Cities that Work

International Growth Centre

POLICY FRAMING PAPER

Policy options for informal settlements

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Across the developing world, the pace of urbanisation has outstripped the ability of governments to faciliate decent, affordable housing, resulting in unplanned and often illegal settlements. This paper brings together economic research and cross-country experience to inform trade-offs policymakers face, both in addressing existing informal settlements, and in preventing informality in the future..

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Executive Summary

Across the developing world, many governments have inherited broken, ex-colonial housing policies that do not work for ordinary residents. While most households in African cities struggle to afford a house for $15,000[1], the cost of constructing a basic house that meets all legal requirements is over $42,000[2].

The cost of a legal house in many African cities is over $42,000. Most households in African cities struggle to afford a house at $15,000

Large-scale 'public housing' schemes have not helped matters. The cost of providing this housing means that it is unable to keep up with demand, and often built on less expensive but disconnected urban peripheries. Kigali's public housing units are cheap compared to other cities, but still cost upwards of $30,000. This is housing for the elite, not for ordinary citizens.

The result of these policy failures is that most people bypass the formal system completely. Urbanisation instead happens through informal settlement, without legal recognition, planning, or formal service provision. Globally, more than one billion people live in informal settlements and this number is set to double in the next fifteen years. While these settlements represent a vital source of housing for the city's low-income workforce, their illegality and absence of planning often lead to problems of **poor infrastructure** and **weak land right.** This in turn frustrates the potential for rising productivity and liveability.

The effects of unplanned, informal settlement are long-lasting. Retrofitting large-scale infrastructure after settlement has occurred can be **three times more expensive** than investing beforehand[3], and is **almost impossible on a large scale without large-scale displacement**. Policy needs to become proactive, rather than reactive.

Retrofitting infrastructure after settlement can be three times more expensive than investing in advance

One cost-effective option for forward planning is to simply provide the core infrastructure required for productive and livable neighborhoods before they form. This was the approach adopted by the city of New York as it faced rapid urbanization the early 19th century with a very limited municipal budget. The 1811 Commissioners Plan mapped and demarcated a grid system of roads on undeveloped agricultural land in Manhattan, in an anticipated seven-fold expansion of the city's footprint. This same road grid system now still carries modern Manhattan's traffic on it, and water and sewerage infrastructure underneath it. A more comprehensive, albeit more expensive, policy approach is

1 Collier, P. and Venables, A. J.. (2014). "Housing and Urbanization in Africa : Unleashing a Formal Market Process." Policy Research Working Paper;No. 6871. World Bank, Washington, DC.

2 Centre for Affordable Housing Finance in Africa (CAHF website: http://housingfinanceafrica.org/dashboards/benchmarking-housing-construction-costs-africa/

3 Fernandes, E. (2011). "Regularization of Informal Settlements in Latin America" Lincoln Institute for Land Policy

to provide not only arterial roads, but serviced plots of land upon which owners can incrementally build.

Aside from providing the physical infrastructure for urban expansion, governments can also play a crucial role in providing an enabling regulatory environment for housing provision by reforming dysfunctional land markets and reducing restrictions on land-use and construction techniques that drive up the costs of housing production far beyond affordable levels.

Where informal settlements have already been established, policy options become more challenging. Across both developed and developing cities, these options can broadly be divided between slum-upgrading, resettlement and land readjustment:

— Where policymakers are content to retain land under residential use, participatory **in-situ slum upgrading** is a cost-effective solution that can enable informal settlements to incrementally transform into poor but highly liveable neighbourhoods, integrating the city's low-income workforce into the urban fabric.

— Where informal settlements are located on land that is either unsafe for habitation or needed for vital urban infrastructure, **resettlement may be necessary**. Where resettlement is used as a tool for urban renewal or the creation of business clusters, the value gain for the city as a whole in converting land to more efficient uses and boosting employment, must be weighed against high costs - to residents in terms of socio-economic dislocation, and to governments in terms of financing the rehousing of displaced residents in well-connected locations.

Land readjustment can enable win-win solutions for occupiers, land-owners and governments

— Where strong land administration systems render them feasible, **land readjustment policies** could offer a promising way of facilitating large-scale infrastructure provision, whilst simultaneously resolving tenure disputes. In land readjustment schemes, governments pool together disorganised land plots and create a new plan for the area which demarcates land for infrastructure and resolves ownership disputes. Implementing this can be funded by landowners giving up parts of their land, because better infrastructure, planning and clarified ownership raises the value of the rest of their land. Such policies have been practiced widely in East Asian economies.[4]

This paper explores practical and realistic ways in which governments can prevent future urbanisation from proceeding informally, and to make existing informal settlements more productive and liveable. Section 1 explores options for proactive policy to expand formal housing. Section 2 explores the costs and benefits of different policy options for addressing informal housing. Section 3 considers the importance of better data for effective policymaking.

4 Lozano-Gracia, N., Young, C., Lall, S. V., and Vishwanath, T. (2013) "Leveraging land to enable urban transformation: Lessons from Global Experience" World Bank Policy Research Working Paper 6312

1
Staying ahead of the curve: expanding the formal housing supply

The root cause behind the proliferation of slums is a lack of affordable formal housing. With African cities set to triple in size by 2050 and South Asian cities set to more than double[5], demand for housing is set to rapidly increase. Boosting the formal housing supply is therefore an urgent priority to ensure future growth proceeds in a planned manner.

The inability of the formal housing market to meet demand is driven by the fact that the cost of producing a house that meets all formal requirements far outstrips what ordinary households can afford. What constitutes 'affordable housing' is highly dependent on the state of local mortgage markets, but a reasonable approximation is that an affordable house price should be approximately 3-5 times the buyer's annual income. Yet the cost of constructing a generic formal house in most developing cities is far beyond 3-5 times annual income levels, even for the median household. The Africa Centre for Housing estimates the cost of basic formal housing construction at over $42,000 across a set of African cities.[6]

The Africa Centre for Housing estimates the cost of basic formal housing construction at over $42,000 across a number of African cities

Even if construction companies sold formal houses at exactly the construction price without making any profit, housing would still be unaffordable to ordinary residents.

Informal settlements in Mumbai, India (source: Nadir Hashmi/flickr)

5 Asian Development Bank (2011), "Asia 2050: Realising the Asian Century"

6 Centre for Affordable Housing Finance in Africa (2017) "Benchmarking Housing Construction Costs in Africa"

The challenges of conventional public housing

The response of policymakers to housing shortages in many developing cities has been to launch large-scale 'affordable' public housing programmes on underdeveloped land in peripheral areas. These programmes have often proved prohibitively expensive, failing to deliver anything near the scale of housing investment needed to meet rapidly expanding urban populations. Where such housing has been delivered by governments, it is often poorly suited to the needs of poorer communities. This units are often unaffordable to low-income residents, and located in inaccessible areas disconnected from the economic and social fabric of the city. In South Africa, despite the government spending over $30 billion on heavily subsidised units, the housing backlog is larger than when the scheme began and units lie empty due to their inaccessible and socio-economically isolated locations[7].

The failure of such programmes is hardly surprising given that they do not tackle the root of the problem: **high costs of housing production**. Rather than replicating current housing market problems in state programmes, a more feasible enabling role for policy could be to provide the **core infrastructure** and **regulatory environment** for a formal market process.

Providing infrastructure before settlement

As an alternative to direct housing provision, a more feasible low-cost approach is for governments to provide the essential infrastructure and road layout for urban expansion. Households and developers can then build around this. This brings a number of benefits:

- ✓ Providing core infrastructure is **much cheaper** providing full serviced housing units.

  The cost per household of this approach depends both on land acquisition costs, and on population density levels. Cost estimates for urban expansion in the city of Kigali suggest that acquiring a 1km by 1km grid for urban expansion would cost roughly $100 per household[8]. Reserving 25% of this expansion area for public spaces and building paved roads with trunk water, sewerage and electricity infrastructure would cost roughly $950 per household. This compares with a cost of $30,000 for Kigali's recently constructed public housing units.

Cost estimates for urban expansion in the city of Kigali suggest that acquiring a 1km by 1km grid for urban expansion would cost roughly $100 per household

7 Buckley, B, Kallergis, A. and Wainer, L. (2016) "Addressing the Housing Challenge: Avoiding the Ozymandias Syndrome." Environment and Urbanisation, 28 (1) pp 119-138

8 Halusan, B. (2017) "Multi-story Versus Single-Story Residential Construction Cot Analysis" International Growth Centre Draft Policy Brief, February 2017. Estimates include land costs of $20/m^2, and density calculations based on 55% of land under residentia use, with housing plots of 50m^2. Infrastructure costs are estimated based on official government figures.

Policy intervention	Cost per household($)
Neighbourhood-level infrastructure	
— Acquiring 25% of expansion area land	100
— Acquiring 5% of expansion area for arterial road grid — Building paved roads, and trunk water, sanitation and electricity infrastructure	950
Serviced land plot (including neighbourhood-level infrastructure)	
— 50m² plot, serviced with on-site infrastructure (including electricity, water and sanitation connections and pavement)	3,500
Incremental housing	
— 50m² serviced plot — Basic housing foundations, walls and roof structure	6,250
Finished housing units	
— Basic low-cost house in Kigali (using innovative designs and local building materials)	15,000
— Recent government low-cost public housing projects	30,000

The table below uses housing cost estimates from Kigali to provide a rough estimate of relative cost of various policy options to accommodate the next 10 years of population growth[9] in Kigali, Lagos and Kampala[10].

