

<b>Building Urban Infrastructure through AMRUT</b>	<b>1</b>
<b>Mobility Responsive Urban Planning</b>	<b>3</b>
<b>Developing Natural Forest Cover : A Case Study from Yadadri, Telangana</b>	<b>5</b>
<b>Addressing Stubble Burning with Cooperative Model</b>	<b>6</b>

## URBANISATION

### Building Urban Infrastructure through AMRUT

#### Urban India - Key challenges and opportunities -

- India is witnessing a rapid increase in the urban population. As per the United Nations World Urbanisation Prospects Report 2018, around 34% of India's population lives in cities - an increase of about three percentage points since 2011.
- By 2031, it is expected to grow by another 6% and by 2051, more than half of the nation's population will be living in cities.
- At present, cities contribute nearly 65% of the country's GDP, which is likely to go up to 70% by 2030 (McKinsey Global Institute, 2010).

#### Challenges -

- As per Census 2011, while 70% of urban households had access to water supply, only 49% had access to water supply within premises.
- Further, due to lack of adequate treatment capacity and partial sewerage connectivity, more than 65% of the wastewater was being discharged untreated in the open drains resulting in environmental damage and pollution of water bodies (CPCB, 2015).

#### Government response -

- In light of the above, Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was initiated by the Government of India to address the challenges of water supply and sewerage/septage in cities across the country.
- It aims to provide basic services like water supply to all households, significantly upgrade sewerage and septage and provide for non-motorised transport transport and public amenities like parks and green spaces at least one in each city, thus improving the quality of life for all, especially the poor and the disadvantaged.
- It is a centrally sponsored scheme with a total outlay of Rs 1,00,000 crore including central assistance of Rs 50,000 crore spread over 5 years from 2015-2020.
- **More reforms** - These reforms broadly cover offering online services to citizens; establishing a single window for all approvals; establishing a municipal cadre; achieving at least 90% of billing and collection of taxes/user charges; developing at least one park for children every year; establishing maintenance system for parks and playgrounds; credit rating of urban local bodies (ULBs) and issuance of municipal bonds implementing model building bye-laws; and audit of energy and water.

### **Allocation of funds -**

- The Mission has allocation of Rs 1,00,000 crore including central assistance of Rs 50,000 crore spread over 5 years from 2015-2020.
- In North East and Hill States, 90% of the project cost is shared by the centre.
- The Central Assistance (CA) is released in three installments of 20:40:40.

### **AMRUT - Aligned with the needs of Urbanising India -**

- **Cooperative Federalism** - Keeping in line with cooperative federalism, State Governments have been empowered to appraise, approve, and sanction projects for their AMRUT cities.
- **Framework for institutional reforms** - AMRUT lays emphasis on institutional reforms which aim to improve governance and institutional capacities of ULBs.
- **Principles of 'incrementalism and prioritisation'** - A step-wise approach towards service level benchmarking by the ULBs has been set to introduce the principle of incrementalism under the mission, which is a gradual process of achieving the benchmarks.
- **Incentivising over penalising** - During the erstwhile JNNURM, 10 percent of the Additional Central Assistance (ACA) for projects was retained for non-completion of reforms. This led to all States/UTs losing this 10 percent as none could achieve 100 percent of reforms. In order to encourage States and reward their initiatives constructively, reform implementation is incentivised under AMRUT - 10 percent of the budgetary allocation is earmarked for reform incentive.
- **Monitoring of the Mission** - At State level, State High Powered Steering Committee (SHPS) chaired by the Chief Secretary monitors and approves the Mission projects in its entirety. At Central level, Apex Committee chaired by the Secretary, MoHUA, approves state Annual Action Plans (SAAPs) and monitors the progress. In addition, District Level Regional Review and Monitoring Committee (DLRMC) conducts detailed scrutiny of the projects.

### **Urban Reforms -**

1. **Online Building Permission System (OBPS)** - With a view to facilitate Ease of Doing Business in construction permits, an Online Building Permission System (OBPS) with Common Application Form and seamless integration of all clearances/No Objection Certificate (NOCs) from internal/external agencies has been made operational in Delhi and Mumbai since April 2016.
2. **Replacement of street lights with LED lights** - 65 lakh conventional streetlights have been replaced with energy efficient (LED) lights. It has led to energy savings of 139 crore KWH per annum and reduction in CO2 emission by 11 lakh tonnes per annum.
3. **Credit Rating** - Four hundred and sixty-nine AMRUT cities have been credit rated out of the total 485 cities where the credit rating work had commissioned.

4. **Municipal Bonds** - Rs 3,390 crore have been raised through municipal bonds during 2017-19 for upgrading urban infrastructure by 8 Mission cities (Ahmedabad, Amravati, Bhopal, Hyderabad, Indore, Pune, Surat and Visakhapatnam).

