

Value Capture Finance Policy Framework



Ministry of Urban Development
Government of India

...the ...

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Preface

Adopting innovative fiscal tools such as Value Capture Finance (VCF) mechanisms by States and Union Territories is an important procedure in improving the financial health of municipalities across the country. The fiscal health of urban local bodies is imperative to provide the infrastructure that is desired by the citizenry. Currently, the municipalities receive a fair share of handholding support in the form of revenue and grants from the State as well as Central Governments, but are still struggling to meet their fiscal needs. A burgeoning urban population has also resulted in increased demands from the population for provision of services and amenities. Thus, adopting VCF mechanisms by municipalities to strengthen and augment the fiscal resources of local bodies is a natural and desirable step in the direction of financial autonomy and delivery of quality infrastructure for the benefit of the public.

The Ministry of Urban Development aimed to provide guidance to State Governments and Union Territories to leverage their assets, and in particular make use of underutilized resources such as land to finance infrastructure. Although in some areas value capture as a tool has been in use for financing urban infrastructure, it has not yet gained ground as a systematic instrument for revenue generation. Further, there is a need to bring together the various stakeholders involved in the financing and implementation of infrastructure projects, the existing mechanisms and the required parameters for local bodies to generate sustainable financial resources.

In this regard, the VCF Policy Framework has been developed as an essential document to enlighten States and Union Territories of the country with the concepts and the key idea behind introducing VCF mechanisms at the local level to enhance financial strength and thereby provide better infrastructure. In addition to the policy framework, a Guidance Note on one of the VCF tools – Impact Fees – has also been prepared to highlight the practical aspects of successfully implementing impact fees. Many different tools have been in practice for a considerable period in India, as well as in other countries around the world. Success stories of the implementation of some of these tools to projects such as urban transport and urban infrastructure have been compiled as a supplement to the policy framework and the guidance note. With the formulation of this framework policy and guidance note, it is anticipated that the States/Union Territories will be able to implement land value capture mechanisms successfully, in addition to their traditional financing methods. This would further allow them to gain financial sustainability, and thereby bridge the gap between narrowing resources and increasing demand for infrastructure from an increasing urban population.

I

Value Capture Finance Policy Framework

1. INTRODUCTION

1.1. Rapid urbanization in India has led to increased demands for providing state-of-art infrastructure in Urban Local Bodies (ULBs) and the ULBs are continually looking for new sources of funds in order to meet the requirements of creating and upgrading infrastructure. Similarly, the Ministries and Departments of the Government of India have to make lumpy investments for infrastructure development at the national and regional levels.

1.2. The McKinsey report has estimated that around Rs. 325,000 crore¹ of urban infrastructure investments are required annually. The High Powered Expert Committee Report 2011 projects urban infrastructure requirement at 0.75%, which will increase to 1.5% of the GDP by 2032 (Rs. 97,500 crore to Rs. 195,000 crore annually). Presently, national urban missions are investing about

Rs. 32,500 crore annually leading to an investment gap of nearly Rs. 65,000 crore.

1.3. Ordinarily, own sources of revenue in ULBs can be classified into three categories, (a) taxes levied by the municipality, (b) user charges levied for provision of civic services, and (c) fees and fines levied for performance of regulatory and other statutory functions. Octroi, which was one of the main sources of own income of the ULBs has been abolished, resulting in a serious dent on ULBs' resources. On the other hand, property tax, which is at present the main source of own resources is underused and has issues related to its narrow tax base, exemptions, etc. Furthermore, the State Governments are increasingly fixing the rate for services being provided by ULBs, even though these functions are mandated to be performed by ULBs under the 74th Constitutional Amendment. Overall, this has led to increased dependency on State Governments and reduction in efforts made by ULBs to mobilize resources.

¹ Exchange rate used \$1 =Rs. 65



- 1.4. Land is the most fundamental asset that is owned and managed by the States/ULBs and is a resource to generate revenues. Traditionally, States/ULBs have relied on direct sale of lands to raise funds, which is a less efficient form of resource mobilization, as compared to value capture. It is not that States/ULBs have not used Value Capture methods to raise resources. In fact, States/ULBs are using different Value Capture methods, especially in urban areas, such as impact fee, betterment charges, etc. For example, the Mumbai Metropolitan Region Development Authority (MMRDA) and City and Industrial Development Corporation Limited (CIDCO) of Maharashtra have used different Value Capture methods to finance infrastructure development in the urbanizing areas. Similarly, Haryana and Gujarat have successfully used land pooling schemes, where owners agree to exchange their lands for infrastructure services. Annexure 1 gives the details of the different Value Capture methods being used by States/ULBs and shows that all States/ULBs are not using the full range of possible value capture tools.
- 1.5. While States/ULBs have been developing and using some of the Value Capture Finance (VCF) methods, the Central Government Ministries/Departments have not yet systematically used VCF methods as a revenue generation tool. One reason is that land is a State subject and VCF Policies have to be made by the concerned State Governments. A promising way is to link the location and construction of the projects by the Central Government Ministries and their agencies with the existing VCF Policy of the State Government and then share the revenue generated within the area of influence of the projects. Alternatively, the State VCF Policy could be revised whenever new projects are being planned in order to capture full value being generated due to proposed investment in projects.
- 1.6. There is an increasing focus on creation of infrastructure by Ministries/Departments of Government of India and their agencies. For example, the Ministry of Ports is constructing a series of projects as part of the Sagarmala program. Moreover, the Delhi-Mumbai Industrial Corridor (DMIC) is being developed by the Department of Industrial Policy and Promotion (DIPP) and the Metro Rail projects by the Ministry of Urban Development (MoUD). All these projects have an area of influence in which they lead to increase in value of lands and buildings, creating opportunities for using value capture methods to mop up additional resources.
- 1.7. The above analysis shows that there is great potential to mobilize additional resources and the present VCF Policy Framework aims to enable States/ULBs and the Central Ministries and their agencies to capitalize on the opportunities opened up by using diverse VCF methods. The MoUD will work with the States/ULBs to develop and implement the VCF methods. The Central Government Ministries and their agencies will use the VCF Policy to examine the possibilities of using VCF methods to generate resources by making it a part of the project feasibility study. The present Policy on Value Capture is restricted to enabling capture of value from increases in private land valuation from public investments

and public policy actions, and does not cover direct monetization (sale/leasing) of public land.

2. WHAT IS VALUE CAPTURE?

2.1. Value Capture as practiced widely in the world is based on the principle that private land and buildings benefit from public investments in infrastructure and policy decisions of Governments (eg. change of land use or FSI). Appropriate VCF tools can be deployed to capture a part of the increment in value of land and buildings. In turn, these can be used to fund projects being set up for the public by the Central/State Governments and ULBs. This generates a virtuous cycle in which value is created, realized and captured, and used again for project investment.

2.2. As the additional value is generated by actions other than landowner's direct investment, Value Capture is distinct from the user charges or fees that agencies collect for providing services. It gives governments the opportunity to launch new projects, even with a small resource base. For the private actor, VCF is an opportunity because projects are properly planned and backed up by the Government either through an executive authorization or through risk sharing.

3. VALUE CAPTURE METHODS

3.1. A comparative study on land based financing tools being used in India and the world shows a large number of diverse VCF tools being used. The main types of VCF methods are given below.

3.2. Land value tax – is considered the most ideal Value Capture tool which apart from capturing any value increment, helps stabilize property prices, discourage speculative investments and is considered to be most efficient among all Value Capture methods. Maharashtra and Tamil Nadu, through State laws, have expanded the scope of this mechanism to cover urban land also. Globally, land value tax is widely used in Denmark, Australia, and New Zealand.

3.3. Fees for changing land use (agricultural to non-agricultural) – land revenue codes provide for procedures to obtain permission for conversion of land use from agricultural to non-agricultural use.

3.4. Betterment levy – one-time upfront charge on the land value gain caused by public infrastructure investment. This occurs in two forms – revenue source for improvement schemes and for specific projects. In India, the Mumbai Metropolitan Regional Development Authority (MMRDA) Act, 1974 provides for levying betterment charges for specific projects. The Hyderabad Municipal Corporation Act, 1955 originally provided for the levy of betterment charges to meet the costs of internal infrastructure and services in the case of development projects. In the late nineties, the Government of Andhra Pradesh amended the Act to enhance the scope of such levy to include external betterment. Under this concept, the municipal authority is empowered to collect external betterment charges at the time of according approval to layouts or sub-divisions of plot or issue of building permit for the laying of trunk water lines, development of freeways/major roads,



regional parks, etc. Similarly, Great Britain has imposed a betterment levy equal to 40 percent of the land value gain attributable to public investment.

- 3.5. Development charges (Impact fees) are area-based and link the development charge to the market value of land by carrying out periodic revisions. This is the most widely used land based fiscal tool in States. States like Andhra Pradesh, Gujarat, Maharashtra, Tamil Nadu and Madhya Pradesh levy Impact Fee and collect it upfront while granting development permissions. Impact fee is widely used to fund infrastructure in the United States. The Government of Andhra Pradesh in the late nineties also permitted Hyderabad Municipal Corporation to levy Impact Fees to mitigate the impacts of construction of commercial buildings, which lead to increase in traffic and necessitate decongestion measures. This is meant to address citywide problems emanating from high-density commercial development and is expected to be utilized for the Capital Improvement and Decongestion Plan. This includes works such as road widening, link roads, slip roads, parallel roads, junction improvements including traffic signals, flyovers, rail over-bridges, rail under-bridges, modern lighting on major roads, development of major storm water drains, riverfront and parks and for Geographic Information System (GIS) applications.
- 3.6. Transfer of Development Rights (TDRs) –used for trading development rights. Maharashtra, Karnataka and Gujarat have enabling laws for using TDRs for developing open spaces, promoting affordable housing, etc. In New York City, TDRs are given for preservation of heritage landmark buildings, open spaces or cultural resources and is a way to compensate the property owners for loss in revenue on their properties.
- 3.7. Premium on relaxation of rules or additional FSI/FAR – widely used in States such as Maharashtra, Karnataka, Gujarat, Tamil Nadu, etc. to allow for additional development rights beyond the permissible limits in the State Town Planning Laws and Regulations. Sale of additional Floor Area Ratio (FAR) is an important Value Capture tool in Brazil and France. The French Land-use Policy restricts the landowner’s building right to a low baseline FAR and additional FAR has to be purchased.
- 3.8. Vacant Land Tax (VLT) – is applicable on those landowners who have not yet initiated construction on their lands. In Andhra Pradesh, the Greater Hyderabad Municipal Corporation (GHMC) imposes a tax of 0.5% of the registration value of the land if not used exclusively for agriculture purpose or is vacant without a building.
- 3.9. Tax Increment Financing (TIF) – is one of the most popular Value Capture tools in many developed countries, especially the United States. In TIF, the incremental revenues from future increases in property tax or a surcharge on the existing property tax rate is ring-fenced for a defined period to finance some new investment in the designated area. Tax Increment Financing tools are especially useful to finance new investments in existing habitations. Some of the Smart City Proposals have planned for TIF in their area-based developments (ABD).

3.10. Land Acquisition and Development – acquiring and developing land could be adopted as a useful Value Capture method to mobilize resources. In Hyderabad, impact fees are levied on all new developments within a one-kilometer wide growth corridor on both sides of the Outer Ring Road (ORR). Another innovative ‘Road widening Scheme’ is being implemented in Hyderabad in which the Municipal Corporation gives additional FAR and relaxes zoning for property owners who give land free of cost for road widening.

3.11. Land pooling System (LPS) – is a form of land procurement where all land parcels in an area are pooled, converted into a layout, infrastructure developed, and a share of the land, in proportion to original ownership, returned as reconstituted parcels. In India, States such as Gujarat and Haryana have used land assembly programs where the owners agree to exchange their barren lands for infrastructure-serviced smaller plots. Gujarat has used these tools to guide the development of Ahmedabad city and its surrounding infrastructure. The State of Andhra Pradesh has used LPS to get land for Amravati, its new Capital City. Such LPS are also a common feature in countries like Japan and Germany.

4. TYPES OF VALUE CAPTURE

4.1. Various methods of Value Capture have been used by States which are listed in Annexure 1. Some of the tools like betterment levy, development charge, etc. have been extensively used across States whereas some tools like TDRs and VLT have been used less frequently. Value capture methods can be used in an area or can be specific to a project. Area-based value capture attempts to capture

the basic appreciation of the value of the area as a result of infrastructure development, while project-based value captures the appreciation of land and building values in the area of influence of the project. The area of influence determines the geographic extent of immediate positive impact of project investments. Table 1 gives the different VCF methods that can be applied to the two types of interventions.

4.2. Area-based application of Value Capture is best suited for urban areas. The area could be a locality, city or a larger planning area. On the other hand, project-based value capture can be used for projects being implemented by Ministries/Departments/Agencies of the Government of India. Some examples are given below.

- Ministry of Railways for high-speed rail projects and expansion of railway network through SPVs.
- Ministry of Road Transport and Highways for the phased implementation of the Indian National Expressway Network.
- Department of Industrial Policy and Promotion for setting up of Special Economic Zones (SEZs) and industrial corridors such as the Delhi Mumbai Industrial Corridor (DMIC).
- Ministry of Power for setting up power generation plants.
- Ministry of Shipping for projects requiring significant land resources such as cargo terminals, constructions of ferry and cruise terminals, and establishment of free trade zones.

4.3. Recently, the Government of Karnataka decided to create a dedicated fund for investment in mass transit systems by using



Table 1. Value Capture Methods and Scale of Intervention

S. No	Value Capture Method	Frequency of Incidence	Scale of Intervention
1.	Land value tax	Annual rates based on gain in land value uniformly	Area-based
2.	Fees for changing land use (agricultural to non-agricultural)	One-time at the time of giving permission for change of land use	Area/Project-based
3.	Betterment levy	One-time while applying for project development rights	Area/Project-based
4.	Development charges (Impact fees)	One-time	Area-based
5.	Transfer of Development Rights	Transaction-based	Area/Project-based
6.	Premium on relaxation of rules or additional FSI	One-time	Area (Roads, railways)/Project (Metro)
7.	Vacant land tax	Recurring	Area-based
8.	Tax increment financing	Recurring and for a fixed period	Area-based
9.	Land Acquisition and Development	One-time upfront before project initiation	Area/Project-based
10.	Land Pooling System	One-time upfront before project initiation	Area/Project-based

VCF methods, such as premium FSI, levying fees for change of land use in the vicinity of a project, etc. Specifically, provisions have been made for levying a betterment tax equal to one-third of the increase in value of the land. Similarly, the Government of Maharashtra is also levying a 1% surcharge on Stamp Duty to fund vital important Urban Transport Projects related to MRTS such as Metro Rail, Mono Rail, and Bus Rapid Transport System, Freeway, Sea-link, etc.

5. WAY FORWARD

5.1. The Policy Framework provides a generic pathway to capture a part of the increased value by investment made by Central/State Governments and their agencies and the ULBs. The components of the Framework are

different for Area-based and Project-based interventions. The types and mix of VCF methods which can be applied to an area or project will depend on the State environment and local context

5.2. Framework for application of VCF methods to Projects

The VCF policy framework aims to encourage and enable States/ULBs, Central Government Ministries and their agencies to use appropriate VCF methods for generating resources from new and existing infrastructure projects in both urban and non-urban areas.

