] World Bank (14 December 2020). Making Housing Affordable and Accessible with Market-based Solutions: Innovative Financing to Address Housing in Tanzania. Programme-reported results.

https://www.worldbank.org/en/results/2020/12/14/making-housing-affordable-and-accessible-with-market-based-solutions-innovative-financing-to-address-housing-in-tanzania

[R090] OFFICIAL STATISTICAL REPORT National Housing Bank, India. Annual Report 2024–25, Box 3.4, Graph 3.8 and Annex II (published 2026). INR 35,61,277 crore excluding regional rural banks individual outstanding; separate slab table excludes pooled loan purchases. https://www.nhb.org.in/wp-content/uploads/2026/01/NHB-Annual-Report-2024-25-English-final.pdf

[R094] IFC, Grihum Housing Finance RMBS investment, December 18, 2025 https://www.ifc.org/en/pressroom/2025/ifc-partners-with-grihum-housing-finance-to-expand-affordable-homeownership-and-de

[R095] South Africa Department of Human Settlements, First Home Finance FAQ https://www.dhs.gov.za/FAQ

[R096] South Africa Department of Human Settlements, NHFC 30 years release, September 15, 2026 https://www.dhs.gov.za/node/2322

[R097] NBER, Berger et al., Another Look at the Capitalization of Interest Subsidies: Evidence from Sweden https://www.nber.org/papers/w6365

[R098] NBER, Adelino, Schoar and Severino, Credit Supply and House Prices: Evidence from Mortgage Market Segmentation https://www.nber.org/papers/w17 832

[R105] Ministry of Housing and Urban Affairs, Government of India, PMAY-Urban Progress, website last updated 30 September 2026, accessed 14 October 2026: 127.68 lakh sanctioned; 121.03 lakh grounded; 99.07 lakh completed. . https://pmay-urban.gov.in/

[R106] Kenya Law, Affordable Housing Act, 2024. https://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/2024/TheAffordableHousingAct__2024.pdf

[R107] Kenya Affordable Housing Board, Revenue Collection as at 31 January 2026. https://affordablehousingboard.go.ke/sites/default/files/Levy%20Collection/Revenue%20Collection1.pdf

[R108] Kenya Affordable Housing Board, About AHB. https://affordablehousingboard.go.ke/about-ahb

[R109] South Africa Department of Human Settlements, Government Subsidised Houses. https://www.dhs.gov.za/Programmes

[R110] South Africa Department of Human Settlements, 2026/27 targets and budget allocation, 9 June 2026. https://www.dhs.gov.za/node/2221

[R111] South Africa Department of Human Settlements, serviced-site eligibility. https://www.dhs.gov.za/node/1721

[R112] OECD, Housing Policy in Chile, 2016. https://www.oecd.org/en/publications/housing-policy-in-chile_5jm2hzbnqq33-en.html

[R113] Marcano, Luis, and Inder J. Ruprah (2008). An Impact Evaluation of Chile's Progressive Housing Program. Inter-American Development Bank, OVE/WP-06/08, June. https://publications.iadb.org/en/impact-evaluation-chiles-progressive-housing-program

[R114] Bergman, P. and coauthors (2024; revised working paper 2023). Creating Moves to Opportunity: Experimental Evidence on Barriers to Neighborhood Choice. NBER Working Paper 26164. https://www.nber.org/papers/w26 164

[R115] doi.org — 1540 6229.12129 https://doi.org/10.1111/1540-6229.12129

[R116] www.oecd.org — 9789264191808 en.pdf https://www.oecd.org/content/dam/oecd/en/publications/reports/2013/04/oecd-urban-policy-reviews-chile-2013_g1g29 688/9 789 264 191 808-en.pdf

[R117] www.nber.org — w8165 https://www.nber.org/papers/w8165

[R118] www.nber.org — w17537 https://www.nber.org/papers/w17 537

[R120] World Habitat, Working to End Slums in Indian State - Jaga Mission, January 4, 2023. https://world-habitat.org/news/working-to-end-slums-in-indian-state-world-habitat-awards-bronze-winner-2023/

[R121] Government of Odisha, Jaga Mission official portal - land rights, upgrading and Slum Dwellers Associations. https://jagamission.in/landrights.html

[R122] Global Alliance Against Hunger and Poverty, Thailand: Baan Mankong (Secure Housing) Programme, available in 2026. Reports cumulative reach of over 130,000 households in more than 1,300 communities and about 200 cities. These are programme coverage claims, not experimental impact estimates. . https://globalallianceagainsthungerandpoverty.org/country-example/thailand-baan-mankong-secure-housing-programme/

[R123] Housing & Development Board, Singapore, About Us. https://www.hdb.gov.sg/about-us

[R124] HDB, HDB to Launch 19,600 BTO Flats in 2026, January 7, 2026. https://www.hdb.gov.sg/sitecore/content/hdbinfoweb/home/hdb-pulse/news/2026/hdb-to-launch-19 600-bto-flats-in-2026

[R125] Community Organizations Development Institute. Baan Mankong: City-Wide Upgrading. Programme design, community finance and implementation responsibilities; not a randomised impact evaluation. https://en.codi.or.th/baan-mankong-city-wide-upgrading/

[R126] www.worldbank.org — subnational capacity performance grants https://www.worldbank.org/en/results/2026/05/05/subnational-capacity-performance-grants

[R127] www.iadb.org — favela bairro upgrading program assessing results 10 years later https://www.iadb.org/en/blog/urban-development-and-housing/favela-bairro-upgrading-program-assessing-results-10-years-later

[R128] www.ura.gov.sg — liveable and inclusive neighbourhoods https://www.ura.gov.sg/land-planning/master-plan/master-plan-2025/themes/shaping-a-happy-healthy-city/liveable-and-inclusive-neighbourhoods/

[R129] Singapore Housing & Development Board, “HDB Spent Over $6 Billion in FY2024 to Keep Public Housing Affordable and Liveable,” 10 November 2025: . https://www.hdb.gov.sg/hdb-pulse/news/2025/hdb-spent-over-%246-billion-in-fy-2024-to-keep-public-housing-affordable-and-liveable

[R130] documents1.worldbank.org — 624720PUB0Doin00Box0361484B0PUBLIC0.pdf https://documents1.worldbank.org/curated/en/5 568 714 681 62 294 131/pdf/624 720PUB0Doin00Box0 361 484B0PUBLIC0.pdf

[R131] Mahadevia, D., N. Bhatia and B. Bhatt (2016). “Decentralized governance or passing the buck: the case of resident welfare associations at resettlement sites, Ahmedabad, India.” Environment and Urbanization 28(1). Qualitative study of eight sites, including committee formation, service boundaries, vacancies and disputes. https://journals.sagepub.com/doi/10.1177/0 956 247 815 613 688

[R132] World Bank (2015), Lagos Metropolitan Development and Governance Project study, International Case Study 4: Vietnam Urban Upgrading Project. Community Upgrading Plans, network links, and relocation arrangements. https://documents1.worldbank.org/curated/en/3 473 914 724 44 343 246/pdf/ACS13 975-REVISED-P154 166-PUBLIC-LMDGP-Study-20 150 623-Final.pdf

[R133] World Bank, Vietnam Urban Upgrading Project brief, results at project completion. The 7.5 million figure combines direct and indirect benefits. Results checked against official indexed text; the raw PDF was not accessible during this review. https://www.worldbank.org/content/dam/Worldbank/document/EAP/Vietnam/Vietnam_Urban_Upgrading_Project_Brief_EN.pdf

[R134] World Bank (24 January 2024), Indonesia National Slum Upgrading Project P154782, Implementation Completion and Results Report ICR00004528, page 17 and footnote 17. Original and revised targets differ. Results checked against official indexed text; the raw PDF was not accessible during this review.

https://documents1.worldbank.org/curated/en/0 990 126 240 92 020 832/pdf/BOSIB13 717 495a009 196e41 736ae2c5e21c.pdf

[R135] Independent Evaluation Group, World Bank Group Indonesia evaluation, chapter 6, support for resilient urbanization. Findings on post-project maintenance budgets and alignment of upgrading with housing support. https://ieg.worldbankgroup.org/evaluations/world-bank-group-indonesia/chapter-6-world-bank-groups-support-resilient-urbanization

[R136] Chaskin, Robert, Mouleshri Vyas and Manish K. Jha (2024). Formalization, Citizenship and the Challenges of Self-Governance in Mumbai's Slum Relocation Colonies. International Journal of Urban and Regional Research 48(6), 1115–1136. Majas and Lallubhai sample described in the article. https://doi.org/10.1111/1468-2427.13274

[R137] South Africa Social Housing Regulatory Authority (2025). Annual Performance Plan 2025/26, pp. 30–32: benchmarks and Q3 2024/25 collection and vacancy performance. https://www.shra.org.za/wp-content/uploads/2025/05/SHRA-Annual-Performance-Plan-APP-202 526.pdf

[R138] Nairobi City County, Kenya News Agency (9 May 2024). County flood response and 20,968 affected households. https://www.kenyanews.go.ke/nairobi-establishes-task-force-to-handle-ongoing-floods-situation/

[R139] World Resources Institute (2026). Flooding in Nairobi's Informal Settlements: Advancing Equitable and Resilient Solutions. Mixed-methods issue brief drawing on flood modeling, reviews and household research. https://www.wri.org/research/flooding-nairobis-informal-settlements

[R140] Government of Kenya, Kenya Informal Settlements Improvement Project: program dashboard and KISIP2 implementation architecture. Figures are reported KISIP output counts. https://www.kisip.go.ke/

[R141] Huchzermeyer, M. (2008). 'Slum Upgrading in Nairobi within the Housing and Basic Services Market.' Journal of Asian and African Studies 43(1). https://doi.org/10.1177/0 021 909 607 085 586

[R142] Rigon, A. (2014). 'Building Local Governance: Participation and Elite Capture in Slum-Upgrading in Kenya.' Development and Change 45(2). Ethnographic study of landlord–tenant power. https://doi.org/10.1111/dech.12078

[R143] Atuesta, L.H. and Y. Soares (2018). 'Urban upgrading in Rio de Janeiro: Evidence from the Favela-Bairro programme.' Urban Studies 55(1), 53–70. Quasi-experimental household and value estimates. https://doi.org/10.1177/0 042 098 016 669 290

[R144] OECD (2024). Economic Surveys: Mexico 2024, section on vacancy, abandonment, municipal rental recovery and regeneration agreements. https://www.oecd.org/en/publications/oecd-economic-surveys-mexico-2024_b8d974db-en/full-report/component-8.html

[R145] OECD (2026). Economic Surveys: Austria. Restoring the affordability and improving the functioning of the housing market. Observed sector rent comparisons are not causal programme effects. https://www.oecd.org/en/publications/oecd-economic-surveys-austria-2026_7cea027b-en/full-report/restoring-the-affordability-and-improving-the-functioning-of-the-housing-market_7 403 868f.html

[R146] Housing2030 / Housing Europe. Austrian limited-profit housing associations: equity accumulation and dedicated building renovation funds. https://www.housing2030.org/project/equity-investment-in-new-social-housing-austrian-providers-generating-their-own-investment-capital/

[R147] Africa's Urbanisation Dynamics 2025. OECD, AfDB, UCLG Africa and Cities Alliance, March 2025. Projections of African urban population and footprint. https://www.citiesalliance.org/resources/publications/publications/africas-urbanisation-dynamics-2025-planning-africas-urban

[R148] Africa's Cities: Opening Doors to the World. World Bank, 2017. Comparative cost evidence; historical figures, based on price data used in the study. https://documents1.worldbank.org/curated/en/8 542 214 907 81 543 956/pdf/113 851-PUB-PUBLIC-PUBDATE-2-9-2017.pdf

[R149] Spatial Distributions of Job Accessibility, Housing Rents, and Poverty in Nairobi, Kenya. Nakamura and Avner, World Bank Policy Research Working Paper 8654, 2018. Observational urban job-accessibility analysis. https://econpapers.repec.org/paper/wbkwbrwps/8654.htm

[R150] Nairobi Metropolitan Area Transport Authority. Government of Kenya, NaMATA official mandate and metropolitan council; established February 2017. Accessed October 2026. https://www.namata.go.ke/nma

