Access to Land in South Asia

The World Bank Guidance Note
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and serves as the bedrock for all human endeavors. Our burgeoning needs and aspirations, coupled with the imperative to safeguard our planet, underscore the criticality of land in our collective narrative. As our global population swells, so does the demand for resources, urging us to push the boundaries of innovation and sustainability. However, our current land administration and management systems struggle to keep pace with these evolving demands, leaving a glaring gap between aspiration and implementation.

Despite its undeniable significance, land often languishes on the periphery of public discourse and development priorities. It is time for this narrative to shift.

This Guidance Note represents a call to action, dedicated to enhancing access to land and unlocking the full potential of land assets for urban and infrastructure development, as well as renewable energy investments. It not only underscores the importance of improving land access but also highlights the pathways towards leveraging land assets, creating value, and capturing its dividends.

Drawing inspiration from South Asia’s rich legacy in land administration, we acknowledge both the strides made and the challenges that persist. Recent success stories include the Digital India Land Records Modernization Program, alongside parallel initiatives in Pakistan, Bangladesh, and Sri Lanka. Yet, formidable hurdles remain. Outdated land records, coupled with manual processes in planning, mapping, valuation, and taxation, impede the swift execution of development agendas. Litigation over ownership, succession, and compensation is widespread and further complicates matters, leading to systemic delays, setbacks, and cancellations in critical development initiatives across the region.

Tailored primarily for stakeholders in urban development, housing, and renewable energy sectors, this guide serves as a technical manual for navigating the complex terrain of land access and utilization. However, its relevance extends far beyond, encompassing all endeavors aimed at climate action and sustainable land use. We trust that its insights and practical guidance will invigorate the discourse on land systems and services, igniting a renewed commitment to fostering equitable access to land and unlocking its latent development potential.

The stakes are high. Effectively addressing land issues is not merely a matter of financing infrastructure or capturing value; it is a prerequisite for nations to honor their commitments under the Paris Agreement and forge a sustainable future, on a livable planet, for generations to come.

Join us in this pivotal journey towards a world where land is not just a finite resource but a boundless platform of opportunity, equity, and resilience. Together, let us rewrite the narrative of land access and forge a path towards a more livable planet for all.

Yours sincerely,

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### 10. Conclusions
Executive Summary
Executive Summary

Securing access to land is a key factor in any infrastructure project. It determines whether developments designed to preserve nature or build sustainable cities and improve citizens’ quality of life can move forward, and impacts the size, cost, and schedule of these projects, and whether they can be completed at all. When systems to secure access to land function effectively, governments are empowered to invest in urban development, renewable energy (RE) production, mass transit systems, and affordable housing, and other forms of infrastructure investment. They are also more likely to find that these projects do not overburden public budgets, as land assets can go a long way toward securing and paying for investments.

But in South Asia, access to land is more commonly an obstacle rather than an opportunity for infrastructure investments. A recent review of World Bank Group (WBG)-supported investments in transmission lines, solar parks, hydroelectric power projects, road and railway corridors, and urban transformation identified inability to access land as a major reason that projects are canceled or delayed. These challenges are expected to become more acute in coming years due to the high demand for land created by rapid urbanization, the vast areas of land needed for climate change mitigation, and losses of land from floods, inundation, droughts, and disasters.

In this report, access to land refers to the entire process of securing areas or corridors of land for development. These processes include identifying, valuing, assembling and acquiring sites, planning, permitting, and monitoring land to host an investment.

The fundamental challenge in South Asia is that land records are commonly incomplete and out of date. There are significant areas, even in major urban centers, without comprehensive or up-to-date records on how land is being used and who holds rights over it. Beyond the issue of land records, inclusive access to land also requires functional infrastructure and services for land management: South Asian countries require improvements in services governing development planning and control, property valuation, land value capture and taxation, and land acquisition.

The objective of this report and the surrounding initiative is to improve land access in World Bank-supported urban development, public land management, transit-oriented development, affordable housing, RE, and infrastructure investments in the South Asia region. The land administration system should be capable of providing accurate information on titles and land rights for the lands needed for these projects.

The World Bank Group can play a leading role in assisting the South Asia region remedy this situation. The many regional programs to digitize and expand the coverage of land records should be prioritized and supported, as well as held to tight performance standards and completion deadlines. Long-term success will require holistic improvements in land administration systems, as well as the creation of appropriate regulations, obligations, and incentives for keeping land records current to ensure that these improvements are sustainable.

There are a number of ways in which sites can be assembled for development purposes. Whatever method is used, it is absolutely vital to be able to identify
who the owners of the land are and any other property rights over it, such as occupancy, tenancy, residence, and use rights. If land records cannot be relied upon, then the systematic registration of land and property rights in the area may have to be incorporated into the project before construction work can commence.

Infrastructure investments often have to resort to compulsory acquisition in order to prevent a situation in which a small number of owners can block a project by refusing to sell. This process can take a long time and be frustrated by title disputes or litigation about compensation values. For this reason, governments require accurate and reliable land records to identify individuals or groups who possess property rights that must be acquired and the assets taken and livelihoods diminished. They also need effective land valuation infrastructure and the transparency of property markets to determine fair and equitable compensation levels.

SAR countries systematically underutilize public lands and buildings, despite these representing some of their most valuable assets. Investing in better access to state and public lands for development and improved management of these has enormous potential for providing an impetus for accelerated growth, diversification of the economy, and increased public revenues. This in turn promises to have a major positive impact on these governments’ programs on sustainable urbanization, improvements in living space, and poverty reduction. In order to unlock these benefits, governments must develop accurate and up-to-date records of public assets, as well as their values and uses, and establish an overarching rationale for the ownership and management of public lands and buildings and invest in enhancing management capacity.

SAR countries should also look into innovative methods for funding development projects. Value capture can play an important role by obliging those who benefit from infrastructure improvements to contribute part of their gains in asset values to financing these investments. The increase in value that results from these improvements – often in the form of economic, urban, or demographic growth – are often regarded as being legitimate for land value capture, as it was created by society at large rather than as the result of individual entrepreneurship and investment. A wide variety of devices can be used to capture this increase in value, including property taxation, fees and charges, sales of development rights, sales of leases and land, and planning and development obligations. Value capture depends upon the government having the capacity to precisely determine the value uplift that is likely to result from an infrastructure investment.

The difficulty of gaining access to land and applying principles such as land value capture means that SAR countries are missing out on significant development opportunities. Transit-Oriented Development (TODs) create opportunities for investment and added value along transit corridors but have been plagued in this region by issues regarding land ownership, site definition, and compensation for the acquisition of the parcels of land needed for construction. Land issues related to TOD are more complex than for single entity or site projects as they affect hundreds of small properties that have to be purchased or acquired – and unless all the land required for the entire corridor is secured, the project is likely to fail. SAR countries should adopt modern systems designed to ensure the success of TODs, including the establishment of transit development authorities, integrated planning and development approval systems, co-location of services, pooling land resources and funding, and bundled project finance.

SAR countries also need effective land systems to successfully mitigate the effects of climate change. The land use change actions that governments committed to at the Conference of the Parties 26th meeting (COP26) will require vast tracts of land even as other large swathes of land will be rendered unsuitable for cultivation or habitation due to climate change. South Asian countries’ transition away from coal and towards RE production requires massive land acquisition and land use repurposing. However, solar park projects in the region have already been hampered by problems related to land acquisition. Similar problems are
encountered with investments in other carbon neutral sources of energy. If these countries’ RE plans are to achieve their full potential, comprehensive land information, valuation, and administration are vital. Governments should also adopt an approach that pairs geospatial analysis with field analysis prior to project implementation to provide task teams with powerful decision-making information.

Access to land for affordable housing is a common challenge in SAR. In search of affordable housing in urban areas, people and developers often turn outside of the formal housing supply chain because of problems such as the difficulties in obtaining land with clear titles, a lack of up-to-date structure plans to guide development, overly rigorous zoning and development control regulations, delays in gaining development permits, and lack of infrastructure. Land for affordable housing can be provided in different ways, including the conversion of agricultural land through greenfield development, upgrading informal settlements, and densification of brownfield districts. It is critical to provide an enabling environment to promote diverse land and housing supply to meet the evolving demands of residents of every rung of the income ladder.

Historically, South Asia has played a leadership role in land recording. However, recent decades have seen the region fall behind global trends and developments from the poor state of land records and public land inventories, informality, land disputes, weak land valuation infrastructure, and limited use of instruments to capture value are now holding back investments in essential infrastructure development. The result is a lack of affordable housing projects, canceled and delayed investments in RE, and derailed investments in mass transit systems. The situation

Bangladesh’ sunny delta and coast lands are competed for food, shelter and energy uses among others. Mika Törhönen
is not acceptable, and promises to severely impact infrastructure development, food production, environmental conservation, economic growth, and social and political stability.

It is time for South Asia to reclaim its role as a global leader in land administration. The region must push forward with projects to achieve digital and integrated land records with high reliability and low dispute rates, leverage asset values for investments and revenue, and plan and implement projects to develop sustainable, prosperous cities – while at the same time preserving the environment for future generations. These investments in the use of land cannot be delayed.
Introduction
1.1 The Land Problem

In 2021, the World Bank’s South Asia Region Working Group on Land suggested the need for a guidance note to promote holistic approaches for securing access to land. The Working Group reviewed multiple WBG-supported investments in transmission lines, solar parks, hydroelectric power, and mass transit, road and railway corridors, as well as urban and environmental investments and identified a pattern of delays or loan cancellations due to governments’ inability to access land. The World Bank also found in a parallel review of experiences with land acquisition in Bangladesh that development projects there were commonly delayed due to land acquisition challenges, such as identifying the owners of the target land areas.

Site assembly for a wide range of investment projects in the South Asia Region is extremely challenging. Major infrastructure investments typically involve either the assembly of a network, for instance a road, railway, or power line, or a large contiguous site, for instance a transport interchange, railway station, or solar farm. A network cannot be built if there are breaks in the line because land cannot be acquired. Large contiguous sites cannot have areas in the middle of them in other ownership together with access corridors to these. These investments require either the whole sites to be acquired or the investments not to go ahead. Certainty that the land can be acquired is essential before any construction work can be started, otherwise there is the risk that they may have to be abandoned in an incomplete state because the land needed for them is unobtainable.

In South Asia, claims to land are often contested or overlapping, with legal registration commonly missing or out of date due to unclear, unfeasible, or unaffordable processes. This increases the costs of due diligence ahead of investments taking place and the thoroughness with which it must be undertaken. Land issues constitute the principal reason why many investment projects fail: No matter how good the design is or how skilled the implementation team, without access to all the land needed to realise the plans and at the time when it is needed, a project is, at best, doomed to underperform and there is an enhanced risk that it will fail entirely.

Land needed for infrastructure investments can be accessed in different ways. It could be purchased from current owners, including through compulsory acquisition. It could be leased or the right to use it gained through easements. It could be acquired through donation, or sites brought together through land pooling, or it may already be in the ownership of a public body. Whatever means are used to assemble the site, it is important to remove all encumbrances that could prevent the investment from moving forward and to do so in ways that ensure that those who own such rights are fairly compensated. Encumbrances include tenancies, use rights, easements, access rights, customary rights, seasonal rights, indigenous and tribal rights, and rights which have been gained through long and peaceful enjoyment. In countries that have not completed systematic land and property rights registration and kept its records up to date,
determining who claims what rights and the legitimacy and value of these claims is a major challenge and may have to form a key aspect of the investment.

A number of World Bank studies have concluded that insecure property rights have an adverse impact on investment. This research has typically focused on individual private investment, however, overlooking the impact of insecure property rights on collective public investment. Democratic governments bound by the rule of law cannot simply seize or expropriate the land needed for infrastructure investments. They must acquire it using legitimate legal processes and fully compensate in a timely manner those whose land, property rights, and livelihoods they dispossess or diminish in value. For this reason, sorting out land and property rights so that they can be legitimately acquired and those surrendering them properly compensated is a precondition for any successful infrastructure project. In contexts where property rights are insecure, governments will often find that they struggle to secure land for investments – and consequently, that their efforts to tackle poverty and environmental issues are frustrated.

These challenges are expected to accelerate. Vast tracts of land are needed for climate mitigation investments such as afforestation, carbon neutral and RE projects, and low carbon urban development to which governments committed at COP26. At the same time, land stocks will diminish as areas face unwanted land use conversion due to informal migration or
become unsustainable for cultivation or habitation because of temperature increases, changing weather patterns, drought, desertification, sea level rise, floods, and the increased frequency of climate-induced natural disasters. These conditions, combined with rapid trends in urbanization, promise to result in an unprecedented demand for land, placing long-term stress on private, public, communal, and indigenous peoples’ land rights.

South Asian countries face a common pattern of difficulties in producing adequate administrative and governance responses on land issues. While there have been recent success stories in digitalization and modernization of land records and services\(^2\), services, there are significant areas and even urban centers - without comprehensive or up-to-date records of land and land rights. Apart from tenure security, inclusive land development also requires functional infrastructure and services for land management. Land records provide the base, but improvements in planning, property valuation and taxation, and land acquisition are also needed. Yet capacity is often lacking.

Informality is a major challenge. Tenancy without legal protection, unauthorized settlements, unrecorded historic land usages and gender equality vulnerabilities are commonplace across the region, making it difficult to identify the individuals affected by infrastructure investments.

Informality adversely impacts planning, infrastructure investments, and urban development by making such projects difficult to implement by causing problems in identifying who will need to give up property rights to enable investments to go ahead and what those rights are. Land litigation is widespread, and disputes over land take long periods to resolve. In Bangladesh, for example, an estimated 80 per cent of civil and criminal court cases in the country involve land disputes. The situation is similar across much of the region in large part due to the lack of accurate and up-to-date legal land records.

Informal settlements are very common, locking land users and dwellers out of formal economic structures. For instance, 20 percent of Dhaka’s population lives in informal settlements, Karachi’s informal settlements make up 8 per cent of the city’s area and fulfill over 50 per cent of its housing needs, and 20 to 25 per cent of the urban properties in Pakistan’s Punjab province are not registered. Informality is associated with poverty, poor health outcomes, and insecurity. Furthermore, informal settlements are often located in hazard-prone areas or encroach on foreshores or forest lands.

Informal occupiers cannot simply be driven from their homes and businesses in order to make way for infrastructure investments. Legitimate rights which are unrecorded are still rights that should be respected as called for in the Voluntary Guidelines on Responsible Governance of Tenure (https://www.fao.org/3/i2801e/i2801e.pdf). Governments cannot focus just on compensating legal owners when land is acquired for investments and ignore the impact on those with occupancy, residence, or use rights and the loss of assets and livelihoods that would result. At the same time, informality makes even diligent efforts to determine who is affected by such investments challenging. This in turn negatively impacts local services and governance and revenue flows. Up-to-date records of lands, rights, asset values, and ownership would allow proper land use planning and development, and provide governments with the opportunity to promote compact, green, low carbon cities, and capture land value increases resulting from urban growth and infrastructure investment.

1.2 The Project

This document provides guidance on access to land for infrastructure investments for World Bank teams and their counterparts in governments as well as aiding policymakers in creating effective environments in which infrastructure investments can proceed with minimal delays and risk of being derailed. It was prepared as part of for the Access to Land in SAR programmatic

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\(^2\) The State of Karnataka in India is known, among other things, for its success in digitizing its land records and land administration services and improving public access to those services. See for example: https://www.elections.in/blog/bhoomi-karnataka/.
knowledge and advisory project. Its objective is to improve land access in World Bank-supported urban development, public land management, transit-oriented development, affordable housing, and RE investments in the South Asia region. The note was initially drafted in a Writeshop in Singapore on May 16–19, 2022, and subsequently iteratively consolidated and subjected to internal and external peer reviews and field testing.

Although the Guidance Note is primarily aimed at WBG teams supporting operations that need to acquire land to fulfil the investment objectives and WBG clients who have or plan to borrow funds for such projects, central regional, and local governments and municipalities in SAR have common weaknesses in landholding policies, land records, public land and building inventories, public land management, and public land monetization.

and policy makers in them will benefit from the analysis it contains. There is a need to develop solutions that enable the unlocking of access to land at a time when pledged climate change investments will require unprecedented amounts of land and as the need for investment in resilient urbanization and affordable housing to new urban dwellers becomes more acute. The Guidance Note will help WBG task teams and their counterparts amongst borrowers manage these challenges more effectively as well as identifying issues for policy markers. The note reflects international best practices as well as the region's rich cultural heritage, tradition, knowledge, and successes.

1.3 Structure of the Guidance Note

Chapter 2 examines the state of land administration in SAR and the problems that this presents for land
assembly. Chapter 3 discusses the underlying theme of assembling land for infrastructure investments and the principal ways in which this can be achieved. The next three chapters examine in greater detail three ways in which land for infrastructure investments can be assembled by governments borrowing World Bank funds for infrastructure investments. Chapter 4 examines effective ways to manage public lands, the largest untapped resource available in the SAR region, and examines how surplus, under-utilised, and non-core land can be released for more productive investments. Chapter 5 focuses on compulsory acquisition of land and property rights from private owners, users, and occupiers, and how this tool can be used effectively to assemble sites for investment in a fair and equitable manner. Chapter 6 discusses how governments can capture part of the increase in land value resulting from development to fund infrastructure investment and require or incentivize developers to contribute to the provision of infrastructure. Chapter 7 focuses on the role of land access and leveraging TOD. Chapters 8 and 9 concentrate on questions surrounding how to access land for RE and affordable housing investments in an effective and timely manner.
2

Land Administration and Management in SAR
2. Land Administration and Management in SAR

2.1 The Need for Effective and Reliable Land Administration

Land administration is the process of determining, recording, and disseminating information about how the rules of land tenure, value, and use are applied and made operational. It is important because land and buildings typically account for between half and three quarters of a country's national wealth. By providing geo-references of buildings and land parcels, land administration enables the locations of people, assets, businesses, public services, and economic activities to be identified, secured and insured. Good quality land administration and policies are fundamental for the management of resource and are necessary for economic growth, environmental protection, social cohesion, social stability, poverty reduction, and tenure security. Without it, potentially dangerous and socially and environmentally damaging developments cannot be controlled.

Effective land management requires comprehensive and reliable records and geospatial data on land and the rights, responsibilities, and restrictions related to land, as well physical extents, boundaries, fixtures, value, and uses. In much of South Asia this is not the case. Successful land administration systems provide protection of property rights for each property owner, lessor, and user regardless of their ethnicity, gender, disability, religious affiliation, primary language, sexual orientation, political affiliation, or age. Common challenges that prevent effective land administration include legal and institutional complexities and the cost of establishing comprehensive land records and maps, as well as the challenge of maintaining records that reflect the current reality on the ground.

There are a range of successful land administration systems, including setups based around registration of deeds or title registries and cadastre or parcel-based systems. But while the systems themselves vary, their outcomes are similar – namely, comprehensive and reliable land records and maps. Digital records, online access, common data standards and geospatial base, and data sharing, integration, and interoperability are the keys to developing an efficient and transparent land administration system.

The comprehensiveness of any land administration system is essential. The utility of even the most reliable and transparent system is limited if it only covers part of a country and leaves areas, groups of people, or economic activities subject to the vagaries of informality.

Any claim to land and property rights ultimately can be traced back to an original grant, or the taking possession of unclaimed land followed by a lengthy period of peaceful, unchallenged enjoyment of the territory. Current claims to rights depend upon an unbroken chain of transfers back to those original events. A break in the chain of transfer or an illegitimate transfer undermines the legitimacy and enforceability of rights. These can occur during any transfer and only come to light retrospectively; the owner of rights can be said to be the person who, for the time being, has the best claim.

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Governments have sought to minimize this uncertainty over property rights through establishing land registers and cadasters as the definitive source upon which all parties can rely. They have done this in order to minimize the costs of due diligence on the part of potential purchasers and on financial institutions seeking to take property rights as collateral for a loan. Such registers provide certainty to property owners, would-be buyers, financiers, and investors alike. In contexts of uncertain property rights, the resources used in due diligence can be regarded as a deadweight loss, as uncertainty creates risks and discourages investment. The security of property rights is therefore a hybrid good, providing private benefits but also a public good that benefits society as a whole.

If an efficient land registration system is in place, then legally enforceable rights, restrictions, and obligations are recorded in the register rather than having to be proved through an unbroken chain of title. First registration reflects the results of unbroken chains of title when the register was compiled, with subsequent transfers being recorded so that the register shows the current ownership. As part of first registration, disputed and overlapping claims must be resolved. A cadastre records the boundaries of the parcels over which rights, obligations, and restrictions apply. When there is a reliable land register, those seeking to undertake investment projects can identify all those with property rights over the potentially impacted land and anyone who possesses property rights over neighboring properties that may be adversely affected by it. As a result, it should be possible to identify all those adversely affected by a project who are entitled to compensation.

Modern land registries⁵ are parcel-based and interlinked with cadastral records and maps. Each parcel has a unique identifier, and its boundaries are registered in the cadastre or land records ⁶, with proof of ownership being through the entry in the register. In contrast, South Asian countries often rely on person-based land records⁷ and a deeds system, where title is proved through documentation showing an unbroken series of transfers back to an original grant or taking possession of a property.

A deeds registry does not provide a guarantee of title, but it is a repository of deeds which document that a person has acquired the property in question. Modernized deeds are linked to cadastres and land parcels, and typically, registration in them sets a precedent over competing claims on land. Plans or maps can form part of a modernized deeds registry, but often no spatial data is included. And when there is a spatial element in the deeds, it can be a textual description rather than a map or plan and is often inaccurate, causing potential for overlapping claims and lack of clarity.

Title registers are advantageous because they can provide a guarantee of absolute ownership, as only entry in the register proves legal ownership. Any uncertainties in land registration disappear when comprehensive cadastre and parcel mapping is linked to the land register, and trading, no matter whether through a titles or deeds registry, occurs with uniquely defined land parcels and properties, and registered owners. However, attempts to introduce conclusive title systems in the region have been unsuccessful, at least in part because of widespread informality and elasticity in land use.

Land parcel mapping does not necessarily need to be of the highest accuracy and thus expensive. The United Kingdom is famous for its general boundaries concept and approximate land registry maps, which nevertheless enable lands and properties to be uniquely defined. Unified parcel-based land records ⁸ provide the greatest certainty of title as long as they are properly maintained through the recording of all transfers and changes to properties.

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⁵ Such as the Torrens land registration system, which developed in South Australia in the 1850s.
⁷ Such as the Khatian system of Bangladesh and West Bengal.
There is little de facto difference whether the land records or cadastre and associated maps support evidentiary or conclusive (title) systems or whether they are constitutive or declaratory operationally (as defined by FAO 2017, p. 48). The true difference lies in the systems’ capability to stay current and reflect the actual situation on the ground, and how societies perceive the reliability and utility of registration.

No land registry is ever likely to be fully comprehensive in its coverage of property rights. The statutes that established them define which rights can be recorded in them and which must be registered and, by implication, which will not be. Usually, rights must meet certain requirements before they can be registered - for instance, registered leases may have to be of a certain minimum duration. Rules also determine who can be identified as holding ownership rights: Minors may not be permitted to be registered as owners in their own right, for instance, and social conventions may determine whether women can be recorded as owners or whether jointly owned property can be recorded as being in the ownership of both spouses. Communities holding lands based on custom do not have registered rights over land.

For these reasons, it is important not to rely only on formal land records when defining project stakeholders and beneficiaries. Field verification and community consultations should form an important part of clarifying land tenure and use in South Asia. Ideally, before a large infrastructure investment commences, land records should be systematically updated to identify individuals whose property rights, including use and access rights, assets, or livelihoods will be affected.

A land register is only as good as the quality of the data it contains. It reflects the systems and processes that underpin it. In reality, not all land registers provide accurate or reliable data about property rights, resulting in a gap between what is recorded and reality on the ground. A common reason for this discrepancy is the lack of effective mechanisms for tracking and recording

### WHY A LAND REGISTER MAY NOT BE RELIABLE OR ACCURATE

- The register has not been maintained and so has not captured transfers through sales, gifts, or sub-divisions.
- The method of registration used to compile the register is sporadic, requiring a trigger event for registration. The register may not cover properties that have not been subject to trigger events.
- The cost of registration and/or property transfer taxes discourage owners from registering transfers, resulting in informal and unrecorded transfers.
- Owners do not participate in the registration process out of fear that it will be used as the basis of taxation, or simply because they do not perceive a value in the process.
- A policy of systematic registration was adopted but not completed, so that there are areas for which property rights are not recorded or the records are incomplete.
- Records have been lost, destroyed, tampered with, or damaged.
- Data recording is not standardized, making the accurate identification of owners and properties difficult.
- The register does not comprehensively include all property rights but is selective in the rights it records.
- Certain rights, such as access rights and easements, are recorded against the property to which they apply but not against the property capable of enforcing them.
- Fraudulent claims to property rights have been registered.
- The register has not kept pace with urban development and omits informal developments.
- Parcel boundaries were not accurately surveyed.
- There are overlapping or disputed claims that have not been resolved.
changes in ownership and use. Land registration can be slow, expensive, and cumbersome in the region, and its benefits are not always known or appreciated by all land users.

The costs in time and resources of maintaining an accurate land register, however, pale in comparison to the costs of failing to do so. In the absence of such a register, those undertaking infrastructure investments have little alternative but to carry out a systematic survey to establish the ownership of property rights in the affected area and the identity of individuals who may be impacted by planned development. Since contested and overlapping claims are likely to exist and the time taken to resolve them can be significant, this may result in severe delays to infrastructure projects.

Revenue record archives in Punjab, Pakistan. Dong Kyu Kwak
In Kerala, land record keeping is fragmented. While progress has been made in connecting different sets of records, their data on land ownership commonly differs. Registration of Deeds is kept by the Department of Registration, Record of Rights by the Revenue Department, and the Field Book (cadastral map) by the Survey and Land Records Department. The cadastral map is grossly outdated, requiring a resurvey in 46 per cent of Kerala’s close to 1,700 villages.

Land rights-related litigation dominates courts in Kerala, stemming in part from the system that allows registration of deeds without verifying the property details or the existence of previous deeds on the same land parcel. The situation is further complicated by the fact that a large percentage of land transactions between 1947 and 1967 were not registered. Informal settlements have made significant encroachments on vast state land areas.

The Department of Survey and Land Records maintains a Field Book, which consists of individual survey plans of each land parcel. These plans are linked to the Record of Rights through map sheet and parcel numbering. In the case of subdivision, after registering a transaction in the Register of Deeds, the new owner applies for a mutation to subdivide the old parcel into two or more parcels, and to survey them for the Field Book and update the cadastral map. However, owners often do not proceed with the mutation request and the Field Book, and thus the cadastral map, does not get updated. Large numbers of mutations are pending, which undermines the value of the Field Books. As a result, the cadastral map is less up to date than the Record of Rights, which the village officers maintain based on first-hand information on land use and occupancy.

Roughly half of villages in Kerala have a reasonable standard of cadastral maps available. The Cadastral Index Map, which is compiled from the Field Book by the Department Land Records and Survey, has been scanned for 828 villages. The individual maps and records have not been scanned. These are stored in indexed archives, often without climate or dust control, and many are in a bad or poor condition to the extent that their digitization would need to be preceded by conservation.

Historically, the process of updating Kerala’s land records was revived in 1964 with a program of cadastral resurveying. By 2018, 901 villages had been resurveyed and the Record of Rights and the Cadastre Index Map were in a workable state, but still maintained in paper format and in local (rather than national) coordinate systems. While there is a state-wide three-order geodetic network connected to Survey of India’s national network, many old cadastral surveys were done in a local coordinate system and have not been georeferenced to the national system. New surveys are being carried out by GPS to the WGS -84 global coordinate system.

On November 1, 2021, Kerala launched a massive new digital survey as part of the ‘Ente Bhoomi’ program. 1,550 villages of Kerala’s 1,666 villages will be surveyed in four years. After that Kerala will have an up-to-date land parcel map and record.
Without a comprehensive and accurate land register, not only are affected persons at risk of not receiving compensation to which they are entitled, but the project budget faces risks of fraudulent claims. Those trying to carry out projects can be faced with new rights or assets created for the sole purpose of gaining compensation - as well as interlopers trying to gain an unjustified share of the compensation pot. The poor state of land records also makes it difficult for public officials to represent the state and government lands, which are often poorly recorded and commonly under dispute or encroachment. While all of these challenges are being resolved, the project budget mounts and the project falls ever further behind schedule.

2.2 Land Records and Maps in South Asia

South Asian land administration frameworks date back to British colonial times and despite having a proud history and tradition, they are commonly in need of modernization. These systems were developed for local ownership and revenue collection, in a slowly evolving predominantly agrarian world. South Asian realities today are very different with high demand on land and rapidly changing landscapes, and systems have not evolved accordingly. Land administration in the region tends to be institutionally and functionally fragmented and geographically incomplete. Moreover, the recording and management of state lands is commonly vested in multiple institutions, and information on state and public lands are often historical rather than current, non-standardized, and not integrated. Rural and urban land administration systems are largely separate, with some notable exceptions, such as the unification of systems in Karnataka, India. These rural and urban land records tend to overlap in urban fringes, causing grey areas and informality, as urbanization spreads to what were once rural lands. This creates informality and disputes, and a need to consult several different land records for transactions.

LAND RECORDS IN PAKISTAN
How land records became de-linked from revenue records

Pakistan's legal framework is fairly representative of land tenure systems in South Asia. The terms “land” and “property” are often used interchangeably under Pakistani laws. Property rights in Pakistan are protected under the 1973 Constitution, as well as by many specific laws that deal with various types of property and aspects of property rights. Land areas not held by private parties are owned either by the Provincial or Federal Governments, and rights to extractives belong to the Provincial and Federal Governments in equal share. Pakistan also has tribal areas where tribes practice customary tenure outside the statutory tenure system and coverage of land records.

The Deeds Registers and Revenue Records include the deeds and records of city center land parcels that have been allocated to Cantonments, Development Agencies, and Cooperatives. Subsequent developments within those urban allotments have not been recorded in the Revenue Records. The Registration of Deeds was also historically voluntary, though more recently it has become obligatory in some provinces. As the registration of sales led to liability to stamp duties, not all properties in Cantonment, Development Agency, and Cooperative areas can be found in the Register of Deeds or in any Revenue Records.

Cantonments, Development Agencies, Cooperatives, and others maintain their own land records on the land plots, properties, and rights in their areas. They also provide land registration services to land and property owners, banks and others. However, these semi-public land records are not reflected in or linked to the Revenue Records or the Excise and Taxation's UIPT (Urban Immovable Property Tax) records. As a result, for example, Punjab Province has over 200 standalone land records, Sindh has hundreds, and Baluchistan and Khyber Pakhtunkhwa dozens each.

