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Article

Land-Based Financing Elements in Infrastructure Policy Formulation: A Case of India

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Abstract: A rapid increase in land and property values has been one of the driving forces of urban ecosystem development in many countries. This phenomenon has presented project proponents/policymakers with multiple options and associated challenges, nudging them to configure or incorporate elements of land-based financing in their policies and legislations. Specifically, the Government of India and various state governments have sought to monetize land through diverse instruments, for augmenting the financial viability of infrastructure and area development projects. This paper compares Indian central and state infrastructure policies/acts with regard to land monetization strategies. The analysis indicates that policies and legislations are taking a turn towards promoting land monetization mechanisms as a financing tool for cities and project implementation agencies. However, the approach is cautiously used and implementation is often seen to fall behind actual project timelines. Based on the findings, key determinants of a successful policy that captures an increase in land values, are identified. The learnings provide useful inputs for states to strengthen their policy documents and legislative/institutional frameworks, for ensuring the effectiveness of land-based financing tools.

Keywords: land-based financing; land monetisation; policy; infrastructure; Sustainable Development Goals



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1. Introduction

The infrastructure and urban development landscape across the world witnessed a substantial transformation in the last two decades, attributable to economic growth, internationalization, and greater expectations of citizens [1]. The developing world has struggled with wide-ranging systemic constraints that include technical, institutional, and financial aspects in managing this burgeoning change. The growing fiscal stress of cities (“urban local bodies” (ULBs)) is forcing nations and subnational entities across the world to explore newer sources of finance—broadening the tax base and introducing different charges for utilities [2]. Land-based financing is increasingly seen as a tool for developing infrastructure and providing ecosystem services, across the world. The success of Singapore and Hong Kong in using these tools has spurred the interests of various governments the world over, to explore various tools and instruments that capture the increased value of land, and to finance infrastructure or area-based developments. Driven by speculation, these approaches have led to increased land prices and created more inequality in the developing world. In developed markets such as Hong Kong, London, Paris, and Tokyo, it is estimated that a person earning a national average income would need to work for more than 60 years to buy a residential property. Similar assessment for India ranges between 100 years for property across Indian metros, and nearly 580 years for a property at the highest rate in Mumbai [3].

Land is an important backbone for infrastructure development, which led to numerous statutory interventions by governments, to ensure its availability for economic purposes. Land is conventionally seen as one of the factors of production, and the emphasis is on

making this increasingly scarce resource available for economic growth. The traditional land acquisition acts in many countries were all premised on procuring land, in some instances under the ambit of eminent domain, to propel economic and ecosystem growth. Further, to prevent runaway misuse of increasing land and property values, some countries put in place, urban land ceiling acts, to cap the rentals that could be charged [4].

The prominence attached to land is very explicit in the Sustainable Development Goals when compared to the Millennium Development Goals (MDGs). In the MDGs, land (and property) is viewed as a resource under Goal 7 (Ensuring Environmental Sustainability) for improving the lives of slum dwellers. In contrast, the importance of land as a contributing parameter has been featured in many SDGs. In SDG 1 (“Removing Poverty in all its forms everywhere”), land features as a factor in Target 1.4 that describes rights to economic resources for all (particularly the poor and vulnerable) including control over land and other forms of property. Access to land in a secure and equal manner is considered an important determinant for improving the productivity and incomes of small-scale food producers in Target 2.3 of SDG 2 (“End hunger, achieve food security and improved nutrition, and promote sustainable agriculture”). Having rights to ownership and control of land is also seen as an important feature for achieving SDG 5 (“Achieve gender equality and empower all women and girls”—Target 5a). Access to land is also an important factor for achieving SDG 11 (“Make cities inclusive, safe, resilient and sustainable”), which addresses access to the infrastructure [5]. Land has always been considered as a fundamental factor that influences poverty, hunger, and sustainability [6]. The development path of the urban ecosystem will be influenced in some sense, by how land develops [7].

This innate relationship between land and development, coupled with the poor resources of the governments to raise finances for providing urban infrastructure facilities to an increasing urban population, gave rise to the concept of land-based financing tools. Land-based financing is modeled on the premise that land as a resource adjacent to an infrastructure facility/service has a substantial increase in value, a part of which could be used for financing development projects in that area. Many countries including India and global forums such as Global Land Tool Network, Royal Institution of Chartered Surveyors have adopted tools for this value capture in the form of area linked development charges, impact fees, transfer of development rights, urban land value tax, surcharges on stamp duty, etc. [8–10].

The idea of levying a tax on increased land value due to the efforts of the government or the community was first stated by Henry George in his seminal book “Progress and Poverty” [11]. Since then the concept of land-based financing or variants of land value capture has been propagated through the years [2,12]. The instruments span across a transfer of development rights, impact fees, land leases and sale proceeds, property, and land tax variants, betterment charges, etc. [13]. The very steep increase in land values, particularly in the developing world, has presented project proponents and policymakers with a range of opportunities to fund projects using land as one of the resources. [14].

While the benefits from land value capture are evident, land-based financing does have its share of criticisms. Leveraging the increased value of land distorts the land rights regime and equity across various sections of the society. In India, for instance, many informal and slum settlements are situated on government-owned lands. The dwellers in these settlements do not own a legal title to the land but have perceived rights to reside. Attempts to gain from monetizing such land parcels might negatively impact these human settlements [15]. The equitable benefits of land-based financing across all sections of the society are not conclusive, as there have been instances of the system bypassing the poor [13] where the expected revenues do not subsidize the needy.