5.2.1. Project initiation - At the time of initiation of the project the rules and regulations

governing Value Capture in the State need to be studied and possibilities of applying existing VCF methods has to be examined. If the existing VCF tools are inadequate, new VCF tools could be proposed. A comparative analysis of VCF tools being used in other States and countries will lead to the identification of such new VCF tools.

5.2.2. Planning - After finalizing the project location, the area of influence of the project for applying the Value Capture tool needs to be delineated. The area of influence of the project will be the area in which land and property values are expected to increase due to project location. The starting point is the value impact assessment in the area of influence, which should form a part of the Detailed Project Report (DPR). Next, stakeholders who will benefit from the setting up of the project will have to be identified and consultations held with them right from the stage of project initiation.

5.2.3. Design and Strategy - The Value Capture methods for funding a project need to be identified and these methods have to be put in place by the State Governments. This will include the type and number of VCF tools to be applied, methods of assessing, levying and collecting the incremental value generated, time period during which the VCF tools will be in operation, etc. Moreover, the funds collected from the application of Value Capture methods will have to be placed in a separate account and the way of using the funds by Governments and their agencies will have to be agreed upon. In

case projects are being established by the Central Government Ministries and their agencies, an agreement/MoU will have to be signed with the State Government/ULB, which will, inter alia, include the sharing of funds, joint operation of accounts, agency to levy and collect the Value Capture fund, etc.

5.2.4. Execution and Operation - The value capture method for the project should be implemented and an efficient mechanism for monitoring of fund management put in place. Regular monitoring and evaluation of the project progress will have to be established and put in the public domain. Figure 1 gives the details of the steps to be taken by the Central/State Governments and their agencies at the time of doing project feasibility studies.

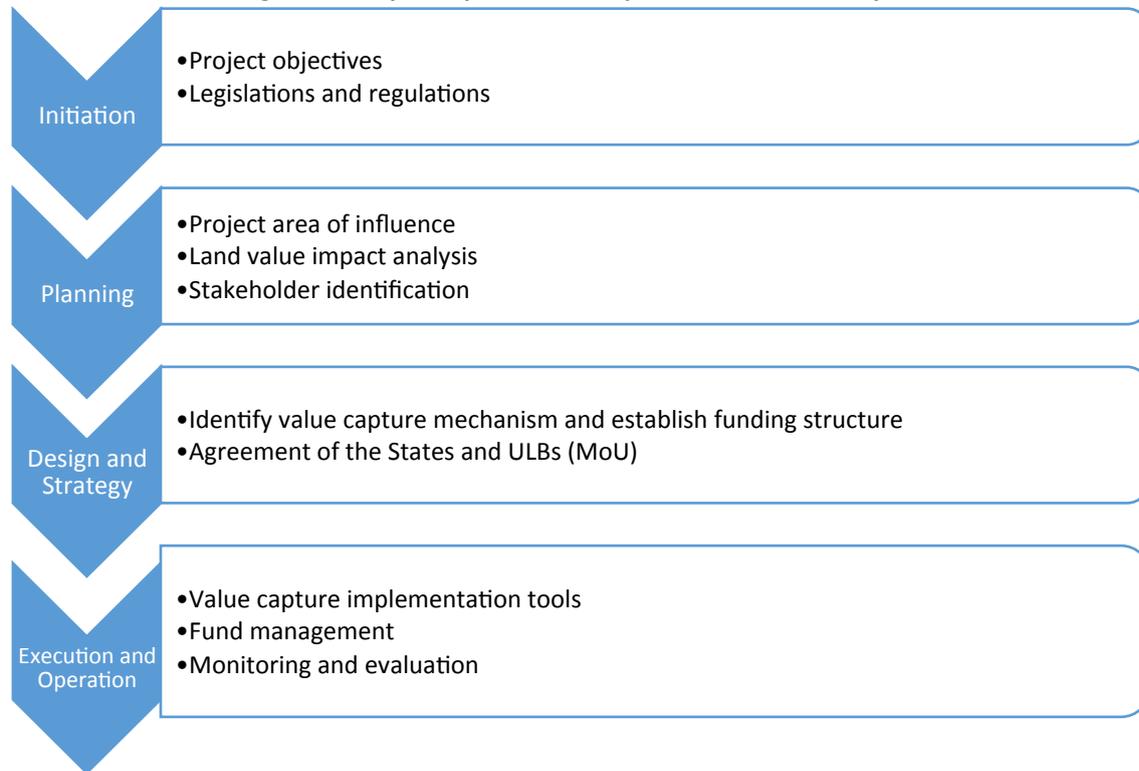
At the time of initiation of the project, the Central Government Department/Agencies should use a Challenge method for project/site selection and one criteria for locating projects in a State/City should be the willingness of State Governments to use the full range of VCF tools.

5.3. Framework for application of VCF methods to Area

In order to capitalize on the full range of VCF tools to mobilize additional resources, the States/ULBs will have to use the Scope-Coverage-Optimization Model of Value Capture. Scope refers to the type of existing and new tools which can be used in the State/ULBs. Coverage is replication of an existing tool to all parts of the State; and Optimization is related to use of scientific methods to assess, levy and collect taxes from a range of VCF tools. Below,



Figure 1: Steps Required for Project-based VCF Policy Framework



are given the steps for States/ULBs to assess the opportunities for using VCF tools to generate additional resources.

5.3.1. Scope - The State should review the different types of Value Capture tools being used in other States and countries and decide on the types which could be used in the Area.

5.3.2. Optimization - The State should analyze rates of different VCF methods based on an examination of the rates being levied by other States and the different ULBs within the same State.

5.3.3. Coverage - Sometimes the VCF tools are applied to small parts of the State and can easily be extended to other Areas. These should be identified and scaled-up.

5.3.4. After studying the scope, optimization possibilities and coverage of the Value Capture methods, the State will have to examine if existing Acts, rules, regulations and bye-laws have to be amended.

5.3.5. Finally, a mechanism for sharing of the revenues through value capture between the States/ULBs and other entities will have to be designed and implemented.

II

Guidance Note for Inclusion of Value Capture Financing in Projects

The Ministry of Urban Development (MOUD) has prepared a Value Capture Financing (VCF) Policy Framework for use by the Central Government Ministries and Departments/PSUs as well as the State Governments. The concept arising out of the Framework is given in Box 1. The Ministry of Finance (MOF) vide their OM No. 66(20)/PF-II (2016), dated 7 March 2017 have issued instructions to include the VCF as an integral part of Detailed Project Report (DPR) of all projects of the Central Government. While appraising projects of the Central Government being implemented in the State, the Public Investment Board (PIB) and Delegated Investment Board (DIB) will ensure that option of using VCF has been considered and examined in the DPR. The check memo for PIB/DIB memorandum by the MOF has been revised and now the DPR for the project should examine and consider the VCF as a source for financing the project as per the guidelines circulated by MOUD. Moreover, the details of the estimated amount and the mode of such VCF should be clearly brought out in the PIB/DIB meeting.

This is the first time that a stipulation has been made to examine new sources of finance at the DPR stage itself. While the VCF Policy Framework gives the types of tools, etc., there is little guidance available on the precise way to use one or more VCF tools at the time of DPR preparation in order to make the project self- sustaining. There are

Box 1.

What is Value Capture?

Value Capture as practiced widely in the world is based on the principle that private land and buildings benefit from public investments in infrastructure and policy decisions of Governments (e.g. change of land use or FSI). Appropriate VCF tools can be deployed to capture a part of the increment in value of land and buildings. In turn, these can be used to fund projects being set up for the public by the Central/ State Governments and ULBs. This generates a virtuous cycle in which value is created, realized and captured, and used again for project investment. As the additional value is generated by actions other than landowner's direct investment, Value Capture is distinct from the user charges or fees that agencies collect for providing services.



various VCF tools, which enable local bodies to capture the increased value of land from development and some of these concepts are detailed in the VCF Policy Framework. However, keeping in view the suitability of a tool in the current scenario, this note only explains the practice of impact fees as a tool. The purpose of this Guidance Note is to enable municipal bodies and their agencies to use the VCF tool - impact fees, and assess the possibilities of levying them in an area of influence of new/existing projects. This Guidance Note must be read as a supplemental document to the VCF Policy Framework.

IMPACT FEES - DEFINITION

Impact fee is one of the most widely used value capture methods worldwide. Impact fees are charges assessed against new development that attempt to cover the cost of providing capital facilities needed to serve the development. The use of this VCF tool is based on the premise that new development should pay the costs associated with growth. Conversely, the existing residents should only bear the costs of improving existing services. The method of impact fees is usually adopted to meet the increasing demands from growth by financing facility improvements, i.e. a proportionate share of the cost of new facilities is borne by those who create the demand for new or additional facilities.

Please refer to Section 4.2 of the VCF Policy Framework for instances of projects being implemented by the Ministries, Departments, or Agencies of the Government of India. Some other facility improvements where agencies can explore introducing impact fees are roads and highway improvements, water supply and sewerage, parks

and open spaces, solid waste management, etc. Impact fees are not intended to be used for operational expenses or to pay the capital improvements to correct an existing deficiency or shortfall.

The simplicity with which impact fees could be designed, implemented, adopted and charged is one of the reasons for it to be a preferred VCF tool. Administrative efficacy of impact fees makes it a relatively easier option. Impact fee is typically levied annually for a longer time. The calculated impact fees are not a one-time payment in the future but, rather, annual payments. This means that there will be a payment in one year, in two years, in three years, etc. Thus, the project will be able to generate a stream of payments through an appropriate VCF tool over a number of years in the future. A common cut off point is twenty years. The task then becomes the provision of fair and reasonable consideration for annual payments toward capital improvements costs over the next twenty years.

IMPACT FEES IN PRACTICE

The municipality must view impact fees as a source to finance improvements that are needed to meet projected growth and must include it as part of its capital improvement plan. For a successful financing tool, impact fee should include assessment of various factors such as the new facility or improvement and the area of influence or the beneficiaries of the development. Other important factors that must be included in the assessment are forecasted employment growth, high rate of taxes, growth taxes, the demand and supply of housing, per capita costs among other demographic projections. In an area of influence or a benefitted area with multiple developments

(as is common with satellite towns, etc.), it must be explored which facility is most suitable for introducing impact fees. There are three important factors that the agency must bear in mind for levying impact fees –

- The improvement/construction of the infrastructure must be a necessary action
- The fees must be proportional to the cost of the infrastructure
- Those who pay the impact fees must be benefitted by the improvement (only those developments that are to be benefitted by the improvement must be liable to paying the impact fees. For example, impact fees for a road construction must be paid for by residential, commercial as well as institutional developments, while impact fees for recreational facilities should only be paid for by residential developments)

Please refer to sections 5.2.3 and 5.2.4 of the VCF Policy Framework for information regarding

fund management in projects. In case the impact fees collected by the municipal body exceed the costs incurred by the infrastructure, the remaining amount must be refunded and a set procedure must be established for returning the impact fees not expended within a stipulated timeframe. A biannual or timely review of the fee structure is necessary to estimate and establish if any adjustment is required considering the cost of the improvements.

A committee of experts must be set up at the local level, involving knowledge transfer from different perspectives such as economic, legal, urban planning, etc. Refer to section 5.2.2 of the VCF Policy Framework for information regarding stakeholder consultation.

The impact fee notification must be drafted with detailed technicalities such as definitions, rules, intent and purpose, computation of the charge,





payment, use of funds, exemptions, effective time period, penalties, etc. Please refer to section 5.2.1 of the VCF Policy Framework for project initiation with references to rules and regulations.

A special purpose vehicle (SPV) must be tasked with the development of the infrastructure improvement or construction. An annual update must be conducted to reassess the current budget levels, planned improvements and compliance with the capital improvement plan.

In conclusion, the following steps may be followed for implementing impact fees:

Box 2. **Present value of Impact Fees**

“Payments to be received in the future have a lower value in the present. The difference between the future and present value is interest. Assuming an interest rate of 6 percent, Rs.100 to be received one year from now is worth Rs.94.34 in the present. The quick method for calculating this present value is to divide the future amount, Rs.100, by 1 plus the interest rate (expressed in its decimal form), or $Rs.100 \div 1.06 = Rs.94.34$. The difference, Rs.5.66, is interest at 6 percent ($Rs.5.66 \div Rs.94.34 = 0.06$). Likewise, Rs.100 to be received two years in the future is worth Rs.89 at the present. The method to calculate this is to divide the amount due in two years by the square of 1 plus the interest rate, or $Rs.100 \div (1.06)^2 = Rs.89$. The difference, Rs.11, is interest for two years. For three years, the factor of 1 plus the interest rate would be cubed, and so forth.

The general formulation is:

Present Value = Future Amount / $(1+i)^n$

‘n’ is the number of years between the present and when the amount is to be received, and ‘i’ is the interest rate.

Source: A Practitioner’s Guide to Development Impact Fees (J. Nicholas, A. Nelson, and J. Juergensmeyer)

- Identification of facilities and services affected by rapid growth
- Identification of capital improvement projects requiring financing through impact fees
- Calculation and deduction of formulas to compute impact fees to be charged (should involve calculation of the total infrastructure cost per unit of capacity, linkage of development – in the form of dwelling units, family size, housing size, etc. – to the demand for the services, multiplication of the infrastructure cost per unit of capacity by the demand per unit of development, and estimation of credits against the impact fees to allow for any double payments)
- Relevant Notifications must be issued

A few cities in India have already been using impact fees as a VCF tool. In Ahmedabad, Gujarat it is charged as fee regularizing unauthorized development while in Hyderabad, Telangana it is an area-based charge. Likewise, the Maharashtra government in 2016 also proposed to levy impact fees in the areas considered as benefit zones in Mumbai. The impact fee in Mumbai is proposed to be a direct levy imposed on the landowner and will be in effect when the land in the designated benefit zone is sold or developed.

Various sources of revenue are available to finance new or expansion of existing projects. The levy of impact fees for new or expansion of projects is different and is given below.

FOR NEW PROJECTS

Impact fee calculations are based on standard project planning and financing principles which include forecasting population, employment and other demand characteristics usually over a longer period, say, twenty years. The process begins



with assumption about current and twenty-year population and employment forecasts. The second step entails projecting the specific demand for the project under consideration. Once demand for new/expansion of projects is determined, the cost of the project must be calculated. Next, an assessment has to be done of the VCF tools in use in the State (as well as potential VCF tools not being used in the State), which can be easily introduced to provide a steady stream of revenues to make the projects self-financing. Finally, revenue has to be apportioned among the various land uses/buildings in the area of influence and spread over the project lifetime (e.g. 20 years). An effective way of dealing with future payments is by determining the present value of the future stream

of payments. This is called present value and the details are given in Box 2.

