Land Pooling for Smart Cities

Suresh Babu
Additional Chief Planner, CIDCO
Outline of Presentation

- Key points from Smart City Mission
- 24 Smart City Features
- Land as a resource for city planning
  - Introduction
  - Case Studies
  - Land Pooling and Readjustment
  - Benefits and Challenges
- Experiences from Planning and Management of Navi Mumbai
  - Background
  - Planning of Navi Mumbai
  - CIDCO and Navi Mumbai Development Plan
  - Land Acquisition and Rehabilitation
  - Practical Model for Development of Land
- Suggestive Policy Framework
- Smart Land Management Tool
Smart City Mission Transform-Nation

- Key points related to land

  3.1 (i) **Promoting mixed land use** in area-based developments — planning for ‘unplanned areas’ containing a range of compatible activities and land uses close to one another in order to make land use more efficient. The States will enable some flexibility in land use and building bye-laws to adapt to change;

  5.1.2 Redevelopment will effect a replacement of the existing built-up environment and enable co-creation of a new layout with enhanced infrastructure using **mixed land use** and increased density. Redevelopment envisages an area of more than 50 acres, identified by Urban Local Bodies (ULBs) in consultation with citizens.
Smart City Mission Transform-Nation

- Key points related to land

  - 5.1.3 Greenfield development will introduce most of the Smart Solutions in a previously vacant area (more than 250 acres) using innovative planning, plan financing and plan implementation tools (e.g. land pooling/land reconstitution) with provision for affordable housing, especially for the poor.

  - 11.3 The GOI funds and the matching contribution by the States/ULB will meet only a part of the project cost. Balance funds are expected to be mobilized from: States/ULBs own resources from collection of user fees, beneficiary charges and impact fees, land monetization, debt, loans, etc.
Smart City Mission Transform-Nation

- 24 Smart City Features

1. Economy and Employment
2. IT Connectivity
3. ICT Enabled Government Services
4. Citizen Participation
5. **Housing and Inclusiveness**
6. Education
7. Health
8. **Mixed Use**
9. **Compact**
10. **Public Open Spaces**
11. Identity and Culture
12. Transport
13. Walkable
14. Energy Supply
15. Energy Source
16. Water Supply
17. Water Management
18. Waste Water Management
19. **Waste Management**
20. Sanitation
21. Air Quality
22. Energy Efficiency
23. **Underground Electric Wiring**
24. Safety and Security
Land as a resource for City Planning

- Adopting Land Monetization and Value capture policies can play a pivotal role in providing amenities and smart infrastructure.

- Land value is dictated by use, accessibility, infrastructure and service provisions.

- Investments in infrastructure especially transport, appreciation of the value of land over time or change in use of land notably increases market value of land.

Source: Sharma 2015
Land as a resource for City Planning

- **Value Capture Tools – Case Studies**

  - **Sabarmati Riverfront Development Project**, Ahmedabad - Land Monetization

  - **Urban Renewal of Poblenou, Barcelona** - Air Rights for redevelopment, Land Transfer - 30% land given to 22@BCN for redevelopment projects, and Development levy

  - **Development of Mass Rapid Transport System (MRTS): Hong-Kong, China** - 'Land Development Rights' given to Mass Transit Railway Corporation (MTRC)

  - **Provision of Urban Services/amenities through Land Pooling: Gujarat** - Land Pooling and betterment levy

*Source: Sharma 2015*
Land as a resource for City Planning

1. Map Landholdings for a designated area
2. Reorganize land parcels or plots, provide access to each land parcel or plot
3. Set aside land for public uses by taking a portion from each landholding
4. Appropriate increments in land values for infrastructure development. Detailed infrastructure is designed and cost estimates are prepared.
5. Infra provision without additional cost

Source: Sharma 2015
Land as a resource for City Planning

- **Benefits**
  - Sustainable Financing
  - Inclusive Growth across various landscapes including Greenfield
  - Scope for urban renewal / redevelopment

- **Challenges**
  - Poor Administration
  - Lack of planning expertise
  - Sensitivity to market conditions
  - Transparency and accountability problems leading to community resistance

*Source: Sharma 2015*
Experiences from Planning and Management of Navi Mumbai
How the stage was set for Navi Mumbai

- Industrial decentralization and Metropolitan Planning in Maharashtra 1955-75
  - Maharashtra formed in May 1960
  - Board of Industrial development - October 1960
  - MIDC- August 1962 (First IDC in India)
  - First year- 14 centers in interior areas
  - Potable water plants for both domestic and industrial use
  - Stabilize the population base near centers
  - Many actions prior to third five year plan.
Mumbai – the congested city