[R151] World Bank (14 November 2022), "India's Urban Infrastructure Needs to Cross $840 Billion Over Next 15 Years." Summary of Financing India's Urban Infrastructure Needs. Investment total excludes housing and slum upgrading in the full report. https://www.worldbank.org/en/news/press-release/2022/11/14/india-s-urban-infrastructure-needs-to-cross-840-billion-over-next-15-years-new-world-bank-report

[R152] Report on Municipal Finances. Reserve Bank of India, November 13, 2024. Evidence from 232 municipal corporations on own-source revenue and dependence on transfers. https://systemhealth.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx_prid%3D59 093.html

[R153] Auckland Council regional governance and Unitary Plan timeline. Auckland Council official governance manual. Seven local councils and a regional council merged in 2010; common regional authority and 21 local boards. https://governance.aucklandcouncil.govt.nz/2-overview/what-is-auckland-council

[R154] Can zoning reform reduce housing costs? Evidence from rents in Auckland. Greenaway-McGrevy and So, Economic Inquiry, published July 11, 2026. Synthetic-control estimates of new-tenancy rents and construction. https://doi.org/10.1111/ecin.70075

[R155] Transit-Oriented Development in Sao Paulo: spatial analysis shows advances, but not sufficient social inclusion. International Planning Studies, 2023. Spatial assessment of development and inclusion under the 2014 master plan. https://doi.org/10.1080/13 563 475.2023.2251697

[R156] Global Compendium of Land Value Capture Policies. OECD and Lincoln Institute of Land Policy, 2022. Definitions and mechanisms for infrastructure levies, developer obligations and development-rights charges. https://www.oecd.org/en/publications/global-compendium-of-land-value-capture-policies_4f9559ee-en/full-report/land-value-capture-across-the-globe_8 476 165e.html

[R159] Chetty, R., Hendren, N. and Katz, L. (2016; working paper 2015). The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. NBER Working Paper 21156. https://www.nber.org/papers/w21 156

[R161] Barnhardt, S., Field, E. and Pande, R. (2017). Moving to Opportunity or Isolation? Network Effects of a Randomized Housing Lottery in Urban India. American Economic Journal: Applied Economics 9(1), 1–32. https://doi.org/10.1257/app.20150 397

[R162] Haile, Kaleab K., Patrick Lamson-Hall, and Kiflu Gedefe Molla. 2026. Household-Level Impacts of Urban Expansion Planning: Evidence from Ethiopia's Urban Expansion Initiative. Working Paper ETH-25192, March. International Growth Centre. Source https://www.theigc.org/sites/default/files/2026-03/Haile-Molla-Lamson-Hall-Working-Paper-March-2026.pdf

[R170] Rentschler, J. et al. (2022), "Flood exposure and poverty in 188 countries," Nature Communications 13:3527. Peer-reviewed global modeling. https://www.nature.com/articles/s41 467-022-30 727-4

[R171] IPCC (2022), AR6 Working Group II, Chapter 6 "Cities, settlements and key infrastructure," and Chapter 9 "Africa." https://www.ipcc.ch/report/ar6/wg2/chapter/chapter-6/

[R172] World Bank (2023), "Msimbazi Basin Development Project," project overview, design and resettlement approach. US$200 million credit and expected 300,000 flood-exposure benefit. Additional source for the livelihood description: President's Office, Regional Administration and Local Government, Lower Msimbazi Upgrading Project, Draft Resettlement Action Plan and Livelihood Restoration Plan, March 2022, section https://www.worldbank.org/en/brief/2023/03/24/msimbazi-basin-development-project

[R174] Ahmed, C. F. and N. Kranthi (2018), "Flood Vulnerability Assessment using Geospatial Techniques: Chennai, India," Indian Journal of Science and Technology 11(6). https://indjst.org/articles/flood-vulnerability-assessment-using-geospatial-techniques-chennai-india

[R175] The New Indian Express (2025, Sep. 25), NGT order on Pallikaranai approvals; The New Indian Express (2026, Mar. 4), High Court challenge and developer submissions. https://www.newindianexpress.com/states/tamil-nadu/2026/Mar/04/credai-challenges-construction-ban-near-pallikaranai-ramsar-site-madras-hc-seeks-cmdas-response

[R176] Hess, J. et al. (2018), "Building Resilience to Climate Change: Pilot Evaluation of the Impact of India's First Heat Action Plan on All-Cause Mortality," Journal of Environmental and Public Health, Article 7973519. https://doi.org/10.1155/2018/7 973 519

[R177] Mahadevia, D. (2024), "Heat adaptation and health in the informal housing—An exploratory research in Ahmedabad, India," Sustainable Social Development 2(4). https://doi.org/10.54517/ssd.v2i4.2461

[R178] Millington, N. (2021), "Day Zero and the Infrastructures of Climate Change," International Journal of Urban and Regional Research. https://doi.org/10.1111/1468-2427.12899

[R179] Cook, J. et al. (2021), "Distributional Statistics of Municipal Water Use During Cape Town's Drought," Water Resources Research 57(6). 14.9 million monthly billing records. https://doi.org/10.1029/2020WR028 219

[R181] World Bank (2025, Mar. 18), "Climate-proofing infrastructure in Mozambique." Beira nature-based and engineering works, 234,000 beneficiaries. https://www.worldbank.org/en/news/feature/2025/03/18/climate-proofing-infrastructure-in-mozambique

[R182] David Dodman, IIED, "A special approach to slum upgrading: the Special Planning Area in Mukuru, Nairobi," 18 October 2017. Legal designation, consortiums, planning segments. https://www.iied.org/special-approach-slum-upgrading-special-planning-area-mukuru-nairobi

[R183] Rijkswaterstaat, Netherlands, "Room for the River," national program record, 34 sites and EUR 2.3 billion (2006-2019). https://www.rijkswaterstaat.nl/en/projects/iconic-structures/room-for-the-river https://www.rijkswaterstaat.nl/en/projects/iconic-structures/room-for-the-river

[R184] Actuaries Institute Australia (2024), "Home Insurance Affordability and Home Loans at Risk." https://www.actuaries.asn.au/research-analysis/thought-leadership/home-insurance-affordability-and-home-loans-at-risk

[R185] Kousky, C. and H. Kunreuther (2014), "Addressing Affordability in the National Flood Insurance Program," Journal of Extreme Events / Resources for the Future. https://www.rff.org/publications/journal-articles/addressing-affordability-in-the-national-flood-insurance-program/

[R187] Kenya National Treasury, "Financing Locally-Led Climate Action (FLLoCA)" program overview (2022-2027). https://fsad.treasury.go.ke/projects/flloca

[R188] World Bank (2024, Nov. 19), "Scaling Up Locally Led Climate Action to Enable Community Resilience and Equitable Climate Transitions," Kenya institutional indicators. https://www.worldbank.org/en/results/2024/11/19/scaling-up-locally-led-climate-action-to-enable-community-resilience

[R190] Jha, A. (16 April 2019), Rebuilding communities after disasters: four and a half lessons learned, World Bank. Published author viewpoint and discussion of REKOMPAK. https://blogs.worldbank.org/en/sustainablecities/rebuilding-communities-after-disasters-four-and-half-lessons-learned

[R191] Jha, Abhas K., with Jennifer Duyne Barenstein, Priscilla M. Phelps, Daniel Pittet, and Stephen Sena. 2010. Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters. Washington, DC: World Bank. DOI: 10.1596/978-0-8213-8045-1. Title page, "Guiding Principles," and chapters 4–6, especially pp. 59–64, 77–79, and 93–96. https://documents1.worldbank.org/curated/en/2 903 014 681 59 328 458/pdf/528 390PUB0safe101Official0Use0Only1.pdf

[R192] World Bank. 2009. Implementation Completion and Results Report: Gujarat Emergency Earthquake Reconstruction Project. Report ICR0000638, April 29. Lessons pp. 17–18; results table p. 22; financing, technical support, and implementation limitations pp. 26–27.

https://documents1.worldbank.org/curated/en/4 998 714 680 50 063 960/pdf/ICR6380P074 018 101Official0Use0Only1.pdf

[R193] World Bank. 2024. Implementation Completion and Results Report: Earthquake Housing Reconstruction Project, Nepal. Report ICR00006235, February 27. Results and inspections p. 7; installment payments pp. 16–17; final results table p. 21. https://documents1.worldbank.org/curated/en/0 990 228 241 14 542 456/pdf/BOSIB150 908f920 251a23 915ef416a18 707.pdf

[R194] Rawal, Vivek, Jitendra Bothara, Pragya Pradhan, Ramraj Narasimhan, and Vijaya Singh. 2021. “Inclusion of the Poor and Vulnerable: Learning from Post-Earthquake Housing Reconstruction in Nepal.” United Nations Development Programme, April 5. Sections 2, 3.4, and 3.5, especially table 4. https://www.undp.org/nepal/blog/inclusion-poor-and-vulnerable-learning-post-earthquake-housing-reconstruction-nepal

[R195] Secretariat of the Multi Donor Fund for Aceh and Nias and the Java Reconstruction Fund, World Bank. 2012. REKOMPAK: Rebuilding Indonesia’s Communities After Disasters. Jakarta, October. Community finance and facilitation pp. 72, 86–89, and 96–99; construction supervision pp. 112–113; implementation limitations pp. 145–146; service delays p. 152. https://documents1.worldbank.org/curated/en/1 283 614 682 67 347 740/pdf/665 520WP0Box380UBLIC00rekompak0book.pdf

[R196] Todd, David, and Hazel Todd. 2011. Natural Disaster Response: Lessons from Evaluations of the World Bank and Others. Independent Evaluation Group, Evaluation Brief 16. Washington, DC: World Bank, pp. 19–21. https://documents.worldbank.org/curated/en/6 215 914 683 50 106 378/pdf/657 860NWP0Box30at0disaster0response.pdf

[R197] International Development Research Centre (Canada), “Data and activism drive dramatic improvements in struggling Nairobi neighbourhoods,” 2025. Mukuru enumeration, structure and tenant counts. https://idrc-crdi.ca/en/stories/data-and-activism-drive-dramatic-improvements-struggling-nairobi-neighbourhoods

[R198] Muungano wa Wanavijiji, “About the Mukuru SPA.” Resident organizations’ account of tenure, service brokerage and 94% tenancy. https://www.muungano.net/about-the-mukuru-spa

[R199] Gauteng City-Region Observatory, “Backyard and informal dwellings (2001-2016),” 2018. GeoTerraImage structure classification; counts are buildings, not occupied households. https://www.gcro.ac.za/outputs/map-of-the-month/detail/backyard-and-informal-dwellings-2001-2016/

[R200] City of Cape Town, “Cape Town puts affordable housing into high gear as revised Municipal Planning By-law is Gazetted,” 12 August 2025. Legal additional-use rights for designated small rental developments. https://www.capetown.gov.za/media-and-news/cape-town-puts-affordable-housing-into-high-gear-as-revised-municipal-planning-by-law-is-gazetted/

[R201] Rand Merchant Bank, “RMB and INDLU Launch R1bn Blended Finance Programme,” 15 July 2026. Funding plan and company-reported prior delivery; independently verified tenant outcomes not supplied. https://www.rmb.co.za/news/rmb-and-indlu-launch-r1bn-blended-finance-programme

[R202] OECD Economic Surveys: India 2019, chapter on Housing for All. Census-based 2011 vacancy and geography of empty units. https://www.oecd.org/en/publications/oecd-economic-surveys-india-2019_554c1c22-en/full-report/component-6.html

[R203] Sahil Gandhi, Richard K. Green and Shaonlee Patranabis (2022), “Insecure property rights and the housing market: Explaining India’s housing vacancy paradox,” Journal of Urban Economics 131. District panel estimates and modeled shortage effect. https://doi.org/10.1016/j.jue.2022.103490

[R204] Ministry of Housing and Urban Affairs, India, ARHC portal, “Details of Govt. Funded Vacant Houses.” Administrative snapshot accessed 11 October 2026; occupancy not verified. https://arhc.mohua.gov.in/VacantHouses.html

[R205] Government of India, Cabinet approval of the Model Tenancy Act, 2021; MoHUA Affordable Rental Housing Complexes program FAQ. https://www.pmindia.gov.in/en/news_updates/cabinet-approves-model-tenancy-act-for-circulation-to-the-states-union-territories-for-adoption/