City	Road Grid	Serviced Plots	Public Housing
Kigali	$10 million	$350 million	$3 billion
Lagos	$200 million	$8 billion	$65 billion
Kampala	$15 million	$500 million	$4 billion

✓ Putting in place a neighbourhood street pattern enables growth to occur in structured and planned manner from the start. Fitting infrastructure after housing development has place is **three times more expensive, and challenging to achieve without mass slum clearance.**[11]

9 Population growth figures from http://www.citymayors.com/statistics/urban_growth3.html. Household estimates assume an average household size of five.

10 Costs are in 2017 USD

11 Fernandes, E. (2011). "Regularization of Informal Settlements in Latin America" Lincoln Institute for Land Policy

✓ Governments can **complement rather than compete with private housing development.** Infrastructure is a public good, which the private sector alone is typically unable to provide. It also serves to lower land costs for developers by **increasing the effective land supply** that is connected and able to be developed. Enabling a ready supply of well-connected land was key to solving housing shortages in London and New York as they developed. This may well be even more crucial in developing cities, where land costs often exceed 40% of total construction costs. This figure can reach 80% in large cities.[12]

Land costs often exceed 40% of total construction costs. This figure can reach 80% in large cities

CASE STUDY: MANHATTAN'S 1811 GRID PLAN FOR URBAN EXPANSION

At the start of the 19th century, the population of New York was just under 100,000 but was estimated to increase five-fold in the next 50 years[13]. Facing the prospects of mass urbanization but with very limited funding at the city level, the Common Council of New York City devised a bold and low-cost plan for a seven-fold expansion of the urban area of Manhattan. The 1811 'Commissioners' Plan' laid out and demarcated a grid-system of roads on the undeveloped agricultural land surrounding the city, and reserved a total of 30% of the land for public infrastructure uses.[14] Future urban development would therefore occur in a structured manner around this grid system.

The plan left the use of land within this grid structure flexible; land was developed incrementally as farmland became tenements and tenements became skyscrapers. It was originally predicted that the seven-fold expansion plan would last 500 years; in fact, the expansion area was filled by 1900 when another similar seven-fold expansion plan was developed. The grid system laid down by the 1811 plan (left) has fundamentally shaped the city's structure and connectivity, and still carries New York's traffic and infrastructure to this day.

In developing and implementing the 1811 plan, the city had to overcome numerous challenges:

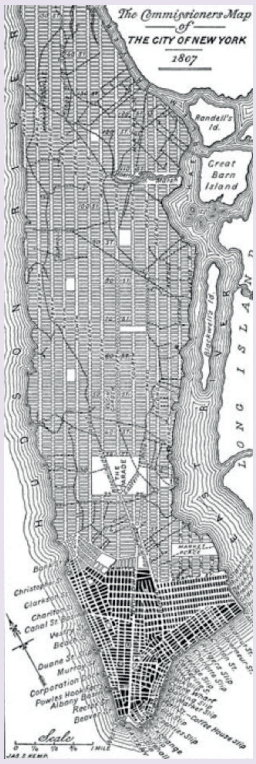
— Limited funds meant that all mapping and demarcation of the grid had to be carried out by a single surveyor and his team. In order to notify landowners of road expansion plans and put 'stakes in the ground' to signal their permanence, this team laid down temporary pegs and stone markers. These often had to be replaced as landowners angry at encroachment on their lands would dig them up or destroy them. Enforcing the plan therefore required strong authority from the local government, backed by a functioning court system.

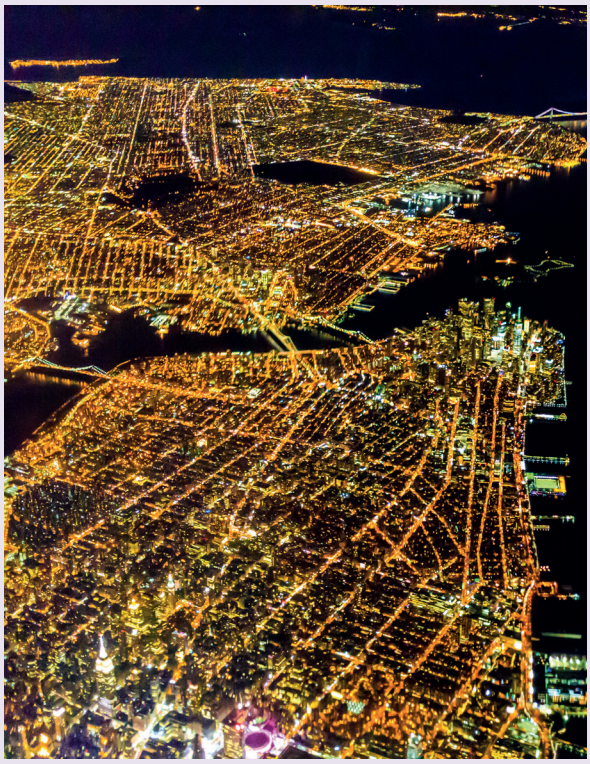
12 Woetzel, J., Ram, S., Mischke, J., Garemo, N. and Sankhe, S. (2014) "A blueprint for addressing the global affordable housing challenge" McKinsey Global Institute

13 http://www.nytimes.com/2012/01/03/arts/design/manhattan-street-grid-at-museum-of-city-of-new-york.html

14 https://paulromer.net/urban-expansion/

— Perhaps even more significant were disputes over the **compensation mechanism** for land acquisition when roads were eventually required by the city authority. The state supreme court commissioned three 'commissioners of appraisal and estimate' to assess the cost of the land being acquired to be given to the landowner as compensation. However, deducted from this cost was the assessed land value appreciation stemming from the rest of the landowner's land being part of the city's grid system; effectively landowners had to pay a '**betterment fee**' to the city authority in return for better connections to the rest of the city. Despite initial opposition, landowners benefitted greatly from this arrangement; agricultural land values skyrocketed once land became part of New York's metropolis, and more than offset initial losses of land.





Left photograph: History of Architecture CCA, 2009, Flickr. Right photograph: New York from the air, Getty Images.

The 'bare bones' grid-based approach to urban expansion taken in 1811 New York is currently being drawn upon across many cities in Colombia and Ethiopia. This is based on a four-step approach pioneered by the New York University Marron Institute[15]:

1 Making projections for population growth, how much land this growing population will require and where this land is likely to be.

15 Lamson-Hall, P., DeGroot, D., Tafesse, T., Martin, R. and Angel, S. (2015) "A New Plan for African Cities: The Ethiopia Urban Expansion Initiative" NYU Stern Urbanization Project

2 Working with regional and national governments to ensure that city governments obtain political authority over the planned expansion area.

3 Obtaining rights of way for, and demarcating a 1km by 1km network of arterial roads. As and when needed, the city can then acquire this land to build paved roads, with water, sanitation and communications infrastructure underneath. The 1km by 1km grid ensures that no resident can be more than 500m (or 15 minutes walk) away from a major road.

4 Identifying selected areas to acquire now, and retain either to prevent construction in these areas (e.g. parks or floodplain areas) or for future land sales to increase municipal funding.

This approach can be particularly where public trust in government housing policy is low, because it delivers quick, large-scale and visible results. In Valledupar, a city in northern Colombia, trees have been planted lining to line the future road grid. This has provided a visible and popular signal of proactive planning for urban growth.

In Valledupar, a city in northern Colombia, trees have been planted lining to line the future road grid. This has provided a visible and popular signal of proactive planning for urban growth

Sites and Services

With more resources, governments can focus not only on establishing arterial road networks, but also on creating serviced plots for areas soon to be settled. Under this approach, the city subdivides land into plots and delivers on-site infrastructure (such as electricity lines, water pipes, and pavements). Ownership can also be registered and recorded cost-effectively, as plots can be surveyed easily at the point of being subdivided. Cost estimates suggest that sites and services schemes in Kigali (providing a 50m² plot of land to build on, serviced with on-site infrastructure for electricity, water and sanitation connections and pavements) could cost roughly $3,500 per household[16].

The World Bank adopted this approach in its 'Sites and Services' programmes in the 1970s and 1980s. These were initially scaled back due to high costs and a perception that the programmes had not led to substantial housing developments. However, these programmes are now being re-evaluated aso ovet time they have paved the way for thriving, and often multi-story neighbourhoods.

Key lessons that have emerged from policy experiences with sites and services programmes in Tanzania and elsewhere include:

— **An emphasis on location**. Successful projects have developed housing in locations more readily accessible to the city rather than in distant peripheral areas. This often requires the development of many smaller sites within the city, often on underutilised public land, rather than one large site on the city edge.

16 Brian Halusan, "Multi-Storey versus Single- Storey Residential Construction Cost Analysis" (IGC, 2017). Estimates include land costs of $20/m², and density calculations based on 55% of land under residential use, with housing plots of 50m². Infrastructure costs are estimated based on official government figures.