Overall, the Revenue Records and Housing Agency Records combined cover the entire geographical areas of Punjab and Sindh Provinces (with minor remote area exceptions), but only half of Khyber Pakhtunkhwa's territory and 5 per cent of Baluchistan's land area. The unrecorded areas are either inhabited by or historically classified as tribal areas practicing customary tenure. Currently, Khyber Pakhtunkhwa province, following its merger with the former Federally Administered Tribal Areas (FATA), is exploring ways to expand land record coverage in the tribal areas.
Governments in South Asia are taking significant steps to remedy this situation. Modernization and digitization of land records across the region have begun, and most governments have placed the integration of land and geospatial data and services on their agendas. However, implementation of these steps remains incomplete. Furthermore, land administration systems in the region tend to operate on state funding and as civil servant operations rather than as fee-based, operationally and financially independent services, which the World Bank's global experience suggests has led to more up-to-date and reliable records.

### 2.3 Registration of Transactions and Rights

Deeds Registries perform most registration of transactions to land and properties in the region. For instance, there are 45 Deeds Registries in Sri Lanka that record deeds, mortgages, leases, and other legal documents on land and property. In general, these registries in SAR capture the more valuable property transactions, but avoidance also exists due to historical title chain issues and Stamp Duty and mutation fees. Regional policies have called for modernizing land administration systems by updating to title registration systems and creating parcel-based maps and up-to-date digital land records. Sri Lanka introduced a title registration system in 1998 and India has a policy of moving away from deeds registration and toward a conclusive title system. But progress in Sri Lanka remains partial, and in India, States have not yet implemented title registration. Global experience suggests that the corporate governance and public perception of their service quality define land record success much more than the legal power of their certificates.

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9 Managed by the Registrar General's Department of the Ministry of Public Administration and Management (MOPAM).

10 Registration of Title Act No. 21.
Sri Lanka represents a distinctive case in the region, as 85 per cent of its territory consists of State land. These lands are made available to individuals and entities through a range of tenures, including land permits, land grants, leases, land releases to government agencies, and land releases through vesting orders. Many of these tenures are formalized in response to applications made at Divisional Secretariats, with varying requirements for approval by provincial and central authorities. Land can also be granted for use by presidential decree. Obtaining any of these permits and grants is typically a complex process.

Overall, state land tenure in Sri Lanka can limit access to institutional credit. The process of converting to a tenure that provides access to institutional credit is mostly off-limit and can take many years. There are restrictions on trading most use rights on State lands, but informal transfers nevertheless occur.

Title registration is carried out by the Survey and Land Settlement Department, and it is intended to replace deeds registration. The implementation of title registration has taken longer than anticipated, as there are complications surrounding the cost and feasibility of both survey and adjudication processes. Of Sri Lanka’s private properties, less than half are estimated to be registered and approximately 3 per cent are titled. Registration is not mandatory and provides no legal guarantees of the rights that are registered.
India has been implementing the Digital India Land Records Modernization Programme (DILRMP) nationwide, which started as an integral part of the Digital India Policy. The DILRMP guides States to invest in land records as the basis for all development, including infrastructure investments, planning, construction, revenue generation, and jobs and growth. In theory, these upgrades to land records and investments in digitalization match international best practices, particularly when coupled with institutional reforms that enhance the operations of land authorities. But while several Indian states have made solid progress in implementing DILRMP, financing from the national government and states has been inadequate for completing the job, particularly when it comes to the tasks of re-surveying records and creating a fully digital system.

11 The DILRMP modules include (1) Computerization of Land Records, (2) Survey/Re-Survey, (3) Computerization of Registration, (4) Modern Record rooms, and (5) Training/GIS/Legal FW/Programme Management.

2.4 Revenue and Transaction Records

As is common across the region, Pakistan's main land records are the Revenue Records, or more accurately the Record of Rights, and the Village/Cadastral Maps, maintained at the village level by the State/Provincial Boards of Revenues. In addition, the Boards of Revenues (BoR) or Departments of Registration maintain Registers of Deeds that, among other documents, register property transfers and other transactions, such as mortgages, thereby creating an overriding claim to unregistered properties. The historical Records of Rights and the Registers of Deeds are person-based records, but the Cadastral Maps provide a survey number as a common identifier in Pakistan and many Indian States. Common identifiers and digitalization jointly transform these into land parcel-based records, which global evidence shows is a key step for the comprehensive recording of land rights.

LAND RECORDS IN NEPAL
An incomplete modernization process

Nepal has a cadastre and a deed registration system that are interlinked but not integrated. The system provides no guarantee of title, although ownership certificates are being provided to landowners. The responsibility for registration of land transactions lies with landowners; national or provincial governments are under no liability to register transactions. Land ownership certificates originate from the 1964 land reform, and multiple programs thereafter. The cadastre was originally established for fiscal purposes to maintain cadastral records and maps. A systematic cadastral survey was started in 1960s and was completed in 1999. Today, the formal land administration system covers 24 percent of Nepal's territory, which is predominantly mountainous.

Land registration and cadastral activities are carried out by the Ministry of Land Management, Cooperatives and Poverty Alleviation's Survey and Land Management Departments in local Land Revenue and Survey Offices, which operate separately. The process of modernizing the land information and management system started more than a decade ago. The Deed Register is operated with a Land Record Information Management System (LRIMS) and the cadastre and mapping operate under the Nepal Land Information System (NELIS). Both systems function well, but there is a lack of communication between them. This often leads to partial duplication of data and delays in completing split/merge transactions, and results in inconsistency between the two datasets.

In the 2015 Constitution, local governments were mandated to provide some land administration services, and the Ministry is currently envisioning a transfer of simple land administration services to the local level. However, local entities have no resources to maintain cadastre or deeds registration, and thus the national government is considering providing them with web-based services to complete these tasks. Unfortunately, there are discrepancies between the digital records in the LRIMS and NELIS systems and both departments maintain parallel paper and digital records, which hints at the delays and difficulties with the larger digital transfer process in the land administration sector.
LAND RECORDS IN BANGLADESH
When land records cannot keep pace with urbanization

In Bangladesh, the Ministry of Land maintains the Khatian (the Records of Rights) and the corresponding Mouza Map of land plots as national cadastral records serving citizens in its sub-district (Upazila) and union (Tahasil) offices. The Khatian is a person-based record, which includes all land plots the person in question fully or partially owns in a given administrative area. These records cover public lands, but as Khatian are kept as per map sheet, there is no centralized inventory of state and public lands or reserves. Parallel to Khatian, the Ministry of Law facilitates the registration of property transaction deeds.

The government has initiated several modernization programs. These include the national land classification program, Khatian automation, Deeds Registry digitalization, records and survey strengthening, as well as programs to provide electronic services. While the Deeds Register registers every land transaction or mutation, and the Khatian records are updated to reflect ownership changes and land plot partitioning, the Mouza map is not sporadically updated, but instead left to wait for the next geographical records and maps updating process, called the Settlement. The entire Khatian of every Mouza area is verified systematically during this process, and new Mouza Maps are prepared.

This system may have worked well in previous eras, but it cannot keep up with the pace of urbanization. The modernization challenges are significant. Studies suggest that 80 per cent of civil and criminal court cases concern land and property disputes. Roughly 20 per cent of Dhaka’s population live in informal settlements. The state of records and informality hamper all planning and development, so that much of the population and economy are subjected to insecure tenure arrangements and infrastructure investments are compromised by challenges in accessing land.
Notably, rural and urban fiscal records are often not unified in the region. The Revenue Records originally pertained to rural areas, but as urban areas expanded many were included in these records. The manually-maintained Records of Rights seems to provide a reasonable record of land holdings and holders in rural villages – it is considered the most up-to-date land record in SAR and has evolved into de facto cadastres. In Punjab Pakistan, mutations to parcel boundaries are processed manually to adjust historical maps, which appear to function effectively in rural parts of the province. However, the local cadastral map mutations are rudimentary and don’t translate to digital, online, or centrally maintained mapping. These records have often not been able to keep up with urbanization, resulting in growing informality in urban areas.

In Pakistan, the BoR in all provinces have invested in digitizing the Revenue Records. In Punjab, the Record of Rights has been fully digitized (establishing the Land Records Management Information System, LRMIS), and good progress is being made in Sindh (establishing a Land Administration and Revenue Management Information System LAR-MIS). Similarly, Khyber Pakhtunkhwa and Baluchistan have begun the process of digitizing the Record of Rights. However, contrary to the intention of digitizing the land recording processes, most provinces of Pakistan continue manual updating the Record of Rights in BoR village and district offices, although Punjab province manages the Record of Rights digitally. Cadastral Maps have been scanned (as images) in many parts of Pakistan but only converted to digital maps through vectorization and georeferencing for small areas of Punjab and Sindh.

2.5 Maps, Property Valuation, and Transaction Taxes

In Pakistan, deeds, the Record of Rights, and Revenue Maps are mostly connected through a common parcel number. Many Indian States have also established the same interlinks as well as linked these records to the national census. In Sri Lanka, the Survey Department has developed a national Cadastral Map in SLG99 national coordinate reference system to support title registration12. Thus, the titles on private lands have been linked to a seamless cadastral map, though this currently applies to only 3 per cent of all properties and not the deeds.

Typically, in the region, Stamp Duty on property transfers and various registration fees are collected at the time of deeds registration. Ministries of Justice or Law ministries or, in case where integration has progressed, a joint land records authority typically carry out this task. Agricultural taxes are collected by Revenue Departments based on the Record of Rights and crops statistics, and Tax Departments or local governments collect urban property taxes. In cases

12 Sri Lanka’s title registration mapping covered close to 1 million land parcels in 2014, and in 2015 the Registrar General’s Department recorded 25,500 transactions of land titles.
Urbanization has placed enormous stresses on the Indian state of Punjab. The state faces rapidly increasing demand for basic services like water, sanitation, electricity, health, and education. Cities and municipalities in the state are in a difficult position: they are the leading service providers, yet lack authority over both state-determined municipal tax rates and development grants and transfers, which are determined at the national level. The review of Punjab prepared for the 14th Finance Commission drew attention to the state’s indebtedness, and also raised concerns about the State Level Public Enterprises (SLPEs). Improving the coverage and buoyancy of municipal revenues is critical for empowering them to meet their increasing responsibilities.

Punjab’s 5th State Finance Commission has indicated that policies to improve local property tax recovery are underway. The State’s goals include more effective, streamlined tax collection methods, with incentives for timely payments and penalties for defaulters. Improving service provision will require new approaches to underwriting revenue buoyancy, particularly for municipal annual property taxes and the transition to capital value-based annual property taxes. There are, in addition, critical new demands for modern valuation expertise, which is highlighted in Punjab State’s accounting manual.

The Punjab Municipal Accounting Manual, 2017, Chapter 10, Tax on Buildings and Land and other taxes reflects the national trends and guidance in accounting and discusses the annual property tax and its administration. Chapter 20 reviews fixed assets, including land. These are dealt with on a book value less depreciation basis with no depreciation allowed on land. There is a provision for revaluation, but the provisions for the basis of revaluation do not appear to be specified in Chapter 20 or the definitions section.

Addressing such matters in the future will require appropriate data on the property market, coupled with professional valuation expertise. Increased action at the municipal level is also required to implement the needed changes to improve property tax collection. The revitalization of the property tax will reap benefits both from a revenue perspective and from the standpoint of improving equity between taxpayers, and studies are underway to prepare a time-bound action plan for transforming this tax system into a capital value-based system, and instituting modern valuation practices.

such as in Gujarat in India, where the boundaries of urban local authorities have been extended to include villages in the periphery, property owners may pay both a land tax to Revenue Departments and property tax to urban local governments.

In Pakistan and India, the State or Provincial Excise, Taxation and Narcotics Control Departments usually maintain land and property records on urban properties. This is used for recurrent property taxes (Urban Immovable Property Tax, UIPT) and applies to fixtures on land. These are tax records, not legal land records, linked to valuation tables for defining the taxable values. More often than not they exist in parallel to the Records of Rights in areas that have urbanized during the past decades or century. They have largely been digitized in all provinces, but have experienced issues with coverage. These records are typically not continuously updated, but subject to periodical renewal. Renewal is to be done ideally every 5 years, but, in reality, often happens after substantially longer periods. It is therefore common for such fiscal records to be out of date, especially when it comes to new housing.

Property valuation infrastructure is weak across the region due to outdated valuation systems and challenges with access to reliable land market information. Registered transaction values are commonly understated. This causes loss of revenues, and places pressure on governments. In cases of compulsory acquisition, it contributes to lower than market rate valuations and results in litigation due to disagreements over the level of compensation. An area-based valuation system that defines ‘Fair Values,’ which constitute the minimum applicable values for Stamp Duty and Registration Fees, aims to mitigate the problems caused by the under declaration of transaction prices. However, the Fair Values tend to be outdated and very low compared to market values, at least in developing urban areas.
Land and property-based revenues represent a huge untapped opportunity for improving local services. Property tax collection is commonly minuscule compared to its potential in cities and towns, as collection is hampered by incomplete records of the tax base, limited access to market data, and outdated valuation practices. Governments compensate for the inaccurate tax base by setting inflated tax rates, which in turn disincentivize owners from property registration and the declaration of true transaction prices. In Pakistan, UIPT collection rates are low due to weak systems for billing, collection, and enforcement. The government has sought to change this by making tax returns compulsory for individuals owning larger properties, the 2012 introduction of a Capital Gains Tax, and measures to counter under-documentation tax avoidance in the property market.

In India, weaknesses in the property tax include incomplete property cadastres, significant proportions of properties not being registered, tax rates that are out of alignment with the higher rates often levied by global competitors, a wide range of tax exemptions, and under valuation of properties. The system is also hobbled by limited data on the transaction prices of comparable properties, municipalities’ capacity constraints, and the fiscal transfers enjoyed by urban local bodies. All of these factors contribute to low collection rates and inefficiency in the property tax system.

2.6 Land Litigation

In South Asian countries, land disputes are handled by both administrative entities, such as revenue departments, and local judicial bodies. Land rights-related litigation dominates courts across the region. There are a multitude of factors that have led to widespread litigation over land disputes. It stems in part from a reliance on a Deeds Registration system that until recently allowed registration either entirely blindly or without verifying a land parcel’s chain of title. The Records of Rights are also largely out of date, and there is a widespread lack of attention to detail in terms of boundary alignments and parcel sizes. Additionally, vast State land areas have been encroached upon to a significant extent, causing property disputes between the occupants and authorities.

Uncertainties over title are an ever-present problem across the region. In Pakistan’s Punjab province, the Lahore Development Authority is subject to some 8,000 open court cases and the Lahore Defense Housing Authority has roughly 10,000 outstanding court cases over the ownership of land that it has acquired. Meanwhile, an estimated 60 per cent of
CADAstral MAPS IN WEST bENGAL
Challenges with the Settlement process

In the Indian State of West Bengal, the Mouza Maps function as the State's cadastral maps, and are maintained through a Settlement process. The latest Settlement process (called the LR), a state-wide cadastral mapping update, started in 1971 and is now nearing completion. No other cadastral map updating has taken place.

West Bengal has experienced rapid urbanization in recent decades. Because most Mouza Maps were last subject to surveys decades ago, the government estimates that a new cadastral survey is needed in all urban areas of the country. Mouza Maps are the cadastral maps for all of the State apart from central Kolkata, which uses Smart Maps. As a result, the expanding Municipal Corporations and Municipalities of West Bengal do not have access to current land plot mapping.

When mapping is not updated, the land record (Khatian) also becomes out of date. The Khatian is a record of ownership shares of land plots that a particular owner possesses. When plots are partitioned, the new plots are not recorded on any map, resulting in the Khatian record becoming out of date. Alternative urban records, called the holding records (of built properties) have been developed by Municipalities to serve the needs of urban governance and property taxation. But the cadastral maps and records are still formal records, and lapses in their accuracy increases the risk of overlaps with the holding records, as well as fraud and uncertainty. This in turn impacts the property market, planning, infrastructure financing, revenue collection and all land-based activities.

The government has already made considerable progress with digitizing and automating the Khatian record and investing in digitalization of the Register of Deeds. It is now considering systematically improving urban cadastral maps and records, and unifying various records and mapping under a joint Land Information System. Rethinking West Bengal's process for updating its cadastral maps updating has begun, and the government is considering alternatives to replace the Settlement process with a day-to-day cadastral surveying practice on an assignment and fee basis.

court cases in Sindh province are related to land. These same dynamics occur in India as well, where litigation over land dominates courts in Kerala and other States. In Bangladesh, 80 per cent of court cases relate to ownership, property boundary alignments, compensation levels for land acquisition.

In Pakistan, the root cause of land-related litigation is that the Cantonments, Development Authority allotments and land rights regularization have occurred in multiple processes over time. In Punjab, disputes between Development Authorities and preceding owners are very common and stem from lack of clarity in the original allotment, their extents and boundaries, and the rights that may have existed in the area but were not known or considered when the allotment was made. Deliberate frauds and manipulation of records also occur: In Karachi, for example, cooperative housing societies have been accused of deliberately

GLOBAL BEST PRACTICE FOR REDUCING LAND DISPUTES
Improving land records is just the beginning

Updating and integrating land records has a positive impact on land related litigation, but complementary reforms are also required. Investments in mass valuation systems using improved land records and registered transactions as base data represent another solid step forward. Gradual progress towards a more market-based valuation infrastructure will reduce compensation-based litigation and improve fairness and equality between landholders in taxation and land acquisition.

Another common problem is that local courts tend to lack the expertise or capacity to settle land ownership, boundary, or land compensation cases. Evidence suggests that technical land disputes should not be left to clog the court systems, but instead should be solved at an administrative level where possible, and only be subject to court ruling if the parties disagree with the administrative solution. Many countries have made use of Lands Tribunals, or other specialized courts, in which specialist judges can be assisted by lay experts, to handle land, valuation, and property disputes.
Nepal's earthquake 2015 caused long-lasting damage and homelessness. Mika Törhönen
encroaching on public lands and selling land plots under fake allotment papers. There have also been multiple reports concerning the governance practices of local collectors, who facilitate entries to the Record of Rights and Cadastral Maps.

In Sri Lanka, most land-related disputes relate to land acquisition compensation levels. The low levels of compensation stem from the country’s valuation system, which is thorough but relies on out of date market data and building cost tables. These disputes take excessive time to adjudicate: Local courts lack expertise to settle technical and legal disputes over land that fall within their jurisdiction, as there are no administrative processes to resolve ownership, boundary, or land compensation cases.

2.7 Tenure Insecurity and Informality

One of the primary issues with making land available for infrastructure investments is identifying all those who may have reasonable claims over it. Weaknesses in land records can mean that claims that ought to be recognised may not be recorded. These include claims that arise through long peaceful or uncontested occupation and failures of land recording systems to recognise legitimate claims. Problems with land records can mean that the absence of a record cannot be taken to mean the absence of a legitimate claim but may, instead, be the result of defective processes, lack of capacity or competence, or corruption.

(i) Informality

In Pakistan, the Record of Rights and Cadastral Maps are most outdated in informal settlements (called Katchi Abadis) and areas that have undergone rural-urban conversion without due process. This is a particularly glaring problem because more than half of the country’s urban population are estimated to live in slums and squatter settlements.

A recent study\(^{(15)}\) estimates urban informal settlements accounts for over 8 per cent of Karachi’s urban area and fulfils over 50 per cent of the city’s housing needs. In Punjab, an estimated 20 to 25 per cent of urban properties are not registered in any land record or map. In Sindh Katchi Abadis can be converted by the Sindh Katchi Abadi Authority (SKAA) into leaseholds, subject to the area meeting basic requirements as a living area. The same process exists in other provinces as well, and multiple Katchi Abadis in Punjab and Sindh have been notified about the regularization of land rights, but these processes often remaining pending without resolution.

(ii) Tenancy

Various forms of rural tenancy remain in the region despite decades of reforms and progressive policies. Tenancies from private land holders and the State are constrained by land use and transfer restrictions, lack of formal registration, and standardized contracts and terms. These restrictions cause insecurity of tenure,

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HOUSING LENDING IN PAKISTAN

How land tenure informality negatively impacts financial inclusion

Informality in land tenure is often related to informality in other aspects of life. For instance, Pakistan’s progress on financial inclusion has also been slow: In 2017, only 21 per cent of Pakistanis had a bank account and, more tellingly, while 37 per cent borrowed money, only 2.3 per cent did so from a financial institution. Only 1.1 per cent of Pakistanis had an outstanding housing loan, compared to 4.6 per cent in India, 6 per cent in Indonesia, 26.7 per cent in UK, and 48.3 per cent in Sweden. Overall, Pakistan’s mortgage market remains very small. The mortgage market's development has been hampered by high interest rates and limited mortgage offerings; in 2018, the mortgage market volume was equivalent to approximately 0.3 per cent of GDP. In practice, commercial bank mortgages are only accessible to high net income earners. Housing loan volumes are on an upward trend, however, growing by an average of 29 per cent annually from 2016 to 2018.

\(^{(15)}\) Prepared for the Karachi Strategic Development Plan – 2020 (KSDP-2020).
stagnate land use, discourage innovation, and lock families into subsistence farming.

(iii) The Rights of Indigenous, Tribal, and Marginalized Groups to Land

Estimating the number of indigenous peoples (IPs) in South Asia is complex, as several of the region's governments do not acknowledge the concept. However, a recent estimate suggests there are in excess of 130 million IPs in the region. The marginalization of these groups has resulted in their continuing to be among the poorest of the poor, even though sustained growth and poverty reduction efforts across the region have significantly contributed to declining poverty rates16.


A common reason for poverty is dispossession of traditional lands and prohibitions on access to ancient forests. When commercialisation spreads into rural and remote areas, the lack of formal recognition and protection of indigenous peoples’ rights to land and natural resources results in land insecurity and vulnerability - and potentially to conflict and violence. Community based participatory mapping approaches are spearheading global attempts to overcome these challenges, but the required legislative frameworks and political will necessary for large-scale implementation is often lacking.

(iv) Gender and Land

According to the Social Institutions and Gender Index (SIGI) compiled by OECD 17, women experience medium

In the past, a major barrier to daughters inheriting their parents’ property was the fact that it was not mandatory to share property with them, unless they were over 35 years of age and unmarried. Only 9 per cent of total households in Nepal feature female ownership of land; in 11 percent of households, women are owners of the house or land. Although there are tax exemptions for land registered in women’s name or in joint ownership, many women appear unaware of these provisions.

Nevertheless, women are the ones who manage and utilize natural resources on these properties. Male migration and involvement in non-agricultural sectors means that women are tasked with maintaining both the productivity and suitability of the land and mitigating the adverse effects of climate change and other natural calamities. Their responsibilities often include agricultural work, cattle rearing, collection of fuel and fodder, and protection and conservation of forest and water sources.

Women’s land ownership is also low because patriarchal social structures discourage them from participating in community activities. These social norms, often dictated by husbands and parents-in-law, mandate that men are the default head of the household and are in charge of extra-household affairs. Gender norms also encourage the participation of men in consultations, where the presence of only one person from each household is often sought.
level discrimination on access to productive and financial resources in India, Nepal, and Sri Lanka, and a high level in Pakistan and Bangladesh.

When it comes to access to land in SAR, women’s opportunities to access or own land in their own name are often limited. According to a 2010 USAID study, 4.6 per cent of farms in Bangladesh, 8.1 per cent in Nepal, and 12.8 per cent in India are owned by women. The Constitution of Pakistan states that all citizens can own property, both men and women, and Shariah stipulates land rights for women. However, studies have found that culture and customs have resulted in inequality between genders in access to land: 27 percent of women in Pakistan do not inherit land despite holding legal inheritance rights to it, and 72 percent of women do not inherit a house. Women are 25 percent less likely than men to own land and 69 percent less likely to own a house (according to the Pakistan Demographic and Health Survey, 2017-18). As a rule, rural subsistence farming has followed the pattern of land passing from father to son.

Shariah law ensures a share to all heirs, but inheritance commonly does not lead to subdivision of holdings but rather to co-ownership between heirs. Typically, majority holding male heirs continue farming, and relatives, including women, hold shares in the farm or pass them to the primary holder. Thus, women’s rights to land continue to be mediated by men. However, several countries, including Pakistan, have taken steps to improve the situation by enacting or preparing new legislation.

2.8 Conclusion

South Asian land administration systems largely reflect the historical Deeds Registration and Agricultural Revenue Records and Maps, as well as urban fiscal records developed for recurrent property taxes. These systems served their countries well in the past and continue to function effectively in rural areas, but need to be modernized to serve today's predominantly urban and industrial economies. Informality, on-going litigation, and multiple varying out of date and conflicting land records make the process of checking who has what property rights complex and expensive and is a major barrier to infrastructure investments.

Core challenges include the absence or neglect of legal location-based land records in many historical city centers - the most valuable areas of countries, states, or provinces. This absence compromises land registration, mortgaging, market functionality, and security of tenure. The large number of court cases related to land rights in Pakistan, Bangladesh, and India demonstrate the urgent need to implement reforms.

While digitalization and modernization of land records has progressed in the region, with national and regional governments undertaking important initiatives, the integration of land records and penetration of web-based services have been slow. The absence of integrated records makes the task of due diligence before undertaking infrastructure investments complex and costly and can result in those with legitimate land rights being missed. As a result, housing development agencies, local governments, and other parties have developed ad hoc land and property records that serve their needs rather than those of the public. Countries, states, and provinces lack a single point of truth on land and properties that all can share and rely upon. Until comprehensive, integrated, and current land records are achieved, titles and rights on land are, in effect, undefined, and represent a major source of business and social risks and constrain infrastructure investment. There is the danger that well thought-out proposals may fail to be completed or experience lengthy delays and cost increases as a result of not being able to access land in a timely manner because of uncertainties over who has property rights over it and lengthy court cases. Valuation systems and the valuation infrastructure in the region are also in need of upgrading to be able to produce assessments that reflect current market values. There can be a gap between the quality of valuations undertaken

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2. Land Administration and Management in SAR

Lahore, Pakistan. Bahria Town housing development agency offers streamlined services for apartment registration. Mika Törhönen

on commercial properties for international investors and those used in property taxation and compulsory acquisition.

The deeds systems often do not have the required checks and rigor in place to serve as land registers. Many transactions are informal and unregistered, resulting in a gap between what appears in the records and the reality on the ground, especially in urban fringes.

The current state of land records, mapping, and valuation systems is a source of uncertainty and risk for anyone undertaking investment in South Asia. As a result of these challenges, infrastructure projects often have to start by reconciling what land records say with what exists in reality. This is time consuming and expensive, since it requires not only the collection of reliable information but also resolving of overlapping and competing claims, some of which date back many years. In effect, those carrying out infrastructure projects may have to undertake systematic land registration of the areas affected to ensure that they can acquire the land needed and that those with property rights and fully compensated for any losses. Bringing the land records up to date and integrating them will require customized interventions at national and sub-national levels. These interventions could be embedded into infrastructure projects or function as standalone projects and support to governments.

Infrastructure investment clearly cannot be delayed until the problems with land records are resolved. This would be impractical and deny citizens the benefits of such investment. However, until all land records,
maps, and owners are connected in an integrated land administration system, accessing lands in South Asia to undertake infrastructure projects, especially in peri-urban areas, will need to start with a systematic land registration and adjudication process. This should be factored into all infrastructure investments, both in terms of the costs and the time disputes over title take to resolve. The additional time and costs, together with the delay before the benefits from the investment are received, can result in some infrastructure investments not being viable. This is one of the biggest setbacks for private capital mobilization for social infrastructure. If these issues are not resolved at the start of the project, there is the risk that it may have to be abandoned or only partially completed.

The existing land administration institutions continue to serve certain segments of society well and can survive on that basis, but without dedicated modernization efforts cannot meet the needs of society as a whole. There is need for institutional and policy reforms to integrate land administration, as the fragmentation of mandates and duties constrain effective land administration in many countries. The many programs across the region to digitize and expand the coverage of land records also should be prioritized, and tight performance standards and completion deadlines should be enforced. These programs have the potential for long lasting improvements, impacting economic, social, and environmental well-being.

Long-term success requires systemic improvements through investment in land administration system programs and the provision of resources to implement them. India is working towards this end with its Digital India Land Records Modernization Program and in Pakistan Punjab has made progress in digitizing the Record of Rights and integrating it with the Register of Deeds. Also, Bangladesh has launched similar initiatives and reforms, and Nepal and others are following. Success will require creating an environment in which these improvements are sustainable through appropriate land regulation and establishing obligations and incentives for keeping land records current.
3

Land Assembly
3. Land Assembly

3.1 Introduction

This chapter examines issues associated with the assembly of sites for infrastructure investments. Infrastructure projects must secure land for construction; if land is unavailable, the project will fail.

It is not unusual for projects to be only partially completed because the entire land area necessary has not been secured. The result can be highway schemes that stop short of their proposed destination or are not linked into the rest of the road network, station area improvement schemes that include only part of the locality, and RE schemes that are not viable as they are only partially built. Projects can also fail because they do not factor in the time and cost of securing the land, resulting in much lower benefit-cost ratios than what had been projected.

The land needed for projects can be assembled in a multitude of ways. It can be accomplished through voluntary purchases, in which the owners give up their property rights in return for freely negotiated compensation. Governments and private owners can also enter into various forms of cooperative agreements that enable land to be accessed for infrastructure investment. State land can be used for infrastructure investments, though such projects often run into difficulties when the land is used by others – either legitimately or through encroachment – or is governed by regulations, restrictions, and incentives that discourage making it available for alternative uses.
In any case, State land is likely to be in current use for another purpose so there can be an issue of determining priorities and whether State land is being put to the most effective use. Land pooling can be used in which a group of landowners, who can include central, regional or local governments as well as private owners, voluntarily agree to contribute their land to a collective venture and to share in the benefits. Land pooling does raise questions about the value of each contribution to the whole and, therefore, what share of benefits each should receive. Finally, compulsory acquisition is often used in site assembly and is legitimate when a project is in the public interest, its use is proportionate, and those deprived of assets and livelihoods are fully and promptly compensated.

The fundamental problem that is faced by all infrastructure projects in South Asia is that land markets do not function very effectively. It is difficult for private investors to convert agricultural land to non-agricultural uses or to gain clear title to land so that it can be repurposed. The implication is that governments are likely to have to be involved in land assembly in order to overcome these bottlenecks and, even then, this may not be sufficient to remove impediments to the investments going ahead.

3.2 The Problem of Land Assembly

The issues that arise with site assembly are applicable to all types of infrastructure investments requiring sites that are too large or complex to be in the ownership of a single landowner. These challenges can be summarized as follows.