[R206] Richmond Juvenile Ehwi, Lewis Abedi Asante and Emmanuel Kofi Gavu (2024), “Understanding the norms and difficulties with advance rent payments in Ghana,” International Journal of Urban Sustainable Development 16(1):163-181. Survey of 362 renters. https://doi.org/10.1080/19 463 138.2024.2350747

[R207] Ghanaian Times, 20 March 2026, “Collect 6 Months’ Rent or Face Prosecution,” via AllAfrica. Reports April 2026 enforcement announcement; outcome evidence remains to be established. https://allafrica.com/stories/202 603 200 132.html

[R208] Sebastian Galiani et al. (2017), “Shelter from the storm: Upgrading housing infrastructure in Latin American slums,” Journal of Urban Economics 98:187-213; randomized interventions in El Salvador, Mexico and Uruguay. https://www.nber.org/papers/w19 322

[R210] Muungano wa Wanavijiji (2020 archive), “Mukuru Special Planning Area.” Household scale, area, community forum participation and participating organizations. https://www.muungano.net/mukuru-spa

[R211] Muungano wa Wanavijiji, “Mukuru SPA second level”; account of landowners, community enumeration and the estimate that 94% of residents rent. https://www.muungano.net/mukuru-spa-second-level

[R214] Prichard, W., and Trowbridge, E. (2026). Local leadership for digitalising public administration: lessons from property tax reform in Freetown. ODI Global, 15 May. . Case study and reported reform statistics; no independent randomised attribution. https://odi.org/en/insights/local-leadership-for-digitalising-public-administration-lessons-from-property-tax-reform-in-freetown-sierra-leone/

[R215] Parliament of India, Standing Committee on Rural Development and Panchayati Raj, Implementation of DILRMP, presented 11 August 2026; summary by PRS Legislative Research. https://prsindia.org/policy/report-summaries/implementation-of-digital-india-land-records-modernisation-programme-dilrmp

[R218] NDTV India (31 July 2025), local investigation in Chhattisgarh alleging repeated use of one house image against multiple housing-beneficiary records. News report; no national extrapolation. https://mpcg.ndtv.in/chhattisgarh-news/pm-awas-yojana-fraud-in-gariaband-geo-tagging-scam-in-pradhan-mantri-awas-yojana-15-beneficiaries-on-one-house-photo-sarkari-record-cg-news-8 990 258

[R219] Owusu et al. (2024), “Towards a scalable and transferable approach to map deprived areas using Sentinel-2 images and machine learning,” Computers, Environment and Urban Systems 109. Peer-reviewed model validation. https://doi.org/10.1016/j.compenvurbsys.2024.102075

[R220] Gechter, Sifakis, Swanson & Tsivanidis (2 July 2026), “Measuring slums from space,” International Growth Centre policy brief. https://www.theigc.org/publications/measuring-slums-space

[R222] Dzansi, Jensen, Lagakos and Telli. Technology and Tax Capacity: Evidence from Local Governments in Ghana. February 2025 version includes collection and household-reported bribe results. https://www.sciencespo.fr/department-economics/files/Departmental_2025_paper_A_Jensen_GhanaTech_NBERWP.pdf

[R223] Kreindler, G. E., and Miyauchi, Y. (2021). Measuring Commuting and Economic Activity inside Cities with Cell Phone Records. NBER Working Paper 28516. Dhaka and Colombo; model-based income inference, not direct job enumeration. Author manuscript hosted by Boston University. https://www.bu.edu/econ/files/2021/02/Kreindler-and-Miyauchi-2021.pdf

[R224] Office for National Statistics. Research Outputs: Using mobile phone data to estimate commuting flows. Experimental comparison using 2016 mobile data and adjusted census estimates, sections 3-4. The source labels these research outputs unsuitable for policy decisions. https://www.ons.gov.uk/aboutus/whatwedo/programmesandprojects/censusanddatacollectiontransformationprogramme/futureofpopulationandsocialstatistics/administrativedatacensusresearchoutputs/populationcharacteristics/researchoutputsusingmobilephonedatatoestimatecommutingflows

[R225] Jha, A. (30 September 2009), Philippines flooding: Responding to a disaster in real time, World Bank. Contemporary first-person account; the description of imagery constraints refers to that response, not current satellite capabilities. https://blogs.worldbank.org/en/eastasiapacific/philippines-flooding-responding-to-a-disaster-in-real-time

[R226] Independent Evaluation Group (2016), Vietnam Urban Upgrading Project, P070197, ICR Review ICRR0020083, sections 4, 6, 10 and 12. Public final outcome rating: Moderately Satisfactory. The review documents attribution and baseline limitations, and additional regional evidence. https://documents1.worldbank.org/curated/en/8 506 714 670 56 929 965/pdf/ICRR-Disclosable-P070 197-06-27-2016-1 467 057 819 476.pdf

[R227] Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., and Vermeersch, C. M. J. (2016), Impact Evaluation in Practice, second edition, World Bank and Inter-American Development Bank. General evaluation methods; the housing-specific commissioning guide above is the author's adaptation. https://documents1.worldbank.org/curated/en/6 984 414 740 29 568 469/pdf/108 270-PUB-Box396 299B-PUBLIC-PUBDATE-9-13-16.pdf

[R228] City of Cape Town (8 June 2026), "Mayor hands over inner-city Salt River Market site for 970-unit affordable housing construction." Official city account of 970 planned homes; 300 social units; R95m land concession; 70 households relocated. https://www.capetown.gov.za/media-and-news/mayor-hands-over-inner-city-salt-river-market-site-for-970-unit-affordable-housing-construction/

[R229] Engineering News (28 August 2026), "Salt River Market affordable housing project, South Africa." Reports developer contribution of R40m and anticipated SHRA subsidy of about R127m; prospective construction timeline. https://www.engineeringnews.co.za/article/salt-river-market-affordable-housing-project-south-africa-2026-08-28

[R230] GroundUp, republished by Mother City News (14 January 2026), "Social housing planned to be built at Salt River Market this year." Reporting on existing occupants and negotiations before the June 2026 handover. https://mothercitynews.capetown/news/saltriverhousing/

[R231] City of Cape Town (2022), "Significant new progress in city-owned land release for social housing." Earlier public account of proposed Salt River Market unit mix. https://www.capetown.gov.za/media-and-news/significant-new-progress-in-city-owned-land-release-for-social-housing/

[R232] Cape Argus / Independent Online (21 September 2026), "970-unit Salt River housing project fuels election row." Political claims about timing and prior announcements, distinguished from completed-housing facts. https://iol.co.za/capeargus/news/2026-09-21-970-unit-salt-river-housing-project-fuels-election-row/

[R233] OECD (2025), "Greening the tax system in Bogotá," Reconnecting Bogotá. Land-value capture instruments, capitalization estimates, and disputes over betterment charges. https://www.oecd.org/en/publications/reconnecting-bogota_559f2ecd-en/full-report/greening-the-tax-system-in-bogota_b29 336c5.html

[R234] City of Vienna, "Hauptförderung – Errichtung von Mietwohnungen" (municipal rules, accessed October 2026). Provincial loans, interest, contributions, and repayment terms. https://www.wien.gv.at/wohnen/hauptfoerderung-mietwohnungen-geschaeftsflaechen

[R235] Government of India, Ministry of Housing and Urban Affairs, PMAY-Urban 2.0 official program and eligibility pages (accessed October 2026). Four verticals, eligibility rules, central assistance and infrastructure responsibilities. https://www.pmaymis.gov.in/PMAYMIS2_2024/PmayUrban.aspx

[R236] OFFICIAL PROGRAMME DECISION Prime Minister of India / Union Cabinet. Cabinet Approves Pradhan Mantri Awas Yojana–Urban 2.0 Scheme (2024). Announced interest subsidy amounts, caps, tenure and five annual instalments. https://www.pmindia.gov.in/en/news_updates/cabinet-approves-pradhan-mantri-awas-yojana-urban-2-0-scheme/

[R237] Reserve Bank of India (13 November 2024), Report on Municipal Finances; publication page and national figures (reproduced contemporaneously by the Economic Times). https://www.rbi.org.in/Scripts/AnnualPublications.aspx?head=Report%20on%20Municipal%20Finances

[R239] Kenya Revenue Authority (21 March 2024), "Collection of Affordable Housing Levy." Statutory 1.5% employee and 1.5% employer contributions and non-salaried income rules. https://www.kra.go.ke/news-center/public-notices/2099-

[R240] Court of Appeal of Kenya (2026). Gikenyi B & 5 others v Cabinet Secretary for Lands, Public Works, Housing and Urban Development & 65 others, [2026] KECA 1821 (KLR), 25 September; Civil Appeals E832/2024 and E019/2025. Full judgment text, paragraphs 7–16, 114–120, 136, 149, 187–191. Official record: https://kenyalaw.org/akn/ke/judgment/keca/2026/1821/eng@2026-09-25 . Full-text copy consulted: https://sheriahub.com/cases/ke/caselaw/gikenyi-b-5-others-v-cabinet-secretary-for-lands-public-works-housing-andurban-development-65-others-2026-keca-1821-klr

[R242] Sanyal, Bishwapriya, and Chandan Deuskar (2012), "Town Planning Schemes as a Hybrid Land Readjustment Process in Ahmedabad, India," Lincoln Institute of Land Policy. Process, land shares, state approvals and exclusion of renters and informal settlers. https://www.lincolninst.edu/publications/conference-papers/town-planning-schemes-hybrid-land-readjustment-process-ahmedabad/

[R243] Federal Reserve Bank of Chicago (2025), "Expirations and Early Exits of LIHTC Units: Implications for the Affordable Housing Stock," Chicago Fed Letter 514. Projections, eligible exits, affordability periods. https://www.chicagofed.org/publications/chicago-fed-letter/2025/514

[R244] Ministry of Housing, Communities and Local Government (2026). Appraisal guide, technical annex, Annexes B and H. Appraisal-summary and distributional methods, not an impact evaluation. https://www.gov.uk/government/publications/the-mhclg-appraisal-guide/mhclg-appraisal-guide-technical-annex

[R245] Transport Scotland. National Speed Management Review 2024, Appendix I: Economic Assessment Report, distributional assessment. Published modelled appraisal, not realised household outcomes. https://www.transport.gov.scot/publication/national-speed-management-review-2024/appendix-i-economic-assessment-report/

[R246] Republic of South Africa, Division of Revenue Bill B15–2025, explanatory memorandum, local government equitable share formula and basic-services component. Used as a published description of the 2025 budget design, not as a statement of current legal entitlements or an evaluation of outcomes. https://www.gov.za/sites/default/files/gcis_document/202 505/b15-2025divisionrevenue0.pdf

[R248] sansad.in — 18 Housing and Urban Affairs 1.pdf https://sansad.in/getFile/lsscommittee/Housing%20and%20Urban%20Affairs/18_Housing_and_Urban_Affairs_1.pdf?source=loksabhadocs

[R249] Auditor-General of South Africa, 2024–25 Consolidated General Report: National and Provincial Government, chapter on housing projects, p. 86; media release, 26 March 2026. Audit sample: 24 housing projects, R5.67 billion, 23 with findings, 20 delays, 13 cost issues, 15 poor build quality, six commissioning shortcomings. . https://www.agsa.co.za/news/ag-reports-minimal-progress-calls-government-double-efforts-improve-audit-outcomes

[R250] Office of the Auditor-General, Kenya, Special Audit Report on the Affordable Housing Programme: Project Status as at 31 March 2025, issued 11 March 2026, lodged in the Parliament of Kenya repository (August 2026). . https://libraryir.parliament.go.ke/handle/123 456 789/40 995

[R251] Julius Otieno, "Why same contractors? Audit queries on affordable housing," The Star (Kenya), 20 March 2026, reporting the Auditor-General's audit findings on procurement, site readiness, consultant oversight, payments, permits, and appraisal. . https://www.the-star.co.ke/news/2026-03-20-why-same-contractors-audit-queries-on-affordable-housing

[R252] Emmanuel Too, "Auditor General flags missing land title deeds in affordable housing projects," Citizen Digital, 29 April 2026. Explicitly describes 394 mixed-category projects and 269 with documentation gaps at audit stage; includes officials' subsequent update. . https://citizen.digital/article/auditor-general-flags-missing-land-title-deeds-in-affordable-housing-projects-n381 775