#### **Jal Shakti Abhiyan - Urban -**

In order to address the national issue of water scarcity, Ministry of Jal Shakti (MoJS), Government of India has undertaken Jal Shakti Abhiyan on water conservation, restoration, recharge and reuse of wastewater.

The key thrust areas of Jal Shakti Abhiyan (Urban) are as follows -

1. **Rainwater Harvesting (RWH)** - ULBs have taken measures for establishing Rainwater Harvesting Cell, construction and installation of RWH structures to recharge groundwater sources and to store water.
2. **Reuse of treated wastewater** - ULBs have undertaken construction of dual piping structure in public buildings and reuse of secondary treated water for horticulture, car washing, fire hydrants, etc.
3. **Rejuvenation of water bodies** - Multiple interventions have been initiated by ULBs to clean and rejuvenate defunct wells and water bodies.
4. **Plantation** - ULBs have taken up the mantle to mobilise the local community members to conduct plantation drives across the cities.

#### **Way forward -**

- During the Mission Period, AMRUT envisages to cover over 60% of the urban population living in 500 cities with universal coverage of water supply and over 60% coverage of sewerage and septage services. However, more than 3,500 smaller cities/towns out of 4,378 statutory towns at present are not covered under any central scheme for water supply and Faecal Sludge and Septage Management infrastructure.
- It is imperative to take forward the achievements of this Mission to smaller cities as well.

## **Mobility Responsive Urban Planning**

While the census data estimates the number of migrants at 3.3 million; several studies including the Economic Survey of India 2017 suggests that this is a significant underestimation.

#### **Lack of planning -**

- Most urban policies, initiated at the central or state level, seemed to have overlooked the emerging forms of mobility.
- On their part, most migrants then are compelled to find solutions that are accessible to them and secure them outside the formal system. Such solutions in domains of shelter, basic services, education, and healthcare not only create difficult living conditions for the

migrants, but more importantly most of these solutions lead to new challenges for the city government.

### **Changing Scale and Forms of Mobility in India -**

- The conventional mode of understanding migration is based on census definition and attempts to understand the causes of the same. The census defines a migrant as a person whose residence has shifted from the place of residence enumerated in the previous census or one who has shifted from her birthplace. Of these, 64 percent moved more than ten years ago to their present destination.
- Some studies such as by Deshingkar and Akter (2009) indicated that there were almost 100 million migrants, based on sectoral analysis.
- It may also be noted that the Economic Survey of India (2016-17) places the estimation of interstate migration at 80 million.

### **Demands of urban mobility -**

- Temporary forms of migrants are people who contribute to the city's economy while they are there but their effort is directed at places where they come from i.e. the source areas. This is where they contribute in terms of remittances, investments, asset building and state revenues. On the other hand, they contribute significantly to the economic flows and outputs, extract fewer resources from the city, and bring in new ideas and ways of doing things.
- These create specific demands on city infrastructure and services.
- **Demands on services** may range from requirements of transport infrastructure and making it amenable to large-scale and long-distance commuting to creating a range of accessible basic services in assembly areas to accessible nutrition and to creating shelter options that are accessible and proximate to such nodes.
- **School level education** in languages familiar to the migrants and a local administration and services that also use these languages in their communication is needed as well.
- In the absence of **public conveniences**, roads may become defecation or urinal spots; edges may become waste dumps, and the intensity of slum formation or homelessness may increase.

### **Way forward -**

- Short-term housing is perhaps one of the most critical and unmet needs of migrants to Indian cities. This is often seen as the need for rental housing. Needs for stays longer than hotel stays and lesser than rental housing are the most neglected.
- Only local governments with an on-ground knowledge of realities will be able to respond to these as opposed to State governments who have a more top-down and homogenising view of housing and other issues. It is therefore essential to move away from the current State government-based policy onus and equip local governments in terms of capacity to cognise such issues, collect data, and to possess the powers and resources to respond to dynamic phenomena such as migration.

## Developing Natural Forest Cover : A Case Study from Yadadri, Telangana

Professor Miyawaki invented the **Miyawaki restoration technique** to protect the lowland areas against natural calamities like tsunami. The basic principle of Miyawaki is to initiate high density plantation in small piece of land with native tree species that can protect the low-lying areas from natural disasters.

A method of developing a natural forest in the degraded forest areas is developed in a cost effective manner and is known as **Yadadri Natural Forest (YNF) Establishment Model**.