One of the major criticisms of land-based financing models is the intrinsic nature to front end the investment that is recouped over a period, during which time the affordability of the land to the general public is constrained. Thus, lawmakers and policy actors need to assess policies against an equity framework that addresses aspects relating to where the economic value is being created and recovered from, to who is going to benefit from

the initiative. The linkage between the taxation and budgeting process and distributing the financial risks equitably needs to be established. Projects such as Hudson Yards and Atlanta Beltline have been assessed under such criteria [16–18]. The evaluation of the effectiveness of the policy or the project being implemented is based on (i) whether there is value creation (ii) how do policies enable this value creation, (iii) how is the value shared between various stakeholders, and (iv) whether the re-deployment of value generated further increases value at other places in the region [16].

Cities, traditionally, have better control and flexibility in managing their non-tax revenues or own assets, due to the relatively limited need for approvals and adherence to the fiscal frameworks [19]. The discourse on land-based financing is largely limited to land value capture instruments and how cities can utilize them to fund their operations. There is limited research on how the potential increase in land values can be used for financing direct infrastructure projects, and how the policies at national or sub-national levels have incorporated the elements that promote land-based financing aspects. This paper discusses the extent of land-based financing being formally incorporated in policy documents, using the policies and legislations in India as a case example.

The rest of the article is organized as follows. The approach adopted for identifying the various policies that have elements related to land-based financing and the comparison framework of these policies is described in Section 2. A few Indian project experiences that used land-based financing are presented in Section 3 to provide an overview of the diversity of regions and project structures that are being developed across the country. Various national and subnational policies, schemes, and acts that incorporate or relate to land monetization are set out in Section 4. Contours of a framework that could be used for incorporating land-based financing aspects in policy are outlined in Section 5. The findings of this analysis and lessons for its wider adoption in land value capture policies are summarized in Section 6.

2. Method

The intent of the governments to encourage land-based financing tools and instruments is typically communicated through various policy documents (and in some cases specific programmes and schemes). The land-based financing mechanisms that are in practice internationally and captured in many forums such as the Global Land Tool Network [8] emphasize the need for such mechanisms to be contextually tailored. The effectiveness of land-based mechanisms and the equity principles promoted by the policies could be gauged by five questions [16] as set out in Table 1 below.

Table 1. Framework for Comparative Analysis.

Parameters	Description
Contributors	Who are the stakeholders from whom the increased value created by public sector interventions/public infrastructure is recovered?
Beneficiaries	Who are the stakeholders to whom the benefits of the value created will accrue?
Process	How is the value–recovery mechanism linked to budgets of the policy proponents and land monetization benefits related to taxation?
Financial Risks	Who are the stakeholders likely to bear the financial risks associated with future cash flows with current investments?
Governance Actors	Who are the stakeholders (actors) involved in the governance of value recovery, distribution, and allocation?

To identify the programs/policies for a comparative study, the initiatives by the Government of India, and by three frontrunner states to undertake PPP projects over the last two decades, were screened for the following criteria (i) policies/programs that specifically address urban area development (ii) programs/policies that mention land-

based financing and (iii) the programs/policies that allow for private sector participation to achieve the respective objectives. For this research, land-based financing included all the forms of land value capture, land monetization instruments generally adopted in global networks like Global Land Tool Network [8] and mentioned by the Government of India in its land value capture policy. The sections of the policies that refer to the land-based financing mechanisms were listed out. The land-based financing elements of these policies have been compared with the five parameters (as set out in Table 1) to understand if these elements address the fundamental questions of effectiveness and equity.

3. Indian Project Experiences of Land-Based Financing

Historically, urban land has been used to develop cities in India. Mumbai (known earlier as Bombay) was developed as a port city by selling the leasehold rights by the then English administration. A similar model was adopted to develop Kolkata (earlier known as Calcutta). Many surrounding areas of the capital city, Delhi, were also developed using the sale of urban land (through Development Authorities) [20]. When the Indian economy started to blossom in early 2000, many sectors attracted international investments which subsequently led to a sharp increase in land and real estate prices. For example, allowing foreign direct investments in privately built townships and special economic zones. The domestic investments followed suit, rapidly changing the sector into an attractive investment class [21]. The Government of India and various state governments took advantage of this increase and used the land as a means to fund infrastructure projects. A recent example is the greenfield development of Amaravati as the capital city of Andhra Pradesh (explained in Table 2).

Over the last two decades, India attracted a variety of domestic and international investors, developers, and other stakeholders to participate in its growth story, who have sought progressively to move up the risk curve by exploring newer sectors and implementation arrangements [22]. The launch of major infrastructure programmes such as the Golden Quadrilateral, East West North South corridors, redevelopment of airports, ports, telecom, and energy sector improvements gave a fillip to public and private investment in infrastructure. The subnational entities, state-owned organizations, city administrations, and parastatals followed suit with a range of projects spread across infrastructure subsectors [23]. The buoyancy and aggressiveness of the investment programme coupled with the increasing risk appetite of the private sector resulted in many projects being deemed financially unsustainable solely based on user fees and charges [23]. The project proponents then began structuring projects, primarily those implemented under public–private partnership arrangements, with land-based revenue as an additional source of financing. The trend continued across all the subsectors including transport, urban, tourism, and agriculture marketing projects. The project sponsors were also spread across the national, state, and city levels. While a few of the projects were large and had attracted substantial national and regional media attention, there were also a plethora of smaller projects spread across different states that benefitted. An indicative list of projects that used land-based financing mechanisms and have attracted substantial research attention are listed in Table 2.

The greenfield development project of Amaravati city that was based on land pooling, was designed to provide the development authority with considerable land to use for development and also to raise finances for infrastructure creation, through capturing the increase in land value. The challenge, however, will be from competing developments in fringe areas that could affect the land value appreciation in the development areas of the city. The development authority would need to identify measures to counter the impact of competing developments, for instance, by permitting higher built-up areas and capturing the value from this increase. Another challenge for the authority to balance is the mismatch in the timing of initial infrastructure investments required and the value capture that would be realized over a longer time horizon [15].

Table 2. Illustrative projects that incorporated land-based financing elements.