[R253] Lewis-Faupel, Sean, Yusuf Neggers, Benjamin A. Olken, and Rohini Pande (2016), "Can Electronic Procurement Improve Infrastructure Provision? Evidence from Public Works in India and Indonesia," American Economic Journal: Economic Policy 8(3): 258– https://doi.org/10.1257/pol.20140 258

[R255] Lehne, Jonathan, Jacob N. Shapiro, and Oliver Vanden Eynde (2018), “Building Connections: Political Corruption and Road Construction in India,” Journal of Development Economics 131: 62– https://doi.org/10.1016/j.jdeveco.2017.10.009

[R257] Olken, Benjamin A. (2007), “Monitoring Corruption: Evidence from a Field Experiment in Indonesia,” Journal of Political Economy 115(2): 200– https://doi.org/10.1086/517 935

[R258] Olken, B. (2007). Monitoring Corruption: Evidence from a Field Experiment in Indonesia. Journal of Political Economy; NBER Working Paper 11753. Road-project evidence; transfer to housing requires testing. https://www.nber.org/papers/w11 753

[R259] Singapore Public Sector Outcomes Review. Housing and amenities. Official account of housing provision and delivery; institutional benchmark, not a transferable treatment effect. https://spor.performancereports.gov.sg/citizens/quality-and-sustainable-living/housing-and-amentities/

[R260] Government of India, Ministry of Housing and Urban Affairs, PMAY-U https://pmay-urban.gov.in/guideline

[R261] 0 Scheme Guidelines (September 2024) and PMAY-HFA (Urban) FAQ, describing geo-tagging linked to instalment release. ; . https://www.pmaymis.gov.in/PMAYMIS2_2024/faq.html

[R269] National Construction Authority, Kenya (7 Jan. 2026). Updated report on South C building collapse. https://www.nca.go.ke/whole-story/JAN71 525

[R270] The Star, Nairobi (2 Jan. 2026). City Hall: collapsed South C building had been flagged months earlier. https://www.the-star.co.ke/news/2026-01-02-city-hall-collapsed-south-c-building-had-been-flagged

[R272] Bertaud, A. & Brueckner, J.K. (2005). Analyzing building-height restrictions: predicted impacts and welfare costs. Regional Science and Urban Economics 35:109–125. https://doi.org/10.1016/j.regsciurbeco.2004.02.004

[R273] City of Cape Town (26–27 June 2025). Council approval of revised Municipal Planning By-law; rental flat provisions commenced 1 Sept. 2025. https://www.capetown.gov.za/media-and-news/cape-town-s-revised-municipal-planning-by-law-to-enable-more-affordable-housing/

[R274] Scheba, A., Turok, I. & Visagie, J. (2021). Inequality and urban density: socio-economic drivers of uneven densification in Cape Town. https://doi.org/10.1177/0 975 425 321 998 026

[R275] Delhi Development Authority (current scheme page, accessed 16 Oct. 2026). PM-UDAY property-rights scheme for 1,731 unauthorised colonies. https://dda.gov.in/index.php/pm_uday/scheme

[R276] Datta, S., and Pathania, V. (2016). For whom does the phone (not) ring? Discrimination in the rental housing market in Delhi, India. UNU-WIDER Working Paper 55/2016. . Correspondence audit experiment; outcome is landlord callback. https://doi.org/10.35188/UNU-WIDER/2016/098-0

[R277] Asafo, D.M. (2024). Fragile and compromised housing: land conflicts in peri-urban Accra. Housing Studies 39:1340–1363. Open https://doi.org/10.1080/02 673 037.2022.2119209

[R278] Urban land use planning in Ghana: Navigating complex coalescence of land ownership and administration (2020). Land Use Policy. https://doi.org/10.1016/j.landusepol.2020.105054

[R279] Horn, P. (2021). Enabling participatory planning in exclusionary urban political environments: Mukuru, Nairobi. Environment and Urbanization 33. https://doi.org/10.1177/0 956 247 821 1 011 088

[R280] Einstein, K.L., Palmer, M. & Glick, D.M. (2019). Who participates in local government? Evidence from meeting minutes. Perspectives on Politics 17:28–46. https://doi.org/10.1017/S1 537 592 718 00 213X

[R281] Architectural Association of Kenya (2025). Status of the Built Environment Report 2024; inspections and members’ planning experiences. https://mail.aak.or.ke/status-of-the-built-environment/

[R283] 18. City of Cape Town (2022). Integrated Human Settlements Sector Plan, 2022–27; spatial inequality and infrastructure mandates. Open source

https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2C%20plans%20and%20frameworks/Integated_Human_Settlements_Sector_Plan_2022-2027.pdf

[R285] World Bank (2017/2018). Environmental and Social Framework, Environmental and Social Standard 5, Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, plus Guidance Note. https://documents1.worldbank.org/curated/en/3 830 114 924 23 734 099/pdf/114 278-WP-REVISED-PUBLIC-Environmental-and-Social-Framework-Dec18-2017.pdf

[R286] Mwau, B. & Sverdlik, A. (2020). High rises and low-quality shelter: rental housing dynamics in Mathare Valley, Nairobi. Environment and Urbanization 32(2):481–502. https://journals.sagepub.com/doi/10.1177/0 956 247 820 942 166

[R287] Community Organizations Development Institute, Thailand (26 August 2026). Social Return on Investment: Baan Mankong programme reports 142,763 households covered. Administrative count. https://en.codi.or.th/2026/08/26/social-return-on-investment-sroi-evaluating-reality-of-housing-development/

[R288] Takeuchi, A., Cropper, M. & Bento, A. (2008). Measuring the welfare effects of slum improvement programs: The case of Mumbai. Journal of Urban Economics 64(1), 65–84, especially Table 10, p. 80. https://doi.org/10.1016/j.jue.2007.08.006 ; author-hosted published article: https://www.econ.umd.edu/sites/www.econ.umd.edu/files/pubs/J%20Urban%20Econ%202008.pdf

[R289] CODI (23 September 2026). From Railway-Side Communities to Secure Homes: report of 3,229 households, 76 communities as at August 2025. https://en.codi.or.th/2026/09/23/from-railway-side-communities-to-secure-homes-baan-mankong-railway-side-communities-report/

[R290] Dharavi Redevelopment Project / Slum Rehabilitation Authority (Maharashtra). Official FAQ, eligibility criteria and entitlement pages; accessed 17 October 2026. https://drpmumbai.maharashtra.gov.in/en/Citizen-Services/Eligibility-Criteria

[R291] CODI (12 May 2023). Community Housing Insurance: financing and default risks in community-led cooperatives. https://en.codi.or.th/2023/05/12/community-housing-insurance/

[R292] World Bank PPP Reference. Slum Rehabilitation Scheme, Maharashtra, India (historical scheme description; eligibility and consent rules may have changed). https://ppp.worldbank.org/sub-national-ppp/slum-rehabilitation-scheme-maharashtra-india

[R294] Jha, R. (2025). Urban practice in extremis: resettlement policy, life-threatening housing and social change in Mumbai. British Journal of Social Work 55(6):2957–2975. https://doi.org/10.1093/bjsw/bcaf082

[R295] Wainaina, G.K. et al. (2023). Lack of organizational learning in slum upgrading success: Kenya Informal Settlement Improvement Programme, 2011–2020. Environment and Urbanization. https://journals.sagepub.com/doi/10.1177/0 956 247 823 1 175 041

[R296] Constitutional Court of South Africa (10 June 2009). Residents of Joe Slovo Community v Thubelisha Homes ZACC 16. https://www3.saflii.org/za/cases/ZACC/2009/16.html

[R297] Wainaina, G.K. & Truffer, B. (2024). Missing link for effective informal settlement upgrading: Appropriation shaping the outcome of new infrastructure. Urban Studies. https://journals.sagepub.com/doi/10.1177/0 042 098 024 1 236 077

[R298] Constitutional Court of South Africa (31 March 2011). Residents of Joe Slovo Community v Thubelisha Homes ZACC 8. https://www.saflii.org/za/cases/ZACC/2011/8.html

[R299] Channels Television (21 June 2017). Court stops Lagos government from further evictions at Otodo-Gbame. https://www.channelstv.com/2017/06/21/court-stops-lagos-govt-evictions-otodo-gbame/

[R300] Amnesty International (14 November 2017). The Human Cost of a Megacity: Forced Evictions of the Urban Poor in Lagos, AFR 44/7389/2017. https://www.amnesty.org/en/documents/afr44/7389/2017/en/

[R301] Tandel, V. et al. (2016). Decline of rental housing in India: the case of Mumbai. Environment and Urbanization 28(1):259–274; plus Mumbai location study . https://journals.sagepub.com/doi/10.1177/0 956 247 815 620 316

[R302] Field, E. (2005). Property Rights and Investment in Urban Slums. Journal of the European Economic Association 3(2–3):279–290. https://dash.harvard.edu/entities/publication/73 120 378-8465-6bd4-e053-0 100 007fdf3b

[R303] Field, E. (2007). Entitled to Work: Urban Property Rights and Labor Supply in Peru. Quarterly Journal of Economics 122(4):1561–1602. https://rpds.princeton.edu/sites/rpds/files/media/field_entitled_to_work_qje.pdf

[R305] Galiani, S. & Schargrodsky, E. (2010). Property Rights for the Poor: Effects of Land Titling. Journal of Public Economics 94(9–10):700–729. https://repositorio.utdt.edu/items/72a4b0be-ccb9-40d0-887b-454 721fe22b9

[R307] Belchior, C.A., Gonzaga, G. & Ulyssea, G. (2023). Unpacking Neighborhood Effects: Experimental Evidence from a Large-Scale Housing Program in Brazil. IZA Discussion Paper 16113. https://www.iza.org/publications/dp/16 113/unpacking-neighborhood-effects-experimental-evidence-from-a-large-scale-housing-program-in-brazil

[R308] Datta, S. & Pathania, V. (2016). For whom does the phone (not) ring? Discrimination in the rental housing market in Delhi, India. UNU-WIDER Working Paper 2016/55. https://doi.org/10.35188/unu-wider/2016/098-0

[R309] UNHCR Integration Handbook. Access to secure and affordable housing. Resettled-refugee integration guidance; housing-system and support arrangements require local adaptation. https://www.unhcr.org/handbooks/ih/housing/access-secure-and-affordable-housing

[R310] www.knbs.or.ke — kenya integrated household budget survey 2015 2016 https://www.knbs.or.ke/reports/kenya-integrated-household-budget-survey-2015-2016/

[R311] www.pib.gov.in — Pressreleaseshare.aspx https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1 593 252&lang=2&reg=48

[R312] census.statssa.gov.za — P03014 Census 2022 Statistical Release.pdf https://census.statssa.gov.za/assets/documents/2022/P03 014_Census_2022_Statistical_Release.pdf

[R313] its.uci.edu — published journal article backyarding theory and evidence for south africa https://its.uci.edu/research_products/published-journal-article-backyarding-theory-and-evidence-for-south-africa/

[R314] journals.sagepub.com — 0956247819895958 https://journals.sagepub.com/doi/full/10.1177/0 956 247 819 895 958

[R315] isandla.org.za — 194 understanding rental markets better a synthesis of research findings https://isandla.org.za/en/resources/item/194-understanding-rental-markets-better-a-synthesis-of-research-findings

[R316] www.capetown.gov.za — council approves subsidies for micro developers in lower income areas https://www.capetown.gov.za/media-and-news/council-approves-subsidies-for-micro-developers-in-lower-income-areas/

[R317] resource.capetown.gov.za — Additional information on the CCT Amendment MPBL 2025.pdf https://resource.capetown.gov.za/documentcentre/Documents/Bylaws%20and%20policies/Additional-information-on-the-CCT-Amendment-MPBL-2025.pdf

[R318] journals.sagepub.com — 09562478241300227 https://journals.sagepub.com/doi/10.1177/0 956 247 824 1 300 227

[R319] journals.uct.ac.za — 2077 https://journals.uct.ac.za/index.php/JARER/article/view/2077