- Commercial Capital of India
- Wedge Shaped Metropolis – with restricted future geographical growth
- Very high growth rate
- Economic activities concentrated in the southern tip
- Uni-directional movement of the traffic and imbalanced utilization of infrastructure
Concurrent Events 1958-65

- Remedy for Mumbai
- Delineation of MMR
- Formation of RPB
- Enact MR&TP Act
- Foundation for Metropolitan Planning
- First Development Plan of the BMC
- Conception of Navi Mumbai
Necessary Conditions To Navi Mumbai: The Regional Plan 1970

- **Root cause** - Concentration of tertiary sector jobs in island city”

- **Remedy**
  - Arrest tertiary growth in south Mumbai
  - Divert to Navi Mumbai
  - Relieve - B & K complex
  - Build alternative tertiary focus.
Necessary Conditions To Navi Mumbai: The Regional Plan 1970

“Immediately necessary” policy decisions

- Only 20% of back-bay reclamation as commercial
- Divert offices above a certain area
- Shift government offices
- Shift non-location-specific industries
- Move laterally
- Build bridge across creek
- Journey started 1970…..
Navi Mumbai
Planning Options

- Ribbon type of development along arterial roads
- Satellite feeder townships
- Development of a large counter magnet.
CIDCO

- Incorporated in 1970 under the Indian Companies Act, 1956
- Owned by Government of Maharashtra
- Navi Mumbai, the flagship Project, it is world’s one of the largest well-planned city

**Expertise in**

- Urban Planning,
- Transportation Planning,
- Engineering Design
- Execution,
- Architecture & Housing,
- Economics & Finance,
- Marketing & Estate Management
# Navi Mumbai Development Plan

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Area (Sq.km.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Navi Mumbai Notified Area</td>
<td>343.70</td>
</tr>
<tr>
<td>2.</td>
<td>Areas under MIDC, MSEB, Municipal Councils and others</td>
<td>50.00</td>
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<tr>
<td>3.</td>
<td>Navi Mumbai Project Area (1-2)</td>
<td>293.70</td>
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<tr>
<td>4.</td>
<td>Other Industrial (Jawahar &amp; Panvel 153.67 Co-op &amp; ONGC, Airport, JNPort, NDZ, RPZ)</td>
<td>153.67</td>
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<tr>
<td>5.</td>
<td>SEZ</td>
<td>21.40</td>
</tr>
<tr>
<td>6.</td>
<td>Non-Nodal Area</td>
<td>21.01</td>
</tr>
<tr>
<td>7.</td>
<td>Nodal Area</td>
<td>97.62</td>
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<tr>
<td></td>
<td>Total Area (4 to 7)</td>
<td>293.70</td>
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</tbody>
</table>
Major Projects

- Navi Mumbai International Airport
- Exhibition Centre
- Navi Mumbai
- Metro Railway
- Central Park
- Golf Course
- Affordable Housing
Land Acquisition for Navi Mumbai

- In 1970 State Government started acquisition of land under Land Acquisition Act 1894
- In the initial period there was very strong opposition and agitations faced by Government for acquiring the lands from the Project Affected Persons (PAPs)
- Rehabilitation measures were rolled out apart from monetary compensation
Current Status

- Entire project land in possession
- Development of strong & cheap communication
- Vicinity to Mumbai, the commercial capital synergetic
- Flexible approach in development plan helps in responding to changing scenario
- Taking care of project affected persons by providing adequate compensation and employment leads to sustainable development
The total land to be acquired was 29275.59 Ha

The share of private land to be acquired was 67% for Navi Mumbai

The share of private land to be acquired was lowest in Thane Taluk (40%)

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Taluka</th>
<th>Total private land to be acquired (Ha)</th>
<th>Total public land to be acquired (Ha)</th>
<th>Total Land to be acquired (Ha)</th>
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<tbody>
<tr>
<td>1</td>
<td>Thane</td>
<td>3210.48</td>
<td>4760.23</td>
<td>7970.71</td>
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<tr>
<td>2</td>
<td>Panvel</td>
<td>9794.09</td>
<td>3370.498</td>
<td>13164.59</td>
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<tr>
<td>3</td>
<td>Uran</td>
<td>6516.194</td>
<td>1624.101</td>
<td>8140.295</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>19520.76</td>
<td>9754.829</td>
<td>29275.59</td>
</tr>
</tbody>
</table>
## Land Acquired