FOR EXISTING PROJECTS

Where the project is already complete and has excess capacity to serve new developments, an impact fees to recoup costs is levied. The impact fee is usually a one-time assessment on new developments (e.g. buildings) falling within the area of influence of an existing project. Vintage pricing (see Box 3.) is central to the calculation of impact fees for existing projects since the fee is calculated according to current replacement costs. Here, fee is calculated according to what it would cost at the present time to replicate each project on per unit



of consumption basis. Through vintage pricing, the value of service betterment, depreciation, and excess/deficient capacity are factored into the current value of project replacement. This pricing concept contrasts with the historical cost approach in which fees assessed are based on original investment, not the value of investment in current rupee terms.

Vintage pricing ensures that new development always pays a proportionate share of the cost of replacing a unit of service in present value terms rather than historic costs. In effect, new houses, commercial entities and businesses are required to “buy in” at the current value of the infrastructure, rather than at the historic value of construction. This results in a payback for past investments where excess capacity exists. The impact fee for specific projects paid by each sector is thus simply the net growth-related vintage costs attributed to that sector, divided by the increment in units of capacity resulting from expanded facility capacity. For example, if a new road costing Rs.1 crore

will serve ten thousand residential units, the per dwelling unit fee would be Rs.1,000. Fees calculated for each facility are summed to arrive at the total impact fee.

Since different infrastructure projects have different life cycles, it is suggested that the life cycle of the infrastructure project in question must be evaluated to calculate the impact fees projected. This method is prevalent in Australia, where asset management takes into account the life cycle of a project to work out the investment needed and not simply for its replacement value. For example, infrastructure such as roads and buildings have a longer life span; say 30 years, as compared to streetlights, which have a shorter life span.

Lastly, impact fees can be a good source of generating revenue for development purposes, but they may face a lot of opposition from the beneficiaries, unless there is a transparent system to inform the ‘ultimate beneficiary’ – the user from whom this fee is collected. Transparency is also of import in processes that fix the impact fee rates, as we currently do not have independent regulators. State Governments legitimately have the power to fix these rates and must ensure that calculations with respect to rate of impact fee are arrived at after keeping in mind the indicators mentioned above. In addition, the respective Municipal Acts must be amended to introduce the provision on impact fees and grant autonomy to municipal bodies for its implementation. It is only when these challenges are addressed that the implementation of impact fees as a VCF tool will be successful.

Box 3.

What is Vintage Pricing?

Vintage pricing refers to price discrimination between old and new customers and through realizing inflationary pressures. New users as well as increased use by existing users should result in a higher price with current prices being applicable on existing facilities. In effect, vintage pricing is similar to using weighted average pricing. Through its approach related to capacity and consumption, it has substantial administrative difficulties and puts in action price discrimination by charging different prices from different customers for an infrastructure which may have the same opportunity cost.

Source: Priority Rights, Capital Facilities Charges, and Efficient Pricing for Utilities (S. Berg, J. Gonzales and P. Vanderheiden, 1977)

III

Success Stories on Value Capture Finance Implementation

The following are examples from various Indian, as well as international cities where local bodies/collective institutions have tried to capture value from land and harness it to develop major infrastructure.

1. INTRODUCTION OF IMPACT FEE AS A RESOURCE IN HYDERABAD, TELANGANA

Project Aim

To improve the resources of the Greater Hyderabad Municipal Corporation (GHMC) and make significant efforts to recover costs using land as a resource by identifying users and beneficiaries, both direct as well as indirect, and levying impact fees and other value capture tools on them to strengthen the financial resources of the Municipality.

Project Description

In Hyderabad, a 1-kilometre stretch along both sides of the 162 km, eight-lane expressway Outer Ring Road (ORR) has been designated as a Growth Corridor. As a consequence of the ORR

construction, the Hyderabad Urban Development Authority (HUDA) had anticipated large-scale development and other problems that emanate from high-density commercial development such as traffic and congestion. The aim of the corridor is to develop well-planned and well-connected urban settlements and satellite townships around the Hyderabad Metropolitan area. A thriving construction sector provides an opportunity for local bodies to realize significant revenue increase in their finances. In order to curb haphazard development, the Hyderabad Metropolitan Development Authority (HMDA) has introduced Special Development Regulations along the Growth Corridor. A special impact fee is levied on any development that takes place along the corridor for ensuring development of the ORR and other related facilities. The Growth Corridor is classified as a mixed land use zone integrating land use and transport planning through planned satellite townships and a metro corridor in the ORRGC (Outer Ring Road Growth Corridor).¹

¹ Ahluwalia, I.J. (2009). *Planning for Urban Development in India*



Project Implementation

HUDA prepared a Comprehensive Plan and Special Development Regulations for the areas falling within the ORRGCC. The area designated as falling within the ORGCC jurisdiction is classified as a Multipurpose Use Zone, excluding the areas marked for Roads, Open Space and Recreational, Transportation and Public Utilities and Amenities Zone. The growth corridor is divided into two Special Development Zones (SDZs) where SDZ1 includes areas within or inside the ORR (towards the City) while SDZ2 pertains to areas outside the ORR (away from the City) and within the ORRGCC.

The Hyderabad Municipal Corporation levies an impact fee in order to mitigate the impact of increased commercial construction activity along the zone classified as ORGCC and is collected at the time of granting building permissions. This impact fee is a one-time charge that is collected as a measure to pay for public infrastructure requirement that emerges from new developments. Additionally, the impact fee is higher for commercial uses and increases with increasing building height. At the same time, incentive is given for large projects such 10-25% discount on impact fee rates for the construction of large integrated townships and 20-30% discount on impact fee rates for IT/ITES projects, education institutions/universities and hospitals.

The impact fee is collected and deposited in a separate account of the Municipality to be utilized for the Capital Improvement and Decongestion Plan. It is strictly not to be utilized towards general revenues or salaries and maintenance works. This fund is spent on activities which include tasks such as road widening, link roads, slip roads, parallel roads, junction improvements including traffic signals, flyovers, rail over-bridges, rail

under-bridges, modern lighting on major roads, development of storm water drains, river-front and parks, GIS, etc.²

A special purpose vehicle (SPV), Hyderabad Growth Corridor Limited (HGCL)³ was set up in order to execute the construction of the ORR. The Metropolitan Commissioner of HMDA acts as the chairperson of the HGCL Board and its managing director acts as a Special Collector to facilitate the land acquisition process. The total cost of the project was evaluated to be Rs. 6,696 crore of which Rs. 699 crore amounting to the first phase was provided through loans borrowed from a consortium of commercial banks led by the Bank of Baroda. Rs. 2,439 crore was financed through PPP and supported the first part of the second phase of the project. Contracts were further awarded to five concessionaries post global tenders using the build-operate-transfer (BOT) annuity model and 20% of the project cost was financed as grant by the HMDA. Japan International Cooperation Agency (JICA) provided a long-term loan amounting to Rs. 3,123 crore over a period of 30 years at an interest rate of 1.2% per annum.⁴

The rate of the impact fee has recently been reduced by 50% from the time of its introduction in a bid to give a thrust to the real estate industry by boosting the ease of doing business and construction activity on the ORR. Originally, the impact fee was divided into four slabs, which has now been reduced to two slabs in order to encourage the construction of high-rise buildings

² Mohanty, Dr. P.K. (2003). *City Development Strategy and Comprehensive Municipal Reforms: The Approach of Hyderabad City*

³ HGCL is a publicly held company which has 74% shares with HMDA and 26% shares with Infrastructure Corporation of Andhra Pradesh (INCAP)

⁴ Ahluwalia, I.J. (2011). *Highway to the Future. The Indian Express*

and thereby increase the revenue collection of local bodies. The first slab pertains to buildings up to 17 floors while the other slab includes buildings above 17 floors. The impact fees for areas falling within the jurisdiction of GHMC will range from Rs. 500 to Rs. 1500 per sq. m. while the impact fees for areas falling within the jurisdiction of the Hyderabad Metropolitan Development Authority (HMDA) will range from Rs. 175 to Rs. 500 per sq. m.⁵

In order to discourage owners from keeping their land plots empty/vacant and undeveloped, the Municipality also levies a Development Deferment Charge and it is charged @Rs. 10 per square metre of land per year from the date of operationalization of traffic on the ORR.⁶

Key Results and Impacts

- The Development Plan introduced by HUDA has encouraged compact development through the clustering of social and economic activity within built-up areas and along transport corridors⁷
- Proceeds from the impact fees and other charges/taxes have led to the formation of a City Development Fund which is earmarked for undertaking development and improvement of the ORR⁸

2. BANDRA KURLA COMPLEX LAND AUCTION IN MUMBAI, MAHARASHTRA

Project Aim

Bandra Kurla Complex (BKC) was created with an aim to develop an alternate central business district

(CBD) in Mumbai with commercial activities having reached a point of saturation in South Mumbai. It was constructed with the purpose of meeting the demands of a rapidly increasing population and as a decongestion measure for South Mumbai and for raising significant resources for financing massive regional infrastructure.

Project Description

Mumbai Metropolitan Region Development Authority (MMRDA) was appointed as the Special Planning Authority for the development and implementation of the BKC project in 1977. The BKC complex provides two lakh jobs and is a hub for corporate and commercial activities in the city, housing many prominent institutions and covering a developed area of 19 hectares. The complex offers almost 1,17,000 sq. m. of commercial office space.⁹ MMRDA's methods for garnering financial resources for developing a coveted commercial hub in the city have proven successful.

Project Implementation

MMRDA reclaimed marshland near the Bandra-Kurla road and channelized the Mithi River for the development and construction of Bandra Kurla Complex-a large office hub. MMRDA paid Rs. 956 crore over a period to the State government for 208 hectares of the land at BKC. It is located at a good vantage point in its proximity to the suburbs, as well as the airports and was introduced at an opportune time for private purchase. Out of the 208 hectares, 121 hectares was proposed to be developed as a financial and business centre, known as Block G of the area.¹⁰

Initially, to augment their financial resources, MMRDA had developed the BKC site and collected

⁵ Gala, D. (2016). *Real in Sight-Telangana's Fine Print to Drive Growth in Realty*. The Times of India

⁶ Notification issued by the Municipal Administration and Urban Development Department

⁷ Suzuki, H., Murakami, J., Hong, Y. and Tamayose, B. (2015). *Financing Transit-Oriented Development with Land Values*

⁸ Mohanty, Dr. P.K. (2003). *City Development Strategy and Comprehensive Municipal Reforms: The Approach of Hyderabad City*

⁹ MMRDA Official Website

¹⁰ Bhide, A. and Bagal, Dr. S. (2009) *Unlocking Urban Land Values for Infrastructure Finances*



annual rent and other development fees from the developers. However, it transformed their system of financing infrastructure in 2003.¹¹ The MMRDA adopted long-term leasing of land (over 80 years) to private developers and allowed them to conduct high-density development in the area to raise resources. Over the past couple of decades, the price per square metre land has increased almost 20 times. It was sold for Rs. 30,000 per square metre in 1993, Rs. 42,500 in 1995, Rs. 86,000 in 2000, Rs. 1,53,000 in 2006 and Rs. 5,04,000 per square metre in 2007.¹² Apart from lease of land and auctioning, MMRDA does not have the authority to collect taxes, nor does it receive any substantial grants or loans for its investment requirements.

MMRDA has been effective in implementing value capture tools for financing urban infrastructure through auctioning 80-year leases. It successfully raised Rs. 51 billion from merely 13 hectares of land in two auctions of 2006 and 2007, which was ten times the total capital spending of MMRDA in 2005-06¹³ and five times the amount raised for annual infrastructure investment by Mumbai's municipal authorities in 2004-05.¹⁴ The FSI of the land in Block G has been increased from 1 to 3 for residential and 2 to 4 for commercial purposes, thereby making an additional built-up area of 3.05 lakh sq. m. available for residential and 33.11 lakh square metre available for commercial purposes which are further proposed to be sold by the MMRDA.¹⁵

According to Peterson (2009), the motivation for auctioning land parcels was two-fold. It was perceived that BKC could be developed more effectively by involving private players. Following this, MMRDA earmarked individual land parcels for specific development purposes such as a luxury hotel, convention centre, commercial building, etc., which were developed by the buyer bearing the use restrictions by MMRDA.¹⁶ All on-site and approach infrastructure is financed by the private developer. This public-private partnership witnessed at BKC has successfully accelerated the development of the complex. A key success factor for BKC having outperformed its potential is the fact that its supply has been generated in harmony with the demand, through the phased release of land in auctions. A new lot of land is released for auctioning only when the current released lot is completely absorbed in the market.¹⁷

Another reason for having adopted the method of auctioning land parcels was that the MMRDA required generating large amounts of resources for financing major urban infrastructure. Some of these include a new metro rail system, a co-finance road construction in greater Mumbai and a 23-km trans-harbour bridge to connect the island city of Mumbai with the mainland, where industrial Special Economic Zones are being constructed. Part of the revenues realized from the auction of land in BKC were also utilized to finance the ambitious Mumbai Urban Transport Project (MUTP) in order to improve the transport facilities for 22 million residents of the metropolitan area.¹⁸

¹¹ Suzuki, H., Murakami, J. Hong, Y. and Tamayose, B. (2015) *Financing Transit-Oriented Development with Land Values*

¹² Mohanty, P.K. (2016). *Financing Cities in India: Municipal Reforms, Fiscal Accountability and Urban Infrastructure*

¹³ Ahluwalia, I.J. and Mohanty, P.K. (2014). *Unlocking Land Value for Financing Urban Development in India*

¹⁴ Suzuki, H., Murakami, J. Hong, Y. and Tamayose, B. (2015) *Financing Transit-Oriented Development with Land Values*

¹⁵ IDFC (2012) *Evolving Perspectives in the Development of Indian Infrastructure*

¹⁶ Peterson, G.E. (2009) *Unlocking Land Values to Finance Urban Infrastructure*

¹⁷ *Housing.com*

¹⁸ Agence Française de Développement (AFD) and the Ministry of Ecology, Sustainable Development and Energy (MEDDE) (2014) *Who Pays What for Urban Transport?*

Key Results and Impacts

- Capital values in BKC have witnessed an increase of more than 100% in the past two years, while capital values for similar projects in South Mumbai, Lower Parel and Worli have increased around 30-50% in comparison.¹⁹
- Due to the advantages it provides in terms of connectivity, infrastructure and secured areas, many businesses, both Indian as well as MNCs, are rapidly shifting to house themselves in BKC²⁰
- BKC is one of the most expensive office destinations in Mumbai and is strategically located for easy access to people living in most other parts of the city. Given the attractiveness of the complex, it presents a huge opportunity to be tapped for residential development. Although land in BKC is quite expensive, it may be an ideal location for developing high-end luxury homes.²¹

3. SABARMATI RIVERFRONT DEVELOPMENT – GUJARAT

Project Aim

The Sabarmati Riverfront Project aims to reclaim private river edge as a public asset and restore the city's relationship with its river. The Riverfront project presents a great opportunity to create a public edge to the river on the eastern and the western sides of Ahmedabad with claims of providing solution to flood management, protection of the river from sewer pollution, as well as creating value on land that is currently wasted. The project aspires to create a unique identity for Ahmedabad by creating a unique skyline.