[R320] www.pmay-urban.gov.in — arhc about https://www.pmay-urban.gov.in/arhc-about

[R321] timesofindia.indiatimes.com — 116147077.cms https://timesofindia.indiatimes.com/india/4-5-years-after-launch-just-7-of-vacant-houses-allotted-to-migrant-workers-under-affordable-rental-scheme/amp_articleshow/116 147 077.cms

[R322] www.pmaymis.gov.in — PmayARH.aspx https://www.pmaymis.gov.in/PMAYMIS2_2024/PmayARH.aspx

[R323] mohua.gov.in — Model Tenancy Act English 02 06 2021.pdf https://mohua.gov.in/upload/uploadfiles/files/Model-Tenancy-Act-English-02_06_2021.pdf

[R324] www.hindustantimes.com — 4 states have updated law on lines of model tenancy act hardeep puri 101701957896712.html https://www.hindustantimes.com/india-news/4-states-have-updated-law-on-lines-of-model-tenancy-act-hardeep-puri-1 017 019 578 96 712.html

[R325] www.gov.za — human settlements annual report.pdf https://www.gov.za/sites/default/files/gcis_document/202 510/human-settlements-annual-report.pdf

[R326] www.gov.za — minister thembi simelane human settlements dept budget vote 202526 02 jul 2025 https://www.gov.za/news/speeches/minister-thembi-simelane-human-settlements-dept-budget-vote-202 526-02-jul-2025

[R327] pmc.ncbi.nlm.nih.gov — PMC6168747 https://pmc.ncbi.nlm.nih.gov/articles/PMC6 168 747/

[R328] ideas.repec.org — wp563.html https://ideas.repec.org/p/udc/wpaper/wp563.html

[R329] econ.uchile.cl — javiera selman presenta en la 18th annual meeting of the urban economics association https://econ.uchile.cl/noticia/javiera-selman-presenta-en-la-18th-annual-meeting-of-the-urban-economics-association/

[R330] publications.iadb.org — smart social safety nets reducing incomplete take through digital innovation latin america https://publications.iadb.org/en/smart-social-safety-nets-reducing-incomplete-take-through-digital-innovation-latin-america

[R331] INSTITUTIONAL STATEMENT International Finance Corporation. IFC and Aavas Financiers to Catalyze Affordable Green Housing Finance (2020). Describes lender client segment and approach; corporate programme evidence. https://www.ifc.org/en/pressroom/2020/ifc-aavas-financiers-to-help-catalyze-affordable-green-housing-finance-for-low-income-borrowers-in-india

[R332] LENDER OPERATING STATEMENT Aavas Financiers. What Is Assessed Income for a Self-Employed Home Loan? (2026). Describes appraisal methods; no independent causal outcome estimate. https://www.aavas.in/blog/what-is-assessed-income-for-a-self-employed-home-loan

[R333] CAUSAL RESEARCH: NATURAL EXPERIMENT Galiani, S. and Schargrodsky, E.. Property Rights for the Poor: Effects of Land Titling. Journal of Public Economics 94 (2010): 700–729. https://www.cedlas.econo.unlp.edu.ar/wp/en/doc-cedlas103-pdf/ Buenos Aires land allocation; investment and schooling gains without a credit channel. https://www.cedlas.econo.unlp.edu.ar/wp/en/doc-cedlas103-pdf/

[R334] CAUSAL RESEARCH: DIFFERENCE-IN-DIFFERENCES Field, E.. Property Rights and Investment in Urban Slums. Journal of the European Economic Association 3 (2005): 279–290. Peru urban titles; investment response largely financed without loans. https://academic.oup.com/jeea/article-abstract/3/2-3/279/2 280 908

[R335] CAUSAL RESEARCH: POLICY TIMING Field, E.. Entitled to Work: Urban Property Rights and Labor Supply in Peru. Quarterly Journal of Economics 122 (2007): 1561–1602. Tenure security and labour supply; does not estimate mortgage supply impact. https://academic.oup.com/qje/article-abstract/122/4/1561/1 850 508

[R336] INSTITUTIONAL ADMINISTRATIVE REPORT Kenya Mortgage Refinance Company. Annual Integrated Report 2024, pp. 11 and 21. https://kmrc.co.ke/assets/file/e4f9034c--kmrc-annual-report-2024v2.pdf Cumulative refinanced mortgages, wholesale funds, geographic concentration; institution-reported. https://kmrc.co.ke/assets/file/e4f9034c--kmrc-annual-report-2024v2.pdf

[R337] INSTITUTIONAL ADMINISTRATIVE REPORT Nigeria Mortgage Refinance Company. Mortgage Refinancing: How it Works and Bond Issuances (accessed October 2026). https://nmrc.com.ng/our-business/mortgage-refinancing/ Business model and total refinancing as of December 2024; institution-reported. https://nmrc.com.ng/our-business/mortgage-refinancing/

[R338] INDEPENDENT RATING OPINION Agusto & Co.. Affirmation of NMRC Series II 15-year bond rating (2025). Federal guarantee and sovereign contingent-risk structure. https://www.agusto.com/ratings/agusto-co-hereby-affirms-the-aaanga-rating-assigned-to-nigeria-mortgage-refinance-company-plcs-bond-with-a-stable-outlook/

[R342] Kenya Revenue Authority (21 March 2024), Collection of the Affordable Housing Levy; statutory employee and employer rates. https://www.kra.go.ke/news-center/public-notices/2099-collection-of-the-affordable-housing-levy-by-kenya-revenue-authority

[R345] Lok Sabha Standing Committee on Housing and Urban Affairs (14 March 2023), Evaluation of Implementation of PMAY– Urban, summarized by PRS Legislative Research. https://prsindia.org/policy/report-summaries/evaluation-of-implementation-of-pmay-urban

[R346] Government of India, PMAY-U 2.0, official frequently asked questions on funding shares, new subsidy ceilings and verticals. https://www.pmaymis.gov.in/PMAYMIS2_2024/PmayFAQ.aspx

[R347] Picarelli, N. (2019), "There Is No Free House," Journal of Urban Economics, 111, 35–52. https://ideas.repec.org/a/eee/juecon/v111y2019icp35-52.html

[R348] Franklin, Simon (2020). Enabled to Work: The Impact of Government Housing on Slum Dwellers in South Africa. Journal of Urban Economics 118, 103265. Earlier working-paper link retained for access. https://ideas.repec.org/p/cep/sercdp/0197.html

[R349] Gauteng City-Region Observatory (February 2014), "Proximity of RDP housing in relation to major economic centres," derived from July 2008 provincial housing project data. https://www.gcro.ac.za/outputs/map-of-the-month/detail/proximity-rdp-housing-relation-major-economic-centres/

[R350] South African Government News Agency (18 March 2026), About 3.4 million households registered for housing assistance. https://www.sanews.gov.za/south-africa/about-34-million-households-registered-housing-assistance

[R351] Susin, S. (2002), "Rent vouchers and the price of low-income housing," Journal of Public Economics, 83(1), 109–152. https://ideas.repec.org/a/eee/pubeco/v83y2002i1p109-152.html

[R352] Fack, G. (2006), "Are housing benefits an effective way to redistribute income? Evidence from a natural experiment in France," Labour Economics, 13(6), 747–771. https://doi.org/10.1016/j.labeco.2006.01.001

[R353] Eerola, E., Lyytikäinen, T., Saarimaa, T., and Vanhapelto, T. (2026), "The incidence of rent subsidies: Evidence on rents, housing choices and supply," Journal of Public Economics, 261, 105718. https://doi.org/10.1016/j.jpubeco.2026.105718

[R354] Eerola, E. and Lyytikäinen, T. (2021), "Housing Allowance and Rents: Evidence from a Stepwise Subsidy Scheme," Scandinavian Journal of Economics, 123(1), 84–109. https://doi.org/10.1111/sjoe.12396

[R355] Collinson, R. and Ganong, P. (2016/2018), "Incidence and Price Discrimination: Evidence from Housing Vouchers," Harvard Joint Center for Housing Studies working paper. https://www.jchs.harvard.edu/research-areas/working-papers/incidence-and-price-discrimination-evidence-housing-vouchers

[R356] Shelby, H. (2024), "Insurgent Co-production: Conflict, Cooperation and the Dialectics of Scale in Thailand's Baan Mankong Program," International Journal of Urban and Regional Research. https://doi.org/10.1111/1468-2427.13251

[R357] Agence Française de Développement (2021), The role of social housing in reducing inequality in South Africa, study of rental institutions, location and outcomes. https://www.afd.fr/sites/default/files/2021-03-12-15-55/Role%20of%20social%20housing%20in%20reducing%20inequality_South%20Africa.pdf

[R358] Diamond, R., and McQuade, T. (2019), Who Wants Affordable Housing in Their Backyard? An Equilibrium Analysis of Low-Income Property Development, Journal of Political Economy 127(3), 1063–1117. Neighbourhood spillovers vary with initial conditions; property-price effects are not comprehensive household welfare measures. https://www.nber.org/papers/w22 204

[R359] Constitutional Court of South Africa (2026). Adonisi and Others v Minister for Transport and Public Works, Western Cape and Others; National Minister of Human Settlements and Another v Minister for Transport and Public Works, Western Cape and Others, [2026] ZACC 29, CCT 126/24 and CCT 128/24, 2 July. Full judgment, especially paragraphs 144–150, 267–272 and order. https://collections.concourt.org.za/bitstreams/f18b4288-461f-46e1-95d9-19093d2fb5cf/download

[R364] Cape Argus, “City defends Cape Town housing record in Tafelberg court report,” 6 October 2026, describes sworn submissions, claimed released-site pipeline and contested delivery figures: . https://capeargus.co.za/news/2026-10-06-city-defends-cape-town-housing-record-in-tafelberg-court-report/

[R365] Cape Argus, “Tafelberg housing project opens for public submissions,” 9 October 2026, planning status and October 20 objection deadline: . https://capeargus.co.za/news/2026-10-09-tafelberg-housing-project-opens-for-public-submissions/

[R366] Commission on Administrative Justice (Kenya), “Ombudsman calls for urgent reforms in land administration,” 21 March 2025: . https://ombudsman.go.ke/ombudsman-calls-urgent-reforms-land-administration

[R367] Hoefsloot, F. I., and Gateri, C. (2024), “Contestation, negotiation, and experimentation: The liminality of land administration platforms in Kenya,” Environment and Planning D: Society and Space. . https://doi.org/10.1177/0 263 775 824 1 254 943

[R368] World Bank and Government of Ethiopia (2019), Unlocking Ethiopia’s Urban Land and Housing Markets: Urban Land Supply and Affordable Housing Study, Synthesis Report, especially pages 19, 43–45. . https://documents1.worldbank.org/curated/en/5 492 215 723 82 742 218/pdf/Unlocking-Ethiopias-Urban-Land-and-Housing-Markets-Synthesis-Report.pdf

[R369] World Bank (2015), Stocktaking of the Housing Sector in Sub-Saharan Africa, pp. 35–36, condominium affordability in Addis Ababa. . https://www.worldbank.org/content/dam/Worldbank/document/Africa/Report/stocktaking-of-the-housing-sector-in-sub-saharan-africa-full-report.pdf

[R370] Delhi Development Authority, official online land-disposal auction portal: . https://dda.gov.in/landdisposal-eauction

[R371] PTI, reported in Economic Times Real Estate, 3 December 2025, based on Delhi Raj Niwas statement on the 81-plot auction: ; and for the two Dwarka bids. https://realty.economictimes.indiatimes.com/news/industry/reforms-help-dda-to-garner-nearly-1500-crore-in-plot-e-auction-delhi-raj-niwas/125 732 381

[R373] The Indian Express, 11 April 2025, Maharashtra approval and official claims about the 256-acre salt-pan allocation: . https://indianexpress.com/article/cities/mumbai/maharashtra-salt-pan-land-dharavi-officials-address-environmental-and-ownership-concerns-9 937 817/

[R374] Hindustan Times, “Dharavi redevelopment: 6 relocation sites identified,” June 2025; distance and land-allocation estimates, which may change as land transfer and approvals proceed: . https://www.hindustantimes.com/real-estate/dharavi-redevelopment-6-relocation-sites-identified-for-project-s-ineligible-residents-1 017 495 741 03 832.html

