

BUILDING FORWARD BETTER - PATHWAYS FOR A SUSTAINABLE POST-COVID RECOVERY FOR INDIA

Cities and Urban Planning

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COVID-19 AND INDIA'S ECONOMY

The Covid-19 pandemic has infected nearly 11 million people with over 150,000 deaths in India by the end of January 2021.¹ Combined with the lockdown, India's unemployment rate had touched 27% in April 2020, with over 120 million people losing their jobs.² Informal sector wages fell by 23%,³ and the economy is estimated to have contracted by 9.6% in the calendar year⁴.

At the same time, traffic congestion, pollution levels, and greenhouse gas (GHG) emissions decreased temporarily, and new ways of doing business emerged, supported by an accelerated shift to a digital economy. Even as there is a need to return to previous levels of growth and employment, there is an equal and simultaneous opportunity to revisit India's long-term sustainable development challenges. For instance, green investments – including building efficiency, public transit, and solar photovoltaics (PV) – can create more jobs per dollar in the immediate term than investments in fossil fuels.⁵ In addition to the number of jobs, it is also critical to ensure that the measures taken in this socioeconomic reset are equitable and inclusive. To achieve this, cities and towns, which produce more than 70% of the national GDP, have to make a significant comeback in terms of productivity.⁶

This policy note summarizes four ways in which urban planning can be reimagined to benefit the economy, environment, and all sections of society. It does so while noting that such planning should complement broad-based national development, particularly in underdeveloped and resource-rich regions.

WAYS FORWARD

1. Economic Development Planning and Strategic Projects for Metropolitan Regions

Context

A 2012 study indicated that 49 metropolitan clusters accounted for 50% of India's population, 70% of its GDP, 60% of its consumption, and 70% of its income pool.⁷ Metropolitan regions in India

consist of multiple urban and rural local bodies, often around a dominant core city. High land costs and space constraints, arising from tight land use regulations, can lead to expansion in peri-urban areas that eventually grow into urban settlements with their own municipal administrations.⁸ These city-regions are intrinsically interconnected through spatial-economic processes that relate to location, knowledge flows, diversity of economies of scale, and political territorialities.

Such regions function as one large labor pool where members of a single family may travel in different directions to access jobs in various sectors. These regions, often rapidly growing, face significant challenges such as low technical and administrative capacities, severe natural and fiscal resource constraints, high costs of land, and reliable and seamless connectivity.

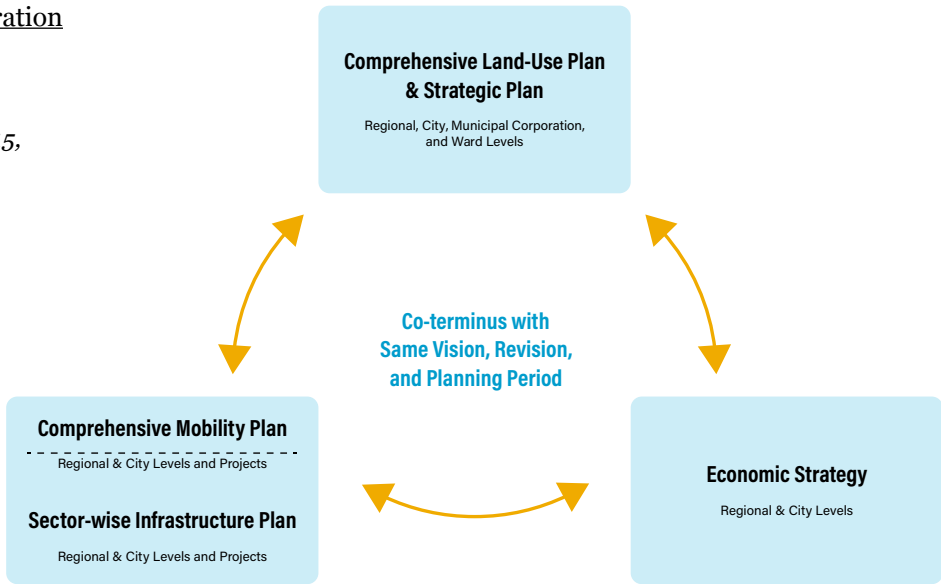
A related challenge they face is the silos in which various infrastructure departments operate. Large scale urban development projects such as metro rail, airports, universities, and special economic zones (SEZs) for example are often used as vehicles for generating future urban growth and improving the competitive position of city-regions in international urban networks. A ‘Strategic Infrastructure Project Framework’ can bring multiple stakeholders to one table to be able to negotiate and arrive at agreements. This can help to determine project priorities, given budgetary and capacity limitations.