- **Networks/Corridors:** Any form of infrastructure project that takes the form of a corridor or network requires the assembly of sites for the entire project. Unless land is made available for the entire project, it cannot go ahead as it is not feasible for there to be gaps. Holdouts by individual owners cannot be tolerated beyond small-scale design adjustments.

- **Large sites:** The sites for major projects, such as new airports, ports, dams, flood defenses, or power generation plants, can be too large to be in single ownership or take place in areas of high density with small parcel sizes, and may therefore have to be assembled from multiple owners.
- **Areas with complex ownership patterns:** Developments in urban areas, such as the redevelopment of railway station areas or urban renewal schemes, are likely to require the assembly of a site from multiple owners as they usually take place in areas characterized by small-scale fragmented patchworks of ownerships. Site assembly must therefore involve multiple owners, which, given the state of land records and land services in the SAR, is often problematic. A common challenge in South Asia is the prevalence of lands belonging to central and local government agencies with historical rights that may not be current or even well-known, and policies that disincentivize their current custodians from using these areas in land development schemes.

### 3.3 Methods of Acquiring Land for Site Assembly

Land needed for infrastructure projects can be obtained in different ways:

**Purchase**

Land and property rights can be purchased from their owners. This can be done through a private treaty in which the acquiring authority negotiates with individual owners. Critical to this process are accurate up to date land records that identify property rights and who owns the title to these.

**Lease**

In many cases, the acquiring authority does not need to purchase an entire plot of land to accomplish its goals. For instance, sites for telecommunications masts are often rented on the roofs of tall buildings or in fields or hills. The length of the lease should be at least as long as the project’s life expectancy, as structures are likely to revert to the landowner at the end of the lease. Rent will have to be paid over the course of the lease, which could involve price increases during the life of the project, for instance, through periodic rent reviews to reflect prevailing market values, by an index, or a set percentage.

#### Public private partnerships (PPP)

PPPs can be defined as “a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance”\(^\text{20}\). Typically, the government either assembles the site or the project takes place on land the government already owns but, very often in SAR the contractor is required to provide the site. Responsibility for building the project is passed to the private partnership, with the government leasing the completed facility.

PPPs have been used to deliver a variety of infrastructure investments, including bridges, roads, railway lines, schools, hospitals, military housing, student hostels, and prisons. Typically, a private consortium finances and constructs or refurbishes an asset, which the public sector leases for a period. At the end of the lease, the facility usually reverts to the public sector. The contracts vary depending on what the private partner agrees to provide and its role in operating and maintaining the facility during the period of the lease.

**Tender**

In this method, which has often been used for the delivery of RE projects, a government offers a number

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of contracts for the supply of a good. Private suppliers then bid for these contracts, and those who are awarded them have the responsibility to build the facilities that will enable them to fulfill the contract's terms. This includes acquiring the land on which the facility is to be constructed.

In India and Bangladesh, this method has fallen out of favor for large-scale projects due to the risks of project failure due to lack of land access. Governments are starting to see the need for proactive and pre-tender qualification and the allocation, acquisition, and zoning of lands for these projects.

More generally, tenders can be used to acquire land with owners being invited to offer land for purchase and to nominate the price they are willing to receive, followed by negotiations once tenders have been evaluated.

**Exchange**

Suitable land for a project may be in the possession of another owner who is willing to exchange it for an asset of similar or greater value. Exchanges may also take place between public bodies.

**Land pooling and readjustment**

In a land readjustment scheme, multiple property owners within a defined geographic boundary voluntarily pool their properties in order to unlock higher overall market value for the combined property. Those who join the scheme can expect to receive a share of the profits depending on the value of the assets they contributed. How this is done can be contentious as it is likely that different parcels make varying contributions to the project's outcome, so rewards may not be equally shared. How rewards are paid could also be contentious. They can include cash payouts, the right to sell part of the development, or expected rises in the value of other land owned by owners. The lead partner could be from either the public or private sector. Owners have also, in some cases, leveraged a portion of their properties' value to fund public infrastructure upgrades required to bring the project to fruition. This is more likely to happen if the public sector contributes land for infrastructure as part of the pooling arrangement. It is important that those who contribute to land pooling do so voluntarily and are not subject to any form of coercion. If coercion

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Bangladesh is one of the most climate-vulnerable countries in the world, being subject to cyclones, associated storm surges and floods. In 2007 there were two waves of flooding followed by Cyclone Sidr, which breached coastal and river embankments, causing flooding of low-lying areas and damaging houses and infrastructure. Over 3,000 people were killed and 55,000 injured, with over 13 million people affected and over 100,000 livestock killed. The cyclone hit when the rice crop was about to be harvested, with 113,000 hectares of crops destroyed and over 800,000 hectares of cropland damaged.

The project included a number of activities, one of which was to rehabilitate and upgrade coastal embankments. As well as protecting cropland from inundations and saline contamination, the investment was aimed at allowing livelihoods to recover through increased productivity and incomes. There was rehabilitation of 501 kilometres of existing embankments, protecting 174,000 hectares of land and benefitting 3.8 million people. Erosion meant that there were examples of where the alignments of embankments had to be changed, thus requiring land to be acquired. Delays were experienced in completing the embankments, which prolonged the vulnerability of populations, agricultural land and assets to disaster risk for longer than intended. The affected people agreed to make available the land needed for civil engineering works while land acquisition and resettlement works were being undertaken. However, the completion of rehabilitation works was delayed due to delays in resettlement and land acquisition payments, resulting in the project having to be extended to allow completion of the works and payment of land acquisition expenses. The legal process for land acquisition and resettlement payment was slow and multi-layered, talking about 12-15 months from the initial surveys to compensation delivery. Incomplete and faulty ownership records caused even further delays. There were 28 polders affected by involuntary resettlement. At the time the loan closed out, compensation had been completed in seven polders and for 62 percent of eligible owners and 99 percent of eligible squatters.
is used to achieve contributions to land pooling, then this is a form of compulsory acquisition.

Land readjustment schemes are used in some countries as an alternative to compulsory acquisition. In such cases, land consolidation policies are used to reorganize parcels and create land banks that can be used for infrastructure investment. In some cases, a minority of owners who refuse to participate can be compelled to take part, or owners may be obliged to contribute a portion of their land if it falls within an area designated for development. In these scenarios, policymakers sometimes argue that although part of the land has to be sacrificed, the remainder will rise in value to offset the loss.

In Canada, pooling arrangements have enabled Canada Lands Company to pursue development schemes in conjunction with indigenous (First Nations) groups and utility companies, as part of land settlements with First Nations. In Hyderabad, authorities have acquired land to widen roads and compensated owners by granting them the right to develop their remaining land at a higher density. Where this is not possible, owners have been granted transferable development rights which they can use to develop at higher densities in designated receiving areas or resell to developers. In Pune, Maharashtra, land for the development of Magarpatta Township has been acquired by enabling landowners and farmers to receive a share of the sales proceeds in proportion to their landholding.

**Joint development**

In these arrangements, the public sector contributes the value of public land into a joint venture and the private sector contributes required equity and technical knowledge to fund pre-development and construction costs. This aims to ensure that the development of infrastructure, such as transit stations and adjacent private properties, is well coordinated. Private owners can also be joint developers with a public agency and receive a share of the benefits from the development as, for instance, happened in parts of the development of New Bombay. Developers contribute financially and take the lead in managing physical construction of transit stations and the surrounding developments, and the profits are shared between the parties.

This can be a particularly effective development method around stations in urban centers where there is surplus railway land. Funding in this way is provided for upgrading infrastructure as well as providing potential profit for the public sector. Such deals help connect increased value from regulatory changes and related investments to funding for transit infrastructure. They benefit cities because the higher land values can generate additional tax revenues and higher transport usage by fare-paying customers, resulting in demand for new retail shops, parking garages, leisure facilities, and residential buildings. Such land value capture approaches can be challenging to achieve in cities in developing countries, where land registries are incomplete and efficient and accurate property valuation systems do not exist, and informal development may occur in the absence of proper controls.

**Easement**

Infrastructure investment may require access over or under land, for instance, for electricity transmission lines or gas pipelines. In these cases, the public body could enter into an access agreement with private owners, who would expect to be compensated for allowing this use of their property.

**Donation**

A public body may receive the land needed for infrastructure investment in the form of a philanthropic
donation. These donations can be an act of pure altruism or can stem from an individual or a community’s desire to have a facility like a school, clinic, or access road built on the donated land. Donations must be voluntary as any form of coerced donation is a method of compulsory acquisition. Sometimes there are instances in which a government takes land by putting pressure on the owners to hand it over without compensation. When coercion is used, this is a form of compulsory acquisition since the owner may feel that he or she has no choice but to hand over their property without being compensated to avoid bad consequences from the failure to do so.

Planning obligations

When developers secure development consent, this has the effect of uplifting the value of their land. Part of the uplift in value could be returned to the community in cash, land, or the construction of infrastructure. Developers may also offer contributions in order to gain additional profits from more intensive development. Thus, for instance, if the construction of a new shopping center will result in traffic congestion, then the developer may be required to finance mitigation measures out of their profits, such as building flyovers or bypasses.

Compulsory acquisition

In certain cases, the State can oblige landowners to sell their land and property rights so that they can be used in an infrastructure project. Compulsory acquisition also includes any situation in which a sale, donation, or the granting of an easement or other right takes place where coercion or the threat of coercion might
be used\textsuperscript{23}. The use of compulsory acquisition, or the threat of its use, can prevent holdouts by property right owners who may be unwilling to participate in site assembly. Compulsory acquisition ought to result in the payment of fair, equitable, and timely compensation. However, this presumes that there is a governance system in place to ensure this happens, as well as a valuation infrastructure capable of assessing fair and equitable compensation.

3.4 Systematic Parcel by Parcel Registration of Rights for Land Assembly

In cases where securing access to land is fraught, infrastructure investments may have to start with a systematic registration of land rights, or - as common in South Asia - a land settlement process. These steps typically take place when land records are incomplete, title disputes common or titles are unclear, historical public land allocations are stagnating, or informal occupancy or public land encroachment compromises, delays, or halts land assembly.

Systematic parcel by parcel land registration is a mass tenure security approach where whole areas of land parcels are adjudicated and surveyed. International experience shows that by operating at a large scale and applying new technologies, the cost per land parcel can be low and a very high percentage of all disputes can be successfully adjudicated. The process also provides social legitimacy due to its focus on transparency and community participation, including the public display of results and the ability to appeal rulings. The most difficult disputes tend to arise between State land custodians and long-term informal occupants of these lands: A legalistic application of the State's ownership rights can lead to social conflicts and will breach the World Bank's Environmental and Social Framework (ESF) stipulations. Instead, successful resolution usually requires new agreements between the occupants and the State where the current possessions are considered as legitimate assets.

The classic steps of systematic registration are adjudication of rights, demarcation and survey of boundaries, and documentation for registration. After the results are publicly displayed, the process is concluded with a registration of lands, while any disputes are subjected to administrative or judicial dispute resolution processes. As the land records and documentary evidence are commonly incomplete or outdated and informality widespread in these cases, testimonies of witnesses will often have to be used as primary evidence for adjudication.

Once the systematic adjudication has resulted in a legal registration of private rights and confirmation of State lands and their custodians, the land assembly process can be accomplished with full and legal information on land rights and land use. Simple purchases or compulsory land acquisition can secure a new transport corridor or complex station area and developments can progress in a secure and predictable environment.

3.5 The Contrast Between Public and Private Sector Site Assembly

In the private sector, developers do not have recourse to compulsory acquisition to acquire the land needed for an infrastructure project. If owners refuse to sell, then the development cannot go ahead. But while developers can walk away from proposals that run into difficulty, either due to site assembly or other challenges, the public sector often cannot do the same. There is usually a social, environmental, or political imperative to public sector projects that makes it difficult to abandon schemes once a project has achieved the necessary backing. This can be the case even when it becomes obvious that a project is no longer viable due to rising costs, over-estimated demand, or challenges with land acquisition.

The private sector has access to a variety of devices to minimize risk. They include:

- Offering landowners an equity stake in the completed development rather than buying the land outright.
- Making payments for land in tranches when revenue is realized.
- Securing options to purchase land so that it does not actually have to be bought until there is certainty that the entire site can be assembled. If the project cannot go ahead, then developers merely lose the cost of buying the options or a break fee.
- Renegotiating planning consents and developer contributions to infrastructure on grounds of financial viability.
- Putting projects on hold until more favorable circumstances arise.

This means that if site assembly proves too challenging or expensive, developers can minimize their losses. Where the public sector is involved in partnership or other collaborative arrangements with developers for the provision of infrastructure, those managing the projects should be aware of how private sector partners can minimize their risks and may be able to walk away from projects that cease to be viable or prove to be too difficult to realize.

Private developers expect their projects to generate sufficient revenue to meet the costs of development, plus generate a profit for themselves. In many infrastructure projects, however, this is not the case. It falls to authorities to step in and develop governance structures that assist in the financing of major development projects. For instance, transport projects, such as railway improvements or mass transit, are typically too expensive to be financed just from fares or tolls on users alone. But they also tend to generate significant benefits for non-users in the form of time savings through reduced congestion. The public sector has the ability to capture the value added to properties resulting from improved accessibility through devices such as property taxes and developer charges, which can be used to service and pay off the debt borrowed to finance the project.

### 3.6 Conclusion

The public and private sectors have a range of methods at their disposal to assemble sites for development purposes. But whatever method they use, it is absolutely vital to be able to identify the owners of the land and who holds any other property rights over it, such as use or access rights. Site assembly requires there to be a system in place that enables prospective owners to identify rights holders and to enable them to defend their ownership once the rights have been acquired.

This is not the case in many parts of the South Asia Region. Land registers and cadasters are incomplete and out of date, and therefore cannot provide the necessary degree of certainty. This means that the cost of defending land claims, resolving overlapping and competing claims to land, and the time this will take to accomplish have to be factored into any infrastructure project. If land records cannot be relied upon, then part of an infrastructure project may have to be the systematic registration of land and property rights in the affected area before construction can commence.

The private and public sectors vary greatly in their ability to walk away from a project that proves not to be viable. Private developers can walk away from a scheme that proves too difficult to undertake often with only modest losses, particularly if land was acquired using options or the development was funded by debt finance. Governments, however, only move forward with infrastructure investments after a political process to ensure that the project has public buy-in. They cannot readily back down and abandon a scheme should it head into difficulties, and thus it is vital that these projects are thoroughly evaluated before the public sector commits to them. In particular, public authorities will need to satisfy themselves that they can assemble the site for the development, which requires the creation and maintenance of accurate land registers and records.
4

Improving Access to Public Lands
4. Improving Access to Public Lands

4.1 Rationale for Improving Access to Public Lands

Despite the recognition that public land and buildings represent some of the most valuable public assets, they are systematically underutilized in most SAR countries. Most developing countries need significant investment in basic public services. These investments require land, particularly when it comes to urban expansion, housing, transport, and climate mitigation, like RE projects. Simultaneously, in many cases, land and building assets in the hands of a ministry or department have a highest and best use value greater than their current use value. This raises the question: Can some of these public lands and building assets be used for a public purpose with higher value, provide much needed land for public infrastructure projects, or raise resources via monetization? Public purposes can include food and energy security, landscape management, and protection of ecosystems, climate change mitigation, and disaster risk management, or affordable housing or jobs and growth, and the list continues.

Investing in better access to state and public lands for development has enormous potential for providing an impetus for accelerated growth, diversification of the economy, and increased public revenues. It could thus have a major impact on sustainable urbanization, improvements in living space, and poverty reduction, while also generating critically needed resources for financing infrastructure investments and climate actions. However, there has been little progress in

PUBLIC LAND INVENTORIES IN INDIA
Reforms to catalogue government-owned lands are underway

While most public lands and properties have been recorded in the Records of Rights or Cadastral Maps, very often the data has not been digitized or standardized. It is also often out of date. An area bases query of available public lands for a public purpose tends to lead to information that does not correspond with the reality on the ground, as most informal occupancy of land in the region takes place in state and public lands.

In response, the Ministry of Electronics and Information, the Ministry of Urban Development, and the Land & Development Office (LDO) of the Union Territory of Delhi have established the Government-Land Information System (GLIS) as a centralized repository of government lands in India. While a good start, GLIS content does not provide comprehensive data on public lands and assets, in terms of covering all or the majority of Public Sector Undertakings (PSUs), Central Public Sector Enterprises (CPSEs), and Ministries, and their land and building assets. GLIS also does not include information on asset values either as a dynamic or static function. Instead, it is updated on a self-declaration and interest basis with loose standards and formats, the data is not verified externally at entry, and continued updating is not pursued.

Other efforts to catalogue India’s public lands and properties are underway. Tamil Nadu State is also working on a Government Land Management System (GLMS) that attempts to create a comprehensive and up to date inventory of state and public lands. India’s Cabinet also recently announced the creation of National Land Monetization Corporation (NMLC) to promote the utilization of surplus public lands and properties for offsetting the public deficit and enabling public asset leveraging in urban and infrastructure development.
completing records on state and public lands, with the result that encroachment and unauthorized construction regularly occur or valuable assets sit idle or underused. Poor land records and ineffective reporting, monitoring, and management of public lands are a region-wide bottleneck to reaping the full benefits from public lands.

Governments should have an overarching rationale for managing public lands and buildings. Owning assets comes with costs and responsibilities and, at times, disposal of underperforming assets to the private market is a better option than holding on to them. On the other hand, several decades of government policies of disposing assets have made clear that monetization of assets for immediate gain is not always in the public interest. Surplus public lands should be considered for alternate public use and assessed strategically for future uses. Public land and building asset management needs to balance these competing objectives and implications of land policy decisions and actions.

The public sector is not a monolithic institution, complicating matters further. It comprises a mosaic of different public bodies, including national, regional, and local governing bodies. Conflicts and competition can exist between different tiers of government and various public bodies, including rival claims by different institutions to surplus public lands. This complicates the development of policy to encourage the release of surplus, under-utilized, and non-core land and buildings for other uses, as delicate negotiations and compromises may be required before the value of assets can be released.

4.2 Functions of Public Lands and Building Assets

Governments require land and building assets to fulfil three core functions: to deliver public services, to generate income, and to preserve lands for the community by holding them in trust. When they become surplus to these requirements or are deemed obsolete, they can be repurposed or disposed of. Investment properties generate income from rents, premiums, fees, and other charges to supplement revenue from taxation. As with any portfolio, governments need to consider the optimum time to exit from an investment and ensure that its portfolio is balanced and diversified. Trust properties are vested in governments so that they can preserve and maintain them on behalf of current and future generations. They provide few opportunities for monetization beyond charging admission fees or generating revenue from catering and gift shops. The main scope for monetization and for releasing public land for infrastructure investment lies with operational properties. This means identifying assets which do not fulfil a core function for the delivery of public services or are under-utilized.

Governments tend to accumulate stocks of non-core, surplus, or under-utilized assets over time. Public services and the methods of delivering them change over time, resulting in some assets becoming redundant or losing their value. Unless users are charged the opportunity cost of using them and encouraged to divest themselves of such assets, public bodies are likely to hang on to them long after the rationale for holding them has ceased. It is therefore important to have a policy that sets out what land and assets should be owned, and which should be made available for alternate uses or disposal. When developing such a policy, governments should recognize that they may not have exclusive ownership over all public lands. In particular, others may have rights of residence, access, or use by virtue of long usage or custom. This can particularly occur where forest lands have been designated as state land. Amongst the groups especially vulnerable to the loss of livelihoods when the state seeks to exert exclusive ownership rights over state lands that have been used by others are indigenous and tribal communities. The state should compensate such persons for their losses if it seeks to extinguish them prior to sale.

Such policies should be linked to asset standards for delivery of public services, such as ones covering space requirements, cost, quality, location. Alternative uses
include transport and other infrastructure, RE, and affordable housing.

### 4.3 The Cornerstones of Good Public Land and Building Asset Management

International experience shows that there are four aspects to effective management of public real estate assets:

(i) **Establishing a Landholding Policy:** Governments should adopt a policy in which they identify the circumstances in which they will own land and building assets, and why. Such a policy is vital if public lands are to be released for infrastructure investment rather than being retained for their current use, which in some cases can be unproductive. This policy is particularly important in the case of operational assets that are used for the delivery of goods and services by public authorities, but also applies to assets owned for investment purposes and ones held in trust.

There are circumstances when the ownership of assets is prudent, such as when there are security concerns, rents are expected to rise, or to ensure stability of supply. There are others when ownership of assets by a government may not be sensible, such as when services are going through a rapid period of change in which assets are likely to become obsolete. Governments can in many cases rent the assets they need for the delivery of public services, and so are not obliged to own them in all cases.

South Asian countries should consider following international trends by adopting the policy that public entities are only allowed to hold public properties for providing a public service, or where the public ownership of an asset is the most effective way of delivering public benefits. The landholding policy should:

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Establish criteria for holding public land and building assets;

- Require custodians of public lands to report their assets, their value, and use as part of the annual financial reporting;

- End free or nominal costs of holding public lands and properties by selective introduction of responsibility for the costs of the assets and return on asset value targets or internal rents for public assets and buildings;

- Enhance incentives for custodians of public land to dispose of non-core assets by selective introduction of monetization benefit sharing and compensation schemes; and

- Define a pathway for alternative public use or monetization of non-core and under-utilized assets.

(ii) **Inventory of Public Lands and Building Assets:**
If governments are to become more efficient in the management of public lands, they require accurate and up-to-date information about the lands and assets they own or control. Countries with comprehensive and reliable land registries, cadaster records and maps, and an efficient valuation infrastructure can use these tools to create efficient public land and property management systems.

For countries that do not possess these tools, a “Land Information System” as the centralized repository of government lands should be built to hold comprehensive information on public land and building assets. A government needs information about what its assets are, how they are currently being used, the terms and conditions and any restrictions over their use or disposal, and any plans for their future use. Self-declaration can be a short-term interim measure while proper land records and cadasters are developed.

(iii) **Management of Property Portfolio:** The efficient management of a property portfolio requires
three principal functions. First, a portfolio manager who is responsible for acquisitions and disposals and how the portfolio is funded, including the dividends that can be paid to owners. This function could be carried out by a ministry of finance. It requires the development of procedures to ensure that a proper business case is produced before the acquisition or redevelopment of assets and that these are evaluated using appropriate investment appraisal and risk assessment methods. There also needs to be financial appraisal procedures since projects can be financed using unconventional methods, such as Public Private Partnerships.

Second, an asset manager who is responsible for maximizing the value of the asset but does not determine whether or when it is to be disposed of. This often can be neglected, or else it is assumed that it can be carried out by the public body using the asset. The tools available to asset managers are the terms and conditions under which the asset is made available to users, the selection of users, investment in asset enhancement, and redevelopment or repurposing of an asset. Using these tools can mean that the interests of the government are not necessarily the same as the agency, ministry, or other public body that occupies it. For this reason, some governments, such as the United Kingdom, have created a body that undertakes the functions of an asset manager and acts as the in-house landlord responsible for leasing assets to public sector occupiers.
Pakistan’s Khyber Pakhtunkhwa (KP) Province is currently seeking to implement policies and create institutions that will enable the efficient management of public land and building assets. The provincial capital of Peshawar is home to some of the country’s most expensive land parcels and real estate, some of which are state-owned. However, these lands are often vacant, under-utilized, or encroached upon - and in other cases, over-utilized. The lack of clear policies, use standards, or reporting on land means that the government has no way to know about these cases. Furthermore, even when public land and building assets are identified, there are no mechanisms in place to make them available for alternative public uses or monetization.

The KP revenue records are partly digitized and not centralized; as a result, authorities do not have access to an up-to-date inventory of public properties. Operational and financial reporting on public assets does not cover this gap. As there is no effective way for the government to know the value, status, and utilization of its property assets, it needs to rely on the acquisition of private lands and assets for development. This process is known for complications and litigation, and risks creating undue burdens on the government – particularly when it may already hold public assets that could be utilized at a lower cost.

There is an increasing recognition within the government of the importance of improving public lands and assets management. Authorities have launched a sectoral needs assessment and action planning work that will aim to implement policies, inventory, performance and reporting standards, management, and monetization of public lands and buildings in the province. There is also a need to unlock access to land for private sector participation and province-wide infrastructure activities. If these reforms are successful, they could lead to similar progress in Sindh and Baluchistan provinces.
Third, property or facilities management can be undertaken by the occupier if supervised by the asset manager. This involves dealing with day-to-day operations such as cleaning, security, repairs and maintenance, car parking, refuse collection, and relations with local government and neighboring owners and occupiers.

(iv) **Cost Recovery from Users:** Countries that make the most efficient use of state-owned land and buildings require their users to pay the cost of using them. This helps to ensure that there is a disincentive for public bodies to retain surplus, under-utilized, and non-core assets. This can take the form of a fair rent or fees that reflect the market value of using the land and buildings. For state-owned enterprises, the charge may take the form of a dividend to taxpayers as a percentage of the capital employed.

One of the key problems that the management of public assets must address is the potential for corrupt practices to creep in. These can take a number of forms including in the award of contracts for managing public assets. The assets of central, regional, and local governments are vulnerable to encroachment, particularly if they are not delineated from privately-owned assets and proper registers of public assets are not maintained. The resources given to the protection of public assets can be inadequate with irregular inspections and checks being made on them and asset management departments lacking trained personnel and equipment, such as vehicles, to perform their tasks adequately. Sales and leasing of land and buildings provides opportunities for corruption, including buyers’ rings to artificially lower prices in auctions and tenders, the sale or leasing of assets to favored parties at less than their market price, and exchanges...
of assets for inferior ones. Public bodies need to have in place robust anti-corruption measures to guard against these.

### 4.4 Public Land Management Institutions

The management of surplus public land and non-core assets require special competencies in real estate and valuation that are not always present in ministries or departments. There are examples, such as Land Use Victoria in Australia and the Government Property Agency in the United Kingdom, of public land management departments that make use of tools commonly found in the private sector for the efficient management of land and building assets. These tools were often developed in businesses like retailers and banks that, like the public sector, have large numbers of properties and need to rationalize them in the face of changing patterns of customer usage. The tools they developed enable them to identify underperforming branches and properties for which the long-term prospects for usage are limited.

The monetization of public lands has typically required the creation of an institution that is able to attract people with relevant real estate skills and to remunerate them at the market rate. This can take the form of a government-owned company or special purpose vehicle (SPV), as in the case of Canada or South Korea. The government, as the owner of a
### GOOD CORPORATE GOVERNANCE FOR PUBLIC LAND MANAGEMENT AGENCIES

**Why operational independence is essential**

Operational independence is vital for any statal or parastatal public land management agency specialized in monetization of assets. Operational independence allows for professional management and the ability to recruit personnel for skills and competencies based on business acumen, rather than the often restrictive civil service human resources (HR) policies, and the public sector’s remuneration restrictions.

The other side of the coin is the state’s ability to undertake owner oversight. Appropriate public corporation governance arrangements have clear lines of separation between owner oversight and executive powers. This is in the interests of both the owner and the company management. Public authorities benefit from the company being operationally independent, as it protects them from being held directly accountable for the company’s actions and coming under pressure to intervene, at a cost to the company’s ability to deliver financial and social benefits. For the company management, operational independence provides them with the ability to operate the company as business to the best of their managerial and technical ability. The company can still be subjected to a level of external scrutiny that can help curtail corruption.

### 4.5 Leveraging the Value of Public Land

Leveraging public real estate occurs when a government transfers publicly owned property at reduced or no cost to a private developer for economic development purposes, or to achieve some other policy goal. This applies to property that is not needed for public use. It could be a large site, such as a defunct rail yard or decommissioned military base, or a smaller site, such as a closed school or office building.

The market value of real property is the highest and best use of the asset given existing legal, physical, and regulatory constraints rather than the value of its current use for a public purpose. A government may determine that there are non-market uses or policy objectives that are desirable to fulfill with the land, such as the creation of public spaces, food security, climate change mitigation, or the mandatory inclusion of “affordable” housing units within a residential development. If such requirements are imposed, these encumbrances may decrease the market value of the development site, but governments need to be mindful that they should act in the interests of their citizens and not take an exclusively commercial approach to surplus assets. Governments have to navigate a path between potentially conflicting objectives, of which the need to raise money from surplus assets is one.
Land acquisition constraints are among the primary causes for delays and cost overruns in implementation of infrastructure projects in India and represent a significant factor disincentivizing private capital flows. The government is the country’s largest owner of land and properties, many of which remain vacant or under-utilized. Accessing these public lands, typically found in congested and expanding urban and peri-urban areas, is critical for the implementation of sustainable and climate resilient infrastructure projects and attracting private sector financing and partnerships. The development of an approach to unlocking and leveraging public lands at scale is therefore required in all or most Indian states.

The State of Tamil Nadu has begun developing a Government Land Management System (GLMS) that will build on the records of the Department of Revenue and the Department of Housing and Urban Development. The GLMS aims to provide a comprehensive record and mapping of all government lands in Tamil Nadu identified by location, fixtures, use and custodianship. It will improve land availability with clean titles, reduce land costs, and increase private investments in housing infrastructure, and strengthen the government’s capacity to leverage public land assets for development objectives.

The GLMS will include a systematic, state-wide geospatial and title inventory of publicly owned lands, resulting in an ability to screen potential sites for housing projects online. As earlier demonstrated under the Rajiv Awas Yojna (RAY) housing initiative, unlocking public lands and their values has immense potential for generating public private partnerships (PPPs) in housing. On this front, the GLMS’s impact promises to be two-fold: First, it will make lands available for affordable housing programs by providing public and private developers with certainty about land and property rights. This in turn will allow the state to leverage public asset values for Joint Ventures and other business deals for urban development.

Transactions can take the form of sales, auctions, leases, or any other conveyance that sees the rights and entitlements to publicly owned property transferred in exchange for fiscal benefits or the delivery of some public good. It is also possible to enhance the value of private properties by, for example, strategically locating government buildings and functions or using them to anchor new developments. One of the tools of regional economic policies has been to disperse government operations to areas of high unemployment. To leverage the value of public real estate effectively, a municipality or government entity must:

- Be able to calculate and understand the market value of its property portfolio;
- Understand the cost of additional infrastructure that may be required to unlock a site’s market value;
- Articulate, as precisely as possible, the policy goal(s) it is trying to achieve;
- Understand the likely cost to developers of meeting such policy goal(s);
- Be able to estimate the residual land value of publicly owned sites; and
- Have the technical capacity, business skills, and authority to negotiate with private real estate developers regarding these issues.