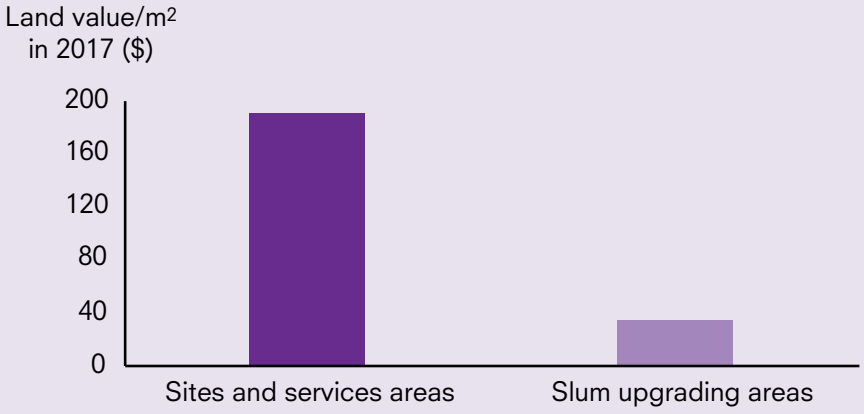
— **Planning for density** enables more residents to be housed on a given area of land, and can ensure housing is affordable to very low-income residents. Sites and Services programmes in Chennai and Mumbai, India, set minimum plot sizes of 33m² and 21m² respectively, compared to official restrictions of 150-200m² that price poorer households out of the formal market in other parts of the city[17].

— **A range of housing options and plot sizes** can enable the emergence of well-integrated mixed-income communities, rather than settlements which exclusively house the ultra-poor[18].

CASE STUDY: SITES AND SERVICES IN TANZANIA[19]

A recent evaluation of Sites and Services programmes implemented in Tanzanian cities in the 1970s and 1980s has shown these programmes to be highly successful and cost-effective. Areas which received 'Sites and Services' programmes 30 years ago have become better planned, better serviced, and now have land values over five times higher than other areas which received the same amount of investment in the form of restrospective slum upgrading[20]. $2.20/m² was spent in the 1970-80s on proactive provision of unpaved roads, drainage and water mains in 'sites and serviced' areas, and land values are now $160-220/m².By contrast, spending was $2.37/m² on retrofitting infrastructure in slum areas and land values are now only $30-4/m².

Proactive vs retrospective infrastructure provision



Based on Michaels et al. (2018).

17 http://blogs.worldbank.org/sustainablecities/success-when-we-deemed-it-failure-revisiting-sites-and-services-20-years-later

18 Ibid

19 Guy Michaels et al., "Planning Ahead for Better Neighborhoods: Long Run Evidence from Tanzania," 2018.

20 Michaels, G., Nigmatulina, D., Rauch F., Regan, T., Baruah, N. and Dahlstrand-Rudin, A. (2017) "Planning Ahead for Better Neighborhoods: Long Run Evidence from Tanzania" London School of Economics Discussion Paper

Setting the right regulatory environment

Aside from providing the physical land and infrastructure for expansion, governments play a crucial role in setting an enabling regulatory environment for housing. Currently, unclear land rights and stringent land use regulations prevent ordinary residents from accessing formal land for housing.

Reforming land markets

For housing developers to be able to make efficient and intensive use of urban land, land rights need to be:

— **Secure** enough to enable owners to make substantial investments

— **Legally enforceable** enough to enable public planning and infrastructure provision in return for user fee and property tax payments

— **Marketable** enough to enable developers to actually purchase land, and banks to use it as collateral for mortgages.

80% of African court cases are disputes over landownership

In many developing cities, overlapping and often conflicting tenure systems and weak land administration put urban land in a state of gridlock and paralyses formal housing development. Conflicting land records and weak land governance means land ownership is not secure enough for owners to make substantial property investments, and not marketable enough to enable the transfer of land to those best placed to develop it. 80% of African court cases are disputes over landownership[21], whilst in cities such as Lagos, the cost of property transfer can reach 36% of property value. The result is low-intensity and inefficient use of land: in cities such as Harare and Maputo, 30% of urban land within 5km of the central business district is currently vacant[22]. Across Afghanistan's cities, 27% of urban land is currently vacant – enough land to house four million residents.[23]

A large-scale land registration programme in Lima led to a 60% increase in housing investments and a 134% increase in land market transactions

Enabling urban land markets to work in a way that can facilitate the provision of formal housing typically requires significant investment in land administration systems in advance of large-scale programmes of formal land registration. Research from Peru shows that a large-scale land registration programme in Lima led to a 60% increase in housing investments[24] and a 134% increase in land market transactions. These benefits were made possible by efficient and accessible systems governing transfer and ownership dispute.

Like infrastructure provision, land registration programmes are easier to implement before settlement has occurred. Clear land ownership complements

21 Paul Collier and Anthony J. Venables, "Urban Infrastructure for Development," Oxford Review of Economic Policy 32, no. 3 (2016): 391–409.

22 Somik V. Lall, Vernon Henderson, and Tony Venables, "Africa's Cities: Opening Doors to the World" (Washington, DC: World Bank, 2017).

23 Samuel Hall (2015) "State of Afghan Cities Report: Volume 1" UN-Habitat

24 Erica Field, "Property Rights and Investment in Urban Slums," Journal of the European Economic Association 3, no. 2–3 (April 5, 2005): 279–90.

public infrastructure – security of ownership meant that where residents had legal titles in a World Bank 'Sites and Services' programme in Senegal, they invested $8.20 for every $1 invested by the World Bank[25]. Once an informal settlement is established, clarifying ownership becomes more challenging. Well-connected interest groups often take advantage of this lack of clarity to gain quasi-legal land ownership claims and frustrate attempts at reform.

Reforming land-use regulations

Complementary reforms to land-use regulations may also be required, in particular to minimum plot sizes and maximum floor-area ratios that restrict density and raise costs for formal-sector housing. Whilst reasonable land-use regulations can be useful in ensuring that infrastructure provision matches population density levels, excessively stringent regulations now serve to price low-income residents out of the housing market in many cities. In Dar es Salaam, the minimum housing lot size is 375m² as compared to 30m² in Philadelphia, US, at similar stages of economic development.The majority of urban residents cannot afford to comply with this regulation, pushing them into informal housing and hindering the emergence of a large-scale formal housing market.[26]

In Dar es Salaam, the minimum housing plot size is 375m² – as compared to 30m² in Philadelphia at a similar stage of economic development

The detrimental effect of land-use restrictions on house prices has been documented across the world. Research has shown that local growth management controls in San Francisco have increased housing prices by 20-40% in affected areas.[27] Such restrictions can be even more distortionary in developing cities where formal housing standards are often based on out-dated colonial planning laws, removed from the needs of ordinary households.

Reforms are often resisted by local governments who control much of the planning process, since local landowners stand to gain from artificially high house prices as regulations price others out the market. Land-use reforms therefore typically require strong political will, typically from the central government, state-level government or the city authority.

Reforming construction regulations

All cities need building standards to ensure safety and standardization across designs. This is particularly important for features of housing units that are not observable to occupiers, such as building materials and construction techniques. Unlike plot sizes and floor areas, occupiers may not be able to identify and make informed decisions on housing based on these features. Construction techniques may therefore require more regulation and standardization to ensure households do not purchase sub-standard or dangerous housing.

25 Patrick Wakely and Elizabeth Riley, "The Case for Incremental Housing," Cities Alliance Policy Research and Working Paper Series (Cities Alliance, 2011).

26 Lall, S. et al (2017)

27 Lawrence Katz & Kenneth Rosen, (1987), "The Interjurisdictional Effects of Growth Controls on Housing Prices" Journal of Law and Economics 30, 149

However, it is also important that such regulations do not excessively constrict housing markets without adequate justification. In many cities, restrictions on functional local building materials in favour of expensive imported materials serve to drive up housing costs significantly, with the end result that most housing does not obey any standard at all. In Kigali, reforms to allow the legalization and standardization of higher-quality localised construction materials, including fired earth bricks, are being planned to reduce housing informality and encourage local construction sector growth.

By introducing any kind of exemption, land and property tax systems are made more complex. This creates the opportunity for fraudulent behavior

In many cities, reforms to construction regulations to allow for 'incremental housing' solutions can allow the private sector to provide housing at a far lower cost than would otherwise be possible. 'Incremental housing' recognizes the current practices of many informal settlers in gradually improving their housing over time. It provides just the parts of a house which owners are less able to build themselves (such as foundations and roof structure), enabling owners to invest in completing their house as and when they earn the money to do so. In Chile, for example, the private firm 'Elemental' have developed half-built houses for low-income residents to build on incrementally.

Housing designs by Elemental in Chile have enabled incomplete, low-cost housing (left) to be delivered to low-income residents and completed by them over time (right) (Source: Wainer, L, Ndengeingoma, B. and Murray, S. (2016). *Incremental housing and other design principles for low-cost housing.* International Growth Centre Final Report C-38400-RWA-1)

2
Policy options for existing informal settlements

Where informal settlements have already been established, policy options become more challenging. These options can broadly be divided into slum-upgrading, resettlement and land readjustment policies[28].