Project	Key Features
Amaravati City	Amaravati, city assumed importance in 2014 when it was designated as the administrative capital of the newly carved state of Andhra Pradesh. Anticipating the challenges that would come from rapid urbanization, population increase, and the associated increase in the value of land in the urban area, the Government of Andhra Pradesh introduced the “Land Pooling Scheme (LPS)” as an innovative land-use planning instrument to capture the land value increases in a manner that is equitable and balances development with urbanization. The unique feature of the LPS was to ensure that landowners benefit directly from the increase in land value when the capital city would be developed, by making them stakeholders in the development process. The scheme encouraged landowners to contribute their plot of land in return for a smaller plot of urban serviced land (returnable plot), expected to be higher in value and was also promised annuity payments (to support livelihoods) and skill upgrading programs for setting up self-owned enterprises [15].
The Bangalore-Mysore Infrastructure Corridor	The project was conceived in the 1980s as an expressway of about 111 km connecting the heritage city of Mysore to the capital city Bangalore. The project proposed by Nandi Infrastructure Corridor Enterprises Ltd. was also to include residential, industrial, and commercial facilities. The objective was to de-congest Bangalore city and attract people to shift to the upcoming townships along the corridor. The government of Karnataka entered into a Framework Agreement with the developer in the year 1997 agreeing to provide land for the project. However, several rounds of litigation ensued, challenging the land acquisition process for the project and refusal to grant permission by the Planning Authority for the construction of group housing [24].
Hyderabad Metro Rail Project	The rail project comprising 66 stations in 72 km estimated at Rs. 14,132 crores are being developed by L&T Hyderabad Metro Rail Private Limited, Hyderabad. Nearly, 40% of the revenues are estimated to come from real estate development and lease revenues therefrom [25].
Modernization of Delhi International Airport	Rajiv Gandhi International Airport was a greenfield airport built on approximately 5000 acres of land. Nearly 45 acres were identified as phase 1 development for commercial and hospitality facilities comprising about 14 assets. Out of 5000 rooms, 3000 rooms were budget rooms and the remaining were categorized as luxurious rooms. The cost of construction was estimated to be Rs. 75 lakhs to Rs. 1 crore per room. The concession agreement was signed on 4.4.2006 and construction completed on 31.3.2010. The other major components of the project included the renovation of Terminals 1A, 1B, 1C, and Terminal 2 of the existing airport [26].
Dhamra Port, Odisha	Dhamra is a port close to the mineral-rich industrial states of Odisha, Jharkhand and Chattisgarh developed on a Build Own Operate Share Transfer framework. The 25.0 MTPA project with a concession period of 408 months was bid out on a revenue share basis. The concession agreement was signed on 2.4.1998. Excess land allotted to the project was met with challenges [27].
Modern Central Bus Terminus cum Commercial Complex, Haldia, West Bengal	Eleven acres of land near HPL Township was identified for the project, out of which the private partner was to develop a modern Central Bus Terminus on 7 acres of land and operate it for 20 years. The remaining 4 acres of land was to be developed commercially by the PPP partner who was also expected to operate and maintain the facilities for 50 years [28].
Construction of central bus terminal, Makarpura, Vadodara	Constructed on 6.3 acres as a BOT project for a concession period of 378 months. The concession agreement was signed in 2010 with Hubtown (Vadodara) Bus Terminal Ltd. at a project cost of Rs. 60.28 crores [28].

Source: Authors compilation based on a review of the literature.

The Bangalore Mysore Infrastructure Corridor, a road project that linked two major cities Bangalore and Mysore in the southern state of Karnataka, had attracted significant public attention as a large quantum of land was promised to the project developer. The business case of the project hinged on making land available to the developer along the corridor, for developing and maintaining townships for a defined period, which would offset the costs for developing the road and associated infrastructure. While there was opposition to the excessive land sought to be acquired for the project, the contours of this model served as a template for infrastructure projects in the country to use land-based financing approaches. Therefore, whenever the business case of a project resulted in suboptimal revenues (from the user charges and associated cash flow streams), the project sponsors, typically the public sector entities offered additional land or rights to use the land for shoring up the sources. For instance, in the case of Delhi International Airport (and other airports at Hyderabad, Bangalore, and Mumbai), the project sponsor offered land surrounding the main airport for commercial development. The income arising from such additional land development was expected to offset the capital and operations and maintenance (O&M) expenditure being incurred on the project.

Similar models have also been adopted in port projects (Dhamra port) and metro train projects (Hyderabad metro). The viability of revenue streams was a risk that was sought to be addressed using land and real estate as a sweetener in many instances. The approach, though, has not been a runaway success due to the limitations in monetizing the land value, especially after the global financial crisis and its aftermath [23]. Political controversies have also stalled the progress of land acquisition and the implementation of projects in many cases as there were attempts to convert agricultural land to industrial and infrastructure purposes [14]. However, the belief in such a model had nevertheless been seeded in many project sponsors.

4. Elements of Land Monetization in Key Legislation and Policies in India

There have been initiatives (though on a limited scale and fragmented) to reform the institutional, governance, and financial systems for encouraging private sector participation and coexisting with the social contexts surrounding land [14,29]. The policy and legislative framework that enables land-based financing in India include Municipal Corporations Acts, Municipality Acts, Development Authority Acts, Town Planning Acts, Stamp Duty, and Registration Acts, various schemes of the central and state government, national policies, and state policies. The powers to legislate different types of instruments varies by the type of agency.

The proponents of infrastructure projects are mostly city administrations and the state level parastatals, whose access to different sources of finances are limited by the powers to influence the prevailing legislations. In most cases, they have very limited say in introducing a new element or changing the base or the rate of a tax system, though they have better control over the administration of any tool once the same has been enacted. Moreover, the revisions to policies and legislations are not carried out regularly by central and state governments, leading to a potential delay in accessing the upside in the land value increases. In the meantime, the expenditure for the infrastructure service provision keeps escalating. Another area of criticism is the lack of transparency that exists in the distribution of land and the direction of transfer (typically from public ownership to private control). Therefore, an effective institutional and governance framework is vital for conducting transparent and equitable land-based financing transactions.