¹⁹ Cushman & Wakefield, *Bandra-Kurla Complex: The Next High-End & Luxury Residential Destination in Mumbai*

²⁰ *Economic Times Realty (2016)*

²¹ Cushman & Wakefield, *Bandra-Kurla Complex: The Next High-End & Luxury Residential Destination in Mumbai*

Project Description

The Sabarmati Riverfront Project is an environment improvement, social uplift and urban rejuvenation project to renew Ahmedabad. The project encompasses both banks of the Sabarmati River for a 10.5-kilometres stretch, creating approximately 185 hectares of reclaimed land.

Project Implementation

The Ahmedabad Municipal Corporation (AMC) set up the Sabarmati Riverfront Development Corporation (SRFDCL) in May 1997 with a mission to revive the city centre by reconnecting it to the river Sabarmati. The first phase of the project included a 9 km stretch of the riverfront. In 2003, the project was extended to cover a 20 km stretch. The project systems to minimize flooding in traditionally flood-prone areas and to clean-up the Sabarmati with new sewage treatment infrastructure. These include providing interceptor sewer lines along both banks of the river to divert sewage to Ahmedabad's two sewage treatment plants; and building retaining walls, which will protect the low-lying areas near the riverbanks from flooding. A key element of the project is a new linear two-level promenade. The lower promenade with a minimum width of 10 meters will be just above water level, providing uninterrupted pedestrian access to the water. The upper promenade will host a variety of public buildings, cultural and educational institutions, public parks and plazas and a few areas for commercial development, while new traffic infrastructure will connect the riverfront to the city.

SRFDCL is a special purpose vehicle (SPV) formed to develop the Sabarmati Riverfront Project. The Ahmedabad Municipal Corporation (AMC)



loaned money to SRFDCL, was supplemented by AMC's investment in the share capital of SRFDCL. The Housing and Urban Development Company (HUDCO) also provided a loan for the Riverfront Project.²² The project is planned to be self-financed. A small portion of the reclaimed land will be sold for commercial development, to generate adequate resources to pay for developing the riverfront and managing it. While the major infrastructural components of the project are almost complete, it has already led to increased land values, thus reducing the percentage of land for sale than what was originally thought of. The private developments that will be built on the riverfront shall be carefully controlled by volumetric regulations to ensure that the built environment along the riverfront is harmonious and has a memorable skyline.²³

Rehabilitation of Slum Dwellers - There were nearly 12,000 hutments on both banks of the river occupying nearly 20% of the critical project area. More than 10,000 families have already been allotted houses for resettlement. 9,078 odd families have already been shifted and the remaining are under the process. Each house is of 26.77 sq. m. carpet area and the current market value of these houses is in the range of Rs. 10 to 25 lakhs.

Gujari Bazaar - Gurjari Bazaar is an age old Sunday Market, where women traders comprise close to 40%. The bazaar provides livelihood for an estimated 2,00,000 lower-income residents, through a complex regional chain of artisan entrepreneurs, home workers, mechanics, technicians and small traders. A MoU was signed between the Ahmedshah Gurjari Association and Sabarmati Riverfront Development Corporation. Today it is spread over 70,000 sq. m. and 1,600

vendors can do their business on 778 pucca platforms and 783 laris. Adequate parking space is provided. More than 200 streetlights have been provided in this Market and 800 trees have been planted. In addition, other basic facilities like toilets, food court, drinking water, and seating area have been provided.

Dhobi Ghat - There were nearly 172 Dhobis using both the banks of the river for washing activities. They were relocated into the Dhobi ghat (laundry campus), which is constructed on the eastern bank of the River near Vasna Barrage. Well-developed water supply and drainage system has been provided with a water meter for inlet watering. This modern Dhobi Ghat is spread over approximately 9,400 square metre area and has a utility area of about 6,000 square metres.

Event Area - An area of 60,000 square metres, spread between Sardar Bridge and Ellis Bridge on the West Bank has been designated for hosting events like the Kite festival, the Marathon, the Cyclothon, and Garib Kalyan Mela (for the urban poor).

Urban Forestry - This unique afforestation project is spread over one lakh sq. metres and is situated between Vasna Barrage and Ambedkar Bridge. Natural forestry is being developed with different plant species from Gujarat, including certain very rare species.

Sewage System - An interceptor sewer system was constructed on both banks of the river to intercept the sewer running into the river and divert it to the treatment plants. All sewage now goes to pumping stations, leading to transformation in river quality, and drastic improvement in the environment around the river.

²² Sabarmati Riverfront Development Corporation Ltd. (SRFDCL)

²³ Sabarmati Riverfront Development Corporation Ltd. (SRFDCL)

Public Gardens/Flower Garden – 27% of project land is being developed for parks and garden space for cultural facilities.

Water Recreation - The project provides for various water sports facilities along the river course on both banks. Boating facility is available at various locations on both banks of the river. A giant ferry wheel project, like the famous London Eye project is also under active consideration in the riverfront area.

Outcome - A Revenue Sustainable Project

- The project is expected to contribute significantly to the financial resources of the municipality. 14.5% of the total area is intended for multi-use land sale. 2,94,082 sq. m. of total area and 8,40,000 sq. m. of total saleable floor area is expected to be sold (amounting to Rs. 1,700 Cr) which will allow AMC to sufficiently cover their CAPEX expenditure and contribute towards the corpus for O&M. Rs. 1,200 Cr will be returned by SRFDCL to AMC. A further increase of Rs. 50 Cr. from property taxes is likely to be realized.²⁴

4. RING ROAD PROJECT, AHMEDABAD

Project Aim

The Sardar Patel ring road was planned with a long-term vision considering the road network and growth structure of Ahmedabad. The road network in Ahmedabad consists of rings and radials. A 76.3 km road was planned around the developing areas of Ahmedabad to strengthen the existing road network within the city. With continuous plantation along the road, it is visualized to develop a “green fort” around Ahmedabad.

²⁴ <http://urbanmobilityindia.in/Upload/Conference/b84df2be-cebe-4e83-a741-c6eb4c97f5c9.pdf>

Project Description

Improvement and widening of existing two lane SP Ring Road into four lanes around Ahmedabad city in Gujarat

The SP Ring Road is an arterial road, facilitating traffic movement within the city by providing easy access in and from the city outskirts. It also facilitates the movement of through traffic going north and south to the city, thereby reducing the congestion on western and eastern bypass. In summary, the 60-metre wide ring road was conceptualized to reduce traffic congestion on peripheral roads; segregate regional land urban traffic; increase connectivity; and guide the development and expansion of Ahmedabad in a larger region.

Project Implementation

The overall project has been systematically divided into three phases. The key features of the three phases of the project are as described below:

Phase 1 includes construction of two lanes on the entire stretch and four lanes of major stretches. The two-lane ring road started in 2001. Many portions of the road have been operational since 2003 and the entire ring road was completed in 2006.

In Phase 2, the existing two lanes are being extended to four lanes. This is being done on Build, Operate and Transfer (BOT) basis. The BOT document was floated in February 2006. The work of constructing a four lane on a BOT basis has been awarded to a joint venture.

Phase 3 will include extension of the ring road with facilities like control access, flyover and underpasses at major junctions crossing national highway, state highway, major district roads and



important roads. It is proposed that 17 flyovers, 5 underpasses and 2 railway over-bridges will be built. There will be service roads, bicycle tracks, exclusive bus lanes for Bus-based Rapid Transit System (BRTS) and walkways on both sides. It has been proposed to develop 60 metres right of way (ROW) on the western side and 78 metres ROW on the eastern side. The total cost is estimated at Rs. 460 Crores.²⁵

Strategies Adopted - The success of this large-scale city road project initiated by Ahmedabad Urban Development Authority (AUDA) is based on its partnership developed with the private sector and citizens during various stages of planning, design, implementation and maintenance. These partnerships have been crucial in implementing the project in a planned manner.

Land Development through Innovative use of Town Planning Scheme Mechanism - It was a challenge for AUDA to acquire land in a stipulated time for the entire 76.31 km road length within the vicinity of Ahmedabad city area. AUDA used a combination of Town Planning Scheme and the land acquisition method for ensuring speedy implementation.

AUDA declared most part of the ring road as a Town Planning (TP) Scheme area. The landowners and tenants who possessed their valuable land along the road stretch were assured final plots in rectangular shapes at the end or near the ROW of the ring road. This unique idea inspired landowners and tenants to hand over their land for development of the ring road. The land for a 60-metre ROW was taken from them by consent without giving any financial reward. Areas that have been designated as agricultural zone in the master

plan and where town-planning schemes cannot be declared were acquired by the conventional land acquisition. Out of the total 76.3 km, only 13.1 km had to be acquired.²⁶

Project Financing

Town planning schemes are self-financing schemes. Investment in land acquisition is not required as the scheme recovers land from landowners for development of infrastructure. Infrastructure is financed by selling a part of the pooled land and from the collection of betterment levy. Phase I - An amount of Rs. 230 Crores was required for the construction of phase I of the project. AUDA invested Rs. 130 crore from its own resources and the balance amount of Rs. 100 Crore was taken as a loan from a consortium of six nationalized banks. Phase II – PPP for project financing: Using BOT model for implementing phase II and for recovering cost incurred by AUDA from its internal resources to complete phase I. Under the BOT contract, the private party will be responsible for designing, engineering, financing, procuring and constructing the road during the construction period, which is 18 months. In addition, during the operation period, it will be responsible for managing operation and maintenance of the project road until the end of the concession period. The private company will generate revenue from toll tax and advertisement rights. The main features of this BOT structure is that AUDA will receive Rs. 230 Crores from the concessionaire in 18 equated, monthly instalments. This payment is for the existing facility of the two lanes, which are being handed over to the BOT operator for the entire concession period. As viability gap funding, AUDA will have to pay Rs. 36 Crores as grant to the concessionaire in two years.

²⁵ Urban Management Centre (2007) *Public-Private Partnership for Road Infrastructure Development*

²⁶ Urban Management Centre (2007) *Public-Private Partnership for Road Infrastructure Development*.

Phase III - funded by JNNURM The entire project costs a total of Rs. 2,347 Crore. This includes Rs. 230 Crores for payment to AUDA, Rs. 192 Crores for additional two lanes, Rs. 294 Crores for maintenance of 20 years, Rs. 131 Crores for toll collection and management for 20 years and Rs. 1,500 Crores as interest on instalments of capital and maintenance cost (on a reducing basis).²⁷

Project Outcome: Revenue Generation

- Total toll revenue is estimated at Rs. 2,350 crore over a span of 20 years. The revenue is estimated at Rs. 12 Crore per year in 2006 and Rs. 220 crore per year in 2026.
- Value Capture: AUDA reconstituted an approximately 1 km wide belt adjacent to the ring road. Out of the total land acquired for the project 60% was returned to the landowners, 20-30% was used to develop amenities like roads, schools and gardens, and the rest was sold as separate plots. Due to development of infrastructure, the land value of adjacent plots increased and AUDA earned about Rs. 600 Crores through the sale of plots.²⁸

5. USING FSI AS A RESOURCE AND TRANSFER OF DEVELOPMENT RIGHTS IN HYDERABAD, TELANGANA

Project Aim

To modify city roads in order to meet growing traffic demands and to adopt efficient methods of compensating residents/landowners for carrying out infrastructural developments in their areas. Hyderabad has adopted various inventive measures to tap the gain in land value from its planning system and infrastructure development,

and in this instance has applied them for carrying out widening of roads in the city.

Project Description

The Municipal Corporation of Hyderabad (MCH) has used incentive zoning for the past 15-20 years in addition to the relaxation of planning norms including Transfer of Development Rights (TDR) for carrying out widening of roads. In order to achieve a transparent policy for providing planning permissions with a view to carry out the widening of roads, the Government of Andhra Pradesh permitted MCH to grant additional FSI in lieu of land.

Project Implementation

In order to tackle the menace of growing traffic problems in the city of Hyderabad, MCH proposed to carry out road widening works to ease traffic flow and used FSI as a resource for the same. Under this scheme, in case any land or building is affected in road widening activity as per the Road Development Plan, such an area is to be surrendered free of cost to the Sanctioning Authority by the landowner. No development permission is given unless this condition is complied with. Upon surrendering the affected area, the owner of the site is entitled to a TDR, or is allowed to construct an extra floor with an equivalent built area for the area surrendered subject to mandated public safety requirements, or is allowed to avail concessions in setbacks including the front set-back.²⁹

According to Mohanty (2003), the Commissioner grants building permissions for any construction activity to be completed over and above that, which is accorded by the Zoning or Building

²⁷ Talikoti, Vandana S. *Infrastructure project Sardar Ptel Ring Road, Ahmedabad*

²⁸ ICRIER, *Report on Urban Infrastructure and Services, March 2011*

²⁹ *Municipal Administration and Urban Development Department (2012) Andhra Pradesh Building Rules*



Regulations. In lieu of land that is surrendered by the resident horizontally, he or she is compensated through permission granted for additional construction vertically. MCH is also responsible for the rebuilding of demolished compound walls and other construction. A token compensation amount is provided to the landowners at the time of handing over of the land, along with the permission to carry out construction vertically. The permission granted for vertical construction is dependent on the amount of land that is surrendered to the Corporation by the landowners, as well as on the existing FSI conditions in the area.

In cases where there is no scope of further vertical construction, the Corporation provides Transferable Development Rights to landowners for proceeding with the construction elsewhere, anywhere within the jurisdiction of the Corporation.³⁰ A TDR certificate is issued by the competent authority as an award specifying the built-up area that the owner of a site or plot can sell, dispose, or utilize elsewhere, in lieu of surrendering land free of cost that is set apart for road widening. If a TDR is granted for undertaking and development of the Master Plan Road or a Road Development Plan, it is equivalent to 200% of built-up area of the area surrendered. The TDR may be arrived at based on relative land value and an equivalent amount in both export and import areas as per the Registration Department records.³¹

Further, the extent of concessions given in lieu of land acquired are such that the total built-up area after concession does not exceed the sum of the built-up area allowed on the total area without

the road widening and built-up area equivalent to the surrendered area. In case of plots less than 750 sq. m. in addition to concessions in setbacks and height, they are allowed to keep the cellar floor as well, keeping its feasibility on ground in mind. In case of high-rise buildings, the conditions for concessions in setbacks other than the front setback would be considered subject to maintaining minimum clear setback of 7 m. on the sides and rear side, while also keeping such minimum setback area clear and without any obstructions.³²

In order to incentivise landowners to readily give up land for road widening, the Corporation sometimes even permits them to construct non-residential buildings such as commercial or institutional in lieu of parting with valuable land. The Commissioner of MCH is provided with powers by the Government of Andhra Pradesh to provide permission for construction of commercial buildings on selected roads. However, this is subject to certain conditions such as³³:

- In order to encourage the development of bigger complexes, the construction of non-residential building use is permitted to the extent of property surrendered irrespective of its usage assigned in the Zonal Development Plan/Master Plan abutting the road with single or multiple title deeds
- No row type shops are allowed to be constructed on the roads being widened

Key Results and Impacts

- There were some delays in carrying out the road

³⁰ Mohanty, Dr. P.K. (2003). *City Development Strategy and Comprehensive Municipal Reforms: The Approach of Hyderabad City*.