These policies are complementary to attempts to increase the overall housing supply, since they often involve some degree of housing displacement (either due to explicit resettlement or to rent rises). Policy towards informal settlements is therefore best considered as part of a broader set of reforms to housing markets across the city.

Slum Upgrading

Slum upgrading programmes work with existing capital in informal settlements to improve access to infrastructure, provide decent housing and enable security of tenure on the same land as residents are currently located (*in situ*).

Slum upgrading in Brazil (source: Cities Alliance Action Plan, 1999)

Despite poor living conditions, dense informal settlements provide essential mass housing for low-income residents that is vital to the urban economy. In Karachi, 62% of the population lives in informal settlements that take up only 8% of the area of the city[29].

28 These three approaches may overlap significantly. For example, slum upgrading programmes, particularly where significant transport infrastructure or street replanning takes place, can involve significant resettlement of displaced residents.

29 Hussain, A. (2015) "Urban sprawl, growing problems and policy challenges: a case study of Karachi" Pakistan Urban Forum

Where policymakers are content for land to remain under residential use, slum upgrading can be a cost-effective option to facilitate housing that is both dense and liveable:

- ✓ **Enabling density and liveability:** Karachi's upgrading programmes to provide secure housing foundations for small plots have enabled owners to invest incrementally to upgrade housing to small but liveable 3-4 storey buildings at densities of 2,800 people per hectare.[30] This is almost double the peak population density of Manhattan over the course of its urban development. Community-led sewerage system construction in Karachi has also made informal settlements dramatically more liveable, reducing infant mortality from 128 per 1000 in 1983 to 37 per 1000 in 1992.

- ✓ **Cost-effective:** By upgrading and improving the living and working conditions of communities *in situ*, governments can augment existing capital, rather than going through the costly process of destroying it and seeking to rebuild elsewhere. This applies to physical capital in the form of often substantial existing housing investments, as well as 'social capital', in the form of community ties, local employment opportunities and local support networks.

Housing Intervention	Country	Cost per household($)
On-site sanitation provision	Pakistan	70
Provision of cement flooring	Mexico	150
Comprehensive on-site renovation: land purchase, housing reconstruction, and infrastructure provision	Thailand	8,900
Innovative low-cost housing unit	Rwanda	15,000[31]
Typical new basic housing unit	Across Africa	42,000

Over time, if governments invest in complementary infrastructure, public services and land regularisation, informal settlements can transform into vibrant and dense formal neighbourhoods. Land tenure regularisation in particular enables residents to securely invest in their properties and access urban infrastructure, in return for the payment of property taxation and user fees to local governments and utility companies.

30 Satterthwaite, D. (2011) "Upgrading dense informal settlements: the potential for health and well-being", Urban Age, LSE Cities, Cities Health and Well Being, Hong Kong

31 http://eprints.lse.ac.uk/81675/1/Building%20affordable%20housing%20in%20Kigali%20-%20IGC.pdf

However, there are disadvantages to slum upgrading programmes:

- ✗ **Inefficient land-use**: despite enabling liveable residential density, slum upgrading does not tackle the fact that the **land use of many informal settlements is often inefficient from a city-level perspective**. Parts of informal settlements often occupy land that is either necessary for vital urban infrastructure, or better-suited to provide employment opportunities generation in the central business district.

  In the longer-term, upgrading programmes can still enable such land-use transformation through issuing **marketable land titles** that owners can then voluntarily sell on to more productive users in return for a cash windfall. However, there are often significant **hold-up and co-ordination problems** associated with governments or developers purchasing fragmented land holdings, meaning that this is a lengthy and costly process. If land-use needs to change significantly in the shorter-term, resettlement may therefore be the only option.

- ✗ **Risk of making things worse**: Historically, many slum upgrading programmes have been embarked upon without adequate participation of affected communities. This has not only resulted in underutilised investments, but has also led to political backlash in cases where valued neighbourhood resources (e.g. street stalls or public recreation areas) are 'upgraded' without being adequately replaced. Community participation is therefore a key aspect of successful programmes.

In order to effectively implement slum upgrading programmes, policymakers will need to determine the appropriate scope of the programme and design it in a cost-effective way that unlocks complementary private investment. Challenging policy decisions may also need to be taken regarding the role of tenants in upgrading programmes.

Determining the scope of upgrading programmes

The scope of slum upgrading programmes is clearly context-specific, and is best determined through close dialogue with affected communities. This helps to identify key priorities for government support given limited funding, and enables participatory data collection on existing levels of housing and infrastructure access.

Smaller-scale upgrading programmes typically focus on key cost-effective priorities, notably the need for waste collection, drainage systems and appropriate sanitation solutions. These can have an important and cost-effective impact on quality of life and health for residents. In Mexico between 2000 and 2007, the government's Piso Firme programme installed cement floors in approximately 300,000 of the estimated 3 million houses in Mexico with dirt floors. The cost per housing unit was only $150, 100 times less than that required to build a new house. However, the health impacts were still highly significant: parasitic infections and anaemia in young children fell by

approximately 80%, and child cognitive development improved by up to 96%. Self-reported housing satisfaction by adults also rose approximately 60%.[32]

Upgrading interventions that combine provision of water and sanitation services can be particularly cost-effective. In rural India, combined provision of water connections, latrines and bathing facilities reduced diarrhoea incidence by 30-50% at the annual cost of only $60 per household.[33] Impacts may be even larger in urban areas where proximity can exacerbate the spread of disease. There are also important complementarities between water and sanitation provision. Research on 19th century Boston, USA, has shown that the introduction of extensive water and sewerage infrastructure *together*, rather than either type of infrastructure alone, accounted for 44% of the decline in infant mortality rates between 1898 and 1915[34].

In rural India, combined provision of water connections, latrines and bathing facilities reduced diarrhoea incidence by 30-50% at the annual cost of only $60 per household

Indonesia's Kampung Improvement Programme delivered immediate and highly visible improvements in quality of life (see above) for over 30 million residents, at a cost per person for basic infrastructure improvements of $23 in smaller towns and $130 in the capital city, Jakarta (source: Cities Alliance Action Plan, 1999).

In the longer term, however, more significant integration of informal settlements into the city tends to require larger-scale and comprehensive investments, including transport links to employment opportunities, and regularisation of property rights.

— **Poor transport infrastructure** means residents face often prohibitively long and costly commutes to access employment opportunities across the city. In Rio de Janeiro, residents of informal settlements report 3 hour commuting times[35], and in Nairobi residents may use up 20-50% of their daily expenditure on transport fares.[36] Investment in transport infrastructure and upgrading of informal transport networks can enable

32 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.

33 Duflo, E., Greenstone, M., Guiteras, R., and Clasen, T. (2015) "Toilets Can Work: Short and Medium Run Health Impacts of Addressing Complementarities and Externalities in Water and Sanitation" NBER Working Paper No. 21521

34 Alsan M, Goldin C. Watersheds in Infant Mortality: The Role of Effective Water and Sewerage Infrastructure, 1880 to 1915. Working Paper.

35 World Bank, (2002) "Cities on the Move." Urban Transport Strategy Review. World Bank, Washington, D.C.

36 Deborah Salon & Sumila Gulyani (2010) Mobility, Poverty, and Gender: Travel 'Choices' of Slum Residents in Nairobi, Kenya, Transport Reviews, 30:5, 641-657

current residents to access a larger pool of employment opportunities; in South Africa, transport subsidies for higher-skilled unemployed workers at vacancy boards resulted in a 7% increase in likelihood of higher quality, permanent work.[37]

— The regularisation of **land rights** in informal settlements is a complement to infrastructure provision. Making land rights legally enforceable enables utility companies and local governments to legally service households with key urban infrastructure, in return for the collection of user fees and land and property taxes. Where resettlement is necessary for the providing of infrastructure, clarity of land ownership allows for timely and cost effective compensation.

DIFFERENT TYPES OF LAND RIGHTS AND THE TRANSFORMATION OF LAND USE

Where the goal of policy is to improve land tenure security and make land ownership legally enforceable, intermediate forms of tenure such as occupancy certificates or collective titles for whole communities can be a flexible and low-cost policy option. Collective titles, for example, are often politically easier and four times less costly to implement than individual land titles. However, where the goal of policy is to improve the marketability of land, such that it can ultimately be sold by titled residents to higher value commercial or residential developers, this typically requires the registration of individual freehold or long-term leasehold titles.[38]

Rwanda's Land Tenure Regularisation Programme 2009-13 offers important lessons on how large-scale community participation based on photo/satellite imagery can help to effectively register land. Under this programme, communities openly demarcated their plot boundaries and resolved disputes together. This was done with the help of a local judicial authorities and a local parasurveyor. Through this process, almost all land in the country was registered in under five years, and at a cost of only $6 per parcel. By contrast, in Tanzania, the cost of official mapping and surveying procedures can reach over $3,000.[39]

Rwanda's participatory Land Tenure Regularisation programme registered almost all land in the country at a cost of under $6 per parcel, compared to over $3,000 in Tanzania

37 Simon Franklin, "Location, Search Costs and Youth Unemployment: A Randomized Trial of Transport Subsidies in Ethiopia," CSAE Working Paper Series (2015). Transport subsidies were randomly allocated to higher skilled workers as part of this study

38 For more information on land rights reforms, see Collier, P., Glaeser, E., Venables, A., Blake, M., and Manwaring, P. (2017) Secure, legally enforceable and marketable land rights for urban development – version 1. IGC Cities that Work Policy Brief.