When it comes to planning for such metropolitan regions however, only land use based – jurisdictionally limited – master plans are typically formulated. None of these regions are mandated by their Planning Acts to prepare Economic Development Plans, despite the critical economic significance of such regions. Urban and regional Economic Development Planning should address the challenges faced by fast-growing emerging economies and the role that cities play in economic opportunity and evolution.

An Economic Development Plan for the metropolitan region will encompass a strategic blueprint for economic policies, collaboration between the public sector and other economic entities, resource needs and limits, technology needs, a strategic infrastructure projects pipeline, and the integrated use of available funds to improve the economy and provide job opportunities for all. The larger intent is to achieve more holistic outcomes such as economic growth (by generating an adequate number of high-quality jobs), environmental sustainability (in terms of sustainable management of natural resources), and enhanced quality of life (from services provision to improving social, cultural and built heritage).

**Integrated Plan Preparation
Across Key Sectors**

Source:
BBMP Restructuring 2015,
WRI India⁹



Recommendations

- Mandate economic development planning for the top 50 metropolitan cities in India by population. This plan must encompass an area with a 40 to 60 km radius around large cities, 20 to 40 km around mid-sized cities, and 10 to 20 km for small cities based on agglomeration and population.
- Plan strategic infrastructure projects that have the potential to trigger growth in the city and region through a negotiated process and not in isolation. Map such multi-sector projects spatially on a single platform to reduce inefficiencies and enable prioritization.
- Accompany spatial plans with Economic Development Plans and Strategic Infrastructure Project Frameworks (for large infrastructure and transport planning). This three-pronged planning approach – followed in other international contexts such as London and New York – can effectively be adapted to the Indian context.
- Appropriate agencies at the state, region, or local level should take on the responsibility of ensuring that this planning approach is enabled. One example of such an agency is the National Capital Regional Planning Board¹⁰ for the Delhi Region.

Benefits

- Economics and Employment
 - Spatially targeted economic plans that are closely linked to strategic projects can trigger positive transformations compared with static land use, statistical extrapolations, and regulatory control. For instance, several redundancies can be overcome if power transmission, metro rail, and arterial road development projects are well coordinated rather than planned in separate phases. As an example, the growth strategy adopted by the Gauteng region in South Africa in 2013 involved connecting jobs, housing, and transit, and led to the creation of special development zones.¹¹

Regional Integration in China

The development of high-speed rail (HSR) as part of China's regional development policy and planning has transformed spatial economies. A study of 25 cities in the Yangtze River Delta Region found that HSR has a significant positive effect on urban service industry agglomeration, as HSR improves the accessibility to the cities located along the rail lines and promotes the flow of personnel, information, and knowledge. More importantly, HSR does not weaken the service industry agglomeration of the medium and small-sized cities situated along the rail lines and around the core city; rather, it is stronger for medium and small-sized cities located along the rail lines than for cities not located along them.¹² China has also connected 80% of the cities in the Pearl River Delta Region with the Pearl River Delta Intercity Railway system. This is the first region in China to have opened up to the outside world, which could be due to its ability to serve the domestic market and increasing industrial linkages within this megaregion.¹³