4.6 Conclusion

There is an increasing realization that, in most countries, land and buildings are the most valuable assets governments hold. However, they are often not being used to their full potential. Land and building assets are required by governments to fulfil three primary functions: deliver public services, generate income to support public expenditure, and holding trust properties to preserve and maintain them on behalf of current and future generations. In order to make effective use of public lands and property, governments should repurpose or dispose of surplus, under-utilized, and non-core assets – including taking steps to make the land available for infrastructure investment and other public purposes, such as climate change mitigation, disaster risk management, and protection of the environment.

Governments should establish an overarching rationale for managing public lands and buildings...
and the policies that require such assets to be in government hands. Globally, countries have made considerable progress in developing models for managing public assets. There is an increasing appreciation that owning public assets has costs and responsibilities attached to them. In addition, public lands and building assets may have a highest and best use value greater than their current use value. If no longer required for a public purpose, these could be disposed of to realize their value or be redeveloped for ongoing revenue generation. Alternatively, they could be repurposed to satisfy a higher value public policy objective.

The building blocks towards a good public land and building management system are (i) establishing a landholding policy in which governments identify the circumstances in which public entities can own land and building assets and why; (ii) creating a land and building asset inventory which has up-to date information on all public assets; and (iii) require state users to pay the cost of using land assets to minimize the perverse incentive of retaining assets they no longer need or are not being used efficiently.

The skills needed to efficiently manage land and building assets are not traditionally found in governments. Accordingly, the State must create an enabling environment for a transparent and efficient public land and building management system through legislation, regulations, and capacity building. Countries that have successfully pursued policies to enhance the efficiency with which government assets are used and managed and to realize the maximum value from the disposal of surplus assets have often had to create a specialized institution that is able to recruit and remunerate employees with the requisite skills.
5

Compulsory Acquisition
5. Compulsory Acquisition

5.1 Defining Compulsory Acquisition

The typical means of compulsory acquisition is compulsory purchase, but it can also take many other forms. These include coerced donations, forced land pooling, forcing people to accept easements over their land, causing the value of land not taken to diminish, and changing rights and consents. Many of the ways in which sites are assembled for the purposes of infrastructure investment require a form of compulsory acquisition in order to prevent a situation in which a small number of owners can block an infrastructure project by refusing to sell at any price or holding out for a monopoly price. Even when acquisition is negotiated, having compulsory acquisition powers in reserve ensures that a project cannot be blocked.

However, having these powers is of little value unless a government can identify those who possess property rights that have to be acquired. The rights in question are not just ownership rights but also rights of roam, use, access, and residence. Affected persons include anyone who suffers permanent or temporary displacement or loss or diminution of rights or assets and not just owners of land. They include tenants, those with access, residential, use, or customary rights, those with leases or licenses, squatters, those with tribal or indigenous rights to stay, graze or use, and those with rights that have been established through long usage over time. They can also include those with rights over neighboring properties which are adversely affected by a project. There should be no discrimination against any group in the award of compensation. This requires that there should be accurate and reliable land records as a precondition for fair and equitable compulsory acquisition. Success in defining just compensation levels depends on the quality of land valuation infrastructure in the country and the transparency of property market. These prerequisites are often lacking in the South Asia region, causing delays and litigation in infrastructure investments.

The assets taken through compulsory acquisition can be tangible, such as land and buildings. They can also be intangible, covering all types of rights. It does not just affect owners of land but anyone who has any type of right over land, buildings, or other assets, including tenancies, occupation, use, access, or subsurface or air rights. Compulsory acquisition does not even have to result in a person being deprived of the asset: They may simply be deprived of some of the rights they previously enjoyed or for their livelihoods to be reduced, or that the investment causes harm to them, for example, in the form of dust or noise. The rights of which a person is deprived also do not have to be formalized: compulsory acquisition can apply to unregistered and customary rights, and to informal property assets. FAO’s Voluntary Guidelines on Responsible Governance of Tenure calls for countries to recognize all legitimate forms of land use and occupancy, not only legally registered rights on land. Land acquisition that recognizes and compensates only tangible and legal property assets can harm the poorest segment of the population and is bound to cause civil unrest.

24 Compulsory acquisition is defined by the World Bank in ESFS.
Sew in Shop in a Jamalpur island in Bangladesh considered for RE investments. Mika Torhonen
5.2 Justification for Compulsory Acquisition

Compulsory acquisition is contrary to the fundamental principle of market economies that transactions should be between willing buyers and willing sellers acting in their own best self-interest. However, it can be justified if:

- **It is in the public interest**: Usually this is defined by legislation but is likely to include the construction of certain types of infrastructure networks or corridors. Legislation may also justify compulsory acquisition as being acceptable on economic, social, or environmental grounds.

- **It is a proportionate response to a problem**: This requirement is fulfilled if the gains from the realization of the project compensate for losses, and there are no effective alternatives to compulsory acquisition, such as the redesign of the project.

- **It is equitable**: Affected persons must be fairly and fully compensated for their losses in a timely manner. Affected persons are not just owners but anyone who has rights of use or access and may include owners of neighboring property rights whose enjoyment of these is adversely affected by a project, for instance by noise or pollution. The project should not be designed in such a way as to transfer wealth from one group (the affected persons) to another (the project beneficiaries).

5.3 Key Requirements for Compulsory Acquisition

Compulsory acquisition requires diligent checks to identify all those affected and the extent of their losses, and not just owners of land and buildings. Compensation should enable those affected to be able to replace lost assets or rights or maintain their livelihoods. The process should be accompanied by community engagement and consultation and the opportunity to challenge the legitimacy of the purpose for which land and property rights are to be used. There should be prompt payment of compensation based on the full value of the assets, rights, and livelihoods lost or diminished, and the ability to appeal against proposed compensation.

The World Bank’s Environmental and Social Framework goes beyond most national legislation, calling for livelihood improvement - or at minimum restoration - and compensation at the replacement cost and should be applied, irrespective of the source of funding.

### KEY PRINCIPLES OF ESS5 LAND ACQUISITION, RESTRICTIONS ON USE AND INVOLUNTARY RESETTLEMENT

- Involuntary resettlement should be avoided or, when unavoidable, minimized.
- Those affected should have their livelihoods improved or, at the very least, restored.
- Where compulsory acquisition is unavoidable, compensation should be based on replacement costs. Acquisition can only take place once compensation has been made available.
- Where there are functioning markets, the replacement cost will be the market value established through independent and competent real estate valuations plus transaction costs. Transaction costs include administrative charges and registration or title fees.
- Where functioning markets do not exist, alternative means can be used, including the productive value of land and productive assets and the undepreciated replacement value of structures and fixed assets.
- Affected people must be resettled to places they can legally occupy and where they are protected from eviction. Tenure rights shall be no weaker than those enjoyed on the land from which they have been displaced.
- Borrowers are not permitted to resort to forced evictions of affected persons.

Globally, most land acquisition legislation stipulates compensation at the market value of the acquired asset. The difference between market value and replacement cost is that the latter considers each property to be as valuable as the cost of building it somewhere else. The market value of a building that costs a great deal to build, but which nobody wants to buy, can be nominal or even negative - particularly in cases where the building site is contaminated or building materials contain toxic or deleterious materials. The replacement cost for the same building, however, would still be high. Replacement value is of particular importance when looking at the value of livelihoods lost. The value to affected persons of the livelihoods lost can be much greater than the market value of assets taken.

5.4 The Problems of Establishing Title and Rights

The challenge for those undertaking infrastructure investment projects is to identify all those with rights over land parcels who should be compensated when their property is acquired compulsorily. Part of the problem is that there can be multiple rights, occupancies, and uses on a parcel of land in existence at any one time belonging to different people. There can be owners, tenants for life or on different types of leases, sharecroppers, and those with use rights, such as seasonal grazing or foraging. Holdings can be sub-divided upon inheritance, with some co-owners working the land while others live and work elsewhere. Rights of usage can also be divided so different individuals possess rights that can be exercised at the same time: The owner of a structure might, for instance, let out the roof space for telecommunications or solar electricity generation. A government agency may also potentially be involved, claiming the area in question is State Land.

Unfortunately, infrastructure investment announcements can trigger opportunistic encroachment on private and public lands in the hope of attracting land acquisition compensation. Satellite image companies’ repositories are a great source of information regarding the history of land occupancy and can serve as a powerful tool to resolve questions about when encroachment occurred.

Land record systems need to be able to record a multiplicity of rights over a single parcel. A registry will often have a minimum quantum of rights that can be registered – for instance, only leases of more than a given duration may be capable of being registered. When registries are established, certain types of rights may also be excluded. For instance, guardians may be recorded as owners rather than minors. Custom can also influence registration practice, affecting, for instance, whether wives are recorded as co-owners.

Rights do not cease to exist just because they are unregistered or cannot be registered. It is incumbent on those undertaking compulsory acquisition diligently to seek out and identify all those whose rights will be acquired or depreciated and to compensate them for their losses. This can be time-consuming and costly even when there are accurate and reliable land registers. For instance, it may involve interrogating land and letting agents about tenancies and who the principals are who employ them, as well as fixing notices to individual parcels, requiring individuals to register their claims with the acquiring authority by a given date.

In SAR, the historical systems of maintaining land records have not been elastic enough to keep pace with development. Large areas, in particular those around the region’s rapidly expanding cities, have fallen into legal informality. A land registry ought to provide a
unique and reliable record of the title, rights, and obligations of each parcel, guaranteed by the body that runs the registry. However, land records in South Asia have often been established in a settlement process. In systematic first registration, issues of disputed and overlapping claims should be resolved so that there is a unique title to each parcel. There can be subordinate interests in a parcel, but not overlapping or disputed claims.

There are many reasons why land records and cadastral maps are often incomplete or out of date in areas where infrastructure investments are planned. If there is no cadastre that provides a geo-reference for each claim, there can still be claims that physically overlap because of inaccurate boundaries. These challenges can also arise if the quality of surveying is poor, resulting in overlapping boundaries or inaccurate measurements of surface areas. If systematic registration was not applied to the whole of an area, there will be parts where title is assured and other parts where it is not. Similarly, sporadic registration - when registration only occurs as a result of a trigger event, such as inheritance or sale - can also leave areas where the land registry has no information. The register will become out of date the day after systematic registration is complete as, for instance, owners die, sell their property, grant rights, take out mortgages, and construct buildings.

The main challenge of land records in the region is not the quality or completeness of past surveys and registration. Historical records, maps and registers in SAR were world-leading at the time they were introduced. However, these records have often not been maintained properly - there have been periods of neglect, and full surveys and register updates are often
necessary to fix any gaps in the records. The historical revenue records in SAR were also designed to capture the slow pace of changes of an agrarian society and cannot accommodate the rapid urbanization prevalent in the region in recent decades. Finally, citizens have typically found ways around registration to avoid fees and taxes, which also reflects these societies' low level of trust in government services.

These challenges call for infrastructure investment projects to start with land records verification and updating. However, this is not a common approach. Instead, ad hoc processes, such as one-off mapping and community consultations that take place outside the land administration realm, are often introduced to overcome compromised land records. The problem with this approach is that it does not resolve the larger issues with land records - it just results in workarounds to manage the issue.

Maintaining the accuracy of a land register requires effective enforcement mechanisms, as well as popular willingness to comply with regulations. Citizens will register their properties when they perceive that doing so is the best way to secure their property assets, and that formal registration increases the asset value. If they don't see the utility and perceive the registration agency to be corrupt and unreliable, they will not register their lands.

Compliance can be undermined by the cost of registration fees and property transfer taxes, “informal” or corrupt fees and red tape, and administrative burdens. Citizens may be disincentivized to register their properties if they need to journey to a distant town or fear that the information provided in registration will be used to their disadvantage, such as by undermining their entitlement to social security or subsidies or leading to higher taxes. As a
result, transfers and transactions will be undertaken informally and what is in the register will, over time, have less and less relationship to reality. These challenges cannot be resolved without persuading the population that an accurate and up-to-date register is of value to them, particularly in helping to protect their property rights.

Many of the systems of land records in SAR are deeds-based. Title deeds are an effective way of proving ownership providing that there is no break in the chain of transfer. However, many, if not most, deeds registries in the region accept registration of new deeds either blindly or with minimal verification, which does not confirm seller’s ownership. Deeds registration also remains voluntary in many jurisdictions. If a past transfer is challenged, then the current owner is the person who, for the moment, has the best claim. There are a variety of policies that can help reduce claims: checks before deeds are registered, a statute of limitations on making claims, and stamp duties, which mandate that only stamped documents can be presented in court, are all useful steps. A common stipulation in deeds registration is that a registered deed takes precedent over an unregistered deed.

The cost of registering deeds and paying stamp duties, as well as any inefficiency or corruption in a deeds registry, are all likely to encourage informal transfers. On the other hand, deeds registration that is compulsory, interlinks with land records and land parcel maps, and where there is verification of the title chain at registration can be very efficient and trusted. The underlying key is up-to-date land records and mapping, which are capable of reliably defining the property object, rights, and owners for the deed of sale.

5.5 Assessment of Compensation

Valuation plays a critical part in any project that involves the acquisition of land. Valuations are needed:

- In the project planning phase, to estimate the likely cost of land acquisition.
- In the implementation phase, during negotiations for the acquisition of land and
The importance of valuers and valuations comes from the way in which the property market functions. The market value is the value of the property in its highest and best use, in most cases but not all, the existing use as no other use is feasible, legally permissible, or as profitable. A widely accepted definition of market value is that adopted by the International Valuation Standards Council:

“Market Value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.”

The highest and best use reflects any development consents or permits for changes of use that have been granted but have not yet been acted upon. It also reflects what is known as hope value - the possibility that consent for a more profitable use or redevelopment might be granted in the future. If land rights are to be acquired compulsorily, affected persons will not be able to replace the asset taken by one that is equivalent unless the highest and best use is the basis of valuation. The affected person will be deprived of the livelihood they might have enjoyed in the future once development had taken place.

The primary problem in the property market is price discovery. How can one ascertain the market price of a property? The prices realized in transactions are used to value the stock of comparable assets that have not been traded. However, the property market does not always function as a classical market. Valuers, through their knowledge of the transactions that have taken place in the property market, are an invaluable conduit through which price information is passed on to buyers and sellers. They must make subjective adjustments to reach a valuation for a given property, using known transaction prices and applying them to the circumstances of properties that are comparable but may differ in certain respects. The qualifications, skills, knowledge, and experience of the valuer play a key role in determining the reliability of the valuations produced.

Since valuers are in a position in which they could influence the market to their own advantage, it is important that they follow a code of ethics. That of the International Valuation Standards Council contains five fundamental principles: integrity, objectivity, competence, confidentiality of information, and

professional behavior. In many countries, valuers are regulated in order to ensure that they pass an examination or obtain certification to ensure they possess the necessary qualifications and that they adhere to an appropriate ethical code.

Valuers should also carry out their valuations in accordance with national valuation standards. Many countries adopt one of the international systems of valuation standards, such as the International Valuation Standards produced by the International Valuation Standards Council, as the basis for their national systems. In reality, standards of valuer education and training vary widely between countries - as does the rigor with which adherence to valuation standards, ethical codes, and codes of professional practice are enforced.

The definition of market value is, by necessity, an estimate. Although valuations should be based on objective information, they are the opinions of fallible human beings. Even when the valuer is acting competently and with integrity, valuations are subject to biases, such as overconfidence in decision making, anchoring decisions on easily recalled information, and interpreting new information as confirming previous assumptions. Valuations should therefore be open to scrutiny regarding the evidence and methodology used in arriving at them. This is of particular relevance in compulsory acquisition, where it should not be assumed that a valuation produced by a valuer appointed by the acquiring authority is the definitive value of a property right. The establishment of independent appeals mechanisms are needed in which estimates of compensation can be challenged and alternative evidence produced by claimants.

Defining a market value is often insufficient for World Bank-funded projects where ESF applies. As per the ESF, the compensation definition needs to also consider replacement value and impact on livelihoods. This means that a lost building should be compensated at the value it takes to build a new replacement today, without any deduction for depreciation. The sales price of a property with an old building in an area with low market interest, such as in an agricultural area where the population is migrating to cities, can be substantially lower than the replacement cost and the income and livelihood it can generate. The livelihoods improvement requirement can also lead to a higher level of compensation than the sales comparison approach to determining market value or replacement values of a farm in an area where farms do not trade well in the market and the buildings are getting old. Loss of livelihoods may result in higher compensation for loss of use or access rights than would be produced by the sales comparison approach.

It is vital that valuers use an appropriate method of valuation when estimating the compensation that should be payable and not assume that the sales comparison method is the only legitimate approach. This is particularly important in areas where there is little market activity and limited evidence from sales of comparable properties or use or access rights. Valuations can be produced in two ways:

(i) A human valuer inspects a property and values it using the evidence drawn from recent transactions of comparable properties, making appropriate adjustments to reflect any differences between those properties and the subject property.

(ii) Mass valuation or mass appraisal is a statistical approach to valuations, often referred to as Computer Assisted Mass Appraisal. Because of the size of the data sets, this is invariably undertaken using computers. Those properties for which there has been a recent transaction are treated as a sample of the population of properties. A statistical relationship is derived in which price is the dependent variable and is determined by a number of characteristics of the property, which form the independent variables. These characteristics can include size, age, construction, condition, and location. Once a statistically significant relationship has been

derived, the population of properties are valued by inputting each of their independent variables in the equation.

Mass valuation is important in assessing properties for property taxation and can also be used to estimate the cost of land acquisition in an investment project. However, it should never be the basis for compensation in the event of compulsory acquisition other than to provide a reference point for the actual detailed compensation valuation. Mass valuation uses only a limited number of characteristics of properties in estimating their value. It aims to produce an approximate valuation and omits key factors that can determine the value of individual property rights. The difference can be significant when it comes to assessing the compensation due for individual assets taken or whose value is diminished, and livelihoods terminated or compromised. There is a legitimate role for mass valuation in estimating the budget needed for land acquisition but not for determining the compensation to which individual affected persons should be entitled.

Valuations depend upon knowledge of market prices. However, discovering transaction prices can be difficult. Some countries have public price registers in which buyers and sellers must disclose the prices paid. Other countries regard such disclosures as a breach of privacy so that prices paid remain secret, and either publish anonymized or indexed information on the markets, or no information at all. Land registry information is public in many countries, but it takes an effort for a valuer to search for market data from the registered deeds. Moreover, the prices disclosed by buyers and sellers may not be accurate. This may be because those involved are seeking to evade property transfer taxes or registration fees when these are calculated as a percentage of the purchase price. Rather than declaring the true price paid, buyers and sellers might state that the price was a plausible lower alternative, such as the assessment used for property taxation.

Not all transactions require registration. If, say, a warehouse in a country's main commercial city were to be sold by one company to another, they might use the device of having the property owned by a special purpose vehicle (SPV). Rather than one company buying the property from the other, the purchaser might buy the shares in the SPV. In this case, there will have been no transfer of legal ownership: the property will still be owned by the SPV, but the SPV simply has a different beneficial owner. Many use and access rights are never sold so that there are no prices to be recorded even if transfers of ownership are capable of being registered. The price discovery process is likely to involve accumulating evidence from a number of sources, including declared prices in land registers, registered lease prices, asking prices when properties are advertised, real estate broker records on sales, valuations for purposes such as mortgages, the regular revaluations of investment property portfolios, and information known to property agents and valuers from their activities on behalf of clients, such as revenues and costs that are typical of certain types of business and usages.

Valuers use a variety of methods when seeking to estimate the market price of a property.

(i) **Sales or direct comparison approach:** This approach involves valuers using the prices achieved in recent sales of comparable properties to estimate the value of the subject property, after making appropriate adjustments to reflect any differences between the properties.

(ii) **Income approach:** When sales evidence does not exist or is unreliable, the market rent of a property can be estimated using recent transactions of comparable properties. The market rent can then

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**METHODS OF VALUATION**

- Sales or Direct Comparison Approach
- Income Approach
- Receipts & Expenditure Approach
- Cost Approach
be capitalized using an appropriate risk adjusted yield to derive the property's estimated market value.

(iii) Receipts and expenditure approach: This method is used for certain types of properties where size is not an appropriate variable for valuation. They cannot be valued using an area unit price such as price per square meter or per square foot. Rather, these properties are traded on their income earning potential and so are valued on their expected turnover or operating profits. This particularly applies to leisure properties such as bars, hotels, theaters, restaurants, and cinemas, but can also be applied to shops outside of the retail core.

In this approach, valuers estimate the revenue that a reasonably competent operator could earn from the property. From this is deducted the operating costs of the business, the cost of capital, and reasonable profits of the operator. The balance is the amount available to pay rent on the premises. This rent is then capitalized using an appropriate risk adjusted yield to derive the market value. The approach is also useful for estimating the replacement income needed when properties which are never or rarely traded, such as farmland, use, access, or customary rights (for instance, foraging, gathering, or grazing rights), are compulsorily acquired. Compensation in such cases may need to take the form of investment advice and training so that affected persons can establish alternative skills to replace the livelihoods lost.

(iv) Cost approach: If none of the other methods can be used, then the cost approach, also known as the contractor's test, is the method of last resort. It is particularly useful when valuing properties that are rarely, if ever, traded, such as steelworks, chemical works, ports, airports, and other forms of infrastructure. It can also be used to estimate the market value of properties used to produce public services that are not sold for their market price, such as schools, universities, and hospitals.

The method assumes that if an asset is in use, it must have a value to the users or else it would be abandoned or left unoccupied. The minimum value must be the cost of replacing the asset if it should be destroyed. The method involves estimating the costs of building a new replacement asset, including site and ground works and infrastructure. A depreciation factor is applied to this to allow for wear and tear and obsolescence to arrive at a depreciated replacement cost. The value of the land in its existing use is then added to this cost. ESF5, however, does not permit deductions for depreciation, so if this method is used to estimate the replacement value of assets, an affected person should receive a new asset, such as a building, in compensation rather than one in the same condition as that taken.

An acquiring authority can also expect to pay disturbance and removal costs when households and businesses have to relocate in addition to compensation for assets taken or reduced in value. Those whose land or other property rights are not taken but fall in value as a result of the infrastructure project, for instance due to pollution or limitations on the use to which land can be put, should also receive compensation for their losses. Some countries pay additional compensation for the fact that the sale is not at a time of the seller's choosing and is compulsory. There should also be compensation to pay for the fees of any professional advisers who the claimants need to consult in making their claims, such as lawyers, valuers, and accountants. If compensation is delayed, further compensation should be paid for the delay, particularly if in the meantime asset values have risen so that affected persons can no longer obtain replacement assets in return for the agreed compensation.

5.6 Conclusion

Governments’ powers of compulsory acquisition should mean, in theory, that they ought to have few problems assembling sites for infrastructure projects. The reality can be very different, however, and land assembly in SAR is often very challenging. The processes can drag on due to title disputes or litigation about compensation values. Compulsory acquisition ought
to mean that affected persons who have assets taken from them, suffer loss of property rights, or have their livelihoods diminished should receive fair and timely compensation for their losses. This will enable them to replace the assets, rights, or livelihoods lost with others of equivalent or greater value.

For this state of affairs to exist, two essential preconditions are needed. First, the government or acquiring authority must be able to identify all those who will suffer loss of assets, rights, or livelihoods as a result of the project. If land records, land registers, and cadastres are incomplete or not maintained, this will be a challenge. In this situation, comprehensive registration of property rights for the land needed for a project and any areas adversely affected by it or construction works, will need to be undertaken. Surveys will need to be undertaken to identify all unregistrable rights that will be terminated or diminished so that those sustaining their loss can be compensated. Second, there needs to be a means by which the losses of assets, rights, and livelihoods of affected persons can be valued so that they can be provided with fair and timely compensation. In many countries, the valuation infrastructure is lacking: the data about transaction prices is poor, national valuation standards do not match international best practices, and valuers are unqualified. Even in situations where the valuation infrastructure is up to the job of identifying fair compensation for affected persons, the processes and systems for ensuring that affected persons and businesses can be relocated and receive timely compensation may be lacking.

Before funds are made available for an investment project, task team leaders ought to satisfy themselves that the borrowers/recipient actually have the capacity to implement it. This means having the ability to identify all the affected persons, the losses they will suffer, and the means to ensure that they are fully compensated in a timely manner.
Value Capture
6. Value Capture

6.1 The Idea and Theory of Value Capture

Property values can rise for two main reasons. They can increase as a result of private landowners’ investment in buildings, drainage, fencing, roads, or other improvements. In such cases, landowners invest their own money, and it is reasonable that they should enjoy a fair profit, as they also bear the risk that the investment will fail and they will lose their money. However, increases in property values also can result from factors over which landowners have no control. For instance, the construction of a new railway line or road may result in land in the vicinity rising in value as access to it has improved, making its location more attractive for industry, commerce, or residence. Such increases in value are known as betterment. Landowners have not contributed to such increases in value of their property but are the passive beneficiaries.

This raises the question of whether landowners, as the beneficiaries of others’ projects, ought to be obliged to contribute to the cost of such improvements. The reverse is often true, as landowners are often entitled to compensation under compulsory acquisition laws or when the construction of infrastructure devalues their property, for instance, because of noise or pollution. The existence of betterment has given rise to the idea that some of the increase in value resulting from infrastructure investment could be captured using what are known as value capture tools, and that these contributions could play a role in funding the development project.

The idea that value capture is a legitimate activity has a long history. David Ricardo (1772–1825), a British economist, is often regarded as the father of value capture. His argument is based on his definition of land as being “the original and indestructible elements of the soil.” In other words, he believed that land was in fixed supply so that its price (rent) was determined by demand. As a result, he argued, landowners can be taxed without any adverse effects on incentives to supply land. Ricardo saw landowners as the

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**FUNDING LONDON’S ELIZABETH LINE**

How Special Assessment Districts can finance public improvements

The Elizabeth Line (formerly known as Crossrail) opened in 2022 and links Reading to the west of London with Shenfield and Abbey Wood in the east. Much of the line is underground. It significantly reduces journey times between the east and west of the capital as well as relieving congestion. The construction of the line has resulted in an increase in the value of properties in the areas it serves. The funding package agreed in 2020 between the Department for Transport and Transport for London was £18.8 billion. Of this, 22 per cent was to come from a supplementary business rate (annual property tax) on business premises and 14.5 per cent from community infrastructure levies on new residential properties and developer contributions.

Source: https://www.crossrail.co.uk/about-us/funding

beneficiaries of factors to which they do not contribute - including urban, demographic, and economic growth and the construction of infrastructure. Not only is the taxation of land neutral in its economic impact, but an ethical case can be made for taxing landowners as the lucky passive beneficiaries of developments created by society.

Because landowners typically supply fixed capital such as buildings, access roads, or fencing, Ricardo was obliged to invent a concept known as economic rent. This concept referred to rent payable just on the land, distinguishing it from rent payments made by tenants to landowners, which includes both payment for the land and the use of any fixed capital supplied by the landowner. This suggests that value capture instruments need to be carefully designed so that they fall on land betterment and not the fair profits from the supply of fixed capital.

Ricardo's ideas were taken up in the latter part of the nineteenth century by an American journalist, Henry George. His book, Poverty and Progress (1879)30, argued that growth in land values was created by the community as a whole, not landowners. As a result, he wrote, the community can tax landowners on these gains “without in any way lessening the incentive to improvement.” While George’s 1866 campaign for Mayor of New York, on a platform of bringing down high rents in Manhattan, ended in defeat, his work has been hugely influential. Many governments have sought, with varying success, to implement his ideas on land value capture.

Ricardo and George's writings provide the theoretical and ethical basis for land value capture, but do not offer detailed guidance about the tools through which it can be achieved. The concept broadly refers to a methodology through which incremental increases in property values (betterment), created as a result of public investment or regulatory action, are recouped or redirected by the state or local governments using various incentives, taxes, or fees. A wide variety of instruments can be used for this purpose, depending on legal and regulatory structures and a society's preferences and values. They include property taxation, fees and charges, sales of development rights, sales of leases and land, and planning and development obligations.

Land value capture schemes can lessen the burden on the public sector by decreasing the total amount of public capital outlay required for infrastructure investment. Value capture instruments can be used to oblige those who benefit from transport investments, such as railways and mass transit systems, but who do not actually travel on them, to contribute to their costs. Beneficiaries include non-users who enjoy time savings as a result of reduced congestion on other routes. These benefits cannot be monetized31 since non-users cannot be charged fares or tolls. However, the value to non-beneficiaries of transport improvements can be captured from the increase in property values produced by reduced congestion and greater accessibility.

Historically, there are a diverse set of ways that land value capture schemes have come about. In some cases, groups of landowners have approached public bodies and offered to contribute towards the costs of infrastructure that would result in their property rising in value. Governments in North America also encouraged investments in railway systems by giving land grants to the railway companies. The railway companies were able to recoup the costs of investment from the rise in value of the lands granted to them. When a privately funded development has adverse impacts on a community, such as causing road congestion, some governments require the developer to pay for infrastructure that mitigates its impact under the “polluter pays” principle.

Capturing future incremental value increases requires public sector officials to have in place viable policies and strategies to capture these increases. They also


must understand how value is created. The value of a site may increase because infrastructure investment improves its accessibility or a change in zoning or development permits allows a higher value use. Value capture can only result in a more equitable distribution between the public and private sectors of newly created value if public sector authorities possess appropriate tools to capture newly created value.

These tools, in turn, depend on the authorities’ ability to value property before and after the infrastructure investment or change in development permits so that the amount of betterment can be assessed accurately. There is the danger that governments may overestimate potential gains and discourage investment or underestimate them so that the public misses out on the share of betterment to which it is entitled.

6.2 Value Capture Tools

A wide range of value capture tools exist. One classification is according to whether they are:

(i) **Tax- or fee-based**: Tax- or fee-based instruments capture land value increases through property taxes, registration fees, development charges, connection charges, infrastructure levies, betterment charges, special assessments, or tax increment financing.

(ii) **Non-tax- or non-fee based**, also referred to as development-based land value capture. These instruments capture incremental value increases through the sale or leasing of public land, sale of development rights, land pooling or land readjustment schemes, or planning obligations.
Planning obligations, which are also sometimes called planning gain, require developers to contribute to infrastructure or mitigate the impact of their developments as a condition of gaining development consent.

A tax is any transfer from the private sector to the public sector that is not payment for goods or services or a loan transaction. If the public sector charges an amount for a service that is in excess of the costs of provision, the excess is effectively a tax, even though it may be called a fee or a charge. Thus, a registration fee levied on transfers of ownership that is higher than the administrative cost of registration is really a property transfer tax under a different name. Similarly, a development connection fee for utilities that is in excess of the costs of making the connection is really a development tax. These excess charges are sometimes explicitly described as a contribution towards funding infrastructure from betterment, as with a community infrastructure tariff, while in other cases it is levied by stealth. Tax- and fee- based instruments are levied at a set tariff so that the obligations of landowners and developers are explicit, while other levies may be variable or open to negotiation. Their success depends on how well these instruments capture the actual increase in value, and whether there is scope for (legal) avoidance or (illegal) evasion of these measures.