³¹ Municipal Administration and Urban Development Department (2012) *Andhra Pradesh Building Rules*

³² Municipal Administration and Urban Development Department (2012) *Andhra Pradesh Building Rules*

³³ Mohanty, Dr. P.K. (2003). *City Development Strategy and Comprehensive Municipal Reforms: The Approach of Hyderabad City*.

widening works due to opposition from residents who were concerned with the effect on their properties where widening of internal roads to 40 and 60 feet from 20 and 40 feet was proposed to be carried out

- Road widening activity has resulted in a new phase of developments in the commercial buildings construction sector. Despite initial reservations displayed by shopkeepers and commercial building proprietors in giving up coveted land for road widening activities, they have now taken it as an opportunity to redevelop and redesign their shopping complexes and shops while retaining their old customer base. Additionally, road expansion has also provided an opportunity to businesspeople by witnessing large-scale construction on either sides of the roads³⁴
- Among its disadvantages, the road-widening scheme has also resulted in the felling of thousands of trees on the affected road stretches, thereby reducing green cover in the city. On some occasions and wherever possible, the concerned authorities have ensured the transplanting of trees in different areas but it is a difficult task to achieve full coverage with.

6. THE MAGARPATTA MODEL OF TOWNSHIP DEVELOPMENT: A UNIQUE MODEL OF LAND CONSOLIDATION BY FARMERS IN PUNE, MAHARASHTRA

Project Aim

To implement the idea of a collective institution of land ownership that includes agrarian landowners as partners in the development wherein they can realize the full potential of land, as opposed to coercive land acquisition strategies that displace

³⁴ Choice-India (2013). Greater Hyderabad Municipal Corporation's Road Widening Plans

landowners and make them opponents to the project.³⁵

Project Description

Magarpatta Township is a unique example of land pooling. It is spread over 430 acres, on the outskirts of Pune, Maharashtra along the Pune-Sholapur highway. The estimated cost of the entire project is around Rs. 850 crore.³⁶ Magarpatta Township is home to a commercial zone, residential neighbourhoods, two schools, a multi-speciality hospital, shopping mall, multiple restaurants, gymkhana and a large 25-acre serene park.³⁷ These amenities are designed to be contemporary along with futuristic features and include a state-of-the-art IT Park called Cybercity that provides international facilities to leading global IT giants. Being encompassed by verdant greenery and a pollution-free environment has added to the township's allure.

The township has its own rainwater harvesting, garbage segregation and waste management, biogas plant, vermiculture, plant nursery and solar water heating arrangements that creates a self-sustainable system and ensures further enhancement of the environment. A walk to work-home-recreation lifestyle is at the core of Magarpatta. It is home to over 40,000 persons and accommodates a working population of over 70,000. The developers of Magarpatta have been able to attract MNCs and other corporate entities; particularly IT companies to set up offices in the city, with its world class infrastructure facilities.³⁸ It has won accolades at the Sydney World Congress

³⁵Balakrishnan, Sai Swarna (2013) *Land Conflicts and Cooperatives along Pune's Highways: Managing India's Agrarian to Urban Transition*

³⁶ <http://www.financialexpress.com/archive/magarpatta-a-dream-town-worth-emulating/113825/>, accessed on 27/02/2017

³⁷ <http://www.magarpattacity.com/>, accessed on 23/02/2017

³⁸ Ahluwalia, I.J. and Mohanty, P.K. (2015) *Unlocking Land Value for Financing Urban Development in India*



of Metropolis 2008, and the Maharashtra Economic Development Council has listed Magarpatta City among the 'Top 10 success stories of the State'.³⁹

Project Implementation

Since 1960, the land in Magarpatta was under the jurisdiction of the Pune Municipal Corporation. The 1982 draft development plan of Pune Municipal Corporation classified it as a zone that may be urbanized in future.

The concept of Magarpatta Township originated in the early 1990s. More than 400 acres of land owned by over 120 families and 800-odd beneficiaries was pooled together to develop an integrated township. The landowner farmers formed a development company—namely 'Magarpatta Township Development and Construction Company Limited' (MTDCCL) and executed a contract for joint development amongst themselves with their self-promoted company to develop Magarpatta Township. The landowners prepared a city plan for Magarpatta and jointly approached the Government of Maharashtra with an integrated Township Scheme proposal. The final notification for township development came in 1995. As per the notification, Magarpatta City was "approved by the Department of Urban Development, Government of Maharashtra; it was exempted from the provisions of Urban Land (Ceiling, Regulation) Act of 1976 and the Master Plan of Magarpatta City was approved by the Pune Municipal Corporation."⁴⁰

Key Results and Impacts

- The project does away with the ubiquitous middlemen, yields rich dividends to the

landowners and improves their standard of living without having to let go of the total ownership of the asset

- All landowners are shareholders in proportion to their land-holdings. They are entitled to receive a percentage of sale-proceeds in proportion to their land-holdings. Irrespective of the location of land, everyone has been treated equally⁴¹
- Therefore, all the farmers have become percentage holders of the floor space index (FSI) as per the master plan of the township
- The revenue share model envisages that 30% of sales proceeds will be shared if a property is constructed on the land whereas if a plot is sold, 60% of the sales proceeds will be shared. The revenue has been shared on the entire indivisible pool
- The above model ensures that the farmer gets the appreciation in value of the property in the township. In 2003, property in Magarpatta City was sold for about Rs. 1,000 per square feet. In 2011, the same property was sold for Rs. 5,000 per square feet. This appreciation in property prices has come back to the farmers as dividends from the company as per their joint development agreement
- All farmers were encouraged to buy at least one residential property in Magarpatta City. These residential properties have been rented out to get a regular income for the families. Many families have also chosen to sell some of their properties to capitalize on the property appreciation and invested this money in other investment opportunities
- A third important source of regular revenue to the member farmers is the non-residential commercial areas, especially the IT Park. It

³⁹ <http://www.magarpattacity.com/>, accessed on 23/02/2017

⁴⁰ Gupta, A., Dalal, S., Basu, D., Joseph, A. (2012) *Magarpatta City: Farmers Direct Investment (FDI)*, Working Paper No. 384, IIM Bangalore

⁴¹ Mahadevia, D., Joshi, R. and Sharma, R. (2009) *Approaches for the Lands for the Urban Poor, India*, CUE Working Paper-2, CEPT University, Ahmedabad

is owned by MTDCCL and leased to various companies, which ensures a regular rental income in perpetuity to the member farmers

- It has also been taken into account that somebody from each family remains involved in construction-related work and generates revenue for own self from the project continuously, as a businessman
- One of the biggest spin offs of the whole scheme is the creation of a whole generation of entrepreneurs who are no longer dependent on the land. MTDCCL has subsidiary companies to run broadband, cable TV, the transportation system, the food supply as well as landscaping, all owned and run by second-generation land owner-entrepreneurs⁴²

7. RAIL INTEGRATED COMMUNITIES IN TOKYO, JAPAN

Project Aim

Rail Integrated Communities (RICs) were established in Tokyo due to high travel demands and less use of private automobiles nationwide. Rapid urbanization in late 1800s boomed economic development with rapid growth in rail-based transport supported by public as well as private networks. To cater to the high demands of rapid urbanization and rural urban migration, Tokyo established a rail network connecting 23 wards of Tokyo and 26 surrounding municipalities.⁴³

Project Description

After World War II, Japan witnessed a high growth of urban centres and migration towards these centres of urbanization. Tokyo turned out to be

the most important urban centre and witnessed population growth between 1890 and 1909, which was almost 2.5 times i.e. from 0.83 million to 2.2 million respectively.

Tokyo municipal area spread out to a radius of 30 kilometres by 1975, which was earlier only 15 kilometres. In 1893, the total length of urban rail network in Japan was 3,010 kilometres, out of which 2,125 kilometres were privatised and the remaining 885 kilometres were government owned. During the period of 1915 to 1935 rapid urbanisation lead to the need for more efficient public transport and about 580 kilometres of track was built during this period. An additional development of subways that were 14.3 kilometres in length were also build during this period.⁴⁴

Currently Tokyo's railway network is one of the largest rail networks in the world with about 2,000 kilometres of railway network in the Tokyo metropolitan area. Out of these, about 52% were built by privately owned bodies, including 16 major companies operating in Tokyo out of more than 88 companies spread all over Japan. Despite high growth in air travel across Japan, the rail network in Tokyo as well as pan-area in Japan, the railway network's ridership has witnessed a high growth.⁴⁵

Project Implementation

Japanese private railway network has diversified into a wide range of businesses that depend on the accessibility created by the railway network, while being completely independent of private railway sector. Property development along the railway network was one of the most profitable businesses to self-finance the railways and kept the commuting

⁴² Gupta, A., Dalal, S., Basu, D., Joseph, A. (2012) Magarpatta City: Farmers Direct Investment (FDI), Working Paper No. 384, IIM Bangalore

⁴³ Jhon Calimente, Simon Fraser University, 2009 Rail Integrated Communities in Tokyo

⁴⁴ Aoki, E, Imashiro, M, Kato, S & Wakuda, Y (2000) A History of Japanese Railways 1872-2000. Tokyo: East Japan Railway Culture Foundation

⁴⁵ Ministry of Land Infrastructure & Transport, 2008a



prices under control. As mentioned, the private railways has also brought a drastic change in the land values of the sub-urban areas in the vicinity of the developed railway network.

These sub-urban areas started using the railway network for work and leisure trips instead of using private modes of transport. These communities, integrated by the railway networks were offered world-class infrastructure and high accessibility resulting in the formation of rail-based communities. These also resulted in profitability from the communities due to a high value of the properties and development in the vicinity of the railway network. This resulted in the development of more businesses and increased ridership that allows the railway network to be financially healthy and sustainable.

Large conglomerates like Tokyo Corporation are able to use intra-firm cross subsidies to subsidize unprofitable lines with the revenues of profitable lines, invest in infrastructure and recover the operation cost of the network.

Private companies operating the railways also developed residential as well as commercial establishments and rent drawn from these establishments facilitated in a smooth revenue flow, which further helped sustaining the railways as well as developed various growth centres, which were called Rail Integrated Communities.

Key Results and Impacts

- RIC's around the Tokyo sub-urban areas and agglomeration has brought a boost to the economic growth of the city. Development of high density, compact, mixed-use and pedestrian friendly development has a major role in enhancing the quality of life of the residents

- Dependency on the private mode of vehicles is very low as the transportation policies discourage citizens to use private vehicles so that they can sustain the ridership volume of the railway network
- Cross subsidization through the development of RIC's has ensured sustainability of the railways, financially as well as functionally
- Increased land and property values with high accessibility and density has ensured quality of life as well as economic development along all the RIC nodes
- The connection between land use and transportation has been strengthened due to the large role that real estate development plays in the profitability of the railways. Rail integrated Communities have been the result of this approach: dense, liveable, mixed-use centres that also provide the transit riders that help make the railways profitable⁴⁶
- Tokyo Corporation offers a very high quality of transit service due to the high ridership created by the dense communities surrounding the station, as well as the schools, businesses, and government facilities that draw people from other parts of the region
- Low vehicular ownership by the RIC residents due to high ownership cost associated with it

8. PPP IN SOLID WASTE MANAGEMENT - JAIPUR, RAJASTHAN

Project Aim

To collaborate with private players in providing services such as solid waste management in order to gain efficiency in the processes as well as save cost through collaboration. To resourcefully

⁴⁶ Jhon Calimente, Simon Fraser University, 2009 Rail Integrated Communities in Tokyo

carry out tasks related to provision of basic urban services without exhausting funds of the local governments through public-private partnership projects for providing infrastructure related to these services.

Project Description

Solid waste in the city of Jaipur is managed by Jaipur Municipal Corporation (JMC) through contracts under public-private partnerships (PPP). It is an efficient model for solid waste management in cities, as most of the municipalities do not have enough personnel or resources for effective management. Jaipur has been engaged in PPP for the last ten years and outsources its waste management. This facility is the country's first fully automated municipal solid waste processing plant.

Project Implementation

The daily production of solid waste in Jaipur is 1100 MT/day, out of which 200-250 MT remains on the streets per day, resulting in a clearing efficiency of 80%. Further, the per capita solid waste production is 350 gms, which amounts to 1.75 kgs per day in an average family size of five.⁴⁷ The process of waste collection from houses depends on the area and the community. Door-to-door waste collection is carried out by the informal sector in some colonies, where families are required to pay Rs. 40 to the waste collectors who usually visit the houses daily but are also unreliable at times. In some other areas, residents dispose of the wastes by themselves in community bins, which are then emptied by municipal vans that arrive daily for waste collection. Lastly, some residents follow neither of the above methods and usually dump their waste in any location that seems convenient to them, leading to the assembly

⁴⁷ Olivier, L. (2011). *The Solid Waste Management System of Jaipur: An Overview and Analysis. Independent Study Project (ISP) Collection*

of dumping lots in the city. In this scenario, rag pickers visit the dumping lots and sift through the garbage, segregating recyclable waste from the rest and selling the former to kabari shops.⁴⁸

Post its collection the waste is transported and taken for storage, where JMC trucks are employed for transporting it. Private companies that are engaged by JMC employ their resources to set up treatment and operation sites for waste management. In some places in Jaipur, contracts are provided to private players for doorstep collection and transportation of waste. The contractors employ their own manpower, vehicles and equipment to facilitate these activities and are paid on a monthly basis by the Municipality for their services.⁴⁹

Outsourcing these activities also encourages the participation of private players who are experts in certain sectors and have specific knowledge in domains such as waste management. Building a PPP model is an attractive option for municipalities that are looking to save costs, since tasks such as waste disposal, treatment and operation involve high expenses, which some municipalities cannot afford or are unwilling to bear. JMC also does not have robust financial resources to back up their own waste management efforts. It acts as the owner of the waste management project, while the private player is concerned with operationalizing the project.

The municipality has adopted the leasing of land as a vital resource for financing infrastructure of the project. A Rs. 20 Cr. plant has been set up

⁴⁸ Olivier, L. (2011). *The Solid Waste Management System of Jaipur: An Overview and Analysis. Independent Study Project (ISP) Collection*

⁴⁹ Asnani, P.U. (2006) *Solid Waste Management. India Infrastructure Report*



on a PPP basis with a private party M/s. Grasim (a flagship company of the Aditya Birla Group) next to the Langariyawas landfill. The private party is allotted the minimum required undeveloped land by JMC at the rate of Re. 1 per sq. m. on lease for a period of 30 years. JMC provides un-segregated garbage to the site free of cost and does not charge any toll, property or land tax from the operator, who is also allowed complete discretion over the use as well as disposal of all the products and by-products that are generated during the process. All other site preparations regarding roads, water, electricity, etc. are taken care of by the operator. The operating company is entitled to receive incentives from the government without imposing any financial burden on the local authorities, as well as the State government.