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Taluka</th>
<th>Acquired Private Land (Ha)</th>
<th>Acquired Public Land (Ha)</th>
<th>Total Acquired Land (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thane</td>
<td>3139.424</td>
<td>2472.978</td>
<td>5612.402</td>
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<tr>
<td>2</td>
<td>Panvel</td>
<td>7206.403</td>
<td>1735.42</td>
<td>8941.823</td>
</tr>
<tr>
<td>3</td>
<td>Uran</td>
<td>5048.284</td>
<td>646.56</td>
<td>5694.844</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15394.11</strong></td>
<td><strong>4854.958</strong></td>
<td><strong>20249.07</strong></td>
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<table>
<thead>
<tr>
<th>Percentage Share of Land Acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sr.No</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

- Till date nearly 70% of the land has been acquired
- Private land has been acquired to the extent of 79%
- Government land has been acquired to the extent of 50%
Rehabilitation Measures by CIDCO

- Compensation included monetary compensation and rehabilitation measure

Apart from monetary compensation, the key features of the CIDCO are:

  a. Rehabilitation measures
  b. Gaothan Expansion Scheme (GES)
  c. 12.5% Schemes
Key features of the rehabilitation measures of CIDCO

- Stipend for Higher Education
- **Stipend for Technical Training & Employment for one family member**
- Entrepreneurship building (Work contracts)
- Allotment of Schools/Colleges to PAP Trusts
- Training in Computers
- Improving village infrastructure (GIA)
- Land compensation (GES & 12.5% Scheme)
Rehabilitation Measures of CIDCO

- Gaothan Expansion Scheme (GES) in 1976 – around village for natural expansion of families
- **10% of acquired land**
- Non-transferable Min – max plots 40 – 500 sq.m. with 0.75 FSI
- **Scope for regularization of unauthorized structures against entitlement**
- Lower physical infrastructure standards
- Implemented in 7 villages of Thane Dist. and 2 villages in Raigad Dist.
- **Cost = 2 X Acquisition rate +Rs. 5/sq.m for development**
Rehabilitation Measures of CIDCO

- First 12.5% schemes
- Introduced in 1990, for those who did not accept compensation and post-86 acquisition
- Extent increased to 12.5% with 70% for plots
- Social infrastructure standards also lowered
- **No upper ceiling on plot size**
- Bulk locations identified in consultation with peoples’ representatives
- **Benefit only for individual land-owners** (excluding JNPT PAPs)
- Other conditions remained same
Rehabilitation Measures of CIDCO

- Current 12.5% schemes
- (Second notification dated 28/10/1994)
- Land owners to whom allotments was made under GES be given benefit of 12.5% scheme
- Additional area to be allotted near the Gaothan or at a different location, if not available near original location
- 1994 – benefit extended to all PAPs irrespective of acquisition date
Rehabilitation Measures of CIDCO

- To discontinue the GES Scheme
  - Min 40 sq.m size of plot - to each of PAP
  - Joint ownership of land Min 40 sq.m size of plot Landless labour, Landless salt pan workers and village artisans
  - 1.5 FSI with 15% of FSI for commercial use
  - Reduced margins for plots up to 1000 sq.m
  - Lands made transferable at a fee
  - Physical & Social infrastructure standards lowered by government
Rehabilitation Measures of CIDCO

- Advantages of 12.5% schemes
  - Landowners partners in city development
  - Better compensation and rehabilitation
  - Housing stock for middle income class & LIG
  - Creation of housing stock through private entrepreneurship
  - Encouragement of PAPs to become developers
  - Lesser opposition to land acquisition
Rehabilitation Measures of CIDCO

- Disadvantages of 12.5% schemes
  - Parallel housing supply to CIDCO at a cheaper rate – lands & DUs
  - Compensation in 12.5% is add-on feature affects project viability
  - Lower standards of development & high density
  - Two distinct forms of city development seen
  - Developed plots to be given at twice acquisition cost + Rs. 5 (approx. Rs. 35 /sq.m)
  - Differential norms gave rise to areas of second class citizenry
Rehabilitation Measures of CIDCO

- Problems in implementation
  - Getting correct and updated record of land acquisition status
  - Problem in establishing inheritance
  - Exploitation for profit – by both villagers & developers
  - Encroachment of lands around existing gaothans
  - Encroachments on nodal lands by PAPs
Assessing the Rehabilitation Programs

- Rehabilitation measures include - training, skill building and education.

- Another component of compensation was land compensation as part of Gaothan Expansion Scheme.

- Initially 10% of acquired land around villages was developed at lower standards. This has now increased to 12.5% of land.