- Regional economic development plans allow for increased inter-city coordination, resulting in a more efficient use of resources, more connected infrastructure and services, and better solutions to regional challenges like water resilience and air quality. Jurisdictions are able to pool and leverage limited resources to ensure the overall region is appropriately served.
- Emissions and Pollution
 - Piecemeal development can, in combination with a lack of regulations and oversight, lead to encroachment of ecologically sensitive areas and economic activities that cause irreparable damage to the city and its surrounding ecosystem.¹⁴
 - Better transport coordination can reduce congestion, air pollution, and GHG emissions, leading to improved health and productivity effects.
- Equity and Vulnerability
 - A coordinated and cooperative approach can ensure lagging areas are connected to leading areas and enable better economic integration to improve access and opportunities for more vulnerable communities. This could also support more affordable housing for growing populations, who would otherwise have to live in informal settlements.

Potential challenges

- It may be challenging to balance the flexibility in legislation that is necessary to accommodate rapidly changing and emerging regions against the need for clear and concrete direction.
- Relevant agencies will need clarity in jurisdictional authorities and capacities.
- Ensuring fairness will be key as development leads to changes in traditional land use and economic patterns.

2. Integrating Transport with Land Use (LU-T) at Regional and City Levels

Context

Cities are expanding at an unprecedented rate, with 7 out of 10 people projected to live in urban areas by 2050. If developing countries overall continue to experience annual population growth rates of 2.5% and built-up densities continue to decline by 1.5% a year, the world's cumulative area of built-up, impervious surfaces will triple in 27 years.¹⁵ In India, 85% more land was converted to urban space between 1970 and 2010, due to declining urban population densities, than would have been required if this density had remained at 1970 levels.¹⁶ The long-term ecological consequences of converting land from natural habitats and open space to urban functions could be devastating.

Poorly managed urban growth can lead to degraded urban environments, lost economic productivity, and widening income disparities and inequities. One of the most critical challenges relating to urban growth is vehicle-oriented development. Of particular concern is the fact that motorization rates are accelerating in India, driven by two-wheelers¹⁷, and are contributing to deteriorating traffic conditions and congestion levels, and higher burdens of disease and injury. According to the WHO, India has 1% of the world's vehicles but accounts for 6% of the world's road traffic accidents; 73% of all deaths due to road traffic accidents in 2018 in the South and South-East Asia region took place in India.¹⁸ Road crashes cost India 3-5% of its GDP every year, and its productive population, aged 18-45 years, constitutes 70% of road accident victims.¹⁹

In urban India, there is little connection between job densities and where public transit systems exist. New growth areas lack adequate essential services, which increases the reliance on more expensive and poorly regulated private services, and on private vehicles.²⁰ Low density vehicle-oriented urban sprawl is associated with higher infrastructure costs and carbon footprints, with negative consequences for the environment, public health, and the economy.

Global experiences show that cities on sustainable pathways are those that are able to successfully link public transit and urban development.

Recommendations

- Institute multi-scalar and interconnected urban planning and strategic spatial planning and projects through necessary reforms in legal, planning, and governance frameworks, in coordination with transportation, land use, and infrastructure planning agencies.
- Ensure that city master plans promulgate a cohesive vision and adopt a growth strategy premised on LU-T integration with common goals and targets and supported by sectoral and/or cross-sectoral strategies. For instance, the spatial-economic development strategy must be closely linked with the infrastructure strategy and, specifically, the transport and mobility strategy; revisit density regulations in public transit corridors and consider location incentives for employers.
- Support the implementation of National Urban Transport Policy 2014 to promote LU-T integration.²¹
- Establish an empowered Unified Metropolitan Transport Authority (UMTA) in all million-plus population cities to facilitate co-ordinated planning and implementation of urban transport programs. LU-T integration is a key mandate and function of the UMTA to achieve the desirable accessibility and mobility pattern within its jurisdiction / metropolitan area.
- Adopt and implement a holistic transit-oriented development (TOD) strategy as part of the urban growth strategy. Such a strategy must prioritize TOD-led renewal and densification over or alongside urban expansion in order to create more housing supply and job clusters that are well connected.