Various government constituted expert committees and interest groups have suggested mechanisms and instruments for utilizing unused land to finance infrastructure in India. One of the earlier initiatives was the report of the Committee on Roadmap for Fiscal Consolidation that recommended the monetization of land resources for financing civic infrastructure [30]. Instruments such as land pooling, monetization of underutilized/unutilized urban lands, land readjustment, land value capture were suggested as part of land-based financing systems [31,32]. The levy of area-based development charges

was in vogue till 2010 in Mumbai, where the revenues were collected and retained by the city municipal corporation. Ahmedabad city has been adopting the premium floor space index tool on a stand-alone basis, and to supplement the transit-oriented development initiatives in the city.

The design of recent government of India's schemes and programmes reflect this intent with sustainability as the centerpiece. Various urban development schemes were launched by the Government of India in mid-2000 to facilitate better infrastructure facilities and ecosystem services for citizens. The schemes were customized for different categories of towns and cities (based on population, characteristics, etc.). The prominent amongst them being the Jawaharlal Nehru National Urban Renewal Mission (JnNURM) Scheme, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), and the Smart Cities Mission. These schemes (and similar ones for different cities) aim to accelerate investments in city infrastructure while proposing to reform the governance, institutional, and financing systems. These schemes seek to improve land registration and cadastral systems and make the real estate available more freely for development projects through repealing land ceiling regulations.

Though direct methods of land monetization are not suggested in the JnNURM guidelines, it provided for legal and policy changes to be made by the States and simplify rules related to the conversion of land from agriculture to non-agriculture purposes. This implied that more land needs to be made available for the creation of assets meant for ecosystem services. As a consequence of this mission, the State needed to earmark land also for commercial use to serve the economically weaker sections (EWS) and low-income groups (LIG) allottees. This would include public markets, parks, schools, etc., that may generate continued revenues to the urban local bodies (ULB). As a result of the development of EWS and LIG housing projects, the land value in adjacent areas may increase due to additional habitation. The Smart City Mission guidelines place the onus on State level public agencies to create frameworks and policies for monetizing land and land-based assets in a Smart City. Land is also recognized as a key resource for implementing the AMRUT scheme, even though the scheme stops short of suggesting that excess land can be monetized for improving the sustainability of projects.

The primary legislation that enables the acquisition of land for infrastructure and development projects is the Land Acquisition Act, 2013 (which was promulgated replacing the archaic act of 1894). The Act sets out compensations that are much more aligned to market values than its predecessor. Section 26(3)(c) of this Act envisages that a Company can acquire land as equity and make landowners as its shareholders. It is possible, therefore, for a Government company to monetize land this way by acquiring it, developing necessary public infrastructure, and benefitting from the revenues that accrue.

The intention of various tiers of governments to provide direction for funding infrastructure developments is set out in the respective infrastructure policies and acts. The three states that are at the forefront are Gujarat, Andhra Pradesh, and Karnataka. While land monetization is not specified in the Andhra Pradesh law, it may be construed that in the process of development of a project for carrying out the objects of the Act, the Infrastructure Authority can suggest ways and means monetize land acquired for a project. Though the powers to acquire land is not vested in the Infrastructure

Authority directly, however, in Schedule V of the law [under Section 2(rr)], it is envisaged that the State Government will extend support to acquire land necessary for a project. It also provides for asset-based support by the Government, whereby the project proponent provides land at a subsidized lease for a predefined period (not exceeding 33 years).

The Gujarat Infrastructure Development Act does not empower the project authority to acquire land. However, in Chapter II—Infrastructure Projects (Section 6), the law envisages assistance by Government agencies for conferment of the right to develop any land. It also provides for Government agencies to participate in the equity of a project (not exceeding 49% of total equity), extends senior or subordinated loans, and similar such

conditions to provide assistance to any person developing an infrastructure project. Thus, the authority has a role of a facilitator in the development of infrastructure in the State. The Infrastructure Policy of the Government of Karnataka does not explicitly mention that land-based financing can be used, or land can be monetized, though there were numerous examples of land being used as a financing source across the state in the last two decades.

Traditionally, states and cities have been raising funds by the sale of lands which is a less efficient form of resource mobilization. Typically, land value has been captured by a levy of the impact fee, betterment charges, etc. For example, infrastructure project agencies in Maharashtra, (Mumbai Metropolitan Region Development Authority (MMRDA) and City and Industrial Development Corporation (CIDCO)) have used value capture methods to finance infrastructure development. Haryana and Gujarat have used land pooling schemes, but there is no systematic approach outlined for land value capture. The government of India's latest policy on land value capture (LVC) seeks to capture value from increases in private land valuation from public investments and public policy actions. However, it does not address direct monetization (sale/leasing) of public land. The policy document also lists out various value capture methods used in India. These include land value tax, fees for change in land use, betterment levy, TDRs, relations of rules or additional FSI, vacant land tax, etc. The guidance note recognizes that presently there is no tool to assess the increased value of the land as a result of development. However, the impact fee tool is discussed at length in the note. The other types of LVC are not dealt with in detail. While success stories of LVC implementation in India and abroad have been dealt with in Section III (page 20 onwards) examples of tried, tested and failed initiatives by Government on value capture are not provided in the guidance note. Annexure 1 contains details of the type of value capture fund sources (Land Tax, Conversion tax, Betterment Levy, Impact Fee, etc.) as has been practiced in different states in the country.

The list of policies, schemes, and legislations that have included land-based financing sources are summarized in Table 3.

Table 3. Legislations/policies with land monetization elements.