[R375] Hindustan Times, “Maharashtra approves using 256 acres of salt pans to rehouse Dharavi residents,” 30 September 2024; environmental and in-situ relocation objections: . https://www.hindustantimes.com/cities/mumbai-news/maharashtra-approves-using-256-acres-of-salt-pans-to-rehouse-dharavi-residents-1 017 277 234 36 457.html

[R376] Government of India, Ministry of Housing and Urban Affairs, PMAY–Urban “In-Situ Slum Redevelopment”: public land costs, central grants, transferable rights and private-sector participation: . https://pmay-urban.gov.in/issr

[R377] wohnfonds_wien, “Qualitätssicherung” (developer competitions and review): . https://www.wohnfonds.wien.at/neubau_qualitaetssicherung

[R378] wohnfonds_wien, “Beurteilung” (four-pillar appraisal, contractual obligations, and sanctions): . https://www.wohnfonds.wien.at/btw_beurteilung

[R379] wohnfonds_wien, “Qualitätsbeirat Eibengasse,” updates to August 2026; planned 2,600 dwellings and two-thirds subsidy share: . https://www.wohnfonds.wien.at/qsb-eibengasse

[R380] Singapore Centre for Liveable Cities, Land Acquisition and Resettlement: Securing Resources for Development, updated 1 March 2025; official historical account: . https://knowledgehub.clc.gov.sg/publications-library/land-acquisition-and-resettlement-securing-resources-for-development/

[R383] World Bank (2024), "IDA and Tanzania: A Focus on People, Cities, and Public Institutions for a Better Future." Results account for the 2015-23 Dar es Salaam Metropolitan Development Project. https://www.worldbank.org/en/projects-operations/results/2024/01/05/ida-and-afe-tanzania-a-focus-on-people-cities-and-public-institutions-for-a-better-future

[R384] World Resources Institute (2018), "Equitable Planning in Ahmedabad: Beyond Eminent Domain." Case account of Bombay Hotel and adaptations to planning alignments. https://www.wri.org/insights/equitable-planning-ahmedabad-beyond-eminent-domain

[R385] Desai, Renu, Darshini Mahadevia and Shachi Sanghvi (2020), "Urban planning, exclusion and negotiation in an informal subdivision: the case of Bombay Hotel, Ahmedabad," International Development Planning Review 42(1). https://doi.org/10.3828/idpr.2018.35

[R386] OECD / Lincoln Institute of Land Policy (2022), Global Compendium of Land Value Capture Policies, Japan country chapter. https://www.oecd.org/en/publications/global-compendium-of-land-value-capture-policies_4f9559ee-en/full-report/japan_79 274b43.html

[R387] World Bank (20 December 2023), "Tanzania: New Financing to Support Private Sector-led Inclusive Growth and Climate-Resilient Development in Dar es Salaam." Reports DMDP1 settlement, road and flood outcomes. https://www.worldbank.org/en/news/press-release/2023/12/20/tanzania-afe-new-financing-to-support-private-sector-led-inclusive-growth-and-climate-resilient-development

[R388] World Bank (2020), Project Appraisal Document, Second Kenya Informal Settlements Improvement Project, P167814, especially paragraphs 17, 33, 68-70 and 81. Includes the up-to-85% avoided-displacement comparison for adaptive planning in selected settlements. https://documents1.worldbank.org/curated/en/2 897 115 971 11 250 042/pdf/Kenya-Second-Kenya-Informal-Settlements-Improvement-Project.pdf

[R389] City of Cape Town, Development Charges Policy and public implementation guidance; policy in effect July 2014, accessed 22 October 2026. https://www.capetown.gov.za/work-and-business/planning-portal/tariffs-and-charges/development-charges

[R390] City of Johannesburg, Development Contributions Policy and Calculator, approved 2021; city website, accessed 22 October 2026. https://joburg.org.za/departments_/Pages/Development-Planning/Development-Contributions.aspx

[R391] Institute of Development Studies (14 June 2021), "Collaborating to reform Freetown’s property tax system." Documents participatory budgeting commitments and early collections. https://www.ids.ac.uk/opinions/collaborating-to-reform-freetowns-property-tax-system/

[R392] African Cities Research Consortium (5 March 2024), "Freetown property tax reform." Documents national-local conflict over authority in 2020. https://african-cities-database.org/urc-record-index/Freetown-property-tax-reform/

[R393] Perdomo Calvo, Jorge Andrés and others (2007/2010), "Study of the Effect of the TransMilenio Mass Transit Project on the Value of Properties in Bogotá, Colombia," Lincoln Institute working paper; propensity score matching. https://doi.org/10.2139/ssrn.1586381

[R394] Tsivanidis, Nick (February 2026), "Evaluating the Impact of Urban Transit Infrastructure: Evidence from Bogotá's TransMilenio," American Economic Review 116(2):418-463, DOI 10.1257/aer.20190874. https://doi.org/10.1257/aer.20190 874

[R395] YUVA (2026). 25 Years Later: Infrastructure Conditions of R&R Housing in Mumbai. Original report (https://yuvaindia.org/wp-content/uploads/2026/08/25-Years-Later-Infrastructure-Conditions-of-RR-Housing.pdf

[R397] University of Cambridge. Fixing India's slum rehabilitation housing (research profile of Ronita Bardhan and colleagues), . Accessible reproduction: Tom Almeroth-Williams, Selwyn, Issue 27, Summer 2020, pp. 10–11, . Research communication drawing on surveys and sensors; neither the 40% figure nor the 1,244-household sample is a citywide estimate. https://www.cam.ac.uk/stories/indias-slum-rehabilitation-housing

[R399] Sarkar, A., and Bardhan, R. (2020). Socio-physical liveability through socio-spatiality in low-income resettlement archetypes. Cambridge repository. . Peer-reviewed research; Mumbai case. https://www.repository.cam.ac.uk/items/2a954 812-5fc3-4924-8867-be902c2b602e

[R400] Kenya Water Services Regulatory Board (2026). Impact 18, 2024/25 sector report, launched 19 June 2026. ; corroborating account, Business Daily, 23 June 2026: . Regulatory administrative indicators; provider counts differ in secondary accounts. https://wasreb.go.ke/impact-reports-issue-no-18/

[R402] Auditor-General of South Africa (2025). Consolidated Report on Local Government Audit Outcomes 2023–24. . Official municipal audit findings; inspected projects are not a random national sample. https://mfma-2024.agsareports.co.za/pages/overview

[R403] South African Human Rights Commission (2024). Investigation of Incomplete and Inadequate RDP Houses in North West, statement 13 November 2024. . Statutory investigation and required action. https://www.sahrc.org.za/index.php/sahrc-media/news-2/item/4178-media-statement-north-west-provincial-office-s-report-on-its-investigation-of-incomplete-and-inadequate-rdp-houses-in-the-north-west

[R404] Parliament of Uganda (2023). Funding gaps affecting KCCA road maintenance, 26 April. . Ministerial estimates, dated 2023. https://gateway.parliament.go.ug/news/609/funding-gaps-affecting-kcca-road-maintenance

[R405] New York City Housing Authority (2023–26). 2023 Physical Needs Assessment; agency asset-management documentation. . Modelled capital needs; later data updates are separately published. https://www.nyc.gov/site/nycha/about/departments/modernizing-properties.page

[R406] Singapore Ministry of National Development (2026). About Town Councils, 27 February 2026. . Institutional rules and assigned duties. https://www.mnd.gov.sg/our-work/regulating-town-councils/about-town-councils

[R407] Singapore Town Councils Act and Financial Rules (2017). Legislation on sinking-fund contributions, with public explanation of the 14% lift and 26% ordinary allocation. ; . Legal minimums; verify current amendments for transaction design. https://sso.agc.gov.sg/SL/TCA1988-S185-2017?DocDate=20 170 426

[R409] Social Housing Regulatory Authority, South Africa. Social Housing Regulations, especially property-management and inspection provisions, and compliance monitoring. ; . Rules and regulatory processes, not independent performance evaluation. https://www.shra.org.za/wp-content/uploads/2025/06/SH-Regulations-BOOKLET.pdf

[R412] South Africa Department of Human Settlements (2025). Annual Report 2024/25. . Administrative report: 1,364 social rental units versus target 2,699. https://www.gov.za/documents/annual-reports/department-human-settlements-annual-report-20 242 025-29-sep-2025

[R413] Boonyabancha, S. (2005). Baan Mankong: Going to Scale with Slum and Squatter Upgrading in Thailand. Environment and Urbanization, 17(1). . Programme-internal early assessment and administrative tables; long-term impacts not inferred. https://www.iied.org/sites/default/files/pdfs/migrate/G00 492.pdf

[R415] Schwartz, H. (2010). Housing Policy Is School Policy: Economically Integrative Housing Promotes Academic Success in Montgomery County, Maryland. The Century Foundation. Assignment-based study, 2001–07; school and neighbourhood effects have different precision. https://tcf.org/content/report/housing-policy-school-policy-economically-integrative-housing-promotes-academic-success-montgomery-county-maryland/

[R417] Montgomery County Department of Housing and Community Affairs. MPDU Program Information. Programme rules and legislative history; historical and current provisions must be distinguished. Accessed 24 October 2026. https://www.montgomerycountymd.gov/department-housing-community-affairs/mpdu-program-information

[R420] Levy, D. K. and coauthors (2012). Expanding Housing Opportunities through Inclusionary Zoning: Lessons from Two Counties. Urban Institute for HUD. Includes historical programme-output literature review; descriptive comparisons. https://www.huduser.gov/portal/Publications/pdf/HUD-496_new.pdf

[R421] Chetty, R., Diamond, R., Foster, T. B., Katz, L., Porter, S. R., Staiger, M. and Tach, L. (January 2026). Creating High-Opportunity Neighborhoods: Evidence from the HOPE VI Program. Working paper. Matched comparisons and exposure designs; outcome populations must be distinguished. https://opportunityinsights.org/wp-content/uploads/2025/09/HopeVI_Paper.pdf

[R422] Housing & Development Board (2024). Annual Report 2023/2024: Key Statistics, p. 12. Resident population by town as at 31 March 2024. https://www.hdb.gov.sg/-/media/hdb-pulse/reports/annual-reports-and-financial-statements/HDB-KS-FY23.pdf#page=12

[R423] Housing & Development Board (2024). Annual Report 2023/2024, pp. 12, 40. Historical milestones for home ownership and CPF housing finance; government grant covering the annual deficit.; Balasingamchow, Yu-Mei (10 October 2016). Public Housing, Private Lives. BiblioAsia, National Library Board. Historical rental construction account. https://www.hdb.gov.sg/-/media/hdb-pulse/reports/annual-reports-and-financial-statements/HDB-AR-FY23.pdf#page=12

[R426] CPF Board (updated 6 October 2026). Saving as an employee. Employee coverage, employer remittance, and self-employed contribution distinction. https://www.cpf.gov.sg/member/growing-your-savings/cpf-contributions/saving-as-an-employee

[R427] Teh Cheang Wan (5 September 1983). Speech at the Singapore Professional Centre convention on high-rise, high-density living, pp. 4–5. National Archives of Singapore. Contemporary description of contractor-development arrangements, not an impact evaluation. https://www.nas.gov.sg/archivesonline/data/pdfdoc/tcw19 830 905s.pdf#page=5

[R428] Jayakumar, S. (11 April 2007). Second Reading Speech on Land Acquisition (Amendment) Bill, paragraphs 2, 4–8. Ministry of Law, Singapore. https://www.mlaw.gov.sg/news/parliamentary-speeches/second-reading-speech-on-land-acquisition-amendment-bill-by-dpm-prof-s-jayakumar-11-apr-2007/

[R429] Singapore Land Authority (updated 26 August 2025). Acquisition of land. Agency explanation of compensation and process. https://www.sla.gov.sg/properties/acquisition-of-land/

[R430] World Bank (2017 edition; framework adopted 2016). Environmental and Social Framework, ESS5, pp. 53–59, especially paragraphs 10–14, 29–30, and 34–35. Applies to covered World Bank Investment Project Financing; see also scope on p. 5. https://documents1.worldbank.org/curated/en/3 830 114 924 23 734 099/pdf/114 278-REVISED-Environmental-and-Social-Framework-Web.pdf#page=67