Benefits

- Economics and Employment
 - LU-T integration enables inclusive, sustainable development and supports resource and economic efficiencies, productivity and growth, and liveability. It improves access, connectivity, and mobility of people and goods, while reducing negative externalities related to traffic congestion, emissions and pollution, and road safety. Efficiency gains from implementing a TOD strategy can include positive impacts on resource efficiency such as water, energy, and waste.
 - Denser, compact development based on LU-T and innovative financing mechanisms, such as 'value capture', can help generate revenues for urban local bodies, while inclusionary zoning can ensure housing remains affordable for low income groups. Private sector participation in TOD would additionally allow a city to benefit from bigger pools of capital, expertise, and political leverage to execute projects.
 - This compact development generates greater economic advantages. First, a more compact approach to urban growth could reduce infrastructure capital requirements globally by more

than USD 3 trillion between 2015 and 2030.²² Second, people living in sprawling cities must travel further to reach their workplaces or public amenities. Third, proximity encourages interactions; in compact cities, people can more easily learn from each other and exchange ideas, thereby stimulating innovation.²³

- There is an economic case for investing in road safety through LU-T integration. If India could halve the deaths and injuries due to road traffic crashes from 2014 to 2038, it could result in an overall 7% increase in GDP.²⁴

■ Emissions and Pollution

- Integrated transport and land development can relieve congestion, clean the air, and conserve energy. There are associated health benefits to reducing emissions, thus increasing productivity and quality-adjusted life-years and reducing spending on health care. Sustainable urbanization recognizes that land use planning, transport and environment cannot be viewed in isolation and that LU-T integration is an opportunity to reduce GHG emissions and particulate matter (PM) and their associated costs.
- Research reveals a negative relationship between number of people per square kilometre and CO₂ emissions per capita. Compact LU-T integrated cities produce fewer emissions because they tend to offer better access to public transit and cycling and walking infrastructure, have greater energy efficiency, and have lower costs for infrastructure.²⁵

■ Equity and Vulnerability

- Integrating land use and transport can catalyze development, revitalize city neighborhoods, and create vibrant and liveable communities.
- An inclusive planning framework is also important to give voice to all segments of society, especially disadvantaged and marginalized populations. Integrated land development and transport is a pro-poor move, particularly if land and housing are kept affordable along the public transport corridors. Enhancing accessibility and affordability through integrated land and transport development supports non-motorized and public transport and helps keep fares affordable, while protecting the vulnerable from the risks of accidents from motorized travel.
- There are considerable health benefits of a compact public-transit oriented city. A study conducted in six cities around the world (including Delhi) estimated the population health effects arising from alternative land-use and transport policy initiatives using a health impact assessment framework. Land-use changes were modelled to reflect a compact city in which land-use density and diversity were increased and distances to public transport were reduced to produce low motorized mobility, namely a modal shift from private motor vehicles to walking, cycling, and public transport. The modelled compact city scenario resulted in health gains for all cities with overall health gains up to 826 disability-adjusted life-years per 100,000 population.²⁶

Potential Challenges

- An important challenge with LU-T integration is the difficulty of securing cooperation among agencies with unclear authority, and managing for resistance from incumbent interests.

3. Nature-based Solutions and Green Infrastructure for Urban Resilience

Context

As environmental challenges and urban vulnerabilities increase, it is increasingly evident that traditional infrastructure systems are insufficient to support and protect urban populations. A new

generation of infrastructure is necessary to achieve development goals, including water security, disaster risk reduction, poverty alleviation, and climate resilience. The United Nations World Water Development Report 2018 highlighted how nature-based solutions can help India meet the SDGs and its NDCs. Similarly, the High-Level Panel on Water concluded that green infrastructure can ‘help address some of the most pressing water challenges, particularly if planned in harmony with grey infrastructure’.