- Minimum 40 sq.m. of plot with 1.5 FSI is provided along with permission of 15% floor space for commercial.
Assessing the Rehabilitation Programs

- In the initial scheme land could not be transferred which has now been made transferable.
- Landowners were seen as partners in development Schemes are primarily for MIG and LIG.
- Encouraged residents to become developers and there is less opposition for acquisition
- Land records continue to be a problem and rehabilitation program should have been part of original plan
Assessing the Rehabilitation Programs

- **Lesson learned**
  - Scheme should be part and parcel of original plan preparation
  - Clear-cut rules and procedures should be framed at time of conceptualization
  - Quick implementation of scheme
  - Transparent method of allotment
  - Fixing of entitlement
Land Acquisition for International Airport

- For Navi Mumbai, CIDCO has envisaged development of International Airport comprising an area of about 1600 Ha (including Aeronautical and Non Aeronautical users)
- Clearance of MOEF, Govt. of India has been received only to the extent of 1200 Ha. for the core activities of Aeronautical use.
Major Challenges for CIDCO

- Acquisition of land for the purpose of development of city,
- Rehabilitation and resettlement about 10 village settlements from the core airport area of about 1200 Ha.
- Before any scheme of compensation for procurement of land is discussed with the PAPs, the land values and real estate market has increased which made the land more precious to acquire from the PAPs
- Acquiring the land, including the resettlement and rehabilitation lot of agitation were seen during the period 2010-12 period.
- PAPs opposed to any sort of compensation for the project for acquiring the land including village settlement for the purpose of Airport
Land Acquisition for International Airport

- Proposed International Airport shall have impact/influence over larger area beyond Navi Mumbai.
- It is estimated that it would be to the extent of 25 KM radius of the Airport.
- Board vide BR no 10572 dt. 19/10/11 approved proposal for designation of CIDCO as SPA for to prepare plan and regulate development in influence zone area.
- CIDCO has been appointed Special Planning Authority (SPA) vide notification date 10th January 2013, for the NAINA (Navi Mumbai Airport Influence Notified Area)
Practical model for development of land

- CIDCO has come up with a practical model for development of land
- Experience of CIDCO for the last 40 years shows that, for a layout / Development Plan 50% to 55% area goes under infrastructure uses at city level
- Thus only 45% to 50% of saleable area component available is to be shared between the authorities as well as to PAPs
Practical model for development of land

• CIDCO has come up with an innovative scheme of 22.5%.
• It involves compensation of land under rehabilitation scheme with 12.5% as per the Govt. of Maharashtra scheme of 1990-94.
• Additional 10% of land is offered in lieu of the monitory compensation which is to be paid to the PAPs.
• Thus this scheme clubs both rehabilitation and mandatory compensation issues together given in the form of higher compensation of land.
• The additional added benefit shown to the PAPs is this land in the form of plots given under 22.5% scheme is designated with 2.00 FSI which previously 1.5 FSI in the 12.5% scheme.
• PAP is satisfied with the package offered by CIDCO in the form of land given with plots of FSI 2.00 which will allow them to have 45% of the saleable area.
Practical model for development of land

- Addition to the compensation of land given in the form of 22.5% scheme, the core village settlements are rehabilitated with a detailed scheme of 26 point programme which is further accelerated the movement of the PAPs for coming voluntarily to surrender their lands for the Airport project.

- Thus out of 1200 Ha. of proposed Airport area wherein aeronautical area is envisaged, around 670 Ha. of balance land, CIDCO could be able to get the consent of the PAPs within a period of less than a year due to the acceptance of the schemes by the PAPs.
Suggestive Policy Framework

- Fiscal Autonomy
- Flexible framework to negotiate agreements
- Reform Land Management System
  - Land inventory
  - Tax revenues
  - Develop and monitor land markets
  - Urban versus rural management
- Transparent mechanism
- Ease approval process
- Planning expertise
- Heritage management
- Environmental conservation
Smart Land Management Tool

- “Fit-for-purpose” as a tool in building sustainable land administration systems. This approach includes the following elements:
  - **Flexible** in the spatial data capture approaches to provide for varying use and occupation.
  - **Inclusive** in scope to cover all tenure and all land.
  - **Participatory** in approach to data capture and use to ensure community support.
  - **Affordable** for the government to establish and operate, and for society to use.
  - **Reliable** in terms of information that is authoritative and up-to-date.
  - **Attainable** in relation to establishing the system within a short timeframe and within available resources.
  - **Upgradeable** with regard to incremental upgrading and improvement over time in response to social and legal needs and emerging economic opportunities.

*Source: The World Bank and the International Federation of Surveyors 2015*
Thank you