39 Ali, D. A., Collin, M, Deininger, K., Dercon, S. and Sandefur, J. (2014). "The Price of Empowerment Experimental Evidence on Land Titling in Tanzania," CSAE Working Paper, WPS-2014/23

Such solutions may not work so effectively in all political settings. In many cases, clarifying land ownership requires city authorities to deal with well-connected 'slum lords', who have exploited the lack of governance in informal settlements to make their own land ownership claims. In Kibera, Nairobi, for example, 50% of land is informally owned by well-connected government bureaucrats;[40] they obtain rents through this ownership, but their rights are too weak to build on substantially or to sell to developers.

City governments often do not have the authority to break this stalemate, and so national leaders will need to step in. Given the importance of inner-city development for national economic growth, well-connected slumlords will either need to be faced down or bought out through compensation so that land can be reassigned to government or to existing residents. Even if compensation is necessary, it is often far less costly than the wasted productive potential that results from the current gridlock. One current estimate puts the cost of land misallocation in Kibera, a slum in central Nairobi, at over $1 billion. The market value of titled land would be high enough for each slumlord to be compensated at the value of all their future rents, and each tenant household to be compensated with £16,000 (roughly 25 years' worth of rent payments).[41]

One current estimate puts the cost of land misallocation in Kibera, a slum in central Nairobi, at over $1 billion

Depending on current neighbourhood layout, regularisation of land rights and large-scale infrastructure provision can often require significant restructuring of land use and ownership, requiring a more comprehensive land-readjustment approach (see section on *land readjustment*).

Making the most of limited funds

Cost-effective slum-upgrading programmes need to use limited funds to generate as much private investment as possible. This can be aided through community participation in programmes, and through the use of government loans.

Community participation unlocks private investment and reduces cost

For public spending on slum upgrading to be complemented by further private investment in housing and infrastructure, this requires active community participation in slum upgrading programmes. Successful policies have typically involved local community leaders working closely with local governments to identify key priorities for improvement given limited resources. In many cases, given adequate support, local residents have been able to build their own infrastructure using their own funds. In the Orangi informal settlement of Karachi, a local Pakistani NGO was able to support communities in building

Community participation in slum upgrading in Karachi has allowed underground sewerage to be provided at around a sixth of the cost for local government to do the same work

40 Syagga, Paul, Winnie Mitullah and Sarah Karirah-Gitau. 2002. "Nairobi Situation Analysis Supplementary Study: A Rapid Economic Appraisal of Rents in Slums and Informal Settlements'.' Contribution to the Preparatory Phase (January-November 2002) of the Government of Kenya & UN-HABITAT Collaborative Nairobi Slum Upgrading Initiative.

41 Venables, A. J., Henderson, V, and Regan, T. (2017), "Building the city: urban transition and institutional frictions", Working Paper

their own underground sewerage system by co-ordinating 'lanes' of houses to dig and built their own piping with specialist help. Local participation in building, alongside careful scrutiny over costs and desired standards (e.g. depth of sewers), meant that the total investment required to service a community of almost 100,000 was approximately $70 per household, **around one sixth of the cost required by local governments to do the same work.**[42]

CASE STUDY: THAILAND'S NATIONWIDE *BAAN MANKONG* UPGRADING PROGRAMME

Thailand's 2003 *Baan Mankong* housing programme is a prime example of a comprehensive upgrading intervention financed by government loans and subsidies, but with community housing collectives at the centre. A semi-autonomous public agency, CODI, was established to implement the programme, under the Ministry of Social Development and Human Security. CODI was directed by a board of policymakers, professionals, academics and local representatives. Representation was therefore drawn from a broader set of actors than traditional government upgrading programmes.

In addition to infrastructure subsidies of up to $2,500 per household, CODI issued loans for land and housing directly to community collectives at a subsidised 4% interest rate, with an average loan amount of Baht 200,000 (approximately $6,400) per household. Co-operatives then on-lent funds to households with a 2-3% mark-up on the programme's interest rate to cover late repayments and fund community-wide improvements.[43] CODI also helped housing collectives to negotiate the purchase of collective land titles from previous owners. Titles were issued to collectives rather than individuals as this further forged community ties and acted as a deliberate barrier to individuals selling their land to developers once obtained. The central role of collectives in managing land and finances acted to generate important local participation and buy-in in the programme.

The programme was highly successful, providing legal and secure housing to over 90,000 households across Thailand and increasing the share of housing made from durable materials from 66% in 2000 to 84% in 2010.[44]

42 Hasan, A. (2008) "Financing the sanitation programme in the Orangi Pilot Project--Research and Training Institue in Pakistan" Environment and Urbanization 20: 109

43 Community Organisations Development Institute (CODI), Baan Mankong: Thailand's City-wide, Community-Driven Slum Upgrading and Community Housing Development at National Scale, available at http://www.polsci.chula.ac.th/pitch/urbansea12/bmk.pdf

44 Mattingly, M. 2013. Property Rights and Development Briefing: Property Rights and Urban Household Welfare. Overseas Development Institute, London.

Financing mechanisms to overcome large upfront costs

Upgrading often involves investments that have **significant upfront costs, but generate massive savings for households over time.** For example, by paying the fixed cost of a water connection, households can access the public water supply which costs 11 times less per unit of water than from informal vendors or water tankers.[45] Similarly, investments in durable housing materials involve large upfront costs, but can generate longer-term overall savings as households no longer need to rebuild their homes so frequently. Government loans or financing for housing microfinance providers are important ways of enabling households to overcome these upfront costs; households can use longer-term savings to pay back the loan, and money can then be recycled to fund further loans. Likewise, utility companies are increasingly enabling connection fees to be paid in instalments over time rather than in one lump-sum payment. Incorporating such financing arrangements into upgrading programmes enables households themselves to pay for improvements over time.

Slum upgrading and tenants

Upgrading programmes can deliver significant improvements in living standards in informal settlements. However, in cities with chronic housing shortages, these increased living standards can lead to 'gentrification' where higher rents may ultimately price low-income tenants out of the area.

If for reasons of community cohesion policymakers wish to prevent this process, one option is to regulate rent increases. This may be feasible for publically owned housing, but can have serious unintended consequences if applied to private housing markets. This is because rent controls do nothing to solve underlying problems in the city's housing market. In fact, **rent controls can seriously exacerbate problems from a city-wide perspective.** Controls on rent dampen the incentives of landowners to invest in existing properties, since they do not obtain more rent as a result of these investments. Furthermore, rent controls constrain future house-building, since property developers are reluctant to build new homes if they cannot recover sufficient rent from them.

Therefore, if enacted, regulations on rent are typically best used sparingly for particular areas, and in a way that is not too restrictive to landowners. Examples include controls which allow for increases in rent but limit these at the inflation rate. In the US, many laws **exempt new housing from rent controls**, to minimise the effects of rent control in disincentivising new housing supply, and allow landlords to charge tenants 'capital improvement surcharges' to incentivise owners to make property investments.

45 Banerjee, S. and Morella, E. (2011) "Africa's Water and Sanitation Infrastructure: Access, Affordability and Alternatives", World Bank.

Resettlement

Resettlement programmes clear the land of informal settlements for alternative uses, and compensate displaced residents with money or new housing. The primary advantage of resettlement programmes is that they can enable land to be converted to a use that is **more efficient** from a city-level perspective. However, resettlement programmes have played a controversial role in urban development. While in some cases they can play an important role in enabling infrastructure provision and urban regeneration, in others, they are used to simply clear cities of 'unsightly' poor neighbourhoods with limited impact on producitivty or liveability of the city. In others, these programmes.[46]

When to use compulsory acquisition powers?

Where governments do need to acquire land to improve efficiency of land use, this is best facilitated through **land markets**. If land is being put to a higher value use, ideally governments and developers should be able to negotiate a voluntary deal that is mutually beneficial for buyer and seller. However, because of coordination failures and hold-out problems[47], voluntary transactions do not always provide governments with sufficient land for large infrastructure projects. Furthermore, the announcement of a planned infrastructure project may actually fuel speculative investments in the land the government is about to acquire. Without legal safeguards in place, this will drive up land prices to unaffordable levels.

In these circumstances, to ensure efficient and livable urban land use **compulsory acquisition of urban land by governments**, also known as eminent domain, may be required.

- ✓ Compulsory acquisition is generally accepted as legitimate when the aim is to release the land for the implementation of vital infrastructure projects to improve a city's connectivity and liveability.

- ✓ In many cases publicly acquired land put to *private* use can also provide long term public benefits for a city. For example, land acquired for a private enterprise that provides well-paid employment to hundreds of low-income residents represents a highly important land use in cities struggling to generate large-scale employment.

46 Collins, W. J., Shester, K. l. (2010) "Slum Clearance and Urban Renewal in the United States", American Economic Journal: Applied Economics, Vol. 5, No. 1 (January 2013), pp. 239-273

47 This refers to cases in which individual owners will 'hold out' on selling their land for prices in excess of the plot's value, as they know that they have significant bargaining power to prevent a project taking place that requires all land in an area. This can result in prohibitively expensive costs of land acquisition for a project.