[R431] Shanmugaratnam, Tharman (30 November 2015). Remarks at Housing, Inclusion, and Social Equity: A Global Perspective. Brookings Institution, uncorrected transcript, pp. 18 and 40. Quotation verified against transcript text, not recording. https://www.brookings.edu/wp-content/uploads/2015/11/20 151 130_housing_inclusion_transcript.pdf#page=40

[R432] Housing & Development Board (2022). Annual Report 2021/2022, Building Affordable Homes of Value, Supporting EIP-Constrained Flat Owners. https://assets.hdb.gov.sg/about-us/news-and-publications/annual-report/2022/building-homes.html

[R433] Centre for Liveable Cities (2020). Enhancing Liveability, Fostering Communities: Estate Management for Singapore's Public Housing, pp. 52–53. Funding structure only; contribution percentages are not taken from this source. https://isomer-user-content.by.gov.sg/50/8cf16f4c-cf98-4fe7-936f-40f2bd09b690/uss-estate-management.pdf#page=37

[R434] Government of Singapore (23 March 2023). Do HDB flat buyers own their flat? Typical new-flat leasehold tenure. https://www.gov.sg/explainers/do-hdb-flat-buyers-own-their-flat/

[R435] Bharti, Madhu, and Shagun Mehrotra (2020). Metropolitan Ahmedabad: Scaling Up with Contiguous Replication of Town Planning Schemes. World Bank, pp. 19–20, 28. Institutional case study. https://documents1.worldbank.org/curated/en/2 906 716 052 94 532 766/pdf/Metropolitan-Ahmedabad-Scaling-Up-with-Contiguous-Replication-of-Town-Planning-Schemes.pdf#page=26

[R436] South Africa Department of Human Settlements (undated; accessed 25 October 2026). Informal Settlements Upgrading. Programme design, not impact evidence. https://www.dhs.gov.za/node/163

[R437] Sapuan, Melissa (April 2007). Managing Singapore's Land Needs. ETHOS, issue 2, Civil Service College Singapore. Historical account of city-state planning and coordination across national land uses. https://knowledge.csc.gov.sg/ethos-issue-02/managing-singapores-land-needs/

[R438] Government of Singapore (2016), Climate Action Plan: Take Action Today, for a Carbon-Efficient Singapore, HDB Greenprint account. Pilot coverage and subsequent extension; not a controlled welfare evaluation. https://isomer-user-content.by.gov.sg/23/7 736 708a-98e9-4993-b4fb-82 304cfecd68/capmitigation.pdf

[R439] Housing & Development Board (11 September 2014), Smart HDB Homes of the Future, press release hosted by MDDI. Framework and proposed trials must be distinguished from measured outcomes. https://www.mddi.gov.sg/newsroom/smart-hdb-homes-of-the-future/

[R440] Housing & Development Board (2 February 2025), HDB to Extend Cool Coatings Initiative to All Existing HDB Estates. Reports the Tampines pilot, planned extension by 2030, and smart electrical sub-meter initiative. https://www.hdb.gov.sg/hdb-pulse/news/2025/hdb-to-extend-cool-coatings-initiative-to-all-existing-hdb-estates

[R441] Housing & Development Board (2020), Home Truly: Building Dreams, Housing Hopes, account of the Biophilic Town Framework and Punggol. Institutional description of design approach. https://assets.hdb.gov.sg/about-us/news-and-publications/home/Home-Truly-1.pdf

[R442] Samuel Hall. 2026. An Evaluation of NRC's HLP Programming in Baidoa, Kismayo, Garowe, and Mogadishu Cities, Somalia. Commissioned by the Norwegian Refugee Council. Published 27 August. Methods pp. 11–12; settlement changes pp. 27–28; continuing affordability and livelihood constraints p. 32. https://www.nrc.no/globalassets/pdf/evaluations/hlp-programming-in-somalia/nrc-somalia-hlp-evaluation.pdf#page=27

[R443] OECD and UNHCR. 2023. Refugees and Internally Displaced Persons in Development Planning: No-One Left Behind? OECD Development Policy Papers 47. Box 1, pp. 11–12. https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/10/refugees-and-internally-displaced-persons-in-development-planning_26eb8a6f/08c021b0-en.pdf#page=12

[R444] Depetris-Chauvin, Emilio, and Rafael J. Santos. 2017. Unexpected Guests: The Impact of Internal Displacement Inflows on Rental Prices in Colombian Host Cities. Documento de Trabajo 493. Instituto de

Economía, Pontificia Universidad Católica de Chile. pp. 4–6, 33–35. Working-paper evidence; subsequently published in Journal of Development Economics 134 (2018): 289–309.
https://economia.uc.cl/wp-content/uploads/2022/10/dt_493-1.pdf#page=5

[R445] Tamim, A., E. Smith, I. B. Palmer, E. Miguel, S. Leone, S. V. Rozo, and S. Stillman. 2025. Housing Subsidies for Refugees: Experimental Evidence on Life Outcomes and Social Integration in Jordan. World Bank Policy Research Working Paper 11042, January. pp. 2–5, 19, 21–25, and Table 3.
https://documents1.worldbank.org/curated/en/0 998 315 012 12 542 537/pdf/IDU-a72 809a4-7fd7-4c79-8d82-40a01ed1a392.pdf#page=5

[R446] United Nations. 1998. Guiding Principles on Internal Displacement. U.N. Doc. E/CN.4/1998/53/Add.2. Principles 20–21 and 28–29. UN text reproduced by the University of Minnesota Human Rights Library; cited as a protection benchmark rather than a standalone treaty.
https://hrlibrary.umn.edu/instree/GuidingPrinciplesonInternalDisplacement.htm

[R447] Government of Telangana. TG-bPASS official building permission system and statutory guidance.
https://tgbpass.telangana.gov.in/

[R448] National Housing Finance Corporation, South Africa. First Home Finance. Programme guidance.
https://www.nhfc.co.za/first-home-finance/

[R449] Franklin, Simon (2025). The Demand for and Impacts of Government Housing: Evidence from Ethiopian Lotteries. Queen Mary working paper 986. Working paper; three- and eight-year follow-up.
https://www.qmul.ac.uk/sef/media/econ/research/workingpapers/2025/wp986.pdf

[R450] Kumar, Tanu (2021). The housing quality, income, and human capital effects of subsidized homes in urban India. Journal of Development Economics 153, 102738. https://doi.org/10.1016/j.jdeveco.2021.102738

[R451] Michaels, Guy, Dzhamilya Nigmatulina, Ferdinand Rauch, Tanner Regan, Neeraj Baruah and Amanda Dahlstrand (2021). Planning Ahead for Better Neighborhoods: Long-Run Evidence from Tanzania. Journal of Political Economy 129(7), 2112–2156. https://doi.org/10.1086/714 119

[R452] Harari, Maria and Maisy Wong (2025, online). Slum Upgrading and Long-Run Urban Development: Evidence from Indonesia. Review of Economic Studies. https://doi.org/10.1093/restud/rdaf090

[R453] World Bank Inspection Panel (2005). India: Mumbai Urban Transport Project. Investigation Report, 21 December. See also management progress reports on case 32.
https://www.inspectionpanel.org/sites/default/files/ip/PanelCases/32-Investigation%20Report%20%28English%29.pdf

[R454] Glaeser, Edward, Wei Huang, Yueran Ma and Andrei Shleifer (2017). A Real Estate Boom with Chinese Characteristics. Journal of Economic Perspectives 31(1), 93–116. https://doi.org/10.1257/jep.31.1.93

[R455] International Monetary Fund (2025). People's Republic of China: Financial System Stability Assessment. Country Report 25/100. https://www.elibrary.imf.org/abstract/journals/002/2025/100/article-A001-en.xml

[R456] International Monetary Fund (2026). People's Republic of China: 2025 Article IV Consultation. Published January 2026. https://www.imf.org/-/media/files/publications/cr/2026/english/1chnea2 026 001-source-pdf.pdf

[R457] Patel, Bimal, Sweta Byahut and Brijesh Bhatha. How do building regulations increase cost and limit supply of affordable housing? Ahmedabad design simulation; author-hosted paper.
https://ik.imagekit.io/bi2uhcctu2/HCP_20 240 625/HCP_Website/CMS/page_research/pdf/2.pdf

[R458] Collinson, Robert and Peter Ganong (2018). How Do Changes in Housing Voucher Design Affect Rent and Neighborhood Quality? American Economic Journal: Economic Policy 10(2), 62–89.
https://doi.org/10.1257/pol.20150 176

[R459] Bryan, Gharad, Simon Franklin, Tigabu Getahun and Alexander Winton (2025). No Place Like Home? The Causal Effect of Forced Relocation from Central Addis Ababa. Queen Mary working paper 993.
https://www.qmul.ac.uk/sef/media/econ/research/workingpapers/2025/wp993.pdf

[R460] Muungano Alliance (2021). Statement on forced eviction in Mukuru kwa Njenga, 18 November. Federation-reported counts as of 17 November. https://www.muungano.net/browseblogs/2021/11/18/press-statement-the-muungano-alliance-condemns-the-recent-forced-eviction-of-residents-in-mukuru-kwa-njenga

[R461] Muungano Alliance (2021). Implementing the Mukuru SPA: the Mosque Road water and sanitation pilot project, 13 April. https://www.muungano.net/browseblogs/2021/4/13/implementing-the-mukuru-spa-the-mosque-road-water-and-sanitation-pilot-project

[R462] Community Organizations Development Institute (2019). Collective Housing in CODI, October. Institutional account of collective housing, canal upgrading and leases. https://en.codi.or.th/wp-content/uploads/2019/11/Collective-Housing-in-CODI-Oct-2019.pdf

[R463] World Bank Inspection Panel. Amaravati Sustainable Infrastructure and Institutional Development Project P159808. Earlier case record, request 2017 and closure 2019. https://www.inspectionpanel.org/panel-cases/amaravati-sustainable-infrastructure-and-institutional-development-project-p159 808

[R464] World Bank Inspection Panel (2024–25). Amaravati Integrated Urban Development Program P507508. Request, eligibility report and Board decision, April 2025. https://www.inspectionpanel.org/panel-cases/amaravati-capital-city-development-program-p507 508

[R465] National Housing Bank (2026). Report on Trend and Progress of Housing in India 2024–25. March 2025 individual housing loans total INR 36.07 trillion including regional rural banks. https://www.nhb.org.in/wp-content/uploads/2026/02/NHB-TP-Report-2024-25-Bilingual.pdf

[R466] World Bank and Development Research Center of the State Council (2014). Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization. Land, fiscal and hukou reform. https://www.worldbank.org/content/dam/Worldbank/document/EAP/China/WEB-Urban-China.pdf

[R467] International Monetary Fund (2001). Colombia: Selected Issues and Statistical Appendix. Country Report 01/68, paragraphs 34–37. Mortgage indexation and the 1998–99 crisis. https://www.imf.org/external/pubs/ft/scr/2001/cr0168.pdf

[R468] Ministerio de Vivienda, Ciudad y Territorio, Colombia (2025). Response to parliamentary questions, 5 March, question 14. Mi Casa Ya budget availability and closure of application platforms. https://www.camara.gov.co/wp-content/uploads/2025/10/control_politico/Respuestas/6834/respuestas_minvivienda_prop_no_14_mar_10_09_00_h_1-57df74cf.pdf

[R469] Ministerio de Vivienda, Ciudad y Territorio (2026). Resolución 0643. Allocation of 26 Mi Casa Ya subsidies to previously preassigned households. https://minvivienda.gov.co/normativa/resolucion-0643-2026

[R470] Goolsbee, Austan and Chad Syverson (2023, subsequently revised). The Strange and Awful Path of Productivity in the U.S. Construction Sector. NBER Working Paper 30845. https://www.nber.org/papers/w30 845

[R471] D'Amico, Leonardo, Edward Glaeser, Joseph Gyourko, William Kerr and Giacomo Ponzetto (2024). Why Has Construction Productivity Stagnated? The Role of Land-Use Regulation. NBER Working Paper 33188. https://www.nber.org/papers/w33 188

[R472] Marx, Benjamin, Thomas M. Stoker and Tavneet Suri (2019). There Is No Free House: Ethnic Patronage in a Kenyan Slum. American Economic Journal: Applied Economics 11(4), 36–70. https://doi.org/10.1257/app.20160 484