Title	Salient Features Related to Land Monetization
JNNURM guidelines(Mission period starts—2005-06)	<p>Amongst others, the guidelines propose that ULBs will develop and manage municipal assets to ensure sustainable public service delivery to the citizens especially the urban poor and people living in peri-urban areas. It is expected that the State Level Nodal Agency/ULBs would leverage financial resources in addition to financial assistance from the Central and State Governments.</p> <p>To ensure bankability, it is envisaged that liquidity support mechanism, up-front debt service reserve facility, deep discount bonds, contingent liability support, and equity support are to be established.</p> <p>The other reform proposed is to earmark 20–25% of developed land for EWS and LIG housing projects. This was suggested to enhance the supply of land for affordable houses for the urban poor and to provide them access to basic services. It was envisaged that with the increased housing supply, the ULBs would be able to garner higher amounts towards property tax.</p> <p>The other reform envisaged in the guidelines is the repealing of the Urban Land Ceiling Act, 1976. Its objective was to facilitate the availability of urban land at affordable prices by increasing its supply in the market.</p> <p>The objective of the reform in the rent control act is to bring out amendments in existing provisions for balancing the interests of landlords and tenants. Additionally, the increased investment in housing would lead to increased housing stock and increased revenue from property tax. So far twelve states have yet to make desired amendments in the rent control act [33].</p>

Table 3. Cont.

Title	Salient Features Related to Land Monetization
Smart City guidelines	<p>“Para 3.1 (i) Promoting mixed land use in area-based developments—planning for ‘unplanned areas’ containing a range of compatible activities and land uses close to one another to make land use more efficient. The States will enable some flexibility in land use and building bye-laws to adapt to change.”</p> <p>“Para 5.1.2 Redevelopment will effect a replacement of the existing built-up environment and enable co-creation of a new layout with enhanced infrastructure using mixed land use and increased density. Redevelopment envisages an area of more than 50 acres, identified by Urban Local Bodies (ULBs) in consultation with citizens.”</p> <p>“Para 5.1.3 Greenfield development will introduce most of the Smart Solutions in a previously vacant area (more than 250 acres) using innovative planning, plan financing and plan implementation tools (e.g., land pooling/land reconstitution) with provision for affordable housing, especially for the poor. Unlike retrofitting and redevelopment, greenfield developments could be located either within the limits of the ULB or within the limits of the local Urban Development Authority (UDA).”</p> <p>“Para 11.3 (i) The GOI funds and the matching contribution by the States/ULB will meet only a part of the project cost. Balance funds are expected to be mobilized from i. States/ULBs own resources from a collection of user fees, beneficiary charges and impact fees, land monetization, debt, loans, etc.”</p> <p>“Para 13.1.3 The National Mission Director will have the responsibility to (iii) Oversee capacity building and assisting in handholding of SPVs, State, and ULBs. This includes developing and retaining a best practice repository (Model RFP documents, Draft DPRs, Financial models, land monetization ideas, best practices in SPV formation, use of financial instruments and risk mitigation techniques) and mechanism for knowledge sharing across States and ULBs (through publications, workshops, seminars)” [34,35]</p>
AMRUT guidelines	<p>“Para 6.10 Conditionality: , in the AMRUT no projects should be included which do not have land available and no project work order should be issued if all clearances from all the departments have not been received by that time. Moreover, the cost of land purchase will be borne by the States/ULBs.”</p> <p>“..Explore innovative ways for resource mobilization, private financing, and land leveraging for funding of projects.”</p> <p>It also provides that in the appraisal of the DPR, the National Mission Director may decide to “Mobilize external resources and improve internal resource generation of the ULBs. For instance, facilitate access to municipal bonds by credit rating ULBs, providing assistance to ULBs to monetize land and prepare Tax Increment Financing Proposals (TIF), obtain private funding, etc.” [36]</p>
Land Acquisition Act, 2013	<p>The objective of the Act (amongst other things) is to ensure the development of infrastructural facilities and urbanization. The Act envisages that the affected persons become partners in development leading to an improvement in their social and economic status. Land can be acquired for a public purpose and it includes agro-processing, industrial corridors, water harvesting, education, sports, etc. (Section 2(1)).</p> <p>The law further provides on the method to be followed in the process of land acquisition for the determination of the social impact and public purpose (Chapter II—Sections 4 to 9)</p> <p>Section 26 (3) (c)—“Provided that in a case where the Requiring Body offers its shares to the owners of the lands (whose lands have been acquired) as a part compensation, for the acquisition of land, such shares in no case shall exceed twenty-five percent. of the value so calculated under sub-section (1) or sub-section (2) or sub-section (3) as the case may be”: [4]</p>

Table 3. Cont.

Title	Salient Features Related to Land Monetization
The Andhra Pradesh Infrastructure Development Enabling Act, 2001	To provide for the rapid development of physical and social infrastructure in the State and attract private sector participation An 'Infrastructure Authority' is established to conceptualize and identify projects and ensuring their conformance to the objectives of the State. The Authority also has the responsibility to categorize projects, prepare a project shelf, road map for project development, decide financial support, etc. It also has the responsibility to receive and consider projects from Government agencies and also advise them in the development of infrastructure. The prioritization of projects is to be carried out based on 'demand and supply gap, inter-linkages and any other relevant parameters'.
GIDB Act	The objective of the Act is to allow persons from the non-Government sector to 'participate in financing, construction, maintenance, and operation of projects. GIDB is the nodal agency for PPP projects in the State. The Board also acts as a policy advisor to the State Government and is vested with appropriate functions to prioritize various projects of the Government, to consider proposals received from private parties, to undertake technical and financial studies, to coordinate with concerned agencies.
Infrastructure Policy, Government of Karnataka	"Facilitating private participation in developing infrastructure facilities in the state by providing opportunities to private parties for participating in new infrastructure facilities development as well maintaining the existing infrastructure facilities. Infrastructure Development Department of the GoK is the nodal agency for appraisal and approval of infrastructure projects which is supported by a PPP Cell within the department. A Single Window Agency under the Chairmanship of Chief Secretary is set up for appraisal and approval of the projects. The State High-Level Committee chaired by the Chief Minister will approve Projects above Rs.50 Crores. GoK intends to put in mechanisms for expediting the land acquisition process and if necessary specific legislation would be passed in this regard. To enhance the commercial viability of projects, GoK may allow, wherever necessary, the Concessionaire/SPV to develop utilitarian services or other socially acceptable commercial activities, on the infrastructure project site."
Land Value Capture Policy, MoUD, GoI	The policy provides for four steps for project-based VCF. (1) Initiation (2) Planning (3) Design and strategy and (4) Execution and Operation. The policy document also provides a Guidance Note for the inclusion of VCF in projects. The Guidance Note envisages that VCF should be an integral part of the DPR for Central Government projects as has been stated by the Ministry of Finance in its OM dated 7 March 2017.