CASE STUDY: RESETTLEMENT FOR BOGOTA'S BUS RAPID TRANSIT SYSTEM

The construction of the *Transmilenio* bus rapid transit system in Bogota, Colombia, required the use of land occupied by informal settlements. Slumdwellers were therefore resettled to affordable housing on the urban-rural periphery as part of Bogota's *Metrovivienda* housing programme. Feeder buses were implemented to connect new housing into the larger bus rapid transit system. The integration of new housing and transport provision in this resettlement process has helped to overcome significant political resistance. Furthermore, the *Transmilenio* system is now able to carry over 40,000 passengers per hour per direction, greatly improving the connectivity of the city, and increasing wages by 7% in areas nearby stations.[48]

Bogota's Transmilenio required the acquisition of informal settlement land (source: Pedro Felipe, 2013).

In Singapore, reforms to British colonial land acquisition laws played a pivotal role in the country's development path, enabling acquisition of land not just for infrastructure, but also for public housing and industrial parks. By contrast, in India, legal challenges in using eminent domain for commercial purposes means acquiring land for large-scale industry is a lengthy and costly process.[49]

✗ However, it is important to note that eminent domain is subject to potential abuse. Historically, many urban regeneration projects have been implemented simply for urban beautification or abstract notions of 'modernisation'. In many cases, these projects have done little to boost wider urban productivity or to improve the lives of previous residents who are expensively resettled in disconnected locations.

48 Tsivanidis, N. (2016) "Commuting Technologies, City Structure and Urban Inequality: Evidence from Bogotá's TransMilenio", Presented at the International Growth Centre's Growth Week Conference in January 2016

49 https://www.ft.com/content/ee2fb6ec-3e55-11e5-9abe-5b335da3a90e?mhq5j=e5

Such resettlements have often occurred in the run-up to high profile international events. For example, in Bangkok, in 1991, in anticipation of a World Bank and International Monetary Fund (IMF) international conference, the government forcibly removed over 2,000 residents from areas surrounding the conference centre.[50] It is less clear that such resettlements meet legitimate public purpose objectives.

✗ Public benefits that materialise from transforming land-use must be weighed up against **high costs, both to those dislocated from their homes, and to governments needing to finance their resettlement.** In particular, where displaced households received insufficient compensation, resettlement policies have led to wide-scale homelessness and social unrest. Furthermore, even when residents are relocated to expensive new public housing projects, the destruction of social networks and local employment opportunities in the relocation process, combined with the peripheral locations of new housing blocks often lead to the exclusion of displaced residents from the city's socio-economic fabric. Across the world, from Paris to Johannesburg, large-scale housing developments in disconnected areas continue to foster a sense of socio-economic exclusion, resulting in high levels of crime and unemployment. In developing cities where governance is weaker, the majority of slumdwellers relocated in distant public housing actually **move back into better located informal settlements.**

BBC NEWS

Zimbabwe slum evictions 'a crime'

Slum-dwellers' relocation falls flat

In the USA, in 1954, the Pruit Igoe housing project invested $57 million in resettling low-income residents in large-scale public housing (left). By 1973, poor maintenance and rising social problems in housing estates led to its eventual demolition by state and federal authorities (sources: Community Organisations Development Institute (CODI), Baan Mankong: Thailand's City-wide, Community-Driven Slum Upgrading and Community Housing Development at National Scale, available at http://www.polsci.chula.ac.th/pitch/urbansea12/bmk.pdf)

50 Greene, S. J. (2003) "Staged Cities: Mega-events, Slum Clearance, and Global Capital," Yale Human Rights and Development Journal: Vol. 6: Iss. 1, Article 6.

Research from across the world has shown that residents tend to value the access to employment and social networks in informal settlements far higher than access to better amenities or higher-quality housing. Based on this evidence, if the goal of policy is simply to improve the lives of informal residents (rather than having the goal of using land for alternative public purposes), forced resettlement is rarely the best option to achieve this.

CASE STUDY: THE EFFECTS OF RESETTLEMENT ON URBAN RESIDENTS IN AHMEDABAD[51]

In Ahmedabad, India, in 1987, the Self-Employed Women's Association organised a lottery whereby 110 winning households signed leases to relocate from inner-city slums to government housing seven miles away. Winners received a 50% reduction in monthly rent, as well as the possibility of eventual home ownership. However, despite far better amenities in the new housing, only two-thirds of winning households actually chose to relocate, and only one third were still in the new housing in 2007. Socioeconomic outcomes for displaced adults and their children showed no improvements relative to those who did not win the lottery, and access to social networks significantly decreased.

Ensuring efficient use of assembled land

Even where land acquisition is justified to enhance efficiency and liveability, active urban policy is required to ensure this can be put into practice, particularly if land is being leased to private developers. The simple act of assembling fragmented land into consolidated holdings can greatly increase land value; for example, land prices tripled when the City of New York simply assembled land parcels to give to the New York Times in the early 2000s.[52] This creates incentives for well-connected private developers to lobby for compulsory land acquisition for the purposes of land assembly, and then proceed to sell off land rather than develop it as planned. In New Delhi, over 65,000 informal residents were relocated in the 1990s and 2000s to facilitate urban redevelopment. However, a survey of demolition sites in 2007 showed that over 46% of sites cleared from 1990 to 2004 were still vacant.[53]

In New Delhi, over 65,000 informal residents were relocated in the 1990s and 2000s to facilitate urban redevelopment. However, a survey of demolition sites in 2007 showed that over 46% of sites cleared from 1990 to 2004 were still vacant

51 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)

52 Heller and Hills (2008)

53 Dupont, V. (2008) "Slum Demolitions in Delhi since the 1990s: An Appraisal", Economic and political weekly: 43 (28)

The following policies can encourage efficient use of land cleared by resettlement programmes:

— **Open and competitive auctions** for land plots can help to ensure land is transferred to high-value uses rather than politically well-connected companies or individuals. These are prevalent in many countries, and have recently been considered for introduction in the USA, alongside restrictions on local government campaign contributions by property developers.

— In many East Asian countries and in cities such as Bogota, **taxation of vacant or underdeveloped land** at a higher rate has helped to incentivise high density efficient land use. The revenues raised can be used to fund public infrastructure and to help finance the resettlement of displaced residents in well-connected locations. However, the efficacy of a tax on vacant land in improving efficiency of land use depends on whether there are reasons why land remains vacant beyond just inefficient land speculation. Where interest rates on loans for development are prohibitively high, for example, a vacant land tax will not be sufficient to increase investment.

— **Contractual agreements with property developers** can specify that the government can reclaim land under public ownership if left vacant for a pre-agreed time period. In Bogota, particularly stringent policies have been implemented, allowing cities to reclaim land left idle for two years and submit it to public auction.

The need for fair and well-targeted compensation

Successful resettlement policies require significant and well-targeted funding to give fair and prompt compensation to both landowners and tenants. In order to be financially viable, resettlement programmes will need to weigh up in advance whether the overall costs are less than the benefits obtained through freeing up land for more productive uses.

Determining those eligible for compensation is a contested issue, particularly where land rights are not legally registered. However, increasingly countries such as Mozambique are updating their laws surrounding compensable land rights to reflect the current reality of customary and informal tenure systems. Detailed and participatory surveys *in advance of resettlement programmes* can help identify both the tenure status of affected residents, and the form and quality of housing for valuation purposes. This can also help avoid a common problem whereby once a redevelopment project is announced, either opportunistic informal settlers enter the area and claim occupancy rights, or property developers lodge quasi-legal ownership claims over the area to obtain compensation.

CASE STUDY: LARGE-SCALE LAND ACQUISITION IN SINGAPORE

As it experienced rapid economic growth through the 1970s and 1980s, Singapore used government land acquisition extensively to facilitate urban regeneration, and to implement large-scale high-rise public housing projects.

Before 1966, the Singaporean government had struggled to acquire land for urban infrastructure and regeneration, in part due to inherited British colonial planning laws and in part due to an 'iron ring' of landlords obstructing redevelopment. In 1966, Singapore passed the Land Acquisition Act, giving the state broad powers to acquire land for a variety of purposes including residential, commercial and industrial developments. Under the new Act, compensation appeals were to be made to an Appeals Board rather than to law courts. In 1973, Prime Minister Lee Kwan Yew made the following further amendment to the law:

> "I further amended the law to give the government power to acquire land for public purposes at its value on a date then fixed at 30 November 1973. I saw no reason why private landowners should profit from an increase in land value brought about by economic development and the infrastructure paid for with public funds."

Throughout the 1970s and 1980s, land acquisition was used extensively; the proportion of Singapore's land owned by the state rose from 44% in 1960 to 76% in 1985. This enabled key infrastructure provision and urban regeneration, but frequently involved large-scale slum clearance. To overcome resistance, the government provided **alternative accommodation for all people and businesses displaced by land acquisition**. This came at great cost given planners' estimates that for every slum structure demolished, seven new flats would be required to relocate affected families. The government also provided educational programmes to enable relocated families, particularly those with livestock, to adjust to the challenges of high-rise living.