The tender is given on a Build-Own-Operate-Transfer (BOOT) model and 350 MT/day of unsegregated municipal solid waste is supplied to the contractor at the plant site, while the plant capacity is 500 MT/day. 25 acres of land is provided to the contractor and a revenue of Rs. 1.01 per MT is shared with JMC, amounting to a revenue share of Rs. 1,20,190 per annum that is paid to JMC.⁵⁰ Rs. 20 lakh was provided by the private operator as a bank guarantee. The Aditya Birla Group employed Doppstadt, a German company to build the plant facility and outsourced the labour from Pratham Envirotech Pvt. Ltd. At Hyderabad.⁵¹ The Refuse-Derived Fuel (RDF) that is produced is used to power a cement plant, M/s Grasim's subsidiary, Ultratech Cement Limited.

Key Results and Impacts

- Involvement of private players has resulted in

⁵⁰ Jaipur Municipal Corporation

⁵¹ Olivier, L. (2011). *The Solid Waste Management System of Jaipur: An Overview and Analysis. Independent Study Project (ISP) Collection*

a consciousness and the opportunity to adopt greener and more sustainable practices. A company called Infrastructure Leasing Financial Services (IL&FS) Ecosmart Limited, produces compost at one of the sites in a public-private partnership and has a capacity of 250 Tonnes per day in a Design-Build-Own-Operate-Transfer (DBOOT) model⁵²

- Due to poor caloric content of the waste received by JMC, the plant is only able to produce 5-6% of RDF as opposed to its capacity of 30%. This fact is also attributable to outdated technology at the plant. On the other hand, at an RDF plant in Mumbai, 80% of the waste received is converted to RDF and only 20% is remaining to be dumped at landfills⁵³
- The informal sector in waste management which comprises of rag pickers is recognized in Jaipur and efforts are being made to integrate them for carrying out door-to-door collection activities
- A waste-to-energy plant is being set up at Langariyawas at the cost of Rs. 182 Cr. on a PPP basis and will aid in the scientific disposal of solid waste of the city along with generating electricity⁵⁴

9. THE TOWN PLANNING SCHEME (TPS) IN GUJARAT: SHARING LAND-VALUE GAINS THROUGH EFFECTIVE LAND POOLING AND RECONSTITUTION TOOL

Project Aim

To analyse the Town Planning schemes being implemented in Gujarat in contrast to direct land acquisitions. In present times, strong landowner

⁵² Department of Economic Affairs, Government of India (2016). *Database of Infrastructure Projects in India*

⁵³ Olivier, L. (2011). *The Solid Waste Management System of Jaipur: An Overview and Analysis. Independent Study Project (ISP) Collection*

⁵⁴ India Infoline News Service (2016) *Rajasthan CM Dedicates a Number of Projects for Jaipur Smart City*

opposition to forcible land acquisition, combined with extremely limited fiscal capacity has left ULBs with very few options to develop well-planned and serviced urban land. Land pooling and reconstitution (LPR) is a tool that addresses both these issues by allowing landowners to share the gain in the land value from provision of infrastructure and services.⁵⁵

Project Description

As per the planning process, first, a Development Plan (DP) is prepared which is a macro strategic plan document that defines the direction of growth and envisions the citywide infrastructure for the entire development area. In the DP, the new areas for growth to be opened up for development are clearly marked and divided into smaller areas of about 100 to 200 hectares. Each such area is called a TPS. The TPS are micro plans prepared for about 100 to 200 hectares typically involving 100 to 250 landowners.

A complex system is used to simultaneously reorganize land parcels or plots, provide access to each land parcel or plot, set aside land for public uses by taking a portion from each landholding, and appropriate increments in land values for infrastructure development. Detailed infrastructure is designed and cost estimates are prepared. The process involves intensive public participation and consultation at several stages.⁵⁶

Project Implementation

The process for preparing a TPS is prescribed in the Gujarat Town Planning and Urban Development Act (GTPUDA), 1976, and its Rules.

The Notification of Intention (NoI) is the first step in the TP Scheme preparation process. Issued by the appropriate local public agency (typically the municipal corporation or development authority), the NoI identifies the location and scheme boundaries. Next, the public agency collects the land ownership records from the State revenue department and other agencies, such as the village local governments. The public agency then must match and reconcile the land ownership records through a site survey, and get the matched records certified by the state revenue department. A site base map is prepared based on this survey.

Next, a layout plan and an infrastructure plan are prepared. The layout plan shows the street network; the new plots to be returned back to the landowners after taking a portion of the land; the location of various services and amenities, such as parks, schools, shops, electric substation, etc., and the land parcels reserved for future sale by the public agency. The infrastructure plan shows the location of the various infrastructure systems, such as streets and water, sewer, and electricity supply systems.⁵⁷ The total percentage of area that goes under roads and amenities is about 35-40%. The GTPUDA allows this to go up to 50%.⁵⁸ The plan is accompanied by a detailed cost estimate.

The next TPS step entails the determination of the following: (a) compensation to be paid to the landowners for the land taken from them by the public agency; and (b) betterment charges (based on the cost of infrastructure proposed to be laid along with betterment contributions in respect to land parcels benefiting from improvements). These

⁵⁵ IDFC-Policy Group Quarterly (2010) *Land Pooling and Reconstitution: A Self-Financing Mechanism for Urban Development*

⁵⁶ Ballaney, S. (2008) *The Town Planning Mechanism in Gujarat, India, World Bank Institute*

⁵⁷ Mathur, S.(2013) *Self-financing urbanization: Insights from the use of Town Planning Schemes in Ahmadabad, India; Cities: The International Journal of Urban Policy and Planning*

⁵⁸ Ballaney, S. (2008) *The Town Planning Mechanism in Gujarat, India, World Bank Institute*



are payable by the landowner to the public agency. The scheme costs that are not recouped from the betterment charges are covered through the sale of the reserved land parcels.

At this stage, the draft TPS is presented to the landowners for comments. Next, the scheme is modified to address the comments and forwarded to the State government for approval. Upon receiving the approval of the State government, the scheme is called the 'Sanctioned Draft TP Scheme'. This further undergoes rounds of public hearings, suggestions and modifications after which, it is again submitted to the State government. Post approval, it is termed as a 'Sanctioned Final TP Scheme'.⁵⁹

Key Results and Impacts

- The 'Town Planning Scheme' mechanism is a powerful and well-coordinated statutory tool for simultaneously preparing a detailed land appropriation, land readjustment and infrastructure-building plan, a mechanism for financing and implementing the plan, and a mechanism for involving landowners in the process⁶⁰
- As per the Draft TPS Reports, betterment charges could finance 87%-98% of the project cost if all expenditures are made and revenues realized in the first year itself. The remainder could be financed through the sale of plots.⁶¹ It has been witnessed that the local governments in Gujarat reap substantial financial benefits from the sale of reserved land. They retain the

reserved land for a considerable time, allowing them to benefit significantly from the increase in land prices. The ability to retain land is primarily a result of local governments not requiring land sale revenues to bear the up-front scheme costs⁶²

- The TPS mechanism is relatively inexpensive. Land does not have to be paid for and infrastructure, planning, administrative (and all other) costs can be realized from the increments in land value. The implementing authority can be simply a 'no-profit no-loss' facilitator⁶³
- New initiatives in TPS being taken up are land pooling for new types of 'Social Infrastructure' such as an IT node, amusement park, etc. and then developing them on PPP mode⁶⁴
- Early development of 'priority' infrastructure: the GTPUDA allow local governments to appropriate land for road construction and other 'priority' infrastructure within the road right-of-way (such as water and sewer pipes, and electric poles and transmission wires) soon after the State government approves a draft TP Scheme, rather than wait until final TPS approval.

10. INFRASTRUCTURE FINANCING IN GURGAON, HARYANA

Project Aim

Value capture financing for the development of infrastructure and enhanced mobility is one of the major sources of funding in urban areas. Cities such as Gurgaon, which has been developed

⁵⁹ Mathur, S.(2013) *Self-financing urbanization: Insights from the use of Town Planning Schemes in Ahmadabad, India*; *Cities: The International Journal of Urban Policy and Planning*

⁶⁰ Ballaney, S. and Patel, B.(2009) *Using the 'Development Plan—Town Planning Scheme' Mechanism to Appropriate Land and Build Urban Infrastructure*; *India Infrastructure Report*

⁶¹ IDFC-Policy Group Quarterly (2010) *Land Pooling and Reconstitution: A Self-Financing Mechanism for Urban Development*

⁶² Mathur, S.(2013) *Self-financing urbanization: Insights from the use of Town Planning Schemes in Ahmadabad, India*; *Cities: The International Journal of Urban Policy and Planning*

⁶³ Ballaney, S. and Patel, B.(2009) *Using the 'Development Plan—Town Planning Scheme' Mechanism to Appropriate Land and Build Urban Infrastructure*; *India Infrastructure Report*

⁶⁴ Sharma,P.L., CTP Gujarat, <https://townplanning.gujarat.gov.in/Documents/FinalLandPoolingMechanism.pdf>, accessed on 28/02/2017

in last two to three decades, has witnessed tremendous growth in infrastructure as well as property and rental values. The government is now ready for capturing the funds for development through imposing taxes and development charges in such areas to finance the infrastructure. Gurugram is one of the fastest growing cities in the National Capital Region where land values have increased exponentially after infrastructure provisions and development through public financing.

In the context of growing demand for resources to finance ongoing urban infrastructure expansion, the local bodies are trying to find innovative resource mobilization through Value Capture Financing (VCF). This seeks to enable Municipalities to raise resources by tapping a share of increase in value of land and other properties like buildings resulting from public investments and policy initiatives, in the identified area of influence.⁶⁵

Project Description

The government is eyeing to recover and develop infrastructure by levying additional taxes and development charges in areas where land values, property values, rent, commercial establishments, etc. have grown exponentially due to the development of various infrastructure and facilities such as roads, water, supply, electricity, schools, hospitals etc. This development has been funded by the public sector and the increased value of land etc. has only been able to benefit the owner of the land.

In 2015, the government decided, under various centrally sponsored schemes such as Smart City

Mission of Government of India, and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) that the areas that are most benefitted from the infrastructure creation should be financed through Value Capture Financing policies.

Project Implementation

The Haryana Urban Development Authority (HUDA) has adopted such measures to capture the funding through the beneficiaries and landowners in terms of taxes, land or privately developed Infrastructure at local/internal levels. Several such examples abound from other cities in the country. Between December 2006 and March 2007, the Haryana Urban Development Authority auctioned off land for 740 crores, including one 2,700 sq. m. site for Rs. 73.4 crores. Some of this land was proposed for public private partnership (PPP) models of development. A 5-acre site was auctioned in February 4, 2007 in Gurgaon for Rs.255.2 crores (which turned out to be more than Rs. 50 crores per acre, or US\$12 million per acre), targeted for a 5-star hotel development.⁶⁶

In Gurgaon, the cost of land development is met through the private developer's equity, instalment payments by purchasers of plots/houses, and commercial financing. Internal infrastructure provision is the responsibility of the private developer, while external infrastructure is to be provided by the Haryana Urban Development Authority, financed through levying external development charges.⁶⁷

Key Results and Impacts

- Introduction of value capture financing from land will be able to enhance the speed

⁶⁵ *Tapping value added to finance urban infra projects through innovative Value Capture Financing UD Ministry to soon come out with policy framework to enable ULBs meet investment demand*

⁶⁶ *Land as a Municipal Financing Option: A Pilot Study from India, Kala Seetharam Sridhar, January 2009*

⁶⁷ *Unlocking Land Value for Financing Urban Development in India, Isher Judge Ahluwalia and P. K. Mohanty*



of development as the financing of the infrastructure and utilities will not be completely dependent on public funding

- Direct impact on the service delivery of various services provided by the State and the development authorities
- Land and property market will be regulated and will cap over speculation and pricing of properties
- Taxes, development charges, betterment levies will be directly recovered from the beneficiaries in right proportion of increase in the value of land due to infrastructure provision
- Strengthening and putting in place of the taxation rules policies etc. with updated rates to be levied

11. CEPACS: CERTIFICATES OF ADDITIONAL CONSTRUCTION IN SÃO PAULO, BRAZIL

Project Aim

To employ innovative financing tools to raise large amounts of public revenue for funding infrastructure projects. To make use of the sale of additional building rights, not only to raise resources but also to guide dense urban growth along transit corridors.

Project Description

In 1995, the Brazilian city of São Paulo introduced an innovative instrument, Certificates of Additional Potential Construction Bonds (CEPACs), to facilitate price discovery for additional building rights. An area was earmarked for redevelopment and certain number of CEPACs set aside for developers to build denser growth areas. A limited quantity of building rights was sold for a large enough area – one CEPAC for each square meter of additional building right - through an electronic auction. The city holds periodic auctions for each area, gradually releasing additional F.A.R.

to maximize the value capture. The market for CEPACs is quite robust since they are traded widely and are an establishment vehicle for pension funds, as well as for those looking to invest in Brazilian real estate. From the Água Espraiada area alone, the bonds raised \$1.5 billion.⁶⁸

Project Implementation

The city of São Paulo in Brazil is also mired in problems that arise because of rapid urbanization, similar to other cities witnessing urban expansion globally. The population of the city has reached a mark of 20-25 million residents in the metropolitan region, with most residents flocking to the city's informal edge. Other problems such as increased traffic woes, increased density with the need for public infrastructure and rapid construction of roads and buildings putting a pressure on scarce public space availability are some of the problems that need innovative solutions for tackling them.⁶⁹

The F.A.R. in São Paulo usually varies between 1.0 and 2.0 and a private landowner is not allowed to construct above the predetermined measurements without having to pay for additional air rights. Through the sale of additional F.A.R., owners are able to contribute towards infrastructure construction costs in proportion to the volume of air rights that are purchased by them. Through selling additional building rights in the form of a larger floor area ratio or change in land use, the municipality is able to raise revenue for infrastructure construction without increasing their debt and by not having to rely on the scarcely available developable land with them.⁷⁰

⁶⁸ Serva, L. (2014) How São Paulo uses "Value Capture" to Raise Billions for Infrastructure. Citiscope.org

⁶⁹ Donkervoot, N. (2013) Spontaneous Allocation through Transferable Development Rights in Urban Regeneration Projects

⁷⁰ Suzuki, H., Murakami, J., Hong, Y. and Tamayose, B. (2015) Financing Transit-Oriented Development with Land Values. World Bank Group

CEPAC bonds are issued by the urban development agency Empresa Municipal de Urbanismo (EMURB) for the municipality through public security auctions, which are regulated by the Brazilian national securities exchange commission - Comissão de Valores Mobiliários (CVM).⁷¹ The Caixa Econômica Federal (CEF) oversees the fiscalization of the process; CEF and Banco do Brasil are responsible for preparing the auctions and executing them. CVM registers the Urban Operation (UO) to which the CEPACs are linked as each auction has a predefined investment plan related to it such as infrastructure development or social housing, and the revenues raised from the auction can only be utilized towards its predefined operation. Public auctions lead to a regulated and transparent sale of development rights. Those proposing to build over the basic F.A.R. have to purchase CEPACs from the secondary market based on the additional square meters that the developer requires. Depending on the neighbourhoods and zones, each CEPAC accommodates between 0.5 to 2 sq. m. of additional building rights.⁷²

CEPACs can only be utilized within the perimeter of the UOs where they have been raised and the amount realized is associated with a specific use of interventions in that area. UO are defined after rezoning an area and updating the urban infrastructure requirements including the density of buildings that is to be supported. Further, a prefixed number of CEPACs may be auctioned over a period in small offerings or in one single auction. The total amount of CEPACs that can be issued are predetermined based on the density

⁷¹ Smolka, M.O. (2013). *Implementing Value Capture in Latin America. Policies and Tools for Urban Development*. Lincoln Institute of Land Policy.