### Miyawaki Principles of Natural Forest -

- No defined spacing between plants;
- Soil enrichment must be done before taking up plantation;
- High density planting of herbs, shrubs and tree species up to 10,000 plants per hectare;
- Further supplementation of site by seed dibbling of native species;
- Watering should be done at least until the next rainy season after planting;
- Mulching should be done after planting to suppress weed and prevent evaporation;
- Watering is to be done with tankers and pipe sprinkling instead of flood irrigation;
- Periodical weeding is to be done till the end of next rainy season after planting;
- Huge crown developing tree species like Ficus should be avoided;
- Seedlings or saplings of all sizes can be planted to give the plantation a 3-tier look of a natural forest;
- Analysis of soil properties, done in advance so as to choose the best soil enrichment practices; and
- Except weeds no other naturally grown species shall be removed from the plots.

The successful YNF model can be a revolutionary intervention towards increasing the greenery, climate amelioration and wasteland development. Establishment cost of the YNF model is arrived at Rs 2 lakh/acre or Rs 5 lakh/hectare.

### Methodology of YNF Model -

The basic principle behind the YNF model is high-density plantation in small areas. There is no defined spacing between the plants and required number of plants per hectare may go up to 10000. Success of the model depends on various sequence of events, like site selection, site development, soil nutrient enrichment, species selection, pits dimension, planting pattern, usage of organic bio-fertilisers and post-planting management including irrigation schedule.

- **Site demarcation and clearance** - It is necessary to demarcate the area and clear the site of existing unwanted vegetation (except trees).

- **Soil testing and site enrichment** - To ensure long-term sustainable growth, soil testing and soil enrichment and soil amendments are very important, especially to support high density planting during the establishment years. Next, the area is to be covered with soil which was kept aside up to a thickness of 10 cm and the total area is to be watered for three days to promote the decaying of the dried leaves and grass. Two tons of vermicompost with earthworms and around 4 tons of Farmyard Manure (FYM) are to be spread over the area.

#### **Other methods of soil enrichment -**

- **First method - Community Lands** - Cattle/Goats/Sheep are kept during the night for at least 3 months during the summer months (March to May) to cover the entire area with cattle dung and urine that will enrich the soil. Local farmers are offered financial support for keeping the cattle to enrich the soil fertility in this process.
- **Second method - In the reserved forest areas/protected areas** - Identify the degraded forest areas/forest restoration areas and start with soil plugging. Use agricultural/crop waste and add domesticated animal dung for decomposing. The waste will improve the soil fertility.
- **Third method - Development of forest in urban areas** - Identify the degraded habitats/forest restoration areas and go for soil ploughing. Use leaf litter in large quantities collected from the institutions, vegetable waste from the weekly markets, lawn grass waste etc. for enriching the soil. Decomposers like earthworms are then used for decomposing the waste. This way, burning of waste can be avoided.
  - **Selection of native species** - For better survival percentage, native species are to be chosen after conducting detailed study on the local areas.
  - **Irrigation schedule** - Watering with tankers and pipe sprinklers is to be done instead of flood irrigation.
- **Post-planting management** - Periodical weeding has to be done for the next rainy season and saplings are to be protected from browsing and grazing animals.

## **Addressing Stubble Burning with Cooperative Model**

Pollution by stubble burning has become an annual phenomenon in large parts of northern India. Rice-growing states including Punjab, Haryana, Uttar Pradesh and Delhi add to the problem of stubble burning.

#### **The paddy issue -**

- Punjab had been contributing about 60 percent of the shares in the food stocks of paddy even with only 1.5 percent of the area.

- Disposing the paddy straw is not a problem that has no solution; rather, it is simple and remunerative and must be adopted at the earliest.
- There are only two crops, wheat and paddy, that have assured marketing through State procurement. But for 23 other crops for which MSP is announced, State procurement is not assured. Reduction of the sizeable area under paddy would not be a feasible alternative in order to ensure enough food stock.

### **What can be done?**

- The issue of straw burning has to be settled through other measures like manufacturing of paper and cardboard, production of mushroom where paddy straw can be used as raw material, etc.
- The cooperative model already experienced in the dairy is the most viable and prudent option in addressing this problem. A cooperative society in the area with the membership of local farmers and farm labourers can be formed and such units must be affiliated to the apex body of the State federation of cooperative for rice straw management.
- Such patronisation can yield the most desirable results not only to tackle this problem but also to generate income and employment in the State.
- Dr GS Bhalla, renowned economist, in his study had concluded that a holding with less than 10 acre is unable to provide sufficient income to maintain their moderate standard of living but in Punjab 89% of the farmers have their holding less than this size.
- In case of rice, price and marketing is assured. The same assurance has to be granted for the alternative crops to increase the area of cultivation under them.

### **Conclusion -**

Stubble burning has to be stopped. But looking into the real problem at micro as well as macro level concerned with food security and concerns of the farm community at large, it should be dealt sympathetically with the alternative measures, and cooperative model stands out to be the most appropriate approach to address this problem, which is more viable and sustainable.