Development-based land value capture instruments are complex. They require working out the land value increases resulting from improved accessibility and agglomeration benefits from infrastructure investment or changes in development permits, which often depend on the real estate market conditions. Some of the instruments are levied before developments take place and are therefore based on projected increases in value. Developers often have the potential to negotiate the charges.

This means that public bodies need considerable technical expertise, especially in property valuation, to assess the value of what developers can be made to offer without rendering the project unviable. Developers are likely to plead that projects are unviable in order to reduce charges, irrespective of whether this is or is not the case. Public bodies also need to possess good negotiating skills, particularly as they are up against experienced commercial managers. Successful implementation depends on market conditions and the extent to which what developers can offer meets the needs of each community.

### Table 6.1: Common Land Value Capture Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
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<tr>
<td><strong>Tax or fee-based</strong></td>
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| **Property taxes**                        | • Taxes levied on estimated value or increase in value of land or land and buildings.  
• Taxes can be recurrent (usually levied annually, or sporadic (levied, for instance, when property is sold)).  
• Revenues can go into municipal budgets or to the national government.                                                                                           |
| **Betterment charges and special assessments** | • Taxes imposed on property owners who benefit directly from specific public investments.  
• The taxed amount is based on the estimated value of benefits generated and could fund new infrastructure or service the debt incurred in the building of existing infrastructure investments.  
• A special assessment is when a supplementary property tax is levied on a specific group of property owners who are believed to benefit from an investment. |
| **Fees and levies**                        | • A registration fee is charged by land registries to register property transfers in excess of the cost of registration.  
• Bodies responsible for spatial planning and construction approvals charge development application fees in excess of processing costs to those who apply for their services. |
### Instrument Description

- **Developers pay fees to connect their developments to utility services in excess of costs of connections.**
- **Infrastructure levies charge developers on a per dwelling or per square meter basis to fund the construction of improvements necessitated by their development.**

**Tax increment financing**

- **A surtax on properties within an area that will be redeveloped by public investment financed by municipal bonds secured against the anticipated increase in property value and other taxes.**

**Planning obligations or planning gain**

- **Developers are obliged to contribute land, financing, or construct infrastructure as a condition of obtaining development consent or to offset congestion or other adverse consequences caused by their developments.**
- **Planning obligations can include requirements on private residential developers to provide social or affordable housing.**

#### Development based

**Disposal of public lands through sale or ground-lease**

- **Governments sell or lease land that has seen its value increase as a result of infrastructure investment or regulatory change in return for an up-front payment or premium, leasehold charge and/or annual land rent payments from developers.**
- **The terms of the lease often include the potential for claw back if the developer's profit is greater than anticipated.**

**Joint development**

- **An agreement in which the public and private sectors partner in a development.**
- **Public agencies usually contribute land and the private sector contributes capital and expertise.**
- **The public and private sectors share the profits resulting from any increase in value.**

**Land pooling/readjustment**

- **Landowners pool their land and contribute a portion of their land for sale to raise funds to partially defray public infrastructure development costs.**

**Sale of development rights**

- **Governments sell development rights in excess of the limits specified in land use or zoning regulations to raise funds to finance public infrastructure and services.**
- **Developers who contribute to the financing of infrastructure or advance another of the government's policy goals may receive transferrable development rights which can be exercised in other areas.**

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### i. Tax-or fee-based instruments

**(a) Property taxes**

There are a wide variety of property taxes that can be used to capture value. Some make use of the types of taxes that most countries routinely levy, while others require the establishment of new taxes. If they are to capture value increases, however, two elements need to be present. First, the taxes have to be levied on the market value of the property. Although annual property taxes are widely used throughout the world, most of them are not based on market value but on size, though this is often modified by certain characteristics of the property. If levied on market values and regularly revalued, then annual taxes can capture increases in value that result from infrastructure investments or changes in development permits. If levied on any other basis, they cannot. Second, assessments must be regularly revalued to reflect current market values. If assessments are regularly revalued based on market value, most properties will not have changed physically to any material extent between assessments. Therefore,
increases in value will reflect economic, demographic, and urban growth, or infrastructure investment.

The effectiveness of annual property taxes depends on the quality of property valuation. This in turn depends upon the quality of the valuation infrastructure, including valuation standards and the education and integrity of valuers, and how transparent the property market is and whether information about transaction prices is readily available. Finally, annual property taxes risk posing a liquidity challenge for taxpayers: They may be wealthier as a result of value increases, but if the tax is set at too high a level, they may find it difficult to raise the cash to pay their obligations.

Sporadic property taxes - such as property transfer taxes, inheritance taxes, and capital gains taxes - require a trigger event to generate tax liability. Stamp duty, a significant source of revenue across South Asia, is one way of levying a property transfer tax: The stamp must be bought from the government or the document confirming that the sales contract has no legal validity. A capital gains tax is levied on the difference between the purchase and sales prices, typically with allowances for any expenditure undertaken to enhance the value of the property and perhaps with allowance for inflation.

There are two key differences between recurrent and sporadic taxes. First, sporadic taxes are typically levied when the taxpayer has cash as a result of a sale, while recurrent taxes can raise issues of taxpayer liquidity. However, sporadic taxes can distort the property market by discouraging transactions. In situations...
where the government does not have a robust system for checking declared prices, tax evasion is likely as buyers and sellers can declare false prices rather than the real transaction price. If the land registration system fails to capture property transfers, it is also unlikely that a government will be capable of collecting all the property transfer tax revenue to which it is entitled. Second, sporadic taxes are typically collected by central governments, while recurrent taxes generate revenue for local governments. This raises questions as to what public bodies ought to be responsible for infrastructure investment and alleviating any negative consequences from development, and which should benefit from capturing value increases.

A key factor determining the effectiveness of property taxes is whether there is an effective system of development control and land registration. Equitable and efficient property taxes require comprehensive land records that identify all taxable property units and their characteristics, an enabling legal framework, the technical and administrative capacity to accurately estimate the market value of properties, and systems to deliver bills, collect payments, hear appeals against assessment, and monitor compliance.

As recurrent property taxes fall on immovable assets, they are difficult to evade or avoid. Common challenges include the failure of land registration systems to record all properties and property transfers, valuation systems that are unable to produce assessments based on current market values, and widespread exemptions. Sporadic property taxes, on the other hand, can offer opportunities for both legal avoidance and illegal evasion. Owners may place the ownership of a property in the hands of a company, for instance, allowing the company to be sold in such a way that changes the beneficial ownership of the property but not its legal ownership, thereby legally avoiding sporadic property taxes.

Tax authorities need to be agile in their response and sophisticated in their understanding of these issues to avoid the erosion of the tax base. Revenues from recurrent property taxes are relatively predictable, but those from sporadic taxes vary with the state of the property market. The collection of property taxes is a sustainable source of revenue in contrast to the sale or lease of public land, which is a finite resource. In many countries, national tax authorities face issues of capacity—authorities do not have a good understanding

**FIGURE 6.1: Recurrent Property Taxation as a Proportion of Gross Domestic Product**

of how property taxes work and suffer from a lack of valuation expertise at a local level. As a result, property taxes are an under-utilized source of revenue.

Most countries generate only a relatively small proportion of the property taxation revenues that market leaders such as United States, United Kingdom, Canada, and France achieve. Generally, Asian countries, with the exception of OECD members like Japan and Korea, raise comparatively little revenue from this source. This indicates that there is significant potential for value capture using property taxes.

A World Bank analysis of India’s property taxes shows that Indian states collect far lower amounts in property tax per capita than OECD countries. Although some of the gap may be due to differences in incomes per capita, the report notes that there are many high value areas in Indian cities that are comparable to OECD countries, which have the capacity for generating significant increases in property tax revenues. Low collection rates, historically low tax rates, the level of intergovernmental fiscal transfers, levels of exemptions, opaque property markets, resource and capacity constraints in tax administration, and incomplete cadastres also explain some of the differences in tax revenue collection between these high value urban areas in India and comparable locations in OECD countries.

(b) Betterment Charges and Special assessments

Betterment charges or levies are taxes that fall on unearned increases in the value of property that landowners passively enjoy. Such increases could come about because of a change in permitted use or development, the construction of infrastructure, or more general influences such as population growth. These charges are not levied upon increases in value that result from improvements. Betterment charges require valuations before and after the increases, and can be levied annually, periodically, or when a trigger event occurs. If levied upon sale, then betterment levies work in a similar way to capital gains taxes. If levied annually or periodically, then the question of taxpayers’ liquidity can arise.

Special assessments, also sometimes referred to as betterment levies, entail an additional tax or assessment paid by property owners within a defined geographic area (the “special assessment district,” or SAD). These taxes reflect the benefits that owners receive from a public improvement or are used to finance the construction of such improvements. These tools try to match cost and benefit incidence by collecting additional taxes from owners who will derive benefits from improvements. Infrastructure investments that produce benefits, such as reductions in congestion on alternative forms of transport and roads, become capitalized into property values as properties in the vicinity of the improvements become more accessible. Businesses and households within the SAD will be willing to pay higher prices to benefit from improved accessibility. Once a local government establishes a SAD, an assessment rate is applied to properties within that district. The rate may vary depending on whether land is used for residential, commercial, or industrial purposes, and the municipality may apply either a constant or phased rate increase until the needed funding amount is reached. The length of time the assessment is in place can also vary and will be decided based on local regulations and the required financing.

These additional taxes can be used to pay for capital improvements within the SAD. This capital payment principally occurs in two ways.

- The municipality pays for the up-front cost of the investment and is repaid over time by the special assessment revenues. In effect, the levy meets the cost of servicing and repaying the debt incurred in providing the infrastructure; or

- Assessment revenue cash flow securitization. This tool can be used when private property owners acknowledge that their property could rise in value sooner if they agree to be assessed at a higher rate, rather than wait for the public sector to identify and deploy capital funds for a specific improvement.

Infrastructure improvements are typically funded out of borrowing rather than current tax revenues. This is partially because investment costs are usually large compared with annual tax revenues, so the cost needs to be spread over a number of years. It is also because borrowing allows the cost burden to be shared by beneficiaries who are not taxpayers at the time the improvements are made. These beneficiaries may subsequently move into the area or are future generations of citizens, who will also benefit from the improvements and ought to contribute to their cost. The additional tax revenues can service the debt and pay it off over time.

(c) Registration fees, development and connection levies, land use changing fees, and infrastructure levies

A land registry may charge fees for the registration of property transfers in order to recoup the costs of running the service. Some countries finance land registries out of government budgets, while in others these registries function on a cost reimbursable basis with users paying fees. The latter model is generally regarded as being good practice since it helps to align the interests of the land registry with those of its customers and can serve to make it more responsive to their needs. Also, fee-based, independently operating land registries are less vulnerable to petty corruption than their central budget covered peers improving the service. Similarly, bodies responsible for spatial planning and construction approvals could reasonably charge fees from those who apply for their services to help recoup part of their costs.

Developers might reasonably expect to pay connection charges so that their developments are attached to utility networks. Under the polluter pays principle, developers might also reasonably be expected to contribute to improvements in infrastructure that their developments necessitate, such as through the construction of roads, schools, public open spaces, and enhancements to the provision of healthcare. Infrastructure levy fees based on a sum per dwelling or per square meter of business space could be justified under the polluter pays principle.

In reality, countries often charge fees or levies that are unrelated to the actual costs of providing services or meeting the additional burden on infrastructure from development. These are, in effect, a hidden or stealth betterment tax. Assessments tend not to be on the basis of cost but the value of the development, typically a percentage. Thus, a greenfield development might pay a lower development or utility connection fee than one in a city center, even though the former required the construction of new infrastructure and the latter just a connection to existing facilities.

(d) Tax increment financing

Tax Increment Financing (TIF) is a mechanism whereby a local government can invest in infrastructure and other capital investments using tax revenues to be generated by future, anticipated incremental growth within a
defined geographic boundary. If, as a result of land development and infrastructure improvement, property values increase within this boundary, known as a TIF district, there should be an increase in the tax revenues collectible there. The increased taxes ("increments") generated after the year when the TIF district was declared are then periodically collected over a defined period of time and deposited in a "ring-fenced" escrow account. The municipality, or local government authority, is then able to use the tax increments to fund significant capital costs upfront, through borrowing against anticipated cash flows.

The bonding capacity should be no greater than the present value of the incremental tax revenues that would be received by the government over the desired borrowing period (usually 10 to 25 years). The borrowing capacity is strongly influenced by the accuracy with which increases in tax revenues are predicted. There is an obvious danger of appraiser optimism behind the projections. Taxpayers throughout the jurisdiction risk becoming liable for making up any shortfall through levying higher taxes on them, as the municipality has a contractual obligation to service and repay the debt. Alternatively, it may have to reduce planned borrowing for other purposes.

A scenario where TIF would prove to be a useful mechanism might be where a municipality invested funds in remediating a well-located but environmentally contaminated former industrial site, which a developer was interested in redeveloping into a mixed-use residential and commercial neighborhood. Proceeds from a TIF bond issuance could be used to pay for the remediation whereby the future, incremental property revenue generated by the new project would cover debt service payment on the bonds. In this example, it would make sense to deploy TIF if the redevelopment project was financially infeasible but for a TIF-facilitated investment in environmental remediation. Alternatively, the municipality could acquire the contaminated site at its as is market value (depressed by the pollution). It could then clean up the site, install infrastructure, and divide the land into lots, which it could either sell or lease to developers. This would reduce the risk to the municipality of private demand for development land failing to increase at a sufficient rate to meet its TIF obligations. Another example might be the building of a road that makes it feasible for agricultural land to be converted into land for residential development. As the agricultural land is developed, property tax revenues should increase. This can be effective in a period of rapid urbanization, but once the rate of urban growth slows, the rate of increase in demand for development land will also slow. As this scenario illustrates, the viability of TIF depends upon an accurate assessment of future demand for development land and demand by households and businesses for the developments created. It should be remembered that developers have a put option, in which they can walk away from proposed or actual developments by accepting the loss of whatever equity they have put into the scheme. However, a municipality has no such option: It has an ongoing commitment to service and repay loans secured under a TIF.

The TIF mechanism does not involve a rate increase. Rather, the mechanism relies on an anticipated increase in property values within the TIF district. When deployed effectively, this tool can make projects self-financing and expand a city's balance sheet. SAD revenues are considered more secure than those of TIF cash flows, because SADs capture a guaranteed percentage of current property value in addition to a portion of future increases. TIF districts, on the other hand, are financed by debt in anticipation of future increases in property value.

(e) Planning obligations and planning gain

Development requires consent from the municipality, as the local planning authority and the regulator of construction. With planning obligations (also known as planning gain), a developer cannot just apply for consent but must offer gains to the community. This could be to mitigate the development’s impact on the community by contributing to infrastructure improvements or by constructing specific infrastructure intended to alleviate problems that the development will cause. At this level, planning obligations can be regarded as an extension of the polluter pays principle.
However, the policy can go beyond this and become a means by which value from the development is captured by the community. Thus, the developer may be obliged to contribute towards an objective of the municipality, such as constructing affordable housing.

Planning obligations can raise a number of issues. Developers are likely to offer what is for them relatively economical for them to provide rather than what may be in the community’s best interests. It may be difficult for public officials to work out what a developer can really afford and, therefore, they may set their sights too low or too high. Bargaining is likely to be asymmetrical, with inexperienced negotiators from the municipality negotiating with the developer’s hardened commercial managers. Unless the municipality has good real estate business capacity, it is unlikely to be able to assess the potential profit a developer should make from the development and its scope for requiring planning obligations. Inequity between developers may also occur as the process is one of negotiation rather than being a set rate like a tax.

A developer may also seek to renegotiate obligations when the development is underway, on the grounds that they are no longer affordable and may even threaten to abandon proposed developments unless concessions are made. If development opportunities are put out to tender by a municipality, then developers may bid for these in the hope that they can renegotiate obligations later to reduce the burden on the grounds that the development is allegedly no longer to be viable. The result can be an inferior one to accepting a lower bid from another developer who actually delivers on its obligations.

**ii. Development-based instruments**

Development-based instruments occur when a public body owns rights over the land on which a development will take place. Developers are obliged to purchase these rights or else their proposed developments cannot go ahead. The public body is thus in the position to extract part of the profit that developers will make from projects.

(a) Disposal of public lands

When a public body sells surplus land, it can exercise a degree of control over subsequent development through imposing conditions, known as covenants, in the sales contract. These can be registered as a restriction in the land registry. Purchasers can face positive obligations, such as being required to carry out particular works or build infrastructure. They can also be subject to negative obligations, such as prohibitions on the development of agricultural land. Subsequent owners must apply to the public authority to have the restriction lifted. The public body will then be in the position to demand financial payment and/or require the developer to contribute to needed infrastructure, in return for doing so.

Public bodies can also sell land so that access to it is only possible via a ransom strip that they retain. Such a strip may be small, perhaps only a meter wide, but the purpose is to prevent utility connections being made to the site without the consent of the public body. Utilities will have to cross the ransom strip, which requires the permission of the public body. Such permission will only be forthcoming in return for financial payment or contribution to infrastructure. The use of devices such as restrictive covenants and ransom strips is only feasible if public bodies have the ability to enforce them. This requires good record keeping, the registration of public assets in the land registry, and the ability to prevent encroachment on public assets.

Public land can also be disposed of through leasing. This allows the public body to retain a long-term interest in the land as well as being able to exercise control through lease conditions. It can benefit financially through the receipt of fixed or variable ground rents. These rates can vary by a fixed percentage uplift each year or by periodic revaluation to market prices, which allows public bodies to share in the uplift in values. It is also possible to build into the contract the potential for claw back if the developer makes a greater than anticipated profit or for any overage to be shared between the landlord and the developer. The developer’s profit is the difference between the rent
charged to the end occupier and the ground rent paid to the public body. This profit has to fund the costs of development. The developer bears the risk that the development does not prove to be as profitable as expected or proves to be costlier to carry out, while the income payable to the ground landlord is shielded from these risks.

Public bodies can play a passive or active role in the development of surplus public lands. A passive role is when the public body advertises the land for lease and potential developers submit a bid which includes their development plans. The public body can choose between bids on the basis of best value and not just the highest price according to what the developer is prepared to contribute towards infrastructure, public realm, social housing, or other elements. Alternatively, public bodies can play an active role in development. This involves acting as the master planner of an area, establishing the design of the development and the uses of different areas. It can construct infrastructure, clean up any contamination, and divide up the land into lots. Developers then bid for individual lots and are required to carry out development in accordance with the master plan. This latter approach has merits if the land is not ready for development, for instance because of contamination. The public body can recoup the costs of cleaning up an area and constructing infrastructure from the sale or lease of the land and benefit from betterment.

(b) Joint developments

Joint developments are partnerships between two or more parties to develop a site. Public bodies can participate in joint developments with the private sector. Often in a development between the public and private sectors, the public body contributes land and the private sector capital and expertise, and they share the profits. A joint development could be on a greenfield site or a brownfield site that is being repurposed. The project would be expected to

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### LEASING LAND TO BUILD MUMBAI’S BANDRA KURBA COMPLEX

Long-term leases helped finance infrastructure for a new business district

The Bandra Kurla complex is intended to be a new central business district in Mumbai to relieve pressures elsewhere. The Mumbai Metropolitan Region Development Authority (MMRDA) was appointed in 1977 as the Special Planning Authority for the project’s development. The authority reclaimed marshland near the Bandra-Kurla road and channelized the Mithi River for the development and construction of a large office hub. While it initially collected rents and development fees from developers, starting in 2003 it adopted a policy of granting 80-year leases to developers, allowing them to undertake development.

Leases were sold through auction and have raised the capital needed for infrastructure development, including roads, rail links, and bridges, and to finance the Mumbai Urban Transport Project. Land is released once existing sites have been absorbed by the market. Developers assume the financial responsibility for bringing their development to market.

### HOW INDIA’S RAILWAY LAND DEVELOPMENT AUTHORITY MONETIZES LAND

A multifaceted development strategy

The RLDA was established in 2006 as a statutory authority to manage railway lands that were not expected to be employed for operational purposes by the Zonal Railways in the foreseeable future. Its mandate is to develop these lands for commercial use to generate funds for Indian Railways, which initially identified about 43,000 hectares of vacant land and multi-functional complexes, redundant railway stations, and colonies for commercial development.

RLDA monetizes land by leasing it to private developers in its as-is state or after self or joint development. In the former case, RLDA leases lands for a period of 45, 60, or 90 years in return for an upfront lease premium. The authority carries out redevelopment of railway stations and colonies through Special Purpose Vehicles, Public Private Partnerships, and joint ventures. Before putting the land out for bids, it carries out works such as the removal of railway structures, rehabilitation, resolving title issues, obtaining consents from local authorities, and removing encroachments.
provide the infrastructure necessary for development. A joint development could also be to increase the density of development. This approach has been used in the United Kingdom by Network Rail (the owners of railways tracks and main railway stations) and Transport For London (the owners of the London Underground) to exploit air rights above railway stations. These ventures have been used to raise finance for railway improvements and also as part of projects to upgrade stations.

(c) Land pooling and readjustment

In these schemes, landowners pool their land in order to enable development to proceed. They are also likely to contribute a portion of their land so that it can be sold to raise funds for the development and infrastructure costs. In some countries, landowners are obliged to hand over a proportion of their land to the municipality in areas that are zoned for development to contribute towards the costs of the infrastructure. This process is designed to make development feasible and, therefore, uplift the value of owners’ remaining land.

(d) Sale of Development Rights

Through their control of land use planning and zoning regulations, municipalities have the power to affect the market value of real property assets. They are usually the body in which rights to change permitted uses of land have been vested and can thus sell permits to monetize the value created by development. They can also adjust regulations by, for example, levying fees in exchange for allowing increased density (“up-zoning”) or for rezoning from low-value to higher value uses. Developers may be able to purchase certain rights if they provide public benefits, such as contributions to infrastructure or the provision of public realm areas or social housing. They may also be able to obtain transferrable development rights, which can be exercised in other areas, in return for preserving historic buildings or environmentally sensitive areas.

Development rights can be sold through an auction system, whereby the municipality sells the rights to develop in a specified geographic area to the highest private sector bidder. Mumbai, Sao Paulo,

| Land readjustment is used in South Asia for urban expansion and farmland consolidation, and in India for post disaster reconstruction. Each country in the region has a different process for how these projects are initiated, as well as landowners' obligations and how they are compensated for lost land. In private-led projects in Bangladesh, developers submit a detailed land use plan and at least 75 per cent of owners must give their consent for the project to move forward. When local governments initiate land readjustment, participation is mandatory. 30 per cent of the area is reserved for public improvements and infrastructure. After readjustment, landowners receive an area proportional to their original holdings. In Pakistan, public authorities and private developers can initiate readjustment in urban areas. 20 per cent of the readjusted plots are reserved for public improvements. Landowners receive plots in proportion to the value of their original holdings and typically retain 10 – 20 per cent of the original land area for commercial plots and 25 per cent for residential plots. In India participation is mandatory when a public body undertakes land readjustment, and land is expropriated when owners resist. 23 – 50 per cent of the land is used for public improvements. Owners receive plots with an area proportional to their original holding, with compensation being paid where the new plot is less valuable than the original one. In each country, there are challenges in the form of the legal framework, the state of land records, resistance by landowners, and the risk to owners stemming from the state of the property market. The process can work to the disadvantage of tenants, informal owners, and smaller owners.

and New York City have all sold development rights in certain geographic areas and used the revenue from those sales to fund public improvements. Development rights may be tradeable so that successful bidders can sell them, as on the stock exchange in São Paulo, Brazil.

The availability of unused development rights does not necessarily confer market value. When the real estate market is depressed, unused development rights will command less value than when market demand is robust - and may even have no value at all. Even if the property market is buoyant in a country as a whole, there may be localities which developers find unattractive. As a result, policies that may work effectively in certain municipalities may prove ineffective in these localities due to lack of demand for property.

The municipality’s ability to control development effectively, so that there is no illegal or informal construction, is implicit in the sale of development rights. Illegality is not solely a question of whether a building has secured the necessary development or construction consents before it is built. It can also include illegal densification, such as when additional floors are added to high-rise buildings, or when a change of use takes place without consent, such as the conversion of ground floor apartments into restaurants or shops. Municipalities’ capacity to control illegal development is undermined if the land registry is not a comprehensive record of what exists on the ground.

Good governance and the rule of law are also essential prerequisites for the sale of development rights, including spatial planning and the control of construction, the fees and charges developers pay may end up in the hands of corrupt officials or politicians rather than the municipality’s budget.

### 6.3 Prerequisites for the Use of Value Capture Instruments

Table 6.3 sets out the constraints over the use of the various land value capture instruments. Four overarching conditions need to be present before any of the instruments can be used effectively.

1. The ability to control development and changes of land use so that illegal or informal development does not take place. If these happen, developers can evade land value capture instruments.
2. A comprehensive register of properties so that all the properties affected by an improvement can be identified.
3. The technical capacity to value properties at their market values and to estimate the profits that developers are likely to make from proposed developments. This requires qualified valuers who have access to a comprehensive and accurate record of transaction prices.
4. Officials with the ability to negotiate on equal terms with developers based upon an understanding of the value of completed developments, the profits developers can expect to make, and the capacity of developers to make payments.
## Land Value Capture Instruments and Prerequisites

<table>
<thead>
<tr>
<th>Land Value Capture Instruments</th>
<th>Prerequisites</th>
</tr>
</thead>
</table>
| Property taxes (recurrent or sporadic) | • Comprehensive land records and valuation characteristics  
• Technical capacity to value properties at their market values  
• To be capable of being levied on market values  
• Revaluation occurs regularly  
• Robust and rigorous system for checking accuracy of declared prices compared to market values |
| Betterment charges and special assessments | • Ability to assess the benefit owners receive from the improvement |
| Registration or land use changing fees, and development, infrastructure, and connection levies. | • Ability to assess the market value of the properties being registered  
• Ability to assess the benefit to owners from permits granted  
• Ability to assess the benefits to owners from infrastructure |
| Tax increment financing | • Ability to levy annual (recurrent) property taxes on owners based on the property’s market value |
| Planning obligations, planning gain | • Ability to assess the impact of a development on the community and what developers should offer in terms of mitigation under the polluter pays principle  
• Ability to estimate the value of the completed development, the profits that developers stand to make, and what developers have the capacity to pay |
| Disposition of public land through sale or ground-lease, joint development, sale of development rights, or land pooling/readjustment | • Ability to estimate the value of the completed development, the profits that developers stand to make, and what developers have the capacity to pay |

### Table 6.3: Land value capture mechanism constraints

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Weak real estate market</th>
<th>Lack of land use controls and regulations</th>
<th>Deficient land cadastre/records</th>
<th>Insecure property rights</th>
<th>Limited valuation capacity</th>
<th>Limited access to capital markets</th>
<th>Limited fiscal powers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property taxes</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Betterment levies</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Registration, development, connection fees, infrastructure levies</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Tax increment funding</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Disposition of public land, through sale or ground-lease</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Joint development</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Sale of development rights</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Land pooling/readjustment</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Planning obligations, planning gain</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

● Prohibitive challenge (regulatory/systemwide changes are prerequisite)  
○ Limited systemwide changes needed. Implementation possible in near term
6.4 Conclusion

Land-based financing and land value capture mechanisms have relative advantages and disadvantages depending on the project and market circumstances. They also depend on specific market, institutional, and regulatory pre-conditions to be viable and function effectively. There needs to be a certain level of institutional capacity, particularly the ability to prevent illegal and informal development and changes of use; comprehensive records of ownership so that those to be targeted by land value capture tools can be identified; the ability to assess the market value of properties in order to identify owners’ ability to pay; and the capacity to negotiate on equal terms with experienced private developers.

A variety of factors also influence which mechanism will be the most appropriate. This selection will depend on, among other factors, a municipality's policy goals, fiscal situation, its ability and willingness to take on risk, real estate market conditions, and the institutional and regulatory capacity to implement each tool. Crucially, the authority must have the valuation capacity to form a precise judgement of the value uplift that is likely to result from the infrastructure investment, and therefore the scope for value capture.

Land-based financing tools can be quite useful to broaden funding options for infrastructure investment. However, they require specific regulatory, market, and institutional conditions to function effectively, and are not a panacea to the problem of insufficient funds available for infrastructure investment.
Access to Land in Transit-Oriented Development
7. Access to Land in Transit-Oriented Development

7.1 Introduction

TOD has been a feature of urban planning and development for centuries. It is a form of development designed to create more accessible, livable, and well-connected cities and metropolitan regions. Whereas the nineteenth century saw the development of cities shaped by suburban railways, horse buses, and tram public transport, the twentieth century led to the development of cities reliant on roads and private automobile use. The growing problems of traffic congestion, urban sprawl, extended journey to work times, and inner-city decline have resulted in a renewed interest in TOD to support the revitalization of cities.

Cities in South Asia are at the beginning of their TOD journey. They have gone through an awareness phase that started last decade and then translated in the second half of the decade into national-level policies. Metropolitan authorities have begun proactively investigating such an approach as part of their expansion planning programs.

Access to land is paramount for successful TOD project development. This issue causes delays and cost overruns on many TOD projects. Gaining access often involves acquiring, consolidating, assembling, and reassembling many small parcels of land to develop transport corridors, hubs, station areas, multi-functional employment and activity centers, and to accommodate the consequential displacement and relocation of residents and businesses.

Many South Asian TOD projects experience difficulties gaining access to land and applying principles such as land value capture. Property acquisition is just one part of securing access to land for TOD projects: Ownership, tenancy, site definition, severance, and compensation issues in securing rights and assembling many parcels of land for construction have plagued the implementation of TOD projects in the region. These issues are linked to broader matters of planning, gaining temporary access and use of land adjacent to infrastructure corridors for construction, land for quarrying of materials, temporary use of land for bypasses during construction, electricity easements, land for relocation and construction of housing and business premises, and health, safety, and security issues within and outside proposed construction zones.

An important consideration in planning TOD projects is the creation of opportunities to realize value-added and capture potential from projects to improve revenue flows, cover project costs, and contribute to the longer-term availability of other public goods and services. TOD projects should be designed to support wider corridor zone development and redevelopment, PPPs, and transfer development agreements, and to increase the share of returns to public revenues and benefits from amenities. These matters are critical to open future land access opportunities and stimulate investment and economic development.