⁷² Smolka, M.O. (2013). *Implementing Value Capture in Latin America. Policies and Tools for Urban Development*. Lincoln Institute of Land Policy.

that the current and future infrastructure is capable of supporting. CEPACs cannot be offered in auctions unless the UO with which they are linked has been registered in the CVM. The registration is dependent upon the presentation and approval of the master plan that contains the UO, by the municipality. The funds raised can only be utilized towards the following: land regularization, affordable housing projects, land reserves, urban development, public equipment, public and green areas, environmental interest areas and historical, cultural or landscape areas.⁷³

Key Results and Impacts

- The potential of CEPACs can be measured in the huge revenues realized from them - \$2.1 billion were raised from the sale of CEPACs between 2004 and 2012 and \$877 million were raised in 2012 alone. It further helped realize 22.5% of property taxes from only two Urban Operations (UO)⁷⁴
- Through raising massive amounts of funds through CEPAC money, ideas such as spending the funds on public transportation in other areas of the city are being explored, as is spending on low-income housing in areas other than the redevelopment area alone. Currently, it is sometimes criticized for leading to wasteful spending as the large amounts of funds realized can only be utilized in a particular UO⁷⁵
- CEPACs are listed on São Paulo's stock exchange websites as financial instruments and are traded along with stocks and mutual funds⁷⁶

⁷³ Sandroni, P. (2010) *Municipal Revenues and Land Policies* edited by Ingram, G and Hong, Y. Lincoln Institute of Land Policy

⁷⁴ Silva, E.R. (2016) *Planning for Land Based Financial Tools. Innovations in Planning and Finance from Sao Paulo, Brazil*. Lincoln Institute of Land Policy

⁷⁵ Serva, L. (2014) *How São Paulo uses "Value Capture" to Raise Billions for Infrastructure*. Citiscope.org

⁷⁶ Smolka, M.O. (2013). *Implementing Value Capture in Latin America. Policies and Tools for Urban Development*. Lincoln Institute of Land Policy.



- Other cities in Brazil such as Rio de Janeiro have also tried to issue CEPACs for raising revenue for infrastructure developments. For example, building rights were issued in Rio de Janeiro's old port area for a Porto Maravilha revitalization project and were bought by a single buyer – Real Estate Development Fund created by CEF (Caixa Econômica Federal).⁷⁷

12. TAX INCREMENT FINANCING IN THE US: A MUNICIPAL FINANCING TOOL FOR INVESTMENT IN REQUIRED INFRASTRUCTURE AND SERVICES

Project Aim

To analyse 'Tax Increment Financing' (TIF) in United States, which has been acknowledged as a self-financing economic development tool and has been used for redevelopment projects as well as development of infrastructure and other community related projects.

Project Description

TIF was first used in California in 1952. As late as 1970, only a few States had adopted TIF programs, but by 2004, all 50 States had passed legislation authorizing the use of TIF.⁷⁸

In general terms, TIF allows a government jurisdiction (usually local government in the US) to take tax revenues derived from increases in property values within a prescribed development area (the 'TIF District') and use those 'incremental' tax revenues to fund the infrastructure and renewal projects that led to (or at least significantly contributed to) this property appreciation.⁷⁹

⁷⁷ Smolka, M.O. (2013). *Implementing Value Capture in Latin America. Policies and Tools for Urban Development*. Lincoln Institute of Land Policy.

⁷⁸ Farris, S. and Horbas, J. (2009) *Journal of Property Tax Assessment & Administration*; 2009, Vol. 6 Issue 4, p5

⁷⁹ PWC Draft Report (2008) *Tax Increment Financing to fund infrastructure in Australia*

Project Implementation

TIF programs are geographically targeted within an urban area. TIF is an economic development tool used to stimulate redevelopment in areas where redevelopment would be unlikely without some form of government stimulus.⁸⁰

In theory, tax increment financing works in the following manner: under a TIF system, the relevant government authority or jurisdiction first assesses the suitability of an area for TIF. It then defines the TIF district and produces a TIF development plan – which, amongst other information, outlines the infrastructure and development needs of the district and provides cost estimates for these works. The implementing agency, then issue bonds and the proceeds are used to pay for the planned improvements. These improvements encourage private development and higher levels of economic activity as well as raise property values above where they would have been without the improvement. With higher values, property tax revenues rise, and property tax revenue from increased assessments over and above the level before the TIF project began (the tax increment) is used to service the debt.⁸¹

The standard method for raising the capital required for infrastructure development is via the sponsoring party (municipality) issuing a bond (although other forms of debt facility can be used). Generally, there are two types of bonds that can be issued (a) revenue bonds – backed only by the expected revenue stream of the TIF project and (b) general obligation (GO) bonds – backed by the assets of the issuing government (i.e. redeemed

⁸⁰ Sullivan, G.L., Johnson, S.A., Soden, D.L. (2002) *Tax Increment Financing (TIF) Best Practices Study*, IPED Technical Reports, University of Texas

⁸¹ New York City Independent Budget Office (2002) *Learning from Experience: A Primer on Tax Increment Financing*

from general government revenue if TIF revenue is less than expected and insufficient).⁸²

Key Results and Impacts

- TIF is not a tax and does not increase the burden on taxpayers. To the contrary, by promoting expansion of the tax base, it reduces the burden on individual and business taxpayers.⁸³
- The TIF system is not capturing tax revenue that would have otherwise gone to other public uses, but is using tax revenue that would not have otherwise been generated

TIF in Chicago

- Chicago's Tax Increment Financing (TIF) program began in 1984 with the goal of promoting business, industrial, and residential development in areas that struggled to attract or retain housing, jobs, or commercial activity
- As of July 2016, there have been 146 TIF districts in the City. During 2015, the City received incremental property tax revenue from 128 of the 146 current TIF districts, totalling \$365.2 million. The first TIF district to expire was the largest TIF district designated to date, the Central Loop TIF⁸⁴
- Chicago usually finances TIF projects through Pay-As-You-Go TIF Notes or the issuance of a bond for the project, supported by projected TIF revenues. Pay-As-You-Go TIF Notes are legally binding promises by the City to reimburse developers for approved project costs out of the tax increment revenue stream. The City only pays for the developer's costs out of the actual tax increment that flows into City funds from the TIF district. The City is under no obligation to

pay for the developer's costs if the tax increment revenues are insufficient to fund the TIF note fully

- Chicago has used TIF to subsidise the redevelopment and rejuvenation of parts of its CBD, including the theatre district and riverfront area. Chicago has also used TIF to improve infrastructure and amenities at street level throughout the CBD, via investment in bus shelters, subway entrances, landscaping (including trees, flowerbeds and planters) and street lighting. This investment has attracted people and commercial activity back into the CBD.⁸⁵ TIF has as well been used for residential development, which includes the construction of low income and affordable housing, rehabilitation of homes, and funds for the Chicago Housing Authority.

TIF in East Point, Georgia

- The City of East Point, Georgia created the \$22 million Camp Creek Tax Allocation Fund in 2001 to extend infrastructure into an area that had not been previously developed due to difficult topography
- These improvements sparked the development of the Camp Creek Trade Centre (a business park), Camp Creek Market Place (a 123,000 m² regional shopping centre) and 1,400 housing units in the area in five years
- The additional tax revenue from these developments is generating the income stream to repay the TIF bonds that funded the initial improvements. This TIF has been so successful that, in 2006, the City created its second TIF – the East Point Corridors Tax Allocation District (TAD), to encourage private investment in the City's major corridors and Central Business District

⁸² PWC Draft Report (2008) *Tax Increment Financing to fund infrastructure in Australia*

⁸³ http://www.icsc.org/uploads/event_documents/TIF%20Webinar%20PowerPoint,%206-13-12.pdf, accessed on 03/03/2017

⁸⁴ <http://chicago.github.io/annual-financial-analysis/TIF/>, accessed on 03/03/2017

⁸⁵ PWC Draft Report (2008) *Tax Increment Financing to fund infrastructure in Australia*



- The East Point Corridors TAD is a \$98 million TIF that is expected to generate \$164 million in appreciation of existing properties and \$191 million in new development over 25 years, thereby providing the new tax revenue needed to retire the TIF bonds⁸⁶

13. BUSINESS RATE SUPPLEMENTS FOR FINANCING THE LONDON CROSSRAIL, LONDON, UNITED KINGDOM

Project Aim

The proposed London Crossrail will link the Shenfield to Maidenhead and west to Redding, connecting the business centres of Heathrow, the West End, the City of London and Canary Wharf. The project is aimed to add an additional 100 km of rail tracks connecting the East and West ends of the city. The need for such addition to the rail network of the city has been formulated considering the growth of the working population projected in the next two decades.

Project Description

The project adds an additional 100 kms. of cross railway line connecting 40 stations out of which ten will be newly constructed. Crossrail will increase the capacity of the entire network by 10% and the east-west capacity by 40%, carrying 72,000 passengers per hour and 200 million per year.⁸⁷ This will allow an additional 1.5 million people to be within 45 minutes of an employment centre, thereby greatly increasing access and “employment opportunities to thousands in some of London’s most deprived areas.”⁸⁸

⁸⁶ PWC Draft Report (2008) *Tax Increment Financing to fund infrastructure in Australia*

⁸⁷ <http://www.crossrail.co.uk/benefits/crossrail-in-numbers>

⁸⁸ Roukouni, A and F. Medda. “Evaluation of Value Capture Mechanisms as a Funding Source for Urban Transport: The Case of London’s Crossrail”. *Procedia – Social and Behavioural Sciences* 48 (2012) 2394-2404.

The project has been financed through various agencies including City of London Corporation, Heathrow Airport holding Limited, Canary Wharf group and Berkeley Homes. The total cost of the project is £14.8 billion. London businesses will contribute £4.1bn through a variety of mechanisms, including the BRS (Business Rate Supplements).

The Business Rate Supplements Act 2009 makes provision for county councils, unitary district councils and the Greater London Authority to levy a supplement on the national non-domestic rate (or business rate). Authorities will be able to use the proceeds to fund additional investment aimed at promoting the economic development of local areas.⁸⁹

The BRS enables complete funding of the Crossrail developed via imposing a levy on non-domestic ratepayers to raise money for the development of an infrastructure. Over 60% of Crossrail’s funding will come from Londoners and London businesses.

Project Implementation

The project has been started in 2012 and is expected to be complete by 2017 as per the schedule of Crossrail Limited. Crossrail Limited is a wholly owned subsidiary of the Transport of London. The project is implemented in the following phases: tunnelling, station construction and civil engineering, network rail works, railway systems and finally trains and railway depots. Further, the services of the Crossrail can be introduced connecting the East and the West Edges of the City.

The funding of the project is done by The

⁸⁹ *Business rates supplements: guidance, Department of communities and local government*

Greater London Authority (GLA) and is expected to contribute around £4.1bn (of its agreed contribution to the £15.9 billion Crossrail project) using income generated from a new business rates supplement (BRS). Powers were granted to the GLA to introduce this under the 2009 Business Rates Supplements Act.

Less than one in five of London's business and other non-domestic premises are liable to pay the Crossrail BRS. Under the BRS a ratepayer for a property (or rating assessment) with a rateable value of £100,000 is liable for an annual BRS contribution of £2,000 (that is, £100,000 x the 2p in the pound BRS multiplier). In April 2017, the revaluation of the business properties and non-domestic entities will be done.⁹⁰

The Crossrail BRS has strengthened the GLA and other government organisation to raise funds and implement the Crossrail benefitting to almost 50% of the population of London with improved connectivity and infrastructure with almost 30% of the funding done by the Business Rate Supplement, which charges those who are benefitted the most by the project.

Key Results and Impacts

- For the collection of the BRS, no additional efforts are to be made as the collection of funds can be integrated to the National Non Domestic Rates levied by the GLA
- Funding is done directly from the new business development induced from the enhanced rail connectivity across London
- The added infrastructure is capable of providing commute to 72,000 workers per day, which also adds to the economy of the city indirectly via

- increased economic and business activities
- Citizens have no direct impact on the taxes or they need not to contribute directly for fund raising of the project
- No additional requirements of tools of fund raising such as municipal bonds, infrastructure shares or investments
- It entails low financial risks as a major part of the funding will be recovered by the established business entities
- Increases fund raising capacity of the GLA to provide the City of London the best possible infrastructure

14. FUNDING OPPORTUNITIES FOR URBAN TRANSPORT IN WARSAW, POLAND

Project Aim

To recover the capital costs of urban infrastructure by capturing the increase in land value resultant from the urban infrastructure investment. To capture land value increment through fiscal mechanisms such as tax, incentives and other development agreements. Three attractive mechanisms are explored for implementing land value capture in the Warsaw metro system line extension and these are land tax, betterment levy and public private partnership (PPP).

Project Description

After the construction of the first line of the Warsaw metro, it was analysed that in the Bielany district, houses that were located within a 1 km distance from the nearest metro station had witnessed an increase of 6.7% in their selling prices, as compared to houses in the same district but farther from the metro line. It is anticipated that following a similar pattern, houses located within a 1 km distance from the planned stations on line 2, Targowek district, will witness an increase of

⁹⁰ *Paying for Crossrail: business rate supplement Government of London.*



7.13% in their selling prices, compared to other houses in the same district.⁹¹ Having observed the rise in land value as an impact of urban transport infrastructure, it is proposed in a report by Ernst and Young, that the financial implication of the construction, maintenance and operation of line 2 extension of the metro system may be shared by land value capture methods. This would result in a pool of dedicated additional financial resources for urban transport infrastructure.

Project Implementation

With time, it has become increasingly difficult to narrow the gap between the revenue generated by public transport and its operations and maintenance costs. As a result, it is inevitable that alternative financial resources are explored to address urban transportation needs. The structure of the local government and the decentralization of public finance have very important roles to play in making the implementation of land value capture financing successful. Post the decentralization reforms in Poland, the municipalities have garnered significant political autonomy.

As is evident in its public finance system structure, municipalities are the foremost stakeholder to be considered in value capture financing as they are in control of the main local public services. In addition to political autonomy of the municipalities, the decentralization of public finance introduced by the Act on Territorial Self-Government of 1990 led to the separation of the municipal budget from the State financial system. This allowed the municipalities to conduct financial management and gain autonomy in planning their budgets and tax revenues (see footnote 91.) The autonomy of municipalities is limited to deciding the rates of the

local taxes, while the maximum tax rate is set by the State regulations.