Source: Authors compilation based on a review of the policies/legislations.

The primary objective of these policies and legislation is to promote infrastructure development, and land monetization is suggested as a tool to achieve this goal.

5. Comparison of Policies

Over the years, project proponents have attempted to leverage the potential upside from increased land value due to infrastructure developments and have structured these increases as a source of revenue for the project. The project structures have attempted to balance concerns of the community and the political class pertaining to displacement and inequity. The history of policies, schemes, and laws also indicates an implicit real estate turn in the development landscape, as was witnessed in other Asian countries [14]. The following Figure 1 presents a timeline of the key projects and the policies, legislations discussed in the preceding sections.

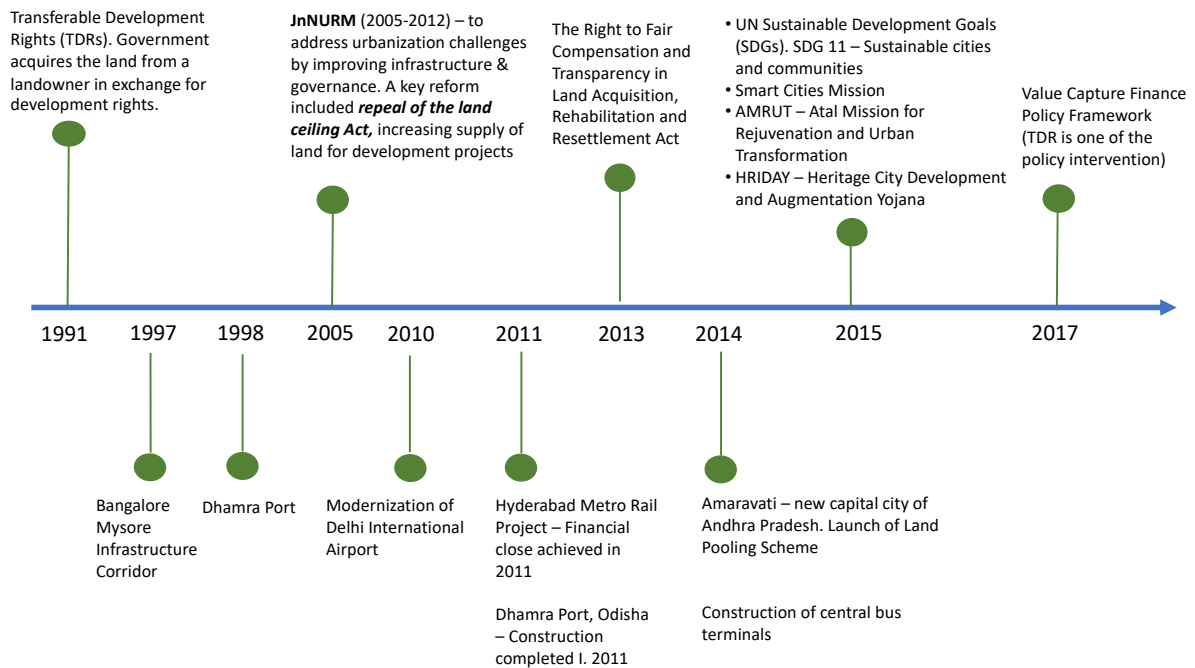


Figure 1. Key projects and legislations/policies.

Most of the projects were structured and implemented before the respective policies for land-based financing were in place. The public sector project proponents have attempted to use land-based financing techniques in the projects, though with mixed results. The capture of the potential upside of land value is sought to alleviate the relatively higher capital and O&M expenditure, in relation to the revenues that are likely to accrue. The use of such implementation arrangements has become mainstream options, though they differ in the mechanics of the application. Only the Smart Cities Mission and the Land Value capture Policy set out more elaborate provisions for monetizing land. However, the inclusion of land monetization elements in various policies and legislations have begun to appear only in the later schemes (post-2015). The permissibility of land-based financing tools under the earlier schemes was implicit, as the same were not directly prohibited. This points to a substantial lag between the inclination to use land monetization instruments for promoting investment activity (or to develop infrastructure projects), and the hesitancy in formalizing the options through well-defined policies and legislations. The approach was noticeably cautious given the challenges and controversies involved with the acquisition, distribution of the land, and its ever-changing value to the stakeholders concerned.

Table 4 sets out the comparison of the various policies, programmes, and schemes on the five parameters—from whom the increased value is being recovered, who benefits from the distribution of the land monetization benefits, how is the process linked to the overall budgets of the project proponents, the stakeholders bearing the financial risks (of future revenues and investments) and the stakeholders involved in governing the process.

Table 4. Comparative Analysis of Policies.