This chapter provides practical guidance for World Bank staff to address issues of access to land for TOD-funded projects. It describes the status and challenges of access to land for TOD projects in South Asia, land administration and management requirements to access land, and the need for good project land governance arrangements before and after the commencement of the projects. It expands on the TOD Implementation and Resources and Tools.
(WB 2021\textsuperscript{33}) developed by the World Bank to guide the implementation of TOD. References and case studies provide additional information for readers to gain more information on good practice access to land for TOD projects.

7.2 TOD and Types of Projects

The concept of TOD is understood and applied in many countries, albeit with varying degrees of success. There are many definitions of TOD projects. The following has been adopted as a working definition:

\begin{quote}
“Integrated urban places designed to bring people, activities, buildings, and public space together, with easy walking and cycling connection between them and near-excellent transit service to the rest of the city. It means inclusive access for all to local and citywide opportunities and resources by the most efficient and healthful combination of mobility modes at the lowest financial and environmental cost and with the highest resilience to disruptive events. Inclusive TOD is a necessary foundation for long-term sustainability, equity, shared prosperity, and civil peace in cities.”
\end{quote}


\textsuperscript{34} Institute for Transportation & Development Policy, \textit{What is TOD}? Retrieved from https://www.itdp.org/library/standards-and-guides/tod3-0/what-is-tod/##:~:text=TOD%2C%20or%20transit%20oriented%20development%2C%20the%20rest%20of%20the%20city
7.3 Main Types of TOD Projects

TOD projects vary in type, size, scope, scale, and mix of transportation modes. Overall, the purpose of TOD projects is to connect multiple nodes and clusters of economic, social, and personal activities in urban areas and metropolitan regions through a range of public transport systems and services. Successfully designing and developing a TOD project requires a wide range of considerations beyond planning and design, acquiring land and property rights, and well-managed construction.

TOD projects should aim to recover, as much as possible, their development, construction, and operational costs. TOD projects is should also be catalysts for development or redevelopment, value-adding, and value capture to maximize public benefit opportunities.

The scale of TOD projects varies significantly in the South Asia Region. They can be small, involving station development in a local precinct (See case study Box 1), or extensive projects like the Ahmedabad Bus Rapid Transit System (See case study Box 2). Figure 7.1 shows the scope and scale of TOD projects. Most regional projects involve corridor rail or bus transit systems.

7.4 Description of the Types of TOD Projects

There are seven broad types of TOD projects. Depending on scope and scale, these may be single-mode or include a range of mixed-mode transport and facilities. The degree of difficulty associated with issues related to access to land is affected significantly by the scope, scale, and type of TOD project.

**Network TOD projects** occur at different scales of development. Large-scale projects will involve connecting rail, ferry, and bus transit corridors at regional and subregional hubs of economic, social, logistics, and intermodal transfer facilities. They foster regional or city scale accessibility to jobs and affordable housing. At a local area level, they may involve connecting neighborhoods or local development corridors to transport hubs that form part of an arterial corridor or region-wide transportation network.

**Corridor TOD projects** involve improving, widening, and developing roads, railways, busways, and ferry terminals to enhance access to mixed-mode transport facilities and services along arterial development corridors within cities and regions. These are large-scale, expensive projects involving extensive land.
acquisition, infrastructure development above, at, and below ground level, relocation of people, and adjustments to land. They include a vision for urban development along the corridor.

Precinct or Local Area TOD projects involve improving public access to new developments, redevelopments, or regeneration of residential, industrial, and mixed-use areas to provide better access to services and single or mixed modes of transport. TOD projects may include the development of pedestrian streets and precincts, cycleways, local area networked shared transport, and moped corridors and parking spaces.

Cluster TOD Projects involve the development of transport and centers of associated economic and social activities linked to transport nodes and hubs via a mix of routes, places, and accessways. Projects may include elevated, surface, and underground infrastructure development to connect nodes of activities.

Hub TOD projects include a mix of transit and non-transit activities connected to a transport, logistics, or communication hub, which in turn facilitates connections to other nodes and hubs. Hubs include multi-modal seamless transport services facilities, which may be located above, at, or below ground level.

Nodal TOD projects involve the development of stations, intermodal transfer facilities, terminals, and other types of key infrastructure that support improved access to the movement of goods, services, and people. Nodal TOD projects are normally single-entity developments that may or may not be connected to a wider cluster or network system of activities. They may include surface and underground developments.

Site-level TOD projects involve the development of amalgamated parcels near a rapid transit station. They involve quality transfer to stations and other types of key infrastructure that support improved access to the movement of goods, services, and people. Site-level TOD projects are normally single-entity developments driven by land availability, and which may or may not be connected to a wider cluster or network system of activities. They may include surface and underground developments.

7.5 Factors Driving the Trend Toward TOD

A range of factors drives interest in TOD projects by governments across the region. These include:

- Rapidly growing traffic congestion in the inner city and metropolitan regions, which is slowing journeys to work and logistics systems, adding to the cost and inconvenience of living and working in large cities.
- The need to improve access to higher density developed areas to capitalize on agglomeration economies and open opportunities for revitalization and regeneration area projects.
- Interest in capturing part of the value stemming from improved accessibility to finance urban development.
- The need to reduce the energy costs (especially non-renewable fuels) of transport in cities and metropolitan regions.
- A growing trend towards inner-city living and revitalization, with closer proximity to work, easy access to community facilities and services, and walkable lifestyles separated from traffic.
- Changes in family structures so that there are more singles, as well as an aging population needing easy access to care and health services.
- Growing national support for smart city growth.
- A new focus of national and state government on urban development policy.

7.6 The Rationale for Supporting TOD Projects

Transit Oriented Development is promoted as an “exciting fast-growing trend in creating vibrant, liveable, sustainable communities. It creates compact, walkable, pedestrian-oriented, mixed-use communities centered around high-quality train systems. It is integral to contemporary regional planning, city revitalization, suburban renewal, and walkable neighborhoods
combined. It is also seen as a sustainable solution to the serious and growing problems of climate change and global energy security by creating dense, walkable communities that significantly reduce the need for driving and energy consumption35.

TOD is associated with land value capture and strongly linked to sustainable urban development and smart cities36. It is supported by principles that encourage an integrated approach to urban land-use planning, transportation planning, and economic and social development. “It means inclusive access to local and citywide opportunities and resources by the most efficient and healthful combination of mobility modes, at the lowest financial and environmental cost, and with the highest resilience to disruptive events. Inclusive TOD is a necessary foundation for long-term sustainability, equity, shared prosperity, and civil peace in cities.”37

There are many studies, guidelines, and toolkits that highlight the important benefits generated from TOD38. In South Asia, TOD offers an opportunity to revitalize and reduce the gridlock in large cities and to sustainably shape urbanization. High congestion levels, poor access to transport and urban services, and constraints within logistics networks has resulted in declining productivity, de-industrialization of inner-city areas, and the relocation of firms and industries to industrial zones and business parks on the urban periphery. TOD projects can help to revitalize these areas. In response to changes in employment patterns and journeys to work, TOD projects are becoming more polycentric, leading to changes in overall metropolitan planning. The planning and mix of TOD projects require a balance between inner-city corridor-oriented development and polycentric infrastructure and service networks that improve metropolitan-wide internodal and intermodal connectivity.39

### TABLE 7.1: High-Quality Transit and TOD Benefits

<table>
<thead>
<tr>
<th>Benefits of TOD projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits of improving mobility options for non-drivers</td>
</tr>
<tr>
<td>• Improved economic opportunities</td>
</tr>
<tr>
<td>• Equity objectives (benefits disadvantaged groups)</td>
</tr>
<tr>
<td>• Option value</td>
</tr>
<tr>
<td>Benefits from reduced automobile traffic</td>
</tr>
<tr>
<td>• Reduced traffic and parking congestion</td>
</tr>
<tr>
<td>• Road and parking facility cost savings</td>
</tr>
<tr>
<td>• Vehicle cost savings</td>
</tr>
<tr>
<td>• Reduced chauffeuring burdens</td>
</tr>
<tr>
<td>• Traffic safety</td>
</tr>
<tr>
<td>• Public fitness and health reductions</td>
</tr>
<tr>
<td>• Energy conservation and emission reductions</td>
</tr>
<tr>
<td>Benefits from more compact, transit-oriented development</td>
</tr>
<tr>
<td>• Improved accessibility</td>
</tr>
<tr>
<td>• Preserves open space and reduced costs of providing public infrastructure and services</td>
</tr>
<tr>
<td>• Agglomeration efficiencies increase economic productivity</td>
</tr>
</tbody>
</table>

Source: Litman, 2018


39 “Travel patterns have changed for good. Transport systems should, too.” The Economist, 19 May 2022, p. 3.
TOD can connect the different nodes, elements, and networks of activities that occur in South Asian cities. It can benefit the citizens of the region by connecting where they live with their work, providing them with enhanced access to daily activities, and improving the livelihoods, network systems, and prosperity of cities in the region. The improved agglomeration economics it creates can result in wider economic benefits, as firms can locate themselves close to critical infrastructure and supply chain services, provide better access to employment opportunities, and deliver greater opportunities for innovation.

### 7.7 TOD Supportive Principles

TOD can be supported and encouraged by applying the following principles for good transportation, open spaces, and built environment planning and development:

- Train stations need good access as they are a prominent feature of town and urban centers
- Pickup, drop-off, park and ride facilities at the train, bus stations, and ferry terminals
- Collector-support transit systems, e.g., streetcars, light rail, buses
- Regional and local transport nodes and hubs containing a mixture of uses nearby (office, residential, retail, civic facilities)
- Design of pedestrian areas to enable the free safe flow of movement
- Urban parks and open spaces
- High density, walkable district in a 10-minute walk circle surrounding the train station
- Compact development and housing diversity

### 7.8 Factors Affecting Access to Land

A broad range of factors and issues affect access to land for TOD projects. Many of these are not well documented and may require extensive investigation, consultation with owners and occupiers, and an understanding of customary land law practices.

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FIGURE 7.2: Planning and Implementation of TOD

Coordination requirements through the TOD planning process

Regional Plan/Vision
- Inventory of Potential Development/ Redevelopment Sites
- Finalize Transit Route & Stations
- TOD Plan / Strategies & Policies at selected scale
- Create TOD-supportive Regulatory Framework
- Identify Investment Gaps & Propose Innovative Funding Mechanisms

Assess Potential Projects in Corridor

City/ Regional Scale
- Refine Station Designs for Transfers & NMT
- Confirm Street Infrastructure to be Changed
- Finalize Last Mile Connectivity Options

Corridor
- Discuss Phasing of Development & Contribution to Infrastructure/ Incentives Needed
- Monitor Progress Compared to Plan

Station Area
- Multi-modal Transport Integration & Station Accessibility Plans
- Discuss High Potential Development/ Redevelopment Sites within Station Areas

Site Level
- Refine TOD Corridor or Station Area Plans
- Develop Branding & Marketing Strategies

TOD projects involve a multiplicity of stakeholders, each with distinct roles in planning and implementation. Success requires aligning the interests of transport and urban planners, economic development experts, real estate developers, and the community located near such projects. While transit and basic infrastructure development (utilities, roads and sidewalks, public space) are developed under the oversight of public authorities, private developers construct the majority of TOD-related investments (residential, offices, shopping facilities) based on masterplans and land availability.

Identifying rights that apply to land needed or affected by TOD development presents difficult challenges during project design. During that critical phase, a careful assessment must be made of existing rights to all land and property that needs to be acquired or is impacted by a TOD project. Land rights for TOD projects can be the subject of legal disputes, so it is critical that all elements of land administration and management are fully investigated and documented.

The following factors require careful investigation and documentation during project design and implementation.

**Occupational Rights** to land in SAR are often conveyed to occupants of land without formal documentation. This is particularly relevant to informal settlements on public and private lands occupied without objection over a long period. In some cases, claims for adverse occupation rights may be in process in the court system. Locating such cases is difficult but should be flagged for investigation as early as possible in TOD project planning and design.

**Tenure (Rights)** involve freehold, leasehold, or other arrangements which may or may not be registered. Where well-managed land registries exist, confirming tenure status is not an issue. But when land records are managed poorly, a lengthy investigative process may be necessary to establish tenure status.

This process can be complex in SAR, as ownership rights may belong to institutions such as co-operatives, with those affected having secure tenancy rights or no formal tenure but a secure supply of electricity, water, or sewerage. Residential tenancy agreements are a form of tenure. In SAR, many of these are informal or semi-formal and are seldom registered unless they are at the high end of the property market or involve a long lease. Tenancy rights – especially rent control – can significantly affect acquisition and compensation claims when developers are gaining access to land. Occupancy of property subject to rent control is a valuable right for the tenant but reduces the freehold value, thus affecting the balance of compensation payable to owners and occupiers.

**Land-use Rights** affect the uses and value of the land that may need to be acquired for a TOD project. In many cases, the land to be acquired or affected by a TOD project is not used for the purpose for which it was zoned. Occupants of land and property in dense urban areas tend to maximize land use, thus increasing its value – especially when negotiating compensation over land that must be acquired for a TOD project. Some governments will use land-use planning development rights to set a value on land for compensation purposes, arguing that existing land-use activities are illegal or exceed the intensity of use permitted by the building code. This can lead to the undervaluation of land and result in prolonged negotiations and litigation to arrive at a fair market value for land procurement.

**Liens** are a right to keep possession of property belonging to another person until a debt owed by that person is discharged. In SAR, many properties and lands have unregistered private liens imposed upon owners or occupier, who are not always known. The extent of net debt is often unknown but is often quite high. Liens are a hidden impediment to gaining access to land: If not handled carefully, they can have unintended adverse consequences on occupants of land affected by TOD projects.

on, over, or above specific parcels, land, or property. They also include many private rights of access, such as those on which farming may depend, and can be seasonal. Many easements are not registered formally on a property title but are documented by utility agencies or in private land records. When registered, they are not necessarily recorded on both the property over which they can be exercised and that which has the power to exercise them.

Poor land records management by utility agencies and land registries makes the discovery of easements difficult. Common law easements that may be implied or prescribed by using land for a long time without secrecy, permission, or force need careful attention. India’s Easements Act of 1882 addresses problems associated with continued easement access to land affected by development projects. However, issues around access to small pockets of severed land need clarity when dealing with TOD development projects.

Other Rights such as airspace development, water, and construction materials resource extraction, construction transport and storage, tunneling, and restriction on development near defense land are matters that may also require investigation to provide clean access to land for TOD projects. There may also be rights to harvest certain products, forage, or use land for seasonal grazing that are exercisable by those who are not owners of the land. TOD development can also have adverse impacts on rights to use property outside of the corridor itself, for instance, as a result of noise or pollution.

7.9 Physical Access to Land

A range of physical factors affect access to land involving TOD projects. These may impose restrictions on land use and result in other impediments during construction and restrict the use of rights and the enjoyment of the use of land and property adjacent to projects once completed. In some cases, this will involve temporarily depriving citizens of rights, such as access to land or temporary relocation or closure of a business, which will need to be compensated.

**Topography** or terrain, especially slope, affects the accessibility and overland water flow rights on to adjacent land and properties during and after the construction of projects. Additional acquisition or flood mitigation works on impact-affected land may be necessary if this is severe. In extreme cases, it may involve compensation or significant acquisition or stabilization of land and property along water courses and streams where flood flows may be affected by the construction of a TOD project. In other cases, it may affect rights of navigation and use of waterways.

**Existing development** close to or within a TOD construction zone may be heavily impacted or damaged by work activities. Structures may need to be removed or existing use rights temporarily restricted, as they may block site access or prevent occupants from enjoying the full use of land rights. The developers may consider the acquisition, temporary prohibition, or compensation for premises taken or vacated by owners or occupants to gain unrestricted access to land during construction.

**Restricted Road Access** to land during and after construction affects property rights, which may call for compensation for landowners or adjustments to the land itself. Temporary roads and accessways, as well as temporary works, such as site compounds, are common features of TOD projects. These require the agreement or purchase of rights on crossing or using land and possible compensation for loss of use.

7.10 Land-use Planning and Development

Land-use planning and development rights affect many aspects of compensation, betterment, and continuing land-use rights during and after construction. These matters require careful consideration during project preparation and cost estimates to determine how much money should be allocated to access the land.

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**Land-use planning** is important for managing and fostering the orderly development of cities and metropolitan regions. The effectiveness of planning varies widely across the SAR, with many local governments casting a blind eye or lacking the capacity to deal with developments that illegally violate zoning schemes and development control requirements. Many issues around land-use rights changes invariably end up in the court system and can involve protracted litigation around compensation and adjustments. It is essential that during the planning stages of TOD projects, design teams are fully cognizant of the requirements of current land-use planning and how they may affect compensation and design issues.

**Transferable Development Rights (TDR)** are voluntary, incentive-based tools that allow landowners to sell development rights from their land to a developer or other interested party, who can then use these rights to increase the density of development at another designated location. They have been applied to TOD projects as an incentive to extract public goods from major projects in India.44

TDR can be used to reduce or offset compensation costs. Their value is variable and depends on the level of demand in the property market. They can also be used to enhance the public goods provided by TOD projects through the construction of more public open spaces or facilities that enhance the non-economic value of projects, such as the preservation of historic buildings and environmentally significant habitats. Their use depends upon the ability of the local planning authority to control unauthorized development in the receiving area.

**Development Approvals** can impose significant constraints on access to land for TOD projects. In most SAR countries, the issuance of development approvals and permits is conducted independently by multi-level government agencies and authorities. This significantly adds to time delays and project costs, which can substantially impact land access and use rights. In the case of some large-scale projects, it may be sensible to set up a separate authority to allow integrated approval and permitting on all aspects of the project to streamline SAR countries’ very complex and bureaucratic procedures for gaining development approvals.

### 7.11 Land Acquisition

Most TOD projects commence before all lands necessary for the project have been secured, especially for later construction phases. However, not all land for TOD projects needs to be acquired. In many cases, alternative means of acquiring access to rights linked to turnkey or long-term leasing arrangements may be a favorable alternative to outright purchasing land. In India, the primary means of gaining access to land are land acquisitions and land pooling/readjustments45. There may also be opportunities for swaps involving transferable development rights as compensation for land severances. This may call for consideration of land banking to enable exchanges to be made as an alternative to full compensation for land acquisition46.

Land acquisition, or restrictions on land-use rights, inevitably involves consideration of value and fair, equitable, and timely compensation. It is unacceptable for affected persons to be denied due compensation because the budget allocated for the TOD was inadequate or has been exhausted by cost or time overruns.

### 7.12 Governance: A Core Problem Affecting Implementation of TOD

The issues affecting access to land are not unique to TOD projects. These issues often stem from a complex

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set of issues and problems related to governance arrangements that shape the design concept, goals, objects, actions, and expected project outcomes. In the case of TOD projects, these problems are often not addressed comprehensively or sufficiently early in the project design.

In fact, land governance for TOD projects is a subject that is not well documented. The World Bank has investigated this: “Land governance is about the decisions made about access to land and its use, how these decisions are implemented and enforced, and the way that competing interests in land are managed.” Therefore, governments involved in TOD projects must have a clear set of functions, mandates, and institutional framework and government environment are essential.

7.13 Multiple Agencies Responsibility for Land Associated with TOD

A diverse set of stakeholders is often responsible for conferring and managing rights on the use, purchase, and sale of land and property linked to TOD projects. These responsibilities often fall to various ministries and agencies at multiple levels of government, as well as public and private organizations. This can result in overlaps, and sometimes conflicts, in responsibilities between public agencies, which may have conflicting agendas and different levels of political power. Therefore, governments involved in TOD projects must have a clear set of functions, mandates, and institutional framework and government environment are essential.

**LAND GOVERNANCE FOR TOD IN JAKARTA**

A dynamic-actor network analysis tool helps build one of Asia’s largest public transit systems

The Jakarta Metropolitan Area (JMA) has a population of 28 million and is growing at a rate of 1.47% per year. It has become a city of cities with poor connectivity between core business centers and industrial areas, with one-third of the region’s population living in Jakarta itself. In 2010, only 56% of commuter trips in Jakarta were by public transportation.

As a result, the city, provincial, and central governments began the development of one of the largest public transit systems in Asia. By 2030, the Jakarta Mass Rapid Transit (MRT) system is expected to stretch across over 108 kilometers. As part of the Master Plan for the metropolitan region, 13 TOD special zones are planned; one of the largest multi-modal projects is around Manggarai Station, a large rail station in the southeastern part of Jakarta.

The area surrounding the station contains a complex mix of land uses. An old neighbourhood, with mature street trees along the roadside, lies on the northern part of the Manggarai area. Other areas are covered by mixed land uses, including government offices, trade and services, settlements, and other public facilities. Some land assets are owned by the Post Office and the Indonesian Military Force (TNI). Developing integrated land use, public transport, and intermodal facilities at and surrounding the station represented a significant challenge.

The key question for the project was what kind of TOD governance arrangement should be designed to bring together the project’s many stakeholders, particularly for land use and acquisition. The project faced problems affecting stakeholders in achieving their goals, priorities, and interests. A dynamic actor-network analysis (DANA) tool was developed to bring together the various stakeholders to sort out competing interests and land acquisition requirements necessary to meet the project’s needs. The DANA is a systematic presentation method that can assist in capturing and resolving the complexities of cognitive and political issues involved in the design of TOD projects. It was instrumental in determining the landholders and other stakeholders involved in the project, their vested interests, the mobilization of resources, and the formulation of land-use policy and acquisition.


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organizational responsibilities that are well-defined by legal, policy, and administrative instruments, as well as coordination arrangements so that conflict resolution processes are in place during the project design phase.

Many problems related to land for TOD projects are linked to functional agency responsibilities and interactions. These include planning and strategy, land administration and management, and structuring of finance instruments used to secure land and fund the development and operation of TOD projects. These functions can be spread across a range of public agencies and sometimes involve partnerships with businesses and multiple levels of government. There can also be complex long-term leasing arrangements between agencies and state-owned enterprises.

Project governance arrangements for engaging multiple stakeholders on land matters are often imprecise or poorly designed. There is an urgent need to improve governance structures and regulations for gaining access to land by designing clear lines of communication with the public and private sectors and ensuring acceptance and compliance with TOD fundamentals. Design and construction requirements are inflexible to political, economic, technological, and budget management cycles, and there can be problems in accommodating them. Planning and strategy assumptions and sectoral approaches to setting project goals, planning, and strategy often do not achieve targeted outcomes.

Mapping public agencies’ land management, administrative governance reporting, and coordination responsibilities is a complicated but essential part of overcoming the many pitfalls associated with engaging all responsible agencies and stakeholders in the land acquisition or reassembling process for TOD projects. These difficulties were highlighted by a case study that analyzed the construction of Delhi’s airport metro express. The Project Management Institute also found the primary cause of project failure was a lack of clearly defined objectives and milestones to measure progress, which was linked to poorly defined project governance arrangements and discipline in planning, implementation, and life-cycle operation strategy.

Few countries have well-developed and integrated land information and management systems where the functions, responsibilities, mandates, and other interests related to access and encumbrances on land are well-documented. A more holistic assessment of the life-cycle governance of projects is required to address land access and value issues.

### 7.14 Framework for Analyzing TOD Land-governance Functions and Responsibilities

There are six broad governance functions that require careful consideration during the TOD project cycle to gain access to land: planning and strategy for land acquisition, land rights acquisition, financing land procurement, access during construction, services delivery, and access to land resources, such as water and materials. These can be mapped, and information incorporated into the design and implementation of TOD projects. Many functions and responsibilities will change or be transferred to other agencies and levels of government during the lifecycle of TOD projects.

There are also four broad operational elements of land governance. Depending on the TOD project’s nature, these elements should consider the system of government, laws, administration, customs, and practices in regions relating to access to land, and adapt accordingly. Many land governance functions and responsibilities are often not considered with sufficient care during the project cycle’s concept and project information document (PID) preparation phases.

**Mandates:** These requirements are imposed on public and quasi-public agencies and are delegated


to authorities and other bodies or organizations for the conduct of public business concerning the formulation and implementation of policies related to land management and services. These requirements need identification and careful research during TOD conceptual design as they have a significant impact on project design, cost, and implementation.

**Organizations:** The names, structure, and reporting lines of organizations and agencies, including subsidiary bodies and public and private delegates, responsible for decision-making to deliver public goods linked to land services for projects. These agencies and organizations are linked to multiple levels of government and jurisdictions, and overlapping functions and responsibilities are common.

**Processes:** The procedures, practices, and courses of action for implementing policy and administrative work tasks to deliver land, products, and services for TOD projects. These processes may include planning, project management, financial and resource management, procurement, monitoring, and evaluation. Many processes operate independently, which makes concurrent processing of access to land issues difficult, expensive, and time-consuming.

**Capacities:** These are the human resources, equipment, infrastructure, technologies, finance, and information available to perform governance functions concerning land to support the design and implementation of TOD projects. Many agencies and organizations involved with TOD projects suffer from a shortage of resources, funds, and skills to handle land issues. This challenge can be overcome by creating land administration teams or resource-sharing arrangements of staff, information, and technology.

Establishing a land governance management system is crucial for TOD projects, and a significant issue facing many projects in SAR.

### 7.15 Added Complexity of Gaining Access and Assembly of Land for TOD Projects

TOD projects are different from most other projects associated with access to land. TOD projects require the assembly or acquisition of many parcels of land along dedicated transportation and utility corridors, as well as transportation hub interchanges and nodes. Unlike projects related to housing, solar energy, or public utility sites for water and waste water management, there are often hundreds of small parcels of land to be acquired or adjusted to build a project. All land in the dedicated TOD corridor must be secured by acquisition, exchanged, or pooled through different arrangements.

Dealing with many tracts of land, ownership, and legal covenants significantly affects the time and cost of gaining access to land for TOD projects. Issues related to absentee ownership, disputes, overlapping rights and claims, and unforeseen legal impediments occur less often with utility projects that involve larger parcels of land with less complex tenure issues.

Many TOD projects have experienced significant litigation around land issues post-construction\(^\text{54}\). These issues relate to land acquired or impacted by the project's construction, which often continue to arise well after the project is completed and operational. Claims can relate to unforeseen impediments imposed upon land markets and the unrealized potential of land value capture, as well as disputes related to compulsory acquisition, including detrimental effects on land not taken. Incomplete documentation and non-compliance with planning, legal, development approval, restoration, and compensation involving non-monetized matters can also lead to post-construction land disputes. These factors can impose substantial ongoing operational costs and impact the viability of TOD projects\(^\text{55}\).

South Asian countries experience significant litigation on issues related to the land in the post-project construction phase. These disputes either do not proceed or take a long time to be addressed by the court system\(^\text{56}\). There are few documented case studies of


\(^\text{56}\) TCRR, Transit-Oriented and Joint Development: Case Studies and Legal Issues, in Legal Research Digest 36. 2016, National Academy of Sciences, Transit Cooperative Research Program Washington, DC.
court rulings. Citizens’ income and socio-demographic factors severely constrain their access to the legal system to bring litigation against project proponents. Disputes can result in those affected taking the law into their own hands, resulting in demonstrations, civil disobedience, and physical violence. Nevertheless, there is growing evidence that litigation on access to land is becoming an increasingly frequent occurrence in Asian infrastructure projects such as the Mega Manila Subway Project and Special Purpose Vehicles for Land acquisition on the Delhi Metro. These disputes highlight the importance of future TOD projects in the region considering possible post-construction access to land issues.

7.16 Land Administration and Management Requirements for Access to Land for TOD

Land administration is the process of establishing property rights and tracking information about the ownership and value of the land. It enables the functioning of land markets. Land-use planning is the allocation of land for private and public uses, including infrastructure and services.

Good planning to address land administration and management issues associated with land access is a prerequisite for successful TOD project delivery. These processes should be an integral part of project design and implementation and should be used as trigger mechanisms for many other aspects of project design to warn of potential delays. Research shows it is essential that governance arrangements for land administration are in place at the commencement of a project to prevent delay or abandonment due to a failure to secure legal, physical, and cultural rights and access to land.

The World Bank’s recent report on Managing Urban Spatial Growth: World Bank Support to Land Administration, Planning, and Development offers useful guidance on establishing land administration systems to manage access to land for large projects. The following are important requirements for effective land administration and management to gain access to land for TOD projects.

Land Records Data Management Systems

The World Bank has focused for many decades on the need for countries to develop fully functioning land record data management systems. However, many countries still do not have well-functioning land administration and data record management systems. When land records systems are poor, it may be necessary for TOD projects to build an independent system for land records and data management. This can be expensive but, without it, projects will likely experience significant difficulties in dealing with land administration and management matters. Gaining access to public records

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can be extremely difficult and expensive, such as in Manila, where land registry records management was privatized. Often the quality of records is poor or information is missing, which will require extensive field investigations and inquiries to establish rightful ownership of some parcels of land.

Land Assessment

All TOD projects require a systematic assessment of the physical, legal, and administrative attributes of land, as well as other features that may be required for project purposes. This work can be done by satellite and drone imagery using remote sensing and fieldwork to collect information on plot sizes, land use, construction, site coverage of structures, and other land uses. In many cases, prefeasibility studies will have determined potential locations for corridors, access routes, and TOD infrastructure. The coverage information collected for more detailed feasibility studies will more than likely extend beyond these potential requirements to enable adjustments to alignment, design, and land use for a range of development purposes. Land access needs can be determined from this analysis and, if necessary, further research requirements can be identified.

Land-use Planning

World Bank interventions related to land-use regulation, spatial planning, and enhancing the capacity of planning agencies have generally been effective. However, TOD

projects may experience significant challenges related to sustainability and integration of land-use planning and development. Building infrastructure without corresponding land-use planning creates a substantial impediment to managing urban spatial development growth. Most TOD projects should be accompanied by regional and local area integrated economic, land-use, and transportation plans. These are important as they set the parameters and assumptions underpinning the design and development of TOD projects and their access to land needs.

Place and Character Issues

People develop an affinity for places and spaces in which they live. In some cases, these have cultural heritage status, which may require sensitivity in handling access to land issues. Archaeological exploration sometimes may be necessary, which could reveal significant issues with sites and preclude them from use by TOD projects. Consultation should take place on legal, common law, and cultural rights to places and spaces affected by TOD development at all times.

Land Assembly Process

The land assembly process for TOD, especially large-scale projects, is complicated and protracted. The most effective way of managing land assembly is to create a system of bundling parcels of small land packages so land access rights can be systematically
7. Access to Land in Transit-Oriented Development

and sequentially acquired or transferred if needed. A significant issue associated with the land assembly process is holdouts, which occur when individual owners or occupiers refuse acquisition, engage in litigation to prevent the acquisition of land rights, or seek higher compensation for land needed for a TOD project. Where possible, these properties should be identified by a special legal team to deal with the litigation process.