Singapore's land acquisition policy therefore went hand-in-hand with its large-scale public housing programme. This in turn was financed through an innovative compulsory savings scheme where workers and employers were required to contribute up to 20% of wage payments each into a savings scheme used to fund mortgages for home ownership. Furthermore, high government capacity, strong trust in government and related rapid economic development were key enabling conditions for Singapore's policy reforms.

Once eligibility is determined, a benchmark for compensation typically combines:

— **Payment to landowners at the market value of their land and property before redevelopment projects are announced.** This prevents speculative

investments made after the project is announced from driving up the price of land being acquired. Without this, governments have to pay for the increased land value that their own planned investments create. To effectively do this requires:

- **Independent, accurate and transparent systems for valuation** both before and after announcements of urban plans. Without this, the implementation of these plans can be stalled by lengthy disagreements and political resistance on the basis of undervaluation of land.

- **Legislation and education of judges** to ensure that payments are made on the basis of land *before* public projects are announced.

In Germany, for example, the stage of development and value of land or property *before* public projects are announced are used to fix the compensation value[54]. By contrast, in Uganda, under the current *Land Acquisition Act*, individuals have the right to reject compensation based on market values before the planned public investment. This results in speculators holding out for higher payments than others in a community and significantly stalling or halting public investment projects[55].

- Further **compensation for displacement** to resident households and businesses displaced in the resettlement process, for whom market-value compensation is insufficient to cover the social and economic cost of resettlement. This can be provided in the form of compensation for lost business profits, lost employment opportunities and relocation costs. A similar type of compensation can also be targeted towards displaced tenants; in South Korea, each tenant household member receives compensation equal to three months of rental payments as well as moving expenses.[56]

Depending on consultation with those displaced, holistic support to communities in finding new housing, integrated with transport links and local job opportunities can be a useful alternative to cash compensation. In one government programme in Chile, the government has been able to resettle 98% of informal households in alternative housing within their own neighbourhood. This has been achieved despite high land costs by cutting down on construction costs through the provision of unfinished 2-3 storey houses that can improved incrementally. Households were resettled in groups of 50 to preserve community ties, and resettlements occurred in a context of wider social inclusion programmes to provide education, job-training, micro-finance and legal aid.[57]

Depending on consultation with those displaced, holistic support to communities in finding new housing, integrated with transport links and local job opportunities can be a useful alternative to cash compensation

54 Winrich Voss, 'Compulsory Purchase in Poland, Norway and Germany - Part Germany' (Germany: International Federation of Surveyors, 2010).

55 Umaru Kashaka, 'Govt Explains Compulsory Land Acquisition', New Vision, 2016, http://www.newvision.co.ug/new_vision/news/1442286/govt-explains-compulsory-land-acquisition.

56 Lozano-Gracia et al. (2013)

57 https://www.bshf.org/world-habitat-awards/winners-and-finalists/from-slum-to-neighbourhood/

“I saw no reason why private landowners should profit from an increase in land value brought about by economic development and the infrastructure paid for with public funds”

PRIME MINISTER LEE KWAN YEW, 1973

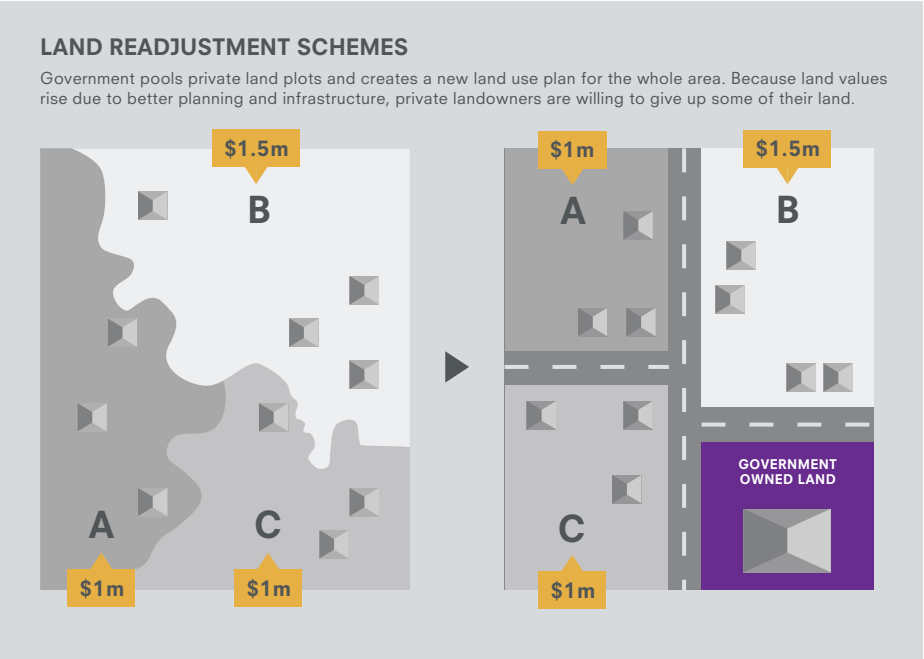
Land Readjustment

Governments in South Korea, Japan and more recently Angola have extensively used land readjustment schemes as a tool for urban transformation. Under readjustment schemes, governments pool together privately-held land plots, and this land is made more efficient through:

— Creating a new land use plan for the area

— Providing necessary public infrastructure on a portion of this land

— Coordinating and facilitating private exchanges between owners to allow for more contiguous ownership



After public infrastructure is supplied, the remaining land is reallocated to owners in proportion to their land plots before readjustment. As land values in the area rise due to better planning and infrastructure provision, private landowners are willing to give up some of their land to the government. Governments are able to acquire selected, strategic land parcels which can either be used for the planned infrastructure investments, or leased or sold to recover the costs of delivering infrastructure. Infrastructure provision is thereby self-financed through 'land payments' by landowners. If implemented effectively, land readjustment can result in a win-win scenario where landowners and local governments share the increase in land values generated by more efficient land use.

CASE STUDY: LAND READJUSTMENT ENABLING LOW-INCOME HOUSING IN THAILAND AND SOUTH KOREA

In Thailand, South Korea and India, the process of pooling land together has enabled large-scale land-sharing agreements, whereby informal occupants agree to relocate in formal on-site high-rise housing while the rest of the land is freed up for the official landowner to use for commercial purposes.

In Bangkok in the 1970s and 80s, official landowners themselves agreed to fund 3-5 storey low-income housing developments for informal occupants in return for reclaiming part of their land back. In one such land-sharing agreement, increased population density enabled the residential area of the slum to decrease from 8.50 hectares to 2.40 hectares. The rest of the land was then able to be used more efficiently for a commercial complex. The value of the freed-up land for commercial uses was sufficient to cover the company's construction costs of new housing units for slum dwellers, which were issued on 20 year leases – a win-win for the landowner and for formally housed residents.

In South Korea, freed up land from land readjustment is also used to fund low-income housing; in the 1980s, this constituted 30% of the government's low-income housing budget.[58]

There are five main advantages to land readjustment schemes:

- ✓ The comprehensive new neighbourhood layout enables the **effective provision of infrastructure**, without the need to permanetly relocate residents off-site. This is otherwise often almost impossible given the narrow winding street patterns and unplanned neighbourhood layout currently prevailing in many informal settlements.

- ✓ Whilst facilitating greater planning and infrastructure upgrading, land readjustment requires **limited government financing**. This is because the government captures the land value generated by its own infrastructure investments, in the form of land payments by landowners. Under land readjustment schemes in South Korea in the 1940s, landowners gave up 30% of their land to make space for infrastructure and public spaces, and a further 20% to cover the costs of actually providing these.[59] More than half of the land area of the capital, Seoul, was redeveloped in this way. This enabled cash-strapped municipal governments to enable neighbourhood regeneration and infrastructure provision without the need for heavy financing for land acquisition or infrastructure provision.

- ✓ **Limited displacement of residents**. Land readjustment schemes allow current residents to remain within the area being planned and minimises displacement of large populations. As a result, land readjustment in

Under land readjustment schemes in South Korea in the 1940s, landowners gave up 30% of their land to make space for infrastructure and public spaces, and a further 20% to cover the costs of actually providing these. More than half of the land area of the capital, Seoul, was redeveloped in this way

58 Lozano-Gracia et al. (2013)

59 Lozano-Gracia et al. (2013)

Japan, where there is a culture of strong ownership rights as well as a high degree of organisation and political influence among Japanese farmers, have been far more successful than land expropriation[60].

✓ Land readjustment can be seen as **fairer** and thus more acceptable than other forms of urban land use intervention in that the costs of planning are borne to a great extent by those who receive the benefits from the scheme.

✓ The process of pooling together land to redesign the neighbourhood layout can **help to resolve ownership disputes**. This can apply not only to small-scale boundary disputes, but also to larger-scale contested ownership claims beteen long-term informal occupants and legal landowners. This is because informal long-term occupants can be resettled in higher density accommodation, freeing up that was previously unusable by the official owner for high-value commercial or residential use.