Title	Contributors	Beneficiaries	Process	Financial Risks	Governance Actors
JNNURM	Landowners, property developers	ULBs (cities), development authorities, parastatal agencies	Not explicitly stated. Assumed to be part of the consolidated fund	ULBs, development authorities, parastatal agencies	State government and ULBs
Smart City	Landowners, property developers	ULBs, smart city SPVs	Income to consolidated fund; revenue to SPVs	ULBs, SPVs	State Government, ULB
AMRUT	Landowners, property developers	ULBs, development authorities, parastatal agencies	Not explicitly stated. Assumed to be part of the consolidated fund	ULBs, development authorities, and parastatal agencies	State government and ULBs
Land Acquisition Act, 2013	Landowners, property developers	State Government	Proceeds go to the consolidated fund	State Government	State Government
The Andhra Pradesh Infrastructure Development Enabling Act, 2001	Landowners, property developers	ULBs, development authorities, parastatal agencies	Proceeds go to consolidated fund; PPP projects can appropriate value	Project proponents (public/private)	State Government
GIDB Act	Landowners, property developers	ULBs, development authorities, parastatal agencies	Proceeds go to consolidated fund; PPP projects can appropriate value	Project proponents (public/nongovernment)	State Government
Infrastructure Policy, Government of Karnataka	Landowners, property developers	ULBs, development authorities, parastatal agencies	Proceeds go to consolidated fund; PPP projects can appropriate value	Project proponents (public/nongovernment)	State Government
Land Value Capture Policy, MoUD, GoI	Landowners, property developers	ULBs, development authorities, parastatal agencies	Proceeds go to consolidated fund; PPP projects can appropriate value	Project proponents (public/nongovernment)	State Government

All the land-based financing aspects of the policies at the national and state level appear to be similar in content and process. The land value creation is proposed to be captured primarily from the landowners and the private developers who are in the region. There is no explicit mention/provision for widening the base to include other financial investors, who could create additional value (for example through the issuance of bonds as is the international practice [18], or to attract philanthropic investors [17]).

The economic value that is recovered is proposed to accrue to the city administrations, development authorities, and other public sector parastatal agencies. There are no formal statements on how the additional value will be distributed, and how the general public is benefited from most policies, except in relation to the land pooling system. The benefit to the contributors of the land value is made possible under the “land pooling” scheme wherein the contributors have access to additional value for the portion of the land they continue to own post-implementation of the scheme [15]. There is no specific mechanism that has been stated in any of the policies for tax abatement to any of the contributors.

The linkage of the value that is captured through land-based financing mechanism to the general budget or the taxation regimes is not touched upon in any of the policies. While there is an assumption that all the additional cash flows due to these activities will go to the consolidated fund of the various governments, there are no stated commitments to ensure that these additional sources are not spent on unrelated activities. The process

appears to be at a preliminary stage of evolution. The policymakers are yet to set out the mechanism for investigating the relative advantages of land monetization options and to assess the impact of these choices on the wider society. Accordingly, the financial risks remain with the project proponents.

The governance of land-based financing structures has been retained by the government across all the policies. While there is no specific mention of region-specific urban development authorities to be created, such institutions exist across the country and have been used in the case of Amaravati city development [15]. Such institutional structures have added flexibility in raising capital, managing the project more efficiently, and insulating financial expenditure from the influence of political exigencies.

There have been substantial gaps in policy and planning with respect to incorporating land as a revenue source in the policy and legislative frameworks. Since urban development is a state subject, much of the federal schemes and guidelines highlight the need for adopting innovative land monetization principles but do not set out the finer implementation details. It is left to the states, to incorporate these principles based on their local context, relevance, and suitability. Many states have appropriately modified the relevant tax codes and other legislations to enable land value capture, though some are yet to initiate action. Therefore, at the state level, there is a wide disparity among states in their readiness to adopt or integrate land monetization approaches in their planning and project designs. While the value capture policy guidelines mention that land monetization principles should be an integral part of an assessment for all projects of the central government, the individual schemes under which projects are submitted (by individual states/departments) to the central government, do not insist on the same being an integral part. Therefore, there is some dissonance in the translation of a policy of the central government with policies/schemes of other departments. The dissonance only increases at the state level, where each state has different enabling mechanisms for promoting land-based revenue instruments.

In summary, the policies in India have lagged behind the projects in terms of incorporating land-based financing aspects. Driven by fiscal constraints, most states are now exploring various elements of land value capture to be included in their policies, though the Government of India policy on land value capture is dedicated to this aspect. The policy landscape appears to be in the initial stages of evolution and is yet to reach a higher-order process supported by appropriate legislations for mainstreaming land-based financing mechanisms in the design and planning processes. [8,16–18].

6. Policy Implications

For governments to use land-based financing tools effectively, it needs to be supported with appropriate laws/legislations or executive orders permitting value capture methods (through tax and non-tax revenues) and earmarking/distributing funds for specific projects/developments. Further, policies need to be formulated to provide a clear roadmap for (a) capturing the value (b) collecting the fees or charges (deposited to the consolidated funds of the state), (c) earmarking funds for specific projects/developments, and (d) ensuring timely disbursement of funds to project implementing agencies (through budgetary allocations or establishing project-specific funds/accounts) [8,16–18]. To enact the policies requires a strong institutional framework and collaboration between different stakeholders [2].

A reflection into the project structures and the elements of the national and sub-national policies in India, and in international markets brings to the fore the conflicts between incorporating the private sector motivation of profit maximization against the public sector responsibilities for equitable access to ecosystem services and weaving these into state planning and policy statements [13]. In the Atlanta Beltline project, the project proponent has not made any provisions for reducing the negative effect of increases in taxes of low-income households or capping of any rents along the project influence area [17]. The extent of the control that the project proponent has over the land markets and the

autonomy of these proponents in making appropriate changes is limited in most countries given the distribution of powers across various tiers of governance. [14] This aspect of control can provide a layout of how the policies can span out in addressing issues relating to the core principles of SDGs (equity, access, efficiency, sustainability, and delivering public value) [31]. These aspects need better articulation in most instances. All of these guiding principles have a continuum with low to high ends of spectrums, providing a framework for understanding when and to what extent the public sector planning and policy framework can embed the land-based financing elements. An indicative framework to analyze the incorporation of land monetization elements in policy is set out in Figure 2.