Integrated Planning Approvals System

SAR countries feature highly segregated management and administration systems of granting planning and development approvals related to land. Most development approvals are handled sequentially, and many still use paper document files. TOD projects require integrated departmental and agency electronic systems, allowing concurrent and transparent approvals for the efficient management of land matters. In some cases, this may require changes to laws or regulations, as well as training to enable professional staff to simultaneously process necessary approvals for development, planning, and land transfers.

Land Development

The impact of urban transport on land use and land development depends on the fit between improved local and regional networks and corridors of transportation and the urban areas they serve. There is a need for systematic data recording of the locations of potentially developable land and investment projects as part of LAM project infrastructure. A prerequisite of TOD projects is the development of an overall vision, supported by detailed planning and extensive land-use mapping, of areas or parcels of land which may be expected to undergo transformations or redevelopment after projects are completed. It is important to assess potential value capture and identify the need for strategic infrastructure investment requiring additional land access to service these developments.
Infrastructure Agreements

Integrated regional development plans may provide a basis for establishing infrastructure agreements between the State or provincial government and developers or landowners. While public authorities invest in infrastructure to guide development, landowners and developers who benefit from these investments may be required to reciprocate by contributing to infrastructure. The benefits resulting from infrastructure investments need to be defined to determine the level of contribution required from each landowner or developer. It may prove difficult to achieve consensus on the extent of benefit attributable to specific infrastructural investments, but those benefits need to be clearly defined and equitable.

7.17 TOD Project Access to Land Checkpoints and Triggers

TOD projects require team management governance efforts to scrutinize issues that can potentially derail a project. The circumstances, events, or conditions in the life cycle of projects when management needs to activate contingency action to mitigate the risk of a project component’s failure are known as trigger points. This may involve requests for additional information or resources, a change in design, or, at worst, delay or abandonment of the project. Trigger points on access to land may require a judgment call to maximize the value of the predetermined contingency by implementing it at the optimal time.

Good project governance on access to land should ensure that risks are constantly monitored. The World Bank Public Investment Management Reference Guide outlines steps for including land governance risk assessment in Project Investment and PPP-type preparation documents. All sizeable TOD projects need a structured approach to identifying, assessing, and controlling land management risks that could emerge during a project’s life cycle, though smaller scale projects can use a more simplified approach. In conducting risk management assessments, it is essential to build trigger response mechanisms for known, possible, perceived, and unknown risks – for example, resolving access to rent control tenancy protection rights in India. Projects need to consider contingency planning, take care to address high-probability events related to land access that could adversely impact a project, and identify the potential impacts of low-probability, high-impact events.

Checkpoints relating to access to land helps TOD projects identify risks and potential trigger points. These are markers or control points used to monitor project performance and surveillance. They are valuable for identifying potential cumulative causation risks, changes, or opportunities to add value or fast-track project components as implementation proceeds. They can be used to monitor potential impacts that delay the acquisition or securing of rights and approvals and what effect they may have on project progress and cost overruns. They also provide a basis for reflection, analysis, and evaluation to determine whether the project is proceeding as planned. An important feature of Singapore’s TOD success is its system of tight controls and checkpoints in the overall planning process.

TOD projects often give insufficient attention to broader external events affecting land access during project design and preparation. Certain events or conditional requirements will trigger the need for responses to adjust the proposed design of a project. For example, where land along a corridor is discovered to be contaminated or vulnerable, it may need to be treated or excluded from a project, potentially causing significant delay in gaining access to a site.

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<table>
<thead>
<tr>
<th>Function checkpoint</th>
<th>Preparation</th>
<th>Implementation</th>
<th>Completion</th>
<th>Action or Triggers</th>
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<tbody>
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<td><strong>Planning and Strategy</strong></td>
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<td>Determination of suitability of all parcels of project land, and whether alternative/extra land should be acquired</td>
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<tr>
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<td>Audit of land and property tenure to flag list of issues (ownership, lease, rental, customary)</td>
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<td>Opportunity costs of acquiring land for co-location of services and facilities. Land access and maintenance agreement</td>
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<td>•</td>
<td>Agreements of land access for services connections of various utility agencies and service providers</td>
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or parcel of land. Attention should be given to climate change events linked to TOD projects that affect land erosion, access to construction sites, or, in some cases, the capacity to develop land. Care should be taken to ensure that land being taken or used for TOD projects does not cut off access rights to upstream or downstream land following construction.

A common reason for TOD project failure is the lack of a systematic decision-making framework with checks and balances to integrate elements of governance. Table 7.2 shows a framework of checkpoints and triggers built into access to land governance arrangements for TOD projects. The symbols represent critical trigger points for the preparation, implementation, and post-completion phases of TOD projects. A framework such as this should be considered carefully during the preparation, implementation, and post-completion phases. Specific triggers need to be identified, such as the percentage of land acquired before construction, preliminary geotechnical studies to determine corridor route alignment and construction design, and systematic documentation of encumbrances that may hold up securing settlement of the procurement of land.

### 7.18 Value-adding Access to Land Access Initiatives for TOD Projects

One of the most important objectives of TOD projects is to improve land access and open land for development, redevelopment, or regeneration opportunities. TOD projects provide a catalyst for realizing development opportunities, but the process must be managed carefully. There are innovative ways to strengthen
TOD project design through value engineering, value capture, and other creative solutions for assembling and holding land, implementation, and post-completion operations to improve access to land for development. Not all of these are universally applicable to SAR, but some good practices could be adopted on a country-by-country and city-by-city basis to improve access and assembly of land to improve investment returns for TOD projects.

Establishing electronic information systems for collecting and analyzing land data and development approvals improves the efficiency of TOD projects\(^\text{67}\). Hundreds of covenants, service easements, and liens on land may need to be annulled, modified, or transferred during TOD projects. These are usually recorded on documents stored in separate departments and agencies or held privately. Successful procurement and amalgamation of land assembly for TOD requires substantial information to be collected and stored on an integrated shared-document land management information system.

The administrative process associated with land administration and management of TOD projects would be greatly enhanced by a wide range of information related to land-use approvals, building and construction permits, and environmental and other related approvals. In addition, many other documented and undocumented public and private rights must be meticulously identified and recorded, primarily related to tenancy and occupation. Several countries have made major strides on this issue: Australian states and territories have established a range of integrated inter-agency development approval and land acquisition systems for TOD and climate change related projects and Singapore employs one of Asia’s most advanced systems for dealing with integrated land management and assembly for TOD projects\(^\text{68}\).

The current TOD land planning, management, and development control system in South Asia involves sequential approval processes, with relevant documents passed from agency to agency for approval. Establishing an integrated and electronic approval assessment system enables relevant agencies to concurrently approve necessary applications. Such systems operate very efficiently in Singapore, Australia, and New Zealand, and could be adopted quickly on a project-by-project basis to manage all land matters for TOD projects.

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**AUSTRALIA’S SUCCESS WITH INTEGRATED DEVELOPMENT APPROVAL**

How modernized systems reduced delays and benefited large TOD projects

Australian states and territories began introducing integrated planning and development approval systems in the 1990s to ensure more coordinated delivery of public goods and services. The integrated development approval (IDAS) significantly reduced the delays in gaining necessary approvals and land acquisition for public and private sector and PPP development projects. Formerly, approvals for the development and purchase of land for public projects involved a time-consuming linear agency approvals process.

In the early 2000s, state governments introduced a one-window integrated development approval process used widely for large TOD projects. The Victorian State Government developed an extensive system that can be integrated with the Federal Government’s assessment process. An extensive range of online materials is available for integrated planning, land use, acquisition, and development approvals. The State of Queensland, Australia, also has a well-developed system for integrating land management and approvals for biotechnology, cleaner energy, and TOD projects. This is currently being used for approvals and land acquisitions for the $US4.5 billion Metro Cross River Rail TOD project, which will see a new underground rail link built under the Brisbane River and the central business district.

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TOD projects can provide a catalyst for building improved integrated planning and development approvals for land management and administration. They can be added as a supplementary sunk cost item to TOD project management at minimal cost. The cost of these systems’ creation can also be incorporated as an offset in project cost recovery, which should generate increasing returns on investment once regeneration and redevelopment occur within and adjacent to TOD corridors and station hubs.

**7.19 TOD Land Banks**

TOD projects often face challenges with land assembly and acquisition as the land near transit sites tends to be expensive and scarce. For this reason, the report on Infrastructure Financing Options for Transit Oriented Development notes69, “communities’ interest in [land banks’] applicability to TOD has been growing because they are used to acquiring property and are often linked to a social mission, such as neighborhood stabilization or affordable housing.” While land banks have not been used for assembling developable land in station areas in South Asia, they have been used in the United States. If applied to South Asia, they could make TOD and associated infrastructure projects more feasible.

Securing access to land for TOD projects also requires securing a land surplus to enable land exchanges, particularly when associated with resettlement. Land Banks can assist in the process of securing and holding land, while providing for temporary-use leaseback until the land is needed for the project’s construction. Land banking would thus help ensure the security and protection of corridors to enable projects to proceed according to schedule.

**7.20 Conclusion**

TOD is an increasingly popular development strategy due to its potential to promote sustainable urban development. It is a feasible option for developing and revitalizing cities in South Asia and has been employed in developed Asian countries, such as Japan and Singapore, as well as the region’s developing economies, particularly India. However, like in other parts of the world, TOD faces significant challenges in gaining access to land to build infrastructure that will improve urban and regional plans and services.

Land issues related to TOD are more complex than single entity or site projects, as they may involve the acquisition or purchase of hundreds of small properties. This section has identified the issues and challenges with applying the TOD model and has focused on access to land and value capture in the design and implementation of these projects. The core problem and issues affecting land for TOD projects are multi-sectoral and involve many functional areas of responsibility and jurisdictions.

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Documentation of organizations, their mandates, responsibilities, processes, and capacities to deliver on the TOD land requirement inputs and outputs is crucial for successful project implementation. This chapter presents functions and arrangements of responsibilities involving land for TOD projects. These functions relate to planning and strategy, acquisition of land, securing land and property, finance, design and construction, services delivery, and resources management.

TOD project management should implement a system of triggers and checkpoints and monitor these closely to address risks and other factors that may impact successful project implementation. Checkpoints are crucial staging points for monitoring progress. Triggers provide options for actions to address events, circumstances, or risks that can potentially impact the successful completion of the project. Triggers may also require a change of strategy or, in the worst case, project termination.

An underlying principle of TOD is that it creates opportunities for investment and value-adding along transit corridors, transportation hubs, and nodes. This chapter outlines several options for adding value to TOD projects linked to improved land management, including establishing transit development authorities, integrated planning and development approval systems, co-location of services, pooling land resources and funding, and bundled project finance.
Access to Land for Renewable Energy Investments
8. Access to Land for Renewable Energy Investments

8.1 Background

Countries will need to employ vast tracts of land to realize the climate actions to which they committed at the COP26. Large swathes of land will also undergo inundation or degradation as a result of climate change, making them unsuitable for cultivation or habitation. These factors, combined with rapid urbanization, will result in an unprecedented demand for land in the coming decades. In order to meet their

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COP26 commitments, countries will need to employ comprehensive land information, valuation, and administration to improve access to land.

The construction of major RE projects, which will be required for countries to meet their COP26 commitments, will entail major reforms in the energy and land sectors. This chapter offers guidance to World Bank TTLs on how to support client governments as they strive to deepen their reliance on RE. The chapter highlights the success stories and roadblocks experienced by several South Asian countries and provides a decision-making framework to help teams identify and acquire the most suitable land for RE projects. Finally, it concludes with broader land policy recommendations to ensure countries can meet their COP26 targets.

South Asian countries’ transition away from coal and towards RE production requires massive land acquisition and land use repurposing. In many countries, the success of meeting RE goals will hinge on accessing suitable lands in a manner that is socially responsible, timely, and legal. Lack of access to suitable land has often constrained and been a source of costly delays for RE projects. For example, problems related to land acquisition are a key factor in Bangladesh’s failure to reach its goal of generating 10 percent of its total electricity from renewable sources by 2020; only 3 percent has been achieved thus far.71

Many private investors in Bangladesh’s solar projects have failed to acquire the required land, particularly when it is privately held72. These difficulties, coupled with the country’s larger land shortage issues,

72 The Business Standard, 18 May 2022, Dhaka, Bangladesh.
has prompted companies to buy up land before learning if the site is truly suitable for a specific project.\textsuperscript{73} India has experienced similar challenges with land acquisition: In the three states where the majority of RE projects are underway, “competition for suitable land with high wind speeds and grid connectivity has grown intense, making land acquisition in a timely manner an arduous task for developers.”\textsuperscript{74}

The land requirements for RE projects can vary dramatically. Nuclear energy, for example, requires minimal amounts of land: A typical 1 GW nuclear power plant needs 1.3 square miles (3.4 km\(^2\)) of land. Solar, on the other hand, is more land intensive: To generate 1 GW, a solar farm would need between 45–75 square miles (116–200 km\(^2\)) of land. Wind farms require even more land because the wind turbines need to be spaced far apart, and thus a 1 GW wind farm would require between 260–360 square miles (670–930 km\(^2\)). Major hydro-electric power generation schemes can require the flooding of substantial areas of land and the displacement of settlements. Land demands can be mitigated in some cases by the potential for multiple uses of the sites.

Most countries plan to use a combination of RE sources to achieve their targets. In India, where the government has proclaimed a target of net zero by 2070, the government estimates that it will need roughly 50,000-75,000 km\(^2\) for solar and 15,000-20,000 km\(^2\) of land for wind. In contrast, Bangladesh has chosen to rely more on solar, estimating that it will need 4,000 km\(^2\) of land for solar parks.


These demands will put pressure on land tenure, planning and permitting, and public asset management systems. Despite an increase in photovoltaic affordability and popularity, large-scale solar installations have lagged. Countries commonly lack standards and methods to identify, plan, pool, and allocate lands for RE projects, which are often not recognized in national land use frameworks. There is more progress with technical suitability analysis and site identification, but less with evaluating access to land in terms of legal rights, stakeholders, social inclusion, and risks. As countries transition away from coal plants towards solar or wind, they will increasingly require the World Bank's technical assistance and investment lending to strengthen their capacity to identify suitable sites for RE investments and to secure access to land.

The shift to harnessing RE will intensify competition among various uses of land, such as agriculture,
forestry, and parks. The World Bank’s South Asia Region Working Group on Land (2021) has highlighted how difficulties accessing land have already led to costly delays and cancellation of RE projects, and these challenges are poised to escalate further. In India, projects are commonly delayed due to challenges in identifying a parcel of land’s rightful owner. Often landholders present claims on land, but they are either contested or the legal land registration is missing due to an unfeasible or unaffordable land registration process.

Due to recent technological advancements and supply chain improvements, solar photovoltaic (PV) technology is playing a key role in the transition to low-carbon economies. One of solar PV’s great advantages is its modularity and flexibility. The increasing modularity of solar PV allows for multiple environments for installation. Solar panels do not need to be installed on the ground, allowing for installation on a multitude of locations, such as homes, commercial buildings, parking lots, highways, and even canals. Solar on rooftops and parking lots not only generate electricity but also provide shade, without requiring direct land use. Such projects are useful where land for RE is difficult to obtain, and allow for multiple uses of the same land footprint.

However, land-based PV farms often do need large swaths of land, thereby competing with agriculture for land allocation. Thus, meeting the National Determined Contribution targets and improving energy security through RE may also have adverse effects on food security. While solar PV projects are typically sited on lands that appear “barren” on official maps, in reality they are sometimes used by villagers for growing fodder or grazing their livestock. Government land records often do not identify such occupants, so when projects break ground, local residents are negatively impacted and resist RE projects. The same challenge is repeating itself in the context of many land acquisitions for infrastructure investments.
8.2 Developing RE in Land-scarce Regions

Large RE projects are beset with land-related problems. They are often faced with a lack of suitable public lands and regulatory and procedural issues in acquiring private land. As a result, governments are increasingly opting for decentralized options that can minimize these challenges:

**Rooftop solar plants and solar canals:** Rooftop solar photo voltaic (RTSPV) systems have the advantage of being arranged in smaller configurations for local use, and “can provide more accessible, affordable, and reliable electricity options.”76 From 2006 to 2018, the installed capacity of the RTSPV has grown globally from 2.5 GW to 213 GW, an 85-fold increase.77

The Indian government has worked to capitalize on these benefits by launching a grid-connected rooftop solar program that aims to provide incentives for residential, institutional, and social use. One stand-out success was the Surya Urja Rooftop Yojana of Gujarat. The incentive enabled Gujarat to achieve the highest cumulative rooftop installed capacity (approximately 1.6 GW) among all the states.

In the states of Gujarat and Punjab, there are ’solar canals’ or solar panels over irrigation canals. This helps conserve water by reducing evaporation as well as generating electricity. Such innovative practices are useful in regions where suitable land for the RE project is not available.

**Solar wind hybrid park:** Hybrid projects that combine both solar PV and wind turbines can yield up to twice the amount of electricity as either system working alone.78 Such hybrid projects are feasible where

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suitable conditions for wind energy plants and solar PV plants co-exist.

One such solar wind hybrid park is being developed in the Indian State of Andhra Pradesh, which is expected to produce 120 MW of solar energy generation and 40 MW of wind energy generation. The projected site for the park is on government-owned barren land, of which 698 acres have been acquired and 200 acres has yet to be acquired. The World Bank is providing technical and financial support to the park. There are other similar projects underway in the region: Edotco Bangladesh, an integrated telecommunications infrastructure services company in Bangladesh, has built the country's first-ever 75-meter long Hybrid solar wind Tower on a remote island located in the northern Bay of Bengal. An Indian green firm, ReNew Power, has also commissioned Gujarat's first wind-solar hybrid project, which has a capacity of 17 MW,


80 Stocktaking of the Solar Park Scheme of India, KPMG India, A report for World Bank India office
and is expected to mitigate 75,000 tonnes of carbon emissions.\textsuperscript{82}

**Floating solar park:** In countries where land is scarce, governments have commissioned solar power plants that float on ponds, lakes, reservoirs, or any body of water. People's Republic of China, the Netherlands, and Portugal represent some of the leading countries in building floating solar parks. Where solar parks are to be constructed on water, consideration must be given to those who have legal or customary rights over the water area, including for navigation, fishing, and water extraction. They will need to be compensated for any diminution in the value of their assets or livelihoods. Similarly, wind farms can be constructed in water, including offshore locations. These can also raise issues over rights over these waters. The construction of solar and wind farms over water can raise questions about their environmental impact, for instance on bird migration routes.

In India, the Omkareshwar Solar Park is being built on a water reservoir spread across 92 km\(^2\), of which 12 km\(^2\) would be utilized for solar panels. The preliminary feasibility analysis of the park has been completed in collaboration with the World Bank. The most important consideration for building a floating solar park is the cost. Solar panels require frames that can survive corrosion and seasonal variations in water levels.

**Agrivoltaics:** These systems promote the dual use of land for both PV solar and agriculture and are emerging as a small-scale solution to energy and food challenges caused by climate change. For instance, hotter temperatures in South Asia damage standing crops – and solar panels, at the appropriate height, can provide necessary shade for the plants while also generating electricity. The solar panels are typically elevated on fixed support systems about 4 meters above the crop field. Agrivoltaics help retain moisture in the soil and boost crop growth, and the water used for cleaning the solar panels can be reused to irrigate the crops growing below the solar panel area.

In India, there are 16 existing agrivoltaic projects. These projects are designed with low-height crops between solar panels. One substantial capital cost for agrivoltaics, as opposed to standard solar projects, is the additional expense of support structures to raise and secure panels. For larger farms, at least, the need to control costs may drive the use of innovations, such as wide-span tension support structures. A 3.77 MW Agro Solar PV Power Plant is planned in Bangladesh on 12.5 acres (5 ha) of land in the Pabna district in central Bangladesh. The land for the project is classified as being for agricultural use and a major portion of the area under the solar panels is planned to be used for farming.

### 8.3 Lessons on Land Assembly and Management for RE

Land assembly for privately funded solar projects is through two main options: direct negotiations with landowners or with the support of governments. In Pakistan, the provincial governments of Sindh and Punjab have policies and processes in place for supporting leasing of public land for solar projects. They have also begun digitizing public lands, which helps solar park developers.

Developers generally prefer solar parks with contiguous tracts of land as there is the possibility of shared infrastructure and comparatively fewer issues with land acquisition and development. The use of fragmented plots of land creates additional costs in the form of the construction of external infrastructure, creation of access roads, and transportation costs. While the acquisition of government land is the most preferable option for solar parks, there have been instances of disputes with locals over land rights, illegal land encroachment, and disagreements about compensation. Rewa Solar Park, Bhadla III, and Bhadla IV are such parks where more than 90 percent of the land was acquired before auctioning. In Rewa Solar Park, developers paid locals double the land value as compensation for their barren land.

From an economic and social perspective, receiving annual land rentals is preferable to compensation in the...
form of an upfront payment. Rental provides a regular source of income to the landowners and gives them opportunity to access the land again after the expiry of the lease. Leasing has recently gained traction in areas associated with high cost of land in the Indian States of Punjab, Karnataka, and Uttar Pradesh.  

8.4 A Decision-making Framework for the Future

This section builds upon the case studies and offers a decision-making framework for advising client countries on how best to access land for RE investments. In other words, it presents Task Team Leaders (TTLs) with a structure for how to understand this process and provides considerations and best practices for mitigating land issues at each stage in the project cycle. Through proper project design and implementation, many common risks and delays can be addressed and minimized. The framework is divided into three main stages: inception, preparation, and implementation. While it is best to apply this framework from the start, these considerations are useful at any stage.

Inception: Given the rising demands and limited land availability in most countries in South Asia, it is best to monitor and proactively identify suitable land for RE. This site identification process can be performed at a national level and will primarily rely on geospatial data. Geospatial analysis provides an opportunity to create a map that highlights areas that are suitable for diverse sources of RE.

Typically, the geospatial analysis considers several requirements, which can be weighted based on importance to identify appropriate locations for RE investment. Depending on data availability, the analysis includes geographic data layers that depict (a) natural resource potential, such as wind speed or solar radiation; (b) topography, terrain, or ground slope, from a digital elevation model; (c) energy infrastructure, such as grid lines and substations; (d) transportation lines and city centers; (e) land use, such as areas of protected land or parks that are restricted for development; and (f) water bodies, such as rivers and lakes. By analyzing all these criteria, this approach can determine feasible sites for RE projects.

There are multiple geospatial applications that allow analysts to identify optimal locations for development once data is acquired. The site suitability analysis can be performed using specialized platforms or more standard desktop software such as ArcGIS or QGIS. Depending on the skillset of the geospatial analyst, the geoprocessing can be conducted using plug-ins, such as the “Suitability Analysis” toolbox that allows the user to add criteria and tailor it to their own specifications to calculate a suitability score. Alternatively, a model could be scripted to identify and rank areas that meet the specific needs of the user. For example, this method of geoprocessing could generate a map that highlights land that is larger than a set hectare, has more than a certain threshold of potential energy, is not more than a certain distance from a substation, is above a set levelized cost of generation (LCOE), and lies outside any protected area. Then the user can place weighted preferences among the land areas selected, such as proximity to dense population centers, road networks, flat land, dry land, and so forth.

This approach, once tailored to the specific setting and project, can be undertaken by governments and companies alike to identify areas that appear on paper as promising locations for RE investment. Performing this process systematically and proactively would routinely offer RE developers potential site locations. Furthermore, it would provide insight into which type of RE project is best suited for specific areas and viable at certain costs – all of which are critical during project inception.

Preparation: In many parts of the world, land for RE projects may appear suitable for RE investments in a GIS application, but the reality on the ground can be quite different. This discrepancy is often due to inaccuracies or complexities in land administration

83 Source: Stocktaking of the Solar Park Scheme of India, KPMG India. A report for World Bank India office.

84 There are numerous GIS Multi-Criteria Analysis tools available, some include: ESMAP’s RE Zoning tool, pvDesign (for solar).
Village boys leverage their weight for pumping water to RE site laborers in Sonagazi, Bangladesh. Mika Törhönen.
information. Common hurdles include (a) outdated land classification or land planning maps, where official government maps fail to capture how land is being used in reality; (b) unclear cadastral data, so that the boundaries of the plots have overlaps or do not reflect the true boundaries of ownership; and (c) ownership is contested, and various groups or individuals have claims to the land. Such issues often have to be confronted when teams enter the field to further investigate the status of the land’s occupancy and use. Renewables projects encounter the same types of problems of poor quality land records and land administration in need of updating encountered in other types of infrastructure projects.

To minimize roadblocks at the project preparation stage, task teams should conduct field visits and consult with local stakeholders. Land records are often managed locally, and the most up-to-date information is decentralized. Therefore, visiting a local land registration office and meeting with the land records division to understand the status of the land records will give teams a better understanding of how the project should go about accessing the land. For example, it will allow the team to prioritize areas that are suitable for RE during land surveying (or resurveying) efforts or modernization and digitization efforts.

Land for RE projects is often occupied by people with insecure land rights, who are not recorded officially in central databases. It is critical that these communities are carefully involved and consulted during this process to avoid conflicts that could delay the project. If properly prepared, RE projects can benefit local communities. Not only can these communities profit from a new reliable clean energy source, but also receive monetary compensation for the use of the land.

In addition to field work, teams should conduct a legal review to gain a strong understanding of local laws and regulations surrounding land acquisition. This review should aim to inform the project on how it can best engage with local communities. For example, it should be able to answer questions such as: Do regulations allow for the formalization and/or titling of the land, followed by the communities leasing of the land? If land needs to be acquired, how high can the compensation be? Through a deeper understanding of the existing legal framework, the task team can design an RE project that is welcomed by the local community.

**Implementation:** The risks surrounding land need to be continuously monitored during implementation of an RE project. A grievance redress mechanism (GRM) should be established to record all land-related complaints or conflicts. Long-lasting litigation surrounding land disputes is not uncommon and the team should prepare to report disputes to management. Clear communication and messaging to affected communities regarding how the RE project will impact the land and their use of it is also instrumental in mitigating complaints.

The distribution of any compensation promised during preparation should be closely monitored. For example, any provision of basic services, subsidies, and royalties offered to communities during consultations needs to be subject to monitoring and occur in a timely manner. If Task Teams remain vigilant regarding land issues and recognize the incredible importance of cultural sensitivities, they will enhance their chances of success in securing access to land.

**8.5 Conclusions**

South Asian countries will need to access vast swathes of land to meet the climate actions to which they committed at COP26. This demand for land comes at a moment when land is becoming scarcer due to rapid urbanization and the inundation or degradation of land as a result of climate change. However, there are several steps that governments in the region and World Bank TTLs can take to accelerate the construction of major RE projects:

Conduct geospatial analysis paired with field validation before project implementation to...
provide task teams with powerful decision-making information. Case studies suggest that RE solutions that only need minimal land requirements are easier to implement. However, the total project area is not the only factor. Location and proximity to existing infrastructure and population centers play a large role in determining the success of a project as well. For example, wind farms have smaller footprints than solar parks but may be located at sites far from users. Transmissions costs therefore need to be considered. Deciding which RE to use can be done through geospatial analysis, which can also identify suitable land for RE projects. Performing this analysis routinely and systematically captures viable locations, which can be verified through site visits to confirm the land’s suitability.

Introduce a special land use category for agrovoltaics, because they provide an option to blend energy with food production. The global installed capacity of agrovoltaics has grown to an estimated 2.9 GW, led mostly by Germany, France, and Italy.86 Regulatory frameworks and support schemes are already in place in Japan, South Korea, People’s Republic of China, and France. But for the agrovoltaics sector to move from the pilot project stage to more widespread adoption, several policy and regulatory obstacles must be removed. South Asian countries should use the policy and legislative responses developed by other nations to help resolve legal, financial, and regulatory challenges.

They should adjust regulatory frameworks for minimum panel heights and maximum shading ratios, as well as post-project yield requirements. One challenge is the classification of land used by agrovoltaics and whether it remains agricultural or non-agricultural land. Given that land administration rules are vastly different depending on this classification, this hurdle must be overcome before agrovoltaic projects are implemented at a large scale.

**Develop clear environmental and social criteria for rating potential sites when conducting assessments.** Formalizing data requirements early in the process allows for time to procure datasets, supplement missing data from alternative sources, or initiate data collection specifically for the project. Based on the resulting geospatial analysis, teams will be well-positioned to conduct geospatial analysis to determine land to consider for RE projects, advise clients on centralized versus decentralized RE solutions, and identify the type of RE project that may be most effective for a specific setting.

**Communicate clearly with populations impacted by RE projects.** Accessing land for RE doesn’t have to take resources away from local communities. In fact, they can provide a wide range of benefits for project-affected populations. By raising awareness about the project and sharing information on its social, economic, and environmental benefits, teams can build trust with local communities. They should also look for opportunities to enhance community participation through direct and indirect involvement in the RE project. Projects that offer a stake to the community and employment opportunities have greater chance of gaining access to the necessary land.

**Be flexible about project design and take advantage of new technologies.** The installation of RE is expected to become increasingly mixed use and flexible. The portfolio of RE solutions optimizing land use are anticipated to expand beyond rooftop solar plants and solar canals, solar wind hybrid parks, floating solar parks, and agrovoltaics. TTLs should make the most of these new technologies to minimize land requirements.
9

Improving Access to Adequate Land for Affordable Housing
9.1 Introduction: Urban Land and Housing Markets in SAR - Messy and Bifurcated

Rapid urban growth has largely outstripped the capacities of cities to plan and manage urban land supply and infrastructure services for businesses and households in most countries of SAR. Where policy and regulatory regimes are in place, formal land supply often is expensive and inaccessible to the majority of urban home builders – developers and households alike. As a result, unmet land and housing demand resorts to informal land and housing supply, as evidenced by informal settlements mushrooming.

This chapter aims to answer the question of how to enhance the access to adequate land for affordable housing in SAR. The starting point is to understand, from land user’s perspective (firms and families) both the formal and informal processes. This will in turn help identifying the pinch points and inform policy makers on how to provide an enabling environment and incentives to promote diverse solutions for land and housing supply to meet the varying and evolving demands commensurate with the local social-economic reality. Targeted support is also necessary to ensure adequate access to land and housing for the poorest.

What’s unique about access to land for affordable housing?