Nature-based solutions (NbS) have the potential to address urban challenges and offer climate-resilient systems. NbS are defined as ‘actions to protect, sustainably manage, and restore ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits’.²⁷ These include adopting regenerative approaches to agriculture, managing watersheds to provide clean water, and preserving peri-urban lands to act as buffers against flooding. NbS are viable approaches to building a resilient city and have the potential to reduce dependence on techno-centric fixes. They can be integrated in every aspect of urban planning.

Sustainable Land Management and Flood Protection in Gorakhpur

Beginning in 2009, Gorakhpur developed a climate resilience strategy and implemented several interventions. The city – which regularly experiences flooding and waterlogging – specifically launched a project in its peri-urban zone to develop climate-resilient integrated agriculture, improve income and food security for poor and vulnerable populations, ensure the sustainability of peri-urban agricultural lands; and improve the flood buffering capacity of the city through the sustainable management of agricultural ecosystems. An evaluation found that farmers in peri-urban areas who participated in this project doubled their average agricultural income through lower input costs, crop diversification and intensification, expansion of the land under cultivation, and reduced crop losses from flooding and other natural hazards. These efforts also strengthened market linkages and product pricing, which helped raise incomes and enhance food security.²⁸

Green infrastructure is a subset of NbS that intentionally and strategically preserves, enhances, or restores elements of a natural system to help produce higher-quality, more resilient, and lower-cost infrastructure services. Service providers can integrate green infrastructure into built systems. More specifically, green interventions can be combined with existing grey infrastructure where feasible, while conserving and regenerating green where possible, using the available NbS opportunities at scale.

Recommendations

- Develop a policy framework to integrate the concept of greening urban spaces and urban infrastructure with sustainable development. While initiatives such as Green Highways Policy²⁹ and National Clean Air Programme³⁰ respond to the need to curb air pollution and improve tree cover, their implementation is uneven across cities, leading to a disjointed approach to sustainable development. A participatory policy framework would serve as a clear roadmap for planning, managing, and delivering a wide range of ecosystem services.

- The India Cooling Action Plan 2019 addresses ‘cooling’ as a national adaptation need, developing a framework to address future cooling demand through technology innovations.³¹ However, the plan does not integrate future risks due to an increasing heat trend in most Indian cities. Develop a process for heat risk assessments at city and neighbourhood levels, and formulate strategies for increasing vegetation, retrofitting building materials, and improving shade on city streets to reduce urban heat island effect.
- Implement the Biological Diversity Act 2002.³² While the institutional structure has been formed at the national and state levels with the formation of the National Biodiversity Authority and the State Biodiversity Boards, biodiversity management committees at the local level (panchayats, corporations and municipalities) have not been formed in many states. As a result, the People’s Biodiversity Registers, a record of a region’s biodiversity resources, have not been developed in most states. The weak implementation of this legislation, according to experts, is costing the country INR 30,000 crores annually.³³
- The Urban Greening Guidelines 2014 addresses the urgent need to protect urban greenery.³⁴ However, the document merely spells out the policy guidelines and does not provide for an implementation mechanism. Develop a comprehensive implementation mechanism to plan, prepare, implement, monitor, evaluate and scale up the interventions.³⁵
- Include projected outcomes of implementing NbS at different scales, as a part of cities’ strategic planning. The new Global Standard for NbS enables governments, companies, NGOs, and others to consistently and reliably design, assess, and scale up NbS interventions.
- Organize awareness, knowledge-sharing, and capacity building activities on NbS and their life-cycle costs for key stakeholders, including policy makers, business and society leaders, political leaders, civil society, and citizens.