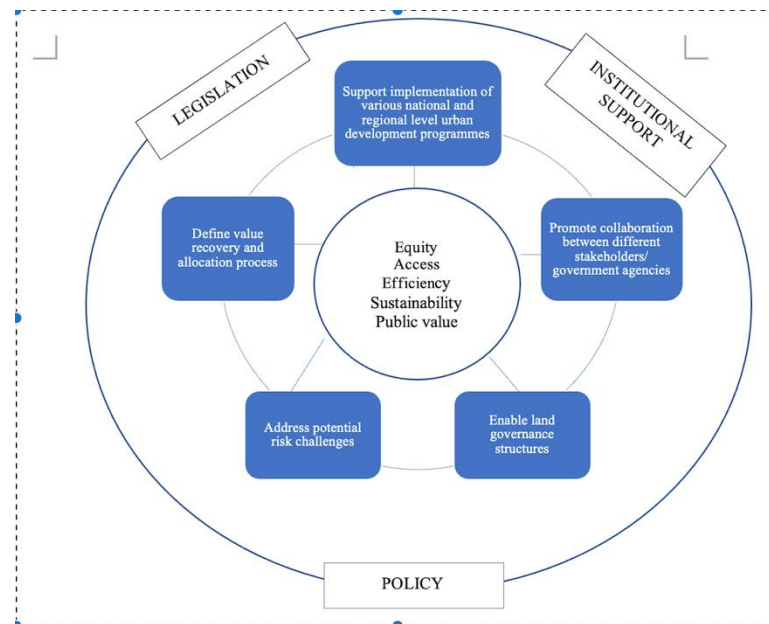


Figure 2. Framework for analyzing land-based financing elements in policies.

At the core lie the principles that define the expectations of and responsibilities towards various stakeholders concerned. These principles are derived from the philosophy of SDGs [5] and also reflect the intents of many governments. The land-based financing aspects would need to provide equal access to all, be sustainable and follow an effective process that continuously delivers public value.

The operational elements of the framework relate to the evaluation of enabling land governance structures, addressing potential risks and challenges, defining value recovery and allocation process, supporting the implementation of various national and regional level urban development programmes, and promoting collaboration between different stakeholders. The land governance structures define the extent of control or ownership of the land and real estate resources, and the flexibility of the policymakers in adapting the resources for use of non-state stakeholders. The ownership patterns of land (widely diffused through a diverse cross-section of public, private, and community owners, with substantial informal claimants in India [9]) renders the policy development more constrained. The fragmented nature of the ownership and more often than not, the unequal impact of land acquisition and land value increase is visible across most developing nations [14] An evaluation of the potential risks and challenges through the lens of guiding principles would keep the frame of evaluation grounded to the desired outcomes. In the instances where the public sector does not have substantial direct control of land, the policy initiatives have been focused on the greater role of private lands, as witnessed in the contents of the land value capture policy of the Government of India. The ability of the non-government stakeholders to influence the policy dialogue has been very minimal, even though the practice of contesting the implementation has been substantial [13]. A quantitative evaluation of the value recovery and the mechanics of the allocation across

various stakeholders is essential to understand and configure the project structures and to promote sustainability of the land-based financing mechanisms. A broader perspective of how these elements support collaboration with prevailing or anticipated government rejuvenation programmes indicates the inclusiveness of the policy. A proactive approach to governing the land monetization process, with supporting institutional and regulatory aspects would provide a feedback overlay for the assessment.

7. Summary and Conclusions

The purpose of this research article is to sketch out the broad direction of how the various policies and legislations incorporate the land-based financing elements, given the projects being implemented are actively adopting such mechanisms. The increase in attention to land-based financing models and the adoption of land monetization instruments generally coincided with the development of infrastructure projects under the public–private partnership arrangements. The stress on finances of the project proponents coupled with the anticipation of upside in the land values post-implementation of infrastructure projects has given way to consider land as a revenue source, rather than just a factor of production [9,13]. The viability assessment of the projects, particularly those in the transport sector, improved substantially with the addition of a real estate component.

The institutional, governance, and policy formulation practices present in India are reflective of similar structures prevalent in Asia and other developing regions. Development agendas of many countries are moving in a similar direction, so are the challenges that they encounter in accelerating political and administrative actions. The use of land-based financing elements without appropriate structuring could lead to sub-optimal distributive justice to all the stakeholders concerned. The policies need to strike a balance between increasing the burden on the adversely affected landowners and users, while not exaggerating the benefits derived by those who are advantageously placed to the intervention. A framework that encompasses the generally accepted guiding principles for analyzing the extent to which the land-based financing elements could be incorporated in their respective policies and legislations could provide the policymakers and public sector project proponents a tool to comprehensively assess their needs, opportunities, and constraints. The project proponents also need to be conscious of how the financial risks are identified and borne, which ecosystem services are receiving lower funding due to the land value increase interventions [16]. A holistic assessment needs to be undertaken before incorporating land-based financing elements in policy to balance the realities of the contributors to the land value increments, and broad basing the beneficiaries pool (to include wider society where appropriate through lower taxes or better ecosystem services).

A reasoned discussion with stakeholders while framing the policies, supported by political advocacy, will lead to a more efficient public investment process. With the increasing attractiveness of land monetization options for funding economic growth, many developing societies will need to balance value capture with the expectations of affected stakeholders. This research contributes to the ongoing discourse of systematically understanding the elements for formulating public policies on land management.

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