For housing, access to land means more than just a piece of land. Access to land means access to floor area as well as the “air rights” or “development rights” that property owners have above or below the land parcel that they can use, subject to applicable zoning regulations. Moreover, housing is an aggregator of a dwelling and the underlying land and services, the value of a “housing unit” being the combined value of the land and dwelling. The value of the underlying land is affected by the highest value feasible and permissible use, the permitted density of development, and the characteristics of its location, such access to basic services and amenities and connectivity to urban centers. Housing is essentially a private good that is best provided by the market. The government’s role should therefore be focused on establishing an enabling environment for the delivery of housing, addressing market failures, and correcting past government policy failures.

Land and housing market complexity and caveat

Housing affordability is a function of a household’s capacity to pay\(^87\) for mortgage or rent. Housing affordability, which can be enhanced by reducing the cost of supply side or boosting purchasing power. This chapter focuses on the supply side and what can be done to facilitate affordable housing.

Low cost of land does not necessarily make housing affordable. Low cost land may be at disconnected locations, imposing high transportation costs, or lack trunk infrastructure, imposing high servicing costs. The cost may be low because land is vulnerable to disaster events such as flooding or landslides. It is necessary to look at the total cost of housing faced by households.

\(^{87}\) For ownership housing, capacity to pay is also determined by their access to finance.
Peshawar Pakistan, Revenue Map. Mika Törhönen
9.2 Framework for Expanding Land Supply for Affordable Housing

The Housing Value Chain shown in Figure 9.1, links the different elements that must come together for the private sector to deliver housing for potential buyers or renters. Each link in the chain adds and/or affects the value of the final product. Spatial planning at metro level gives predictability for the private sector to plan their developments. The process by which land is acquired from private landowners will be most efficient if the underlying ownership rights are registered, and the land is free from incumencies. Zoning and development control regulations affect the physical outcomes by determining floor areas, density, heights, etc. The connectivity and availability of basic infrastructure and social services, much of which is provided by the public sector, has significant impact on the value of the land. The cost of developer finance and construction inputs affects the resulting price of the property. Access to finance for mortgages or self-construction plays an important role in making housing affordable.

This housing value chain is an idealized version of the housing production process. In many countries in SAR, a formal housing value chain produces a small share of the overall housing stock. Most people and firms turn into the informal housing value chain, because links in the supply chain are often missing or malfunctioning, including the absence of clear titles free of incumencies, the lack of a current master or structure plan to guide future urban growth, overly rigorous zoning and development control regulations, delays in gaining development permits, and lack of infrastructure.

There are different avenues for enhancing the supply of land for housing: greenfield development through land conversion, upgrading of informal settlements, and densification, rehabilitation, and conversion of brownfield districts.

9.3 Cross-cutting Measures: Planning, Regulating, and Financing

This section aims to lay out the enabling environment for supply of adequate urban land to all residents, including the poor. First, it emphasizes the importance of spatial planning for expanding the supply of adequate land for housing at structural macro and implementing local levels. Within this context, integrated land use and transportation planning helps not only ensuring the connectivity of land but also promoting more equitable and affordable land markets. Second, flexible zoning and development control regulations expand the supply of floor area for housing.

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**FIGURE 9.1: The Housing Value Chain**

City planning and building regulations  
Infrastructure and services  
Developer finance  
Public asset management  
Access to land  
Construction and building materials sectors  
End user finance  
Property management  
Housing

Proactive planning for predictability and sustainability

Land and property markets alone do not produce efficient land uses for firms and households in cities. The government has an essential role in coordination, particularly in fast growing cities, as firms are clustering and families are settling in, to ensure infrastructure is provided for connectivity and services are made available for residents and businesses. Spatial planning is a critical instrument that city authorities have in hand for firms and families to know what to expect for future development.

While there are different terminologies and systems in spatial planning, there are two fundamental planning scales: (i) a larger-scale structural plan defines areas for expansion and arterial infrastructures, thereby ensuring development at adequate locations and connectivity between urban areas; and (ii) a number of smaller-scale local area plans that facilitate local implementation. For example, Gujarat, India uses Development Plans with subordinated Town Planning Schemes (DP-TP mechanism) across the two planning scales. (Figure 9.2)

Regarding the structural plan, one cost-effective way is through demarcating and ‘protecting’ land for arterial grid of roads and other core infrastructure on the urban periphery before settlement occurs.88 This is the simplest proactive planning option, aiming for getting one step ahead of unplanned urbanization and for enabling the future provision of an efficient public transport system. This was the approach adopted by New York City in their 1811 Commissioners Plan. This Plan anticipated a seven-fold expansion of the city’s footprint, and mapped and demarcated a grid system of roads on then-agricultural land in Manhattan. The grid system created still carries New York’s traffic today, with water and sewerage infrastructure built


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**Figure 9.2:** The DP-TP mechanism integrates large-scale expansion planning with local-scale implementation

Source: based on Nohn/Rapid Urbanism. Image source: AUDA
9. Improving Access to Adequate Land for Affordable Housing

Improving Access to Adequate Land for Affordable Housing

underneath. Figure 9.3 shows how the Intermediate Cities in Ecuador laid out arterial grid to signal where public infrastructure will be and, accordingly, where firms and families can anchor their long-term investments. Identifying, acquiring, and securing the right of ways early can avoid costly infrastructure retrofitting later.

**Strengthening connectivity and mobility for firms and families**

Land use and transportation planning need to be coordinated to ensure that land for urban development is accessible and connected, and that people are not cut off from access to employment and public and private services. Investing in mass public transit to reduce transportation costs does not only reduce the location premium of central locations but also reduces households’ transportation cost and enhances their access to income opportunities. High prices for central locations reflect the scarcity of well-connected and accessible lands. According to Alonso (1964), households unable to finance the premium for well-located land can opt for buy cheaper land and travel longer distances instead. Households must balance their financial and time budgets as longer commutes reduce time for employment and family activities. Longer commutes tend to correlate with negative


**Figure 9.3: Preliminary Sketch Plans for Arterial Grids in Intermediate Cities in Ecuador, 2006**

externalities, for example causing more traffic pollution and congestion. In addition, lower densities consume more land and tend to increase the cost of servicing with infrastructure as the economies of scale from density are lost. A modern case is Jakarta (Figure 9.4) that links public housing schemes with the city through strategic investments into the metro and BRT system.

Promoting dense transportation networks and sub-centers for shorter commutes around interchanges contributes to equalizing land markets. For example, evidence from rapid urbanization in Berlin, Germany shows how public mass transit has improved intra-urban connectivity and flattened the land price gradient, thus helping to maintain more affordable land prices and relative intra-urban equality.

Promoting mixed-use mixed-income settlements can reduce the need for motorized transit by providing for local commerce, social amenities, recreation, and employment. A degree of self-sufficiency reduces the need for longer commutes for employment and public and private services. The same can apply to developments mixing socioeconomic groups with by reducing the relative monopoly and location premium of urban centers and sub-centers and, thus, for

**FIGURE 9.4: Case of Jakarta’s Transjakarta mass transit service to affordable housing projects**

The red arrows point to some of the feeders (in light grey), and the red box in the map’s key points to the multiple dedicated feeder lines that connect large housing projects.

*Source: Nohn/Rapid Urbanism.*
AHMEDABAD, GUJARAT INDIA: ENABLING MARKETS TO SUPPLY AFFORDABLE HOUSING THROUGH INCLUSSIONARY ZONING

To enable the market to supply affordable housing, Ahmedabad Urban Development Authority (AUDA) created the Residential Affordable Housing Zone (RAH) overlay in the statutory DP 2021. The Inclusionary Zoning and Regulation (IZR), conceptualized in 2012 under then-Chief Minister Shri Narendra Modi, has been envisaged to allow the construction of up to 1.5 million dwelling units by 2035. RAH is delineated as a one km wide overlay zone along the outer edge of Sardar Patel Ring Road (SPRR), measuring around 71 sq km and assembled using Town Planning Schemes.

AUDA defines affordable housing by size (up to 90 sq meter), not by price. Private developers are incentivized to construct affordable housing in the RAH zone: (i) developers enjoy access to well-developed land with good public transport network connectivity; (ii) direct incentives include a density bonus of up to 10 percent commercial floor area, and a relaxation of parking standards; (iii) indirect incentives include a GST reduction from 5 to 1 percent, and access to prime lending (as AH has an infrastructure status). Developers are free to either build affordable housing and take advantage of the incentives offered or stick to the base zoning.

Since 2012, over 31,000 units have been developed in RAH, with 20 percent being small (e.g., One Room Kitchen, One Bedroom Hall Kitchen, and 1.5 Bedroom Hall Kitchen). In proximity to the eastern industrial areas, dwelling units as small as 18 square meters were developed, usually not supplied by the formal developers. Literature points out the fact that IZR has been successful in catering to Low Income Groups and Middle Income Groups (located below conventional market supply and above public programs).
equalizing land prices. This is a key principle of the emerging '5-minute neighborhoods' and '15-minute cities' concepts.90

### Making less stringent regulations for increasing floor area supply

The need for density

To realize social and environmental objectives under rapid urbanization pressure, it is critical to both densify existing areas and expand into new growth areas. Angel et al (2021) found that in a global sample of 200 cities, 23 percent of urban population growth was accommodated by densifying existing urban areas while 77 percent took place in expansion areas. Moreover, urban densities declined between 1990 and 2014, while few cities were able to densify and develop more compact forms successfully (e.g., Singapore, Bogota, Shenzhen).91 Dense urbanization is highly desirable as reduces the need for new land supply and land consumption with benefits, such as the protection of agriculture and habitats. Higher densities can result in agglomeration economies, such as using infrastructures more efficiently and shortening trips.

**Improving land use efficiency**

Governments can remove obstacles to higher land use efficiency while respecting social, environmental, economic, and institutional considerations by policies such as:

- Increasing the buildable floor area ratio (FAR) to achieve higher density at suitable locations, in exchange for exactions. This may decrease the market price of the floor area. As it may also be expected to increase the value of the underlying land, the additional floor area should not be free but sold at a price that makes densification more economical.92
- Reducing setbacks from roads and plot boundaries, and in-between buildings, as appropriate. Terraced row housing without side margins in-between use land more efficiently.
- Reducing minimum road width, especially for inner Right of Ways in walkable neighborhoods and near transit. Within local neighborhoods and districts, walking and cycling may be

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92 E.g., Ahmedabad Urban Development Authority, Gujarat, India sells additional chargeable FSI at 10 to 40 percent of jantri rates (government rates), with lower charges for (more affordable) smaller residential units in affordable housing zones. (General Development Control Regulations 2021, Schedule 19)

9. Improving Access to Adequate Land for Affordable Housing

Affordable housing projects may strategically use narrower roads, with access roads of only 3m to 6m, and local roads of 7.5m to 12m (Figure 9.6). Some projects introduce even narrower pedestrian-focused right of ways: e.g., the Petogogan Project under Jakarta’s Kampung Deret Program used footpaths of 2m to allow in-situ redevelopment of an unplanned settlement.\footnote{94} (Figure 9.7) Adequate circulation widths start at 1.50m and increase with functions/network level. (USAID (1984), Site and Unit Design Handbook, p. 94.)

- Reducing parking requirements, especially for affordable housing and near public transits. Portland, Oregon no longer requires parking for affordable housing developments and has reduced parking requirements for regular developments near transits.\footnote{10}

- Relaxing elevator requirements in medium-rise developments. Care should be taken to neither reduce accessibility over the long term (e.g., through designs allowing future provision) nor unduly impact on the elderly and those with disabilities in general.

Reducing minimum lot dimensions to save on land: e.g., Tamil Nadu reduced the minimum lot size for Economically Weaker Section housing from 40m\(^2\) to 32m in Chennai.\footnote{11} Similarly, row plots be deep and narrow to economize on servicing costs.\footnote{12}

### Promoting equity and inclusivity

Affordability implications of extra floor space are complex. Increasing floor area ratios should reduce the market price and increase housing affordability. However, if higher density implies higher construction costs, then this may not be a solution. This complex relationship requires strategizing for different market segments in parallel and spatial integration of these different segments within mixed income settlements to promote urban equity. Otherwise, urbanization risks pricing out the majority over larger areas with adverse outcomes, such as unplanned urbanization and/or monotonous peripheral sprawl (cf. the Ozymandias Syndrome\footnote{13}).

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**FIGURE 9.8: Differentiation and integration mobilizes land for inclusive urbanization, globally**

DFID-supported model by Davidson and Payne, here applied to Ismailiyah, Egypt  
World Bank-supported Bertaud, here used for planning a project in India  
USAID-supported MIT model by Caminos and Goethert, inter alia used in El Salvador

Nota bene: all model plans are colored on a heat map, with red for high value lots on main roads with good services and blue for affordable lots and basic services.  
**Source:** Nohn/Rapid Urbanism based on original materials\footnote{95}

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94 Despite their narrow dimensions, urban footpaths double as a social space, thanks to adjacent front porches, and accommodate not only 2-wheeler parking but also some planting and storm water management.

95 Rapid Urbanism Lecture on planning human settlements. Online at: www.rapidurbanism.com/resources. Reference to original materials:  
Integration/inclusion and grading/differentiation are two sides of the same coin. Differentiating the standards for roads (e.g., street width), land (e.g., plot sizes), and services (e.g., individual vs shared or community-based) with the street network hierarchy reinforces natural location-based value differences for more diverse settlements. Such a ‘diversity approach’ in spatial planning does not promote higher standards throughout: the resulting costs and values would be counter-productive, pricing out the poor, exhausting scarce fiscal resources, risk gentrification and/or subsidy capture. Instead, the focus should be on demand-responsive diversification: different products (services, parcels, and buildings) cater to different users (e.g., income groups) and are integrated in spatial proximity, while sufficient separation aids signaling social status and maintaining property values for effective cross-subsidization.

Local diversification is a precondition for more equitable cities and requires inclusive frameworks that promote locally diverse land markets. Graded infrastructure provision, differentiated land use zoning, and varied development control regulations are strategic tools for supporting diversity, resulting in differential land values, and facilitating inclusive access. Notably, this approach is enshrined in key textbooks/strategies by various development actors, globally. (Figure 9.8)

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**TOWN PLANNING SCHEMES IN GUJARAT**

The Gujarat Town Planning and Urban Development Act allows acquiring up to 50 percent of land for public purposes in Town Planning Schemes: an integrated land management, urban planning and fiscal tool combining (a) land pooling and readjustment, (b) exactions in land for public purposes, (c) servicing, and (d) betterment charges. (Figure 9.9) Deductions in land for public purposes include roads (15%), parks (5%), social amenities (5%), affordable housing (10%), and a land bank (15%). In practice, 40 percent are typically deducted, while raising the share to 50 percent is being discussed in view of large windfalls arising from public action. Finally, the 10 percent of land captured for affordable housing tends to be used for reservations of existing unplanned settlements, taking them out of the general land market and enlisting them for future upgrading. If unplanned areas account for less than 10 percent of the land, additional reservations may be made to secure land for other housing schemes.

**FIGURE 9.9: Key steps in Gujarat’s Town Planning Schemes**

[Image source: Nohn/Rapid Urbanism, based on Ballaney & Patel, Indian Infrastructure Report 2009]

9.4 Leveraging Fiscal Policies for Equitable and Efficient Access to Adequate Land for Housing

Governments need to mobilize fiscal resources for servicing land or mobilizing land for the poor in efficient and equitable ways. In addition to land value capture (discussed in Chapter 6), strengthening land value taxation may provide a means for guiding improved urbanization, while reducing the market price of land – thus easing access to land for housing – while generating fiscal revenue in the most efficient ways, thanks to inelastic land supply.

9.5 Realizing Adequate Land Supply for Affordable Housing

While a large-scale spatial frame is critical to guide land development, particularly for urban expansion, multiple challenges exist when such expansion is to be realized at the local level, as the process often entails outright land acquisition, and even the use of eminent domain. Moreover, the standard under which newly converted land will be serviced with infrastructure network, and sequencing of it, has major impacts on its affordability. The session below focuses on two instruments, Land Pooling and Land Readjustment (LPLR) and Sites and Services, to illustrate how such expansion can be carried out in a more sustainable and inclusive manner.

Land Pooling and Land Readjustment for supply of consolidated parcels and local services

Town Planning Schemes in Gujarat combine the provision of consolidated and serviced land for the general market with an exaction of 10 percent of the total land for affordable housing.

Sites and services

‘Site and Services’ is an approach to urbanization and housing that focuses on the provision of formal serviced lots to provide alternatives to informal urbanization. Sites and Services aim to empower households to build housing incrementally in an enabling environment that although basic, is safe and livable. It is thus a significant improvement over informal settlements. Typical components of sites and services include: the formal lot (with tenure security), basic infrastructure (e.g., water, sanitation, electricity) and social amenities (e.g., education and health), technical assistance and access to finance (to support self development). “Site and Services” is considered a success for preventing informal urbanization with a minimalist approach that, thanks to reduced resource requirements, is scalable. However, early implementation challenges also show the risks, such as the use of cheap peripheral locations, lack of service provision, and an overemphasis of cost recovery from low-income households.

THE CASE OF KHUDA KI BASTI, PAKISTAN

The case of Khuda Ki Basti (KKB), Pakistan, stands out for its pragmatic approach, learning from and mimicking the informal urbanization process in Katchi Abadis, while preventing irregular and costly layouts and undersupply of public spaces. The local NGO Saiban, which operates the scheme, argues that the approach is easily replicable, ensures long term sustainability (as community is involved at all stages of planning and development), makes secure tenure accessible to the urban poor, is largely self-financing by linking the provision of services to cost recovery, while deferring payments for the land. The NGO argues that the sequence of the delivery chain is critical for success. (Figure 9.10)

96 Rapid Urbanism Case Study on KKB: https://app.box.com/s/989bj1gjy5tamjuzj0oukwe31f7mu7mm

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Complexity and starter costs build up from (i) Khuda Ki Basti at the bottom (simplest and most economical) over (ii) traditional/informal development and (iii) sites and services, to (iv) modern/formal/developer-driven development.

Source: Nohn/Rapid Urbanism, adapting third-party material related to KKB, however of unknown origin.

Firstly, Saiban sets up a local office on site. All rules of the scheme, including the financial details, are painted on the wall of the NGO. The NGO also runs a reception center that hosts prospective beneficiaries for one week. All households who want to move on site are required to live in the reception center for one week under most basic circumstances to reduce the capture of subsidies by better off households, who are less likely to accept this procedure. Households first construct a temporary shelter on their (unimproved) lot before self-building a basic home with technical assistance. The provision of basic services is phased to minimize starter costs. Soak pits for individual sanitation is the first infrastructure to arrive. All households living in a network area need to contribute financially before networked services arrive. Typically, electricity is first, then water, and finally road paving. As long as households lack piped water, they are serviced with private water tankers, to bridge the time gap.\(^{16}\)

Upgrading: regularization and servicing

Upgrading informal settlements is another important avenue to realize access to land, particularly for the poor. Formalizing land rights for slum dwellers can put land into formal market circulation and infrastructure upgrading, even without titling, is also proven to be sufficient to offset concerns about possible eviction and encourage further investment by households in improving their homes incrementally over time. The stumbling block for upgrading is, often, the “incompatibility” with formal planning and service standards. The case of slum upgrading in Mukuru, Nairobi, Kenya shows how to overcome this challenge by designating the settlement as a Special Planning Area.

\(^{97}\) Siddiqui, T., 2011, “Affordable Housing: Is it possible?”
Over time, a consolidated habitat develops, which is found to be superior to informal settlements due to (a) a rational urban layout, (b) technical assistance to ensure the quality of construction, including local material production, (c) patient financing and cost recovery, and (d) a supportive environment in which both formal and informal social amenities (e.g., education and health) arrive. Another critical component is subsidized transport linking the peripheral (low cost) site to ensure connectivity. Subsidized informal transport is available during the early stages of the settlement, with eventually formal bus services are provided. Owing to modest subsidies and the prevention of costs and risks associated with informal development, the costs to households are about $1,260 in KKB versus $1,630 (+30%) in an alternative informal settlement (GZX) over the first 10 years. Due to the innovative approach, KKB has been awarded the Aga Khan Price for Islamic Architecture.

Mukuru, Nairobi, Kenya: Participatory In-Situ Slum Upgrading with Negotiated Planning Standards

Mukuru belongs to Nairobi’s’ largest clusters of informal settlements. Located in Makadara industrial zone near the Central Business District, it has an area of 278 hectares and 400,000 people. Its land is controlled by multiple private individuals with leasehold rights. Its residents tend to be extremely poor and informally employed in the vicinity, and 94 percent are tenants. Inadequate services and precarious tenure security expose them to typical urban poverty-associated risks, costs, and stigma.

Thanks to sustained advocacy by the Muungano Alliance (comprised of Muungano wa Wanavijiji (MWW), a federation of the urban poor, and Akiba Mashinani Trust (AMT) a support NGO, both affiliated with Slum Dwellers International, SDI), Nairobi County Council (NCC) declared Mukuru as a Special Planning Area (SPA) in 2017, mandating a development

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A moratorium of two years and the preparation of a participatory physical development plan. SPA status allowed the community to leverage state resources for upgrading the settlement. NCC and AMT collaborated, forming interdisciplinary planning consortia for eight priority sectors (Figure 9.12). The consortia convened expertise from 42 local and international civil society and private sector organizations, with the community being at the center of the process.

**FIGURE 9.12: Mukuru Upgrading Planning Consortiums working on eight priority sectors**

1. Housing, Infrastructure & Commerce
2. Education, Youth Affairs & Culture
3. Health Services
4. Land & Institutional Frameworks
5. Water, Sanitation & Energy
6. Finance
7. Environment and Natural resources
8. Coordination, Community Organization & Communication

*Source: www.muungano.net/browseblogs/2021/4/7/mukuru-spa-update-from-planning-to-implementation-in-2020*

The Housing, Infrastructure and Commerce Consortium explored scenarios of various planning standards. Acknowledging the challenges of brownfield redevelopment and upgrading underdeveloped settlements, the residents opted for locally appropriate planning standards that accommodated more residents without sacrificing security, health, or resilience. Had Mukuru adopted conventional standards, the entire settlement would have been required to resettle. By contrast, the negotiated standards allowed 87 percent of residents to stay. For example, the community prioritized a transport network with the widest road measuring only 12 meters instead of the conventional width of 48 meters. Acknowledging that most residents are pedestrians, the design focused on non-motorized transport and narrower roads and paths. The SPA also explored alternative service delivery models and technologies, such as “water ATMs” to supply clean potable water thereby avoiding the cost of individual connections. Finally, the intervention enhanced tenure security for approximately 100,000 households, who now enjoy use rights over their dwellings, but which cannot be transacted in the formal market or mortgaged.

Equally if not more importantly, Mukuru’s Integrated Development Plan is coordinated with Nairobi’s larger Integrated Development Plan, thereby receiving an official endorsement for the alternative planning standards. Local politicians, including the Governor of Nairobi City County, have publicly endorsed the SPA’s plan and the importance of community-led planning processes. Building on this success, the adjoining Kibera, Nairobi’s largest slum, was declared an SPA, and nearby Mathare is under consideration.
Brownfield: infill/densification

Brownfield infill and densification may be realized through various approaches, each of which may be suitable in different circumstances. For example, the Hamburg’s ‘More City within The City’ theme uses urban densification strategically to accommodate 90 percent of residential development, not only using existing urban infrastructures efficiently but also enhancing the connectivity and accessibility of development.\(^9\) Classifying densification options may be useful for effective policy design. In this respect, Germany promotes six differentiated approaches to densification: \(^{100}\)

1. **Vertical extension:** adding additional floors on top of existing buildings.

2. **Horizontal extension:** adding new floor space adjacent to existing buildings.

3. **Perimeter development:** developing closed block perimeters.

4. **Courtyard development:** block interiors provide space for off-grid clusters.\(^{101}\)

5. **Conversion:** unused buildings (e.g., military or industrial yards) are repurposed.

6. **Restructuring:** e.g., using parking and manufacturing to accommodate new urban uses.

The Johannesburg case study is one of a housing program mobilizing supply through many small-scale projects, a much-neglected area.

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**JOHANNESBURG, SOUTH AFRICA’S INNER-CITY HOUSING UPGRADE TRUST: INNER CITY REHABILITATION AND ADAPTIVE REUSE FOR AFFORDABLE RENTAL HOUSING**

The end of the Apartheid era caused Johannesburg’s economy to decline. Established businesses and wealthy families abandoned the inner city in the early 1990s. Local slum lords rented out vacant buildings suffering from overcrowding, poor maintenance and lack of basic services, violence and stigma to newly arrived migrants, and a red line impeded commercial banks mortgages.

Acknowledging the demand for rental housing, entrepreneurial developers moved in to invest in these dilapidated properties. The Inner-City Housing Upgrading Trust (ICHUT) was established in 1992 by Central Johannesburg Partnership (CJP) to tackle the city core’s decline. ICHUT provided tenant cooperatives with subsidized loans to acquire and operate the properties, as well as related technical assistance, such as entrepreneurial capacity development and network building.

By 2003, ICHUT transformed into National Urban Housing Finance Trust (NUHFT, later renamed to Trust for Urban Housing Finance (TUHF)) with a mandate to combine social housing and standard residential finance in a sustainable operating model. Given the commercial banks’ reluctance to provide credit, TUHF relies on the South African National Housing Finance Corporation for refinancing, while employing a “character-based approach” in lending to clients.\(^{103}\)

TUHF has been operating for almost 20 years and has branched out to Durban, Port Elizabeth, Cape Town, and Bloemfontein, with operations in 94 cities. By 2019, TUHF had financed 285 entrepreneurs, 598 buildings, and 38,770 rental units. Its loan book had grown at a rate of 12 percent per annum to ZAR2.7 billion (USD 204 million) and its 2018 operating profit was ZAR148 million (USD 11.2 million).\(^{104}\) TUHF adopts a blended finance approach by combining concessional, commercial and grant funding from an array of public and private institutions. TUHF has transformed from a not-for-profit entity to a private and, subsequently, a public entity in response to the evolving profile of its funders and growing funding needs.

TUHF champions a “massive small” approach, achieving scale through the underwriting loans to many small scale landlords. This approach promotes densities and urban infill, as well as entrepreneurial development.

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\(^{9}\) City of Hamburg, Urban Development Department. http://www.hamburg.de/bsw/4640464/2015-11-19-vnw-rmv\(^{\text{mv}}\)

\(^{100}\) German BBSR. In: Der Spiegel: http://www.spiegel.de/wirtschaft/service/stadtplanung-wie-mehr-menschen-in-die-staedte-passen-sollen-a-1083766.html

\(^{101}\) “Off-grid” clusters reduce public servicing cost: they locate inside urban block and are serviced by private infrastructure, only.

\(^{102}\) TUHF employs a “character-based lending approach”, as understanding the applicants’ character is key to predicting the likelihood of entrepreneurial success and loan repayment.

The case of TUHF provides valuable transferable lessons for rejuvenation and densification of existing, declining, or underdeveloped areas, such as inner-cities, old cities, gamtals/urban villages, or informal settlements. For example, villages being absorbed by growing urban agglomerations are often carved out of development plans and tend to be relatively underdeveloped compared with urbanized surroundings. Similarly, provision of basic services in unplanned settlements creates opportunities for bottom-up densification, thereby increasing returns on housing investments and improving tenure security. Providing access to finance and technical support may promote effectively locally-driven renewal and densification. The case stands out for creating affordable rental spaces, an often-overlooked option.

9.6 Conclusion

Enhancing access to land for affordable housing requires a sound understanding of the long and multi-sector delivery chains involved and the segmentation of markets. Spatial planning at strategic local levels is critical to set the rules for future supply of urban land uses, infrastructure services, and to coordinate locational choices for firms’ investment and household settlement. In particular, integrated strategies for transportation and land use planning contribute synergistically to controlling central land costs and peripheral transportation costs, thereby serving as a surrogate for the supply of well-connected land. Zoning and development control regulations, while aimed at addressing externalities, should be market-responsive and conducive to land use efficiency and inclusivity.

City authorities need to finance much of the local infrastructure and basic services to ensure adequacy of land supply. Land-based financing, including land value taxation, can contribute to mobilizing the fiscal revenues needed to finance green and just urbanization.

At the implementation level, access to land for affordable housing can be realized through expansion, densification, and upgrading and regularization. A variety of specific instruments and innovations around the globe have successfully enhanced access to adequate land for affordable housing. Scaling up upon these successes requires an enabling environment through multiple cross-cutting measures (planning, regulation, and financing) to make land and housing choices available for every rung of the income ladder, with basic services available to all residents.
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Conclusions
South Asia's historical leadership in land recording is undeniable, but recent decades have seen the region fall behind global best practices. The poor state of land records and public land inventories, the level of informality in land holding and transfers, widespread land disputes, weak land valuation infrastructures, out of date spatial planning policies and development controls, and limited use of instruments to capture value have negatively impacted infrastructure development across the region. These factors have held back investments and private capital from affordable housing projects, resulted in the delay or cancelation of RE investments, and derailed investments in transit corridors.

The responses to these challenges have been pragmatic and innovative. Countries, states, provinces, and cities have developed ad hoc approaches to clean up land records, mapping, and informality. While some investments have eventually made progress, in other cases projects have been cancelled before they ever began or have faced systemic delays due to land issues with consequentially diluted benefits. As disillusionment has crept in, it has become acceptable to pursue compromised outcomes due to the land challenge.

The current situation is not inevitable. Governments in the region, as well as professionals working on land access issues, should focus their efforts on finding the best way out of the challenging situation – particularly in light of rising population growth, continuously accelerating urbanization, and the increasing demand for land for climate change actions. This guidance note provides practical advice on how to assemble, acquire, and leverage lands for area-based investments. It does not aim to be comprehensive or obviate the need for subject matter specialist involvement in investment scoping and design, but it is meant to highlight aspects that need to be considered in infrastructure investments in the region.

The guidance is intended to help those who are not land specialists proactively address land challenges and opportunities. More fundamentally, the authors want to send a strong message to the region on the dangers of letting land challenges further escalate. The current state of affairs is unacceptable. If countries do not succeed in improving their land records and land management systems and services, it will have severe negative impacts on infrastructure development, food production, environmental conservation, economic growth, and social and political stability.

On the other hand, investment in land administration and management infrastructure and services has the potential to reap enormous economic, social, and environmental benefits. The costs of inaction are much higher than those of action. Investment in land will make economies function more efficiently, allow countries to meet their nationally determined contributions on climate actions, and empower men, women, and families to leverage their main asset for personal development and growth.

South Asia can once again reclaim its status as a global leader in land administration and management. But investments in land cannot be delayed. It is the region's time to achieve digital and integrated land records with high reliability and low dispute rates. In doing so, it will gain the ability to leverage asset values for investments and revenue, plan and implement resilient cities for growth, and preserve the environment for future generations.