Benefits

- Economics & Employment
 - NbS approaches offer cost-effective solutions to infrastructure challenges and preserve critical ecosystem services. An analysis of the São Paulo Watershed Conservation Plan in Brazil revealed that green infrastructure, in the form of watershed restoration, was USD 4.5 million cheaper than the traditional approach of dredging the water supply reservoir and incurring high water treatment costs.^{36,37}
 - NbS approaches also support cooling by creating microclimates to reduce ambient temperatures and effectively reduce mechanical cooling demand. Combining grey and green infrastructure directly impacts the cost of service by reducing the cost of grey components in one of three ways: reducing capital costs, reducing O&M costs, or avoided damage costs by increasing climate resilience.^{38,39,40,41,42}
 - NbS is a low-cost investment option for boosting jobs, productivity, and economic activity. The ILO has also called for a move towards NbS and environmentally sustainable approaches that create decent jobs. NbS typically create low-skill and fast-implementing jobs — on average, between 7 and 40 jobs per USD 1 million invested — well-suited to public employment schemes and stimulus packages. Small and medium-sized enterprises active in forest and land restoration efforts could contribute directly to job creation and economic growth if supported through stimulus and recovery programs.⁴³

■ Emissions & Pollution

- Integrating NbS in cities would promote green liveable cities for all and restore urban biodiversity and associated ecosystem services. It can mitigate the effects of climate change and other extreme weather events (e.g., heat risks can be mitigated by adding trees in appropriate locations) and support the efficient conservation of excess rainwater. For example, an improved design to manage its natural water bodies and preventing construction on the floodplains helped Surat climate-proof its urban systems. It thus improved its disaster preparedness and avoided the huge economic losses it had regularly incurred from floods each year.⁴⁴ Similar practices have been adopted by Burhanpur and Indore in Madhya Pradesh, where community participation helped conserve and manage traditional water sources. In east Kolkata, wetlands have been utilized for years to clean the city's wastewater. The wetlands have not only saved the cost of constructing a wastewater treatment plant, but also provided livelihood opportunities to 50,000 people through pisciculture and agriculture.^{45,46,47,48}

■ Equity and Vulnerability

- NbS interventions and green infrastructure projects often necessitate community participation and community stewardship. Such projects have the potential to drive community-led development and social inclusion. By introducing effective care and maintenance protocols, community members can participate in routine O&M of NbS while sharing its co-benefits in the short and long terms. The participatory watershed development project across the Kumbharwadi Basin in Maharashtra is an example of community ownership and community buy-in for green infrastructure projects.⁴⁹

Potential challenges

- The revenues and jobs associated with traditional grey infrastructure companies may be affected, and a transition to NbS may require reskilling and retraining of the labor pool.
- Stakeholders may express reluctance in embracing NbS over more technological or futuristic approaches.

4. Serviced and Structurally Stable Densification in Low Income Neighborhoods

Context

World Bank data from 2018 says 35% of India's urban population lives in slums.⁵⁰ At the same time, in 2012, the Technical Group on Urban Housing Shortage, Ministry of Housing and Urban Affairs, determined the national urban housing shortage to be 18.78 million units, of which obsolescent, kaccha, and congested housing was over 97%. This indicated that the larger problem is one of inadequate housing and not of homelessness. It also indicated that 96% of this shortage of adequate homes is from the economically weaker sections and lower income groups.

WRI India surveys on the challenges faced by implementing agencies at state and local levels found a) A policy mismatch between centrally-led intent vs ground reality, b) Capacity and capability constraints with long learning curves for new staff, c) Prescriptive training and capacity building exercises in the past, d) Little or no experience in public-private partnerships (PPP) at local levels, e) No distinction between the needs of a large and small city in government schemes, f) Unmanageable social audits (which are now mandatory), and g) A siloed approach to housing delivery, without addressing interlinkages between housing and livelihoods.

A multidimensional approach to understanding the housing needs of the urban poor is needed, so that common mistakes are addressed, and successful strategies are adopted. While several schemes have been rolled out over time, such as new home ownership-focused verticals, beneficiary-led construction, and the recent rental housing schemes, more can be done to address the inadequacies in the existing housing stock.