The study by Ernst and Young, analyses the effects of metro access on the property prices in two districts of Warsaw – Bielany, which has an existing metro line and Targowek, where a line extension is planned. Warsaw having Poland's most developed residential market due to high migration, highest income levels in the country along with lowest levels of unemployment are additional factors which aid adopting innovative financial resources for funding urban transport. The first metro line in Warsaw opened in 2008 after 25 years of construction. Due to increasing number of passengers year-on-year, the second line extension of the metro is a priority for the City Council. The construction for the second line began in 2010 with a required municipal investment of PLN 4,117,5 billion along with European funds equal to PLN 2,973 billion. The City of Warsaw budget and the Polish national budgets had been the main sources of revenue for the construction of the first metro line.⁹²

Despite ongoing investments into transport infrastructure, there is tremendous demand for new transport, which has created an opportunity for exploring land value finance as an additional source of revenue. It is observed that the presence of transport infrastructure has a positive impact on the prices of houses and thereby gives a potentially significant return on transport investment (see footnote 92.)

The implementation of a land tax would capture the increase in property value, but would require an advanced land registry system and a new land

⁹¹ Medda, F.R., Modelewska, M. (2011). *Land Value Capture as a Funding Source for Urban Investment. The Warsaw Metro System.*

⁹² Medda, F.R., Modelewska, M. (2011). *Land Value Capture as a Funding Source for Urban Investment. The Warsaw Metro System.*

evaluation system to be put in place. In addition, a price index would be required to keep track of adjustments in real estate values over time. This may result in more costs involved in legislative and administrative procedures than the revenue acquired through land value capture tax, but it may be the best choice in the long-term perspective.

Betterment levy to commercial properties is another option that may be introduced and earmarked for transport investment. This has been a favoured mechanism for many urban transport projects in the world, such as the Crossrail infrastructure in London and the Metropolitan Atlanta Rapid Transport Authority (MARTA) in Atlanta, Georgia. Keeping in mind the current economic situation of Poland, the third option, which is a PPP approach, is likely to be the most achievable.

A new PPP legislative structure passed in 2009 to replace the PPP Act of 2005 contained a number of specific provisions for the private players such as less formal procedures and pre-emption rights to make it easier for PPP projects to take place. This new Act also encourages and facilitates the intervention of the private sector in public sector investment, resulting in a legal basis for introducing financial benefits from investment due to increased land value (see footnote 92.)

Key Results and Impacts

- Implementing land value financing mechanisms would result in effective and structural fiscal reforms in the country, especially in areas of local taxation such as property tax and decentralization of public finance
- Implementation of land value capture financing would result in allowing local governments to access sufficient additional resources to address the complex and growing needs for urban transport infrastructure



Annexure 1

States	Urban Land Tax	Tax on Conversion of Land	Betterment Levy	Development Charge/ Impact fees
ANDHRA PRADESH	Yes	Section 4 AP Conversion Act 2006	Betterment contribution S. 24 APTP ACT	Development charge - Section 27 APUAD Act
ARUNACHAL PRADESH	No specific provision	Conversion of Agriculture land into Non-agri purpose Rules, 2011; Section 99 (b)(8) AP LSR Act 2000	Improvement Expenses recoverable under section 408-409 APM Act	Section 133 - APM Act, 2007; Section 39(1) AP UCP Act 2007
ASSAM	Tax on Specified Lands Section 3 ATSL Act; Assam Land Revenue Reassessment Act 1936	ALRR Act 1939	Section 144 (2)(a) GMC Act; Section 41 ATCP Act; Betterment tax - Section 32-37 Assam Highway Act 1989	No specific provision
BIHAR	No specific provision	Bihar Agriculture Land (Conversion for Non-Agriculture Purposes) Act, 2010	Section 131 BMA	Section 60 of Development Charge ; Section 62. Levy of Infrastructure and Amenities Charges under BUPD Act 2012
GOA	Section 109 of City of Panaji Corporation Act, 2002 (both land and buildings are taxed); Section 143 of City of Panaji Corporation Act, 2002 (street tax)	Section 100A of The Goa, Daman and Diu Town and Country Planning Act, 1974 and Rules, 1976; Section 20A of Goa, Daman and Diu Town and Country Planning (Planning and Development Authorities) Rules, 1977	Section 54 of The Goa Housing Board Act and Rules; Section 41 of The Goa Tillari Irrigation Development Corporation Bill, 1999	Sections 43, 100 of The Goa, Daman and Diu Town and Country Planning Act, 1974 and Rules, 1976; Section 20A of Goa, Daman and Diu Town and Country Planning (Planning and Development Authorities) Rules, 1977



TDR and Incentive FSI	Premium on Relaxation of Rules or Additional FSI	Charge for Regularization of Unauthorized Development	Vacant Land Tax	Town Planning Scheme
No specific provision	No specific provision	The Andhra Pradesh Regulation and Penalization of unauthorized buildings and buildings constructed in deviation of the Sanctioned Plan Rules, 2015; Section 399 of HMC Act, 1955 - Compounding Fee; Section 452(2) and 636 of HMC Act, 1955 - Demolition Expenses; Section 456(4) of HMC Act, 1955 - Administration of Demolition Expenses; Section 440 of HMC Act, 1955 - Balconies	Section 85 (3) of the Andhra Pradesh Municipalities Act, 1965	Andhra Pradesh Town Planning Act 1920
No specific provision	No specific provision	Information Not available	No specific provision	No specific provision
No specific provision	No specific provision	No specific provision	No specific provision	No specific provision
No specific provision	No specific provision	Property Tax Collected from unauthorized properties but no regularization section 18 BPT (ACR) Rules 2013	Section 9 BPT(ACR) Rules	No specific provision
No specific provision	No specific provision	The Goa Regularisation of Unauthorized Construction Ordinance, 2016	No specific provision	Sections 56, 88, 89 of The Goa, Daman and Diu Town and Country Planning Act, 1974 and Rules, 1976

States	Urban Land Tax	Tax on Conversion of Land	Betterment Levy	Development Charge/ Impact fees
GUJARAT	Yes	Gujarat Land Revenue (Amendment) Bill-2016	Section 216 of Bombay Provincial Municipal Corporations Act, 1949 (Gujarat Adaptation of Laws (State and Concurrent subjects) Order, 1960.)	GTPUD Act (Chapter VII); value-based development charge also levied; Impact Fees Collected under AUDA
HARYANA	No specific provision	Section 3(1) - HDRUA Act	Section 93 - HUDA Act	No specific provision, however, a development charge is collected in controlled area (Haryana Municipal Act section 302D(1))
HIMACHAL PRADESH	No specific provision	No specific provision	No specific provision	Section 61 - HPTCP Act; Development Fee (Section 45) - HPHUDA Act
KARNATAKA	Yes	Section 18 - KTCP Act and Rates prescribed by Karnataka Planning Authority Rules 1965	Bangalore Development Authority Act 1976	Section 18 A - KTPC Act- for value-based; Area-based also levied
KERALA	No specific provision	Kerala Land Utilisation Order, 1967; The Kerala Conservation of Paddy Land and Wetland Act 2008	Section 25.2.2. of Master Plan for Kozhikode Urban Area-2035; also features in Kerala Irrigation and Water Conservation Act, 2003	Urban Policy and Action Plan for Kerala; Section 20 of The Kerala Building Tax Act, 1975 (referred to as building tax)
MADHYA PRADESH	No specific provision	No specific provision	Betterment tax S. 127 (5) (h) MPMC Act; Madhya Pradesh Town Improvement Trust Act 1960; Madhya Pradesh Town and Country Planning Act 1973	Madhya Pradesh Nagar Tatha Gram Nivesh Niyam 1975 and Madhya Pradesh Bhumi Vikas Rules 1985



TDR and Incentive FSI	Premium on Relaxation of Rules or Additional FSI	Charge for Regularization of Unauthorized Development	Vacant Land Tax	Town Planning Scheme
Regulations For The Rehabilitation and Redevelopment of the Slums 2010	Ahmedabad Urban Development Authority (AUDA) - Development Control Regulations in CDP 2021 - proposed	Section 7 GRUD Act	No specific provision	Gujarat Town Planning and Urban Development Act 1976
No specific provision	No specific provision	No specific provision	No specific provision	No specific provision
No specific provision	No specific provision	No specific provision	Section 46 Penalty for nonconstruction of buildings-HPHUDA Act	No specific provision
Section 14B - KTCP Act	Zonal Regulations of Mangalore 2011	Akrama-Sakrama Scheme	No specific provision	Karnataka Town and Country Planning Act 1961
Urban Policy and Action Plan for Kerala	Urban Policy and Action Plan for Kerala	Section 134 of Kerala Panchayat Building Rules, 2011	No specific provision	Kerala Town and Country Planning Ordinance, 2014 was introduced but scrapped
No specific provision	No specific provision	No specific provision	No specific provision	Madhya Pradesh Town and Country Planning Act 1973 - Section 50

States	Urban Land Tax	Tax on Conversion of Land	Betterment Levy	Development Charge/ Impact fees
MAHARASHTRA	Maharashtra Land Revenue Code 1966	Yes	Nagpur Improvement Trust Act 1936 Mumbai Municipal Corporation Act 1888; Mumbai Metropolitan Regional Development Authority(MMRDA) Act, 1974 - Section 26-30	Development Charge Section 124A Maharashtra Regional and Town Planning Act 1961 - Amended in 1993
MEGHALAYA	No specific provision	No specific provision	Section 68 of Meghalaya Municipal Act, 1973	No specific provision
MIZORAM	No specific provision	Section 20 of Mizoram Land Revenue Rules, 2013	Section 32 of Mizoram Highways Act, 2002	Section 45 of The Mizoram Urban and Regional Development Act, 1990; Impact fees collected under Section 341 of Mizoram Municipalities Amendment Act 2015
NAGALAND	No specific provision	No specific provision	Section 41 of The Nagaland Highways Act, 1967	Section 169 of The Nagaland Municipal Act, 2001
ODISHA	No specific provision	No specific provision	Section 677 of Odisha Municipal Corporation Act, 2003; Section 70 The Orissa Town Planning & Improvement Trust Act, 1956; CDP Land and Implementation Policy,2015.	Section 196 of Odisha Municipal Corporation Act, 2003; Section 84 of The Orissa Development Authorities Act, 1982
PUNJAB	No specific provision	Section 7. Draft Policy for Housing & Urban Development	Section 141 of Punjab Regional and Town Planning and Development Act 1995.	Section 128 of Punjab Municipal Corporation Act, 1976. Policy for utilization of External Development Charges in the State of Punjab.



TDR and Incentive FSI	Premium on Relaxation of Rules or Additional FSI	Charge for Regularization of Unauthorized Development	Vacant Land Tax	Town Planning Scheme
1994 Amendment to MRTP Act 1966	Yes	Maharashtra Gunthewari (Regulation, Upgradation and Control) Act 2001	Announced	Bombay Town Planning Act 1915 and 1954
Section 9(f) of Meghalaya Heritage Act, 2012	No specific provision	Policy of the Meghalaya Urban Development Authority for Regularization of Unauthorized or Illegal Colonies	Under "holding" definition Meghalaya Municipal Act 1973	No specific provision
Section 341 of Mizoram Municipalities Amendment Act 2015	No specific provision	Policy of the Aizawl Development Authority for Regularization of Unauthorized or Illegal Colonies	Rule 13 & 14 of The Mizoram Municipalities (Property Tax) Management Rules, 2014; Section 221 of The Mizoram Municipalities Act, 2007	No specific provision
No specific provision	No specific provision	No specific provision	No specific provision	Section 375 of the Nagaland Municipal Act, 2001
Section 472 of Odisha Municipal Corporation Act, 2003; Section 64 of The Orissa Development Authorities Act, 1982	Section 9.3.1. Slum Rehabilitation & development Policy for Odisha	Regularisation of unauthorized / deviated construction through compounding Scheme	No specific provision	Section 22 of The Orissa Development Authorities Act, 1982
No specific provision	Section 12.1 (4) of Draft Policy for Housing & Urban Development	Policy for regularization of unauthorized Colonies and buildings under the Punjab Laws (Special Provisions) Act-2013	No specific provision	Land Pooling Policy for Punjab. S. 43, S. 139 of Punjab Regional and Town Planning and Development Act 1995.

States	Urban Land Tax	Tax on Conversion of Land	Betterment Levy	Development Charge/ Impact fees
RAJASTHAN	Section 20. Notification-Government of Rajasthan. Local Self Government, Urban Development & Housing Department	Section 90-A of Rajasthan Land Revenue Act, 1956		Section 106 Rajasthan Municipalities Act, 2009
SIKKIM	No specific provision	No specific provision	No specific provision	Section 94 of The Sikkim Municipalities Act, 2007
TAMIL NADU	TNULT Act	Yes	Yes	Tamilnadu Town and Country Planning Act 1961 - Section 63B; Impact fees collected
TRIPURA	No specific provision	Section 39 of the Tripura Town and Country Planning Act, 1975	No specific provision	Section 202 of The Tripura Municipal Act, 1994
UTTAR PRADESH	No specific provision	Zamindari Abolition and Land Reforms Act; Consolidation of Holdings Act	Section 35 of Uttar Pradesh Urban Planning and Development Act 1973	Sections 14 and 15 of UPUPD Act 1973
UTTARAKHAND	No specific provision	Section 38-A of Uttarakhand Urban Country Planning Development Act, 1973	Section 35 of Uttarakhand Urban Country Planning Development Act, 1973	Section 15, Section 38-A of Uttarakhand Urban Country Planning Development Act, 1973
WEST BENGAL	WBULT ACT	Sections 4A, 4B, 4C and 4D of West Bengal Land Reforms Act, 1955	No specific provision	Section 102 of The West Bengal Town and Country (Planning and Development) Act, 1979



TDR and Incentive FSI	Premium on Relaxation of Rules or Additional FSI	Charge for Regularization of Unauthorized Development	Vacant Land Tax	Town Planning Scheme
Policy of Transferable Development Rights in Rajasthan 2012	RTIDF betterment levy on premium FAR along the two Metro corridors for height upto FAR of 4 rather than 1.33.	(For industrial land) RIICO Disposal of Land Rules 1979	Section 26. Notification-Govt of Rajasthan. Local Self Government, Urban Development & Housing Department	Integrated Township Schemes of Private Developers
No specific provision	No specific provision	Section 26 of The Sikkim Building Construction Regulations, 1991	No specific provision	No specific provision
Yes; Charged but no specific provision exist under any Act	Chennai Metropolitan Development Authority - DCR provision	Section 113A and section 113B - TNTCP Act	Section 81 (3) (a) of the Tamil Nadu District Municipalities Act, 1920	Yes
No specific provision	No specific provision	No specific provision	Section 13 of The Tripura Municipal (Assessment and Collection of Property Tax) Rules, 2016	No specific provision
Sub-section-(2) (i) of section-56 of the UPUPD Act, 1973	Policy for regulation of FAR- Housing Department , Govt. of UP	No specific provision	No specific provision	No specific provision
No specific provision	No specific provision	No specific provision	Section 18 of Uttarakhand Urban Country Planning Development Act, 1973	No specific provision
Section 91 WBT&CPD Act	Section 52 WBT&CPD Act	No specific provision	No specific provision	No specific provision



सत्यमेव जयते

Government of India
Ministry of Urban Development