[R473] Cattaneo, Matias D., Sebastian Galiani, Paul J. Gertler, Sebastian Martinez and Rocio Titiunik (2009). Housing, Health, and Happiness. American Economic Journal: Economic Policy 1(1), 75–105. https://doi.org/10.1257/pol.1.1.75

[R474] Rojas-Ampuero, Fernanda and Felipe Carrera (2026). Sent Away: Displacement, Neighborhoods, and Children's Outcomes under Slum Clearance Policies. NBER Working Paper 35318, June. https://www.nber.org/papers/w35 318

[R475] O'Brien, David and Sandra Carrasco (2021). Contested incrementalism: Elemental's Quinta Monroy settlement fifteen years on. Frontiers of Architectural Research 10(2), 263–273. https://doi.org/10.1016/j.foar.2020.11.002

[R476] Supreme Court of India (1985). Olga Tellis and others v Bombay Municipal Corporation and others, judgment 10 July, (1985) 3 SCC 545. Official judgment text. https://api.sci.gov.in/jonew/judis/9246.pdf

[R477] Shelter Afrique (2021). Annual Report. Table 7, historical operational and financial data, and audited financial statements. https://content.shelterafrique.org/en/wp-content/uploads/2022/11/ShAf-Annual-Report-2021-ENG-FA-Edited-final-compressed.pdf

[R480] Gujarat Real Estate Regulatory Authority, Government of Gujarat (2022). Manual for Preparation of Town Planning Schemes, February, sections 2 and 14; especially pp. 106–107. Statutory process and implementation sequence. https://crdf.org.in/resources/admin_uploads/resources/TPS%20Manual.pdf

[R481] Andhra Pradesh Capital Region Development Authority (2025). Amaravati Capital City Development Project: Resettlement Policy Framework, final file disclosed April; pp. 7–11, 19–29 and annexes. Administrative status dated 10 February 2025. https://crda.ap.gov.in/crda_norifications/NOT04100419/01~RPF-Final.pdf

[R482] Government of India, Ministry of Housing and Urban Affairs (2026). Master Plan for Delhi with the Perspective for the Year 2047, S.O. 4597(E), Gazette of India, 20 August, chapter 4.1. Official gazette: https://egazette.gov.in/WriteReadData/2026/275618.pdf . Gazette text consulted at https://www.gazettetracker.com/g/CG-DL-E-20082026-275618

[R483] De Souza, Felipe Francisco (2018). What is Land Readjustment? In Land Readjustment: Solving Urban Problems Through Innovative Approach. JICA Research Institute, chapter 1, pp. 34–38. Institutional explanation of the Japanese Land Readjustment Law. https://www.jica.go.jp/jica-ri/ja/publication/booksandreports/l75nbg00000ltoi1-att/LAND_READJUSTMENT_Chapter1_web.pdf

[R484] Federal Republic of Germany. Baugesetzbuch (BauGB), §§47–48, 61, 71–72 and 123, official consolidated German text accessed 5 November 2026. English descriptions in this book are explanatory translations. https://www.gesetze-im-internet.de/bbaug/BJNR003410960.html

[R485] Republic of Korea. Urban Development Act, Act 21447, effective 1 July 2026, articles 13, 35–36, 40 and 42. National Law Information Center; Korean text, explanatory translation by the author. Article 13: https://www.law.go.kr/lsLinkCommonInfo.do?chrClsCd=010202&lsJoLnkSeq=1029377027 ; articles 35–36: https://law.go.kr/lsLinkCommonInfo.do?lsJoLnkSeq=1020807703 ; articles 40–42: https://law.go.kr/LSW/lsLawLinkInfo.do?chrClsCd=010202&lsJoLnkSeq=1000063445

[R486] Government of India, Press Information Bureau (2019). Land Pooling: New Paradigm for Urban Development of Delhi, 5 February; explanation of the 2018 framework and 70 percent contiguous-sector condition. Historical policy account. https://www.pib.gov.in/PressReleasePage.aspx?PRID=1562711&lang=2&reg=48

[R487] Ministry of Land Reform, Namibia (2016). Guide to Namibia's Flexible Land Tenure Act, 2012 (Act No. 4 of 2012), chapters 5–6, especially pp. 14–15 and 23. Legal-rights guide, not an impact evaluation. https://www.lac.org.na/projects/lead/Pdf/guide-namibia-flexible-land-tenure-act.pdf

[R488] Fideicomiso de la Tierra del Caño Martín Peña. Reglamento general para el funcionamiento del Fideicomiso de la Tierra del Caño Martín Peña, Regulation 7587, articles IX–X, especially surface-right duration, resale, inheritance and mortgage enforcement. Spanish text; explanatory translation by the author. https://fideicomisomartinpena.org/wp-content/uploads/2022/03/Reglamento-Fideicomiso-de-la-Tierra_2-1.pdf

[R489] Federal Emergency Management Agency (2020). Building Codes Save: Protecting Communities and Saving Money, p. 8. US new-construction cost benchmarks; narrative and illustration give different wind premiums. https://www.govinfo.gov/content/pkg/GOVPUB-HS5_100-PURL-gpo151373/pdf/GOVPUB-HS5_100-PURL-gpo151373.pdf

[R490] World Bank and Global Facility for Disaster Reduction and Recovery (2023). Building Regulations in Sub-Saharan Africa: A Status Review of the Building Regulatory Environment, pp. 20–22, 51–52 and footnote 22. https://documents1.worldbank.org/curated/en/099052523132014390/pdf/P1508350b1503303c097220fedae9a523b9.pdf

[R491] Centre for Liveable Cities (2019). Resettling Communities: Creating Space for Nation-Building, Urban Systems Studies, Singapore, first edition; pp. 22–23, 30–37, 50–53, 72–75, 134–135. Administrative history. https://isomer-user-content.by.gov.sg/50/f6659273-b4d8-4351-bced-53e3105e8dcb/uss-resettling-communities.pdf

[R492] Loh Kah Seng (2014). Squatters, Colonial Subjects and Model Citizens: Informal Housing in Southeast Asia and Hong Kong after World War II. Chapters on Asia, National Library, Singapore. Historical synthesis. https://biblioasia.nlb.gov.sg/chapters-of-asia/chapters-on-asia-2014-squatters-colonial-subjects-and-model-citizens-informal-housing-in-southeast-asia-and-hong-kong-after-world-war-ii/

[R493] PROVISIONAL CITATION. Environment and Land Court, Nairobi (2024). Sheria Mtaani na Shadrack Wambui v CS Interior & 3 others, Constitutional Petition 2 of 2024, Ann Jacqueline Mogeni J. Judy record (2024) JELR 112576 dates the judgment 23 October. Only the opening text was accessible; the full signed judgment and orders remain unverified. https://www.judy.legal/case/sheria-mtaani-na-shadrack-wambui-v-cs-interior-3-ors

[R494] Walter Dzuya (2024). High Court orders gov’t to compensate Mathare, Mukuru residents for forced evictions. Citizen Digital, 4 November. Secondary report; its court label differs from the Environment and Land Court heading in the accessible judgment. No inference of payment or subsequent compliance. https://citizen.digital/article/high-court-orders-govt-to-compensate-mathare-mukuru-residents-for-forced-evictions-n352400

[R495] Inspection Panel (2026). Msimbazi Basin Development Project (P169425), case record, accessed November 5, 2026. Request, management response and investigation process; allegations distinguished from findings. https://www.inspectionpanel.org/panel-cases/msimbazi-basin-development-project-p169425

[R496] World Bank Accountability Mechanism (2026). Tanzania: Parties agree to pursue dispute resolution. Agreement dated October 19, 2026; accessed November 5, 2026. https://accountability.worldbank.org/en/news/2026/tanzania-parties-agree-to-pursue-dispute-resolution

[R497] Slum Dwellers International (2018). Would We Know Scale If She Walked By? Revolutionary Planning in Mukuru, Nairobi. April 2018. Participant account. https://sdinet.org/2018/04/mukuru-chapter-kyc-book/

[R498] Schildkamp, M. & Araki, Y. (2019). Cost Analysis of Mountain Schools in Nepal: Comparison of Earthquake Resistant Features in Rubble Stone Masonry vs. Concrete Block Masonry. Frontiers in Built Environment 5:55, Table 7. https://doi.org/10.3389/fbuil.2019.00055

[R499] Constitutional Court of South Africa (2000). Government of the Republic of South Africa and Others v Grootboom and Others [2000] ZACC 19; 2001 (1) SA 46 (CC), CCT 11/00, October 4, 2000, paras. 39–44, 95, 99. https://collections.concourt.org.za/items/51047f51-7980-4932-8c51-05e62379ee90

[R500] In re Katerra Inc., et al. (2021). Debtors’ sale motion, Case No. 21-31861, Document 243, filed June 25, 2021, US Bankruptcy Court, Southern District of Texas, pp. 2–3. Debtor account of business and liquidity, not a judicial causal finding. Public copy: https://www.dailydac.com/wp-content/uploads/2021/09/katerra.pdf

[R501] Upadhyay, M., Kafle, P., Ban, S. and Khakurel, S. (2026). Seismic enhancement of community housings in Nepal’s mid-Himalayas: Retrofitting and reconstruction scenarios. Bulletin of the New Zealand Society for Earthquake Engineering 59(1):23–38, especially pp. 24, 36–37. Dwelling model and material-cost estimates; labour and transport excluded. https://doi.org/10.5459/bnzsee.1733

[R502] Housing Development Administration of Türkiye (TOKİ). Housing Programs, institutional account with portfolio figures dated January 2022; accessed November 5, 2026. Starts, repayment terms and land-cost treatment, not an independent impact evaluation. https://www.toki.gov.tr/en/housing-programs.html

[R503] TOKİ. Financial Position; and 2024 institutional brochure, p. 37, revenue-sharing model. Institutional accounts, accessed November 5, 2026. https://siteadmin.toki.gov.tr/en/financial-position.html ; https://i.toki.gov.tr/content/entities/main-page-slider/20241023015519529569-pdf.pdf

[R504] Infonavit (2026). Centro de ayuda: Aportaciones de mi patrón, reviewed October 14, 2026. Employer contribution and separate loan-repayment deductions. https://portalmx.infonavit.org.mx/wps/portal/infonavitmx/mx2/derechohabientes/centro_ayuda/

[R505] Brain, I. and Sabatini, F. (2021). Santiago de Chile: Breaking through Urban and Social Inequality with Inclusionary Housing. Lincoln Institute of Land Policy, Working Paper WP21IB1, sections Results and Analysis and Evaluation. Case-study synthesis; no causal estimate of long-term household income effects. https://www.lincolninst.edu/es/publications/working-papers/santiago-chile/

[R506] Mugisha, J., Uwayezu, E., Babere, N. J. and Kombe, W. J. (2025). Fostering Neighbourhood Social–Ecological Resilience Through Land Readjustment in Rapidly Urbanising Cities in Sub-Saharan Africa: The Case of Nunga in Kigali, Rwanda. Urban Science 9(5), 171, sections 3–4. Qualitative case study and spatial analysis; affordability designation and implementation limits. https://doi.org/10.3390/urbansci9050171

[R507] World Bank (1993). Housing: Enabling Markets to Work, with Technical Supplements. Written by Stephen K. Mayo and Shlomo Angel; acknowledgments p. vii, executive summary and chapter 3. https://documents1.worldbank.org/curated/en/387041468345854972/pdf/multi0page.pdf

[R508] United Nations Human Rights Council (2009). Report of the Special Rapporteur on adequate housing, Raquel Rolnik: Addendum, Summary of communications sent and replies received from Governments and other actors, A/HRC/10/7/Add.1, paras. 86–87, pp. 68–76. Sulukule allegations and government response; not judicial findings. https://digitallibrary.un.org/record/649281/files/A_HRC_10_7_Add.1-EN.pdf

[R509] Ministry of Statistics and Programme Implementation, India (10 April 2026). MoSPI Breaks New Ground: First-Ever Deep Dive into Unincorporated Construction Sector in Decades. Pilot survey July–December 2025, own-account construction during preceding 365 days. National household activity count, not a share of urban housing stock. https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2250808&lang=2&reg=3