Challenges of land readjustment

The ability of land readjustment programmes to improve land use relies on:

— **Empowered implementing institutions**. Land readjustment schemes require effective and empowered implementing institutions – not least because landowners need to trust in their abilities if they are to be willing to give up substantial portions of their land. Angola offers a striking example of two diverging experiences of land readjustment schemes implemented between 2006-2008, based on differing funding arrangements for local governments:

  — In one successful scheme, the local government that implemented the project allocated 30% of land to infrastructure provision that raised surrounding land values, whilst retaining a further 35% for sale. Revenues from the sale of this additional land went into an infrastructure development fund to cover the costs of infrastructure provision.

  — By contrast, the second scheme, initiated shortly after a new decentralisation law in 2007, did not generate sufficient resources through land value capture to sustain itself. A large part of the reason for this was that the new decentralisation law did not incentivise local governments to create surplus incomes from local sources – all local revenues reverted to central government and investments funds were instead centrally allocated to local governments. As a result, the local government instead distributed land parcels for free to those on their waiting list for land for housing. No funds were recovered to invest in infrastructure. Wealthy landowners gained control over the replotting process, and used it simply to increase their landholdings.

60 Lozano-Gracia et al., 'Leveraging Land to Enable Urban Transformation'.

— **Strong legal institutions to underlie the process of land title swapping**, as well as a**ccurate systems for land valuation before and after readjustment.** This is to avoid controversy in reallocation of land. Land can either be reallocated on the basis of relative size, or relative value:

  — If determined by *relative size*, a pre-determined and fixed percentage of land per owner (e.g. 50%) is assumed to be needed. If more than this percentage is actually taken from any given landowner in the project, then the municipality must compensate the landowner for extra land taken at the market value. If less than this percentage is taken, the landowner must pay the municipality for land not taken through betterment fees[61].

  — If determined by *relative value*, the land payment for each individual land owner is calculated such that they keep a land-holding of the same, or slightly higher, value as before the scheme.

  Payment by relative size is administratively easier to calculate, particularly where land valuation systems are weak, as the same percentage of land is contributed by each landowner. However, this can be perceived as less fair than payment by relative value in cases where some owners are required to contribute much more valuable land than others. This may be more fair in cases where land values are relatively homogenous across the project area.

— **Effective means of participation**. If landowners are allowed to play a part in the design of plans for their area, it is more likely that such plans will incorporate local knowledge of land use, as well as reflect local needs and aspirations. This will be extremely useful in overcoming existing inefficiencies. More participatory land readjustment can be easier to implement, whilst fostering relationships for further public-private-community partnerships for land management.

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— **Strong enforcement capacity**. Although land readjustment schemes are typically implemented with the aim of neighbourhood-wide comprehensive upgrading, there will likely be winners and losers in the process. Some landowners may also seek to free-ride off the communal infrastructure provided without giving up any of their land, and therefore tactically oppose the scheme. This creates a need to enforce land readjustment for the collective good.

What level of consent legitimises enforcement of these schemes?

The level of consent required to implement readjustment schemes may depend on who initiates the land readjustment process. In Japan, South Korea and Taiwan, land readjustment can be initiated by governments or by landowners themselves. If it is initiated by governments, participation is mandatory,

61 These refer to fees charged to land or property owners based on the increase in the value of their land or property that results from surrounding public investments

although in practice there is often strong collaboration with landowners. If land readjustment is initiated by landowners, then a minimum level of compliance is required for it to be implemented. In Taiwan, 50% of owners, measured by area and by number, must agree to the project, whereas in Japan and South Korea this figure is 66%. This reflects the more participatory, bottom-up nature of the land readjustment process in Japan and South Korea.[62]

What is the role of informal occupants and tenants in land readjustment?

Often official landowners are not the only stakeholders in land readjustment programmes. Long-term informal occupants may claim de facto ownership rights to be respected in such programmes. Tenants are also important stakeholders, particularly if rents rise after readjustment.

Where long-term informal occupants have developed legitimate ownership claims, they can be incorporated as stakeholders in the land readjustment process alongside official landowners. In Thailand and India, the process of pooling land together has enabled large-scale 'land-sharing' agreements whereby informal occupants agree to relocate in on-site high-rise housing, liberating the rest of the land for the official landowner to use for commercial purposes. This process typically involves:

— Setting a cut-off date before which occupiers need to have settled, in order to be deemed to have established some ownership rights through long-term occupancy

— Calculating what levels of housing density are required such that the value of freed-up land obtained by the landowner cross-subsidises new housing for informal occupants.

— If new housing cannot entirely be cross-subsidised in this manner, the funding gap will need to be filled either by payments from occupiers for their new housing, or through government subsidies. In India urban authorities have discussed the possibility than slumdwellers should pay 10-20% of the cost for their new apartments rather than receiving them for free.[63] In Thailand, many land-sharing agreements have required government housing subsidies.

The role of tenants in land readjustment processes can be controversial as they are often the most affected by such schemes, but without legal justification to affect decisions regarding land they do not own. In many countries tenants are included in discussions over readjustment schemes, particularly regarding the level of rent rises after land readjustment, although controls on rent increases are liable to the same objections as discussed in the section on slum upgrading.

62 Lozano-Gracia et al (2013).

63 Gill, M. and Bhide, A. (2012) "Densification through vertical resettlement as a tool for sustainable urban development", World Bank, Sixth Urban Research Symposium

CASE STUDY: LAND READJUSTMENT IN SOUTH KOREA

Land readjustment was introduced to South Korea during the Japanese occupation from 1905-45. However, after World War Two, many practices were reformed to fit the South Korean context of rapid urbanisation with very scarce local government funding. South Korea's per capita income levels were lower than those in many of the poorest countries of Africa and Asia until the 1960s.

Land readjustment was used extensively for both urban expansion and for redeveloping areas which had emerged through unplanned and unserviced settlement. More than half the land area of the capital, Seoul, was redeveloped in this way.[64]

Most schemes are sponsored by municipalities and are compulsory for landowners to participate in, although the scheme is open to public review. Where landowners want to initiate a project, they typically form a landowner association where two-thirds of landowners in the area (by number and by land area) must agree to the readjustment plan. All projects require approval by the Ministry of Construction.

Land readjustment programmes in South Korea are largely self-financing, and are used to provide a very wide variety of infrastructure and services including roads, main sewers, and sites for schools and markets. Furthermore, throughout the 1980s, **30% of the funding for low-income housing programmes** came from land contributions in land readjustment schemes. Water and electricity services are typically paid for through user charges but in some instances have been paid for through land payments. This has required very high land payments from participating owners; typically 30% of owners' land is contributed for public spaces or land for low-income housing, and 20% is contributed for the costs of infrastructure provision. This is far greater than the land payments made in Japanese land readjustment programmes - 20% contributed towards public spaces and 10% for infrastructure costs.[65] Consequently in Japan, readjustment programmes are not so self-financing (they receive government subsidies as well as land payments) and are more limited in scope (they do not provide public utilities or funding for low-income housing)

64 Schnidman, Frank. 1998. Land Readjustment. Urban Land (February).

65 Lozano-Gracia et al. (2013)

SUMMARY OF OPTIONS FOR EXISTING INFORMAL SETTLEMENTS

If local landowners (both formal and informal) can be persuaded to take part in a land readjustment programme, and if complementary land and local government institutions are strong enough, then land readjustment represents an attractive option for improving infrastructure and resolving tenure disputes in informal settlements.

However, in the absence of such consensus or strong institutions, policymakers will need to decide between more conventional upgrading or resettlement. Where policymakers are content to retain land under residential use, slum upgrading is the most cost-effective way of achieving dense but liveable neighbourhoods.

However, if land is needed for key urban infrastructure or economic regeneration projects, resettlement may be necessary. Where resettlement is pursued, it is important that policy acts not only to adequately compensate affected landowners and tenants, but also to ensure that the land cleared is used efficiently and intensively rather than purely for speculative purposes.

The need for better data on informal settlements

Data on informal settlements in many low-income cities is often highly inaccurate or out of date. In Kibera, Nairobi, even population estimates, let alone detailed data on housing and access to services, have been highly unreliable until recently, ranging from 170,000 to 1,000,000.[66] This renders effective planning and indeed cost-estimates for different policy options impossible. In particular, underestimates of slum populations can have serious consequences when policies of resettlement and slum clearance are considered. For example, in Lagos, Nigeria, the decision to partially demolish the Makoko neighbourhood in 2012 was based on out-dated data from a national census in 2007.[67]

In order to obtain accurate physical and socio-economic data on an informal settlement, it is generally necessary to conduct a detailed mapping and surveying exercise. Strong community involvement can make this process both more cost-effective and less politically challenging. This is because local inhabitants know their settlement better than outsiders, and because it encourages a process of early-stage community participation, necessary for the success of upgrading, resettlement or land readjustment programmes.

66 Some recent estimates are 235-270,000 (see http://mapkiberaproject.yolasite.com/maps-and-statistics.php)

67 Marx, B., Stoker, T. and Suri, T. (2013) "The Economics of Slums in the Developing World", Journal of Economic Perspectives, 27:4 pp187-210

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Please cite the contents of this document as follows: Collier, P., Glaeser, E., Venables, A., Blake, M., and Manwaring, P. (2019) "Policy options for informal settlements" Version 1. IGC Cities that Work Policy Framing Paper.

Cover photo: Mumbai, India by Nadir Hashmi.

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