Recommendations

- Prioritize the building of ground+4 walk-up buildings when planning for the urban poor, to avoid higher maintenance costs that result in low service provision. High-rise buildings are inefficient on parameters such as upfront cost, affordability, maintenance costs, and sustainability.⁵¹
- Formulate community-led infrastructure schemes for low-income neighborhoods to provide for higher densities in collaboration with communities.⁵² Local governments must facilitate the planning and management of community-led projects for the provision of shared services that are essential and improve liveability, such as potable piped water, proper road networks, electric power, and sewerage, without driving gentrification. Recast the Sites and Services Approach in government schemes. Explore innovative decentralized ways to provide basic services for slums and informal housing settlements.
- Improve the mechanisms for community land trusts and quality of ‘self-built’ homes, allowing economically weaker sections to access simple technical guidebooks that provide better designs for small homes that are structurally stable.⁵³
- Explore the feasibility of providing title rights and tenure security to the urban poor, drawing upon lessons from the JAGA mission in Odisha.⁵⁴ This will go a long way in ensuring adequate housing for all as it will reduce the fear of eviction and incentivize self-upgradation.
- Training and capacity building at State and local levels will be critical to realizing this vision and creating the ability to address various interlinkages such as reserving land for affordable housing, spurring local innovation, the use of digital technology and finance management and viability gap funding.

Benefits

- Economics & Employment
 - Prioritizing ground+4 buildings for the urban poor would lead to cost-efficiencies, better community formation and long-term serviceability. Even setting aside the cost of land, say through social subsidies, high-rises have significantly higher construction costs than low- to mid-rise buildings. Modern equipment, building materials, and energy for services such as lift movement, water pumping, thermal comfort, and fire standards add to high-rise costs. Maintenance costs are, thus, much lower for a low-income occupant in low- to mid-rises.⁵⁵
 - Investing and planning in trunk infrastructure supports economies of scale and improves the quality of life, thus leading to increased productivity.⁵⁶
- Emissions & Pollution
 - Mid-rise buildings are energy efficient. Studies estimate that high-rises have higher embodied GHGs and higher operating energy demands as compared with mid-rises.⁵⁷

■ Equity and Vulnerability

- Leveraging the dynamism and entrepreneurial ability of the informal sector through improved self-build housing techniques, the provision of trunk infrastructure, and tenure security will go a long way in creating self-sufficiency and financial stability for the urban poor.
- A bottom-up approach to urban planning – keeping local traditions in mind – promotes community participation and leads to greater ownership by the community.
- Enabling co-creation with the community can result in innovations and empower local communities in multiple ways. The sanitation infrastructure planned, designed, and maintained by urban poor federations and women’s cooperatives in the slums of Pune and Mumbai placed the spotlight on them. The slum residents contributed labor and the local self-help groups were responsible for the operation and maintenance of community toilets, and charged a nominal user fee per family. The construction of community toilets using low-cost technology and community labor proved that these were inexpensive and broke the conventional contractors’ monopoly. The sanitation needs of children and women were met by increasing the number of seats for them and making design changes, which resulted in improved upkeep and use of the toilet facilities.⁵⁸

Potential challenges

- One potential challenge is of the differing priorities, and resultant conflicts, between different communities and stakeholders.

CONCLUSION

Policymakers should rethink city planning by promoting regional development across jurisdictions and integrating land use with transport, while focusing on developing green infrastructure and serviced housing for the most vulnerable. These measures will increase economic efficiencies, improve ambient air quality, and increase the opportunities to and resilience of the most vulnerable, thereby creating more liveable cities overall.

ABOUT WRI INDIA

WRI India, an independent charity legally registered as the India Resources Trust, provides objective information and practical proposals to foster environmentally sound and socially equitable development. WRI India’s mission is to move human society to live in ways that protect Earth’s environment and its capacity to provide for the needs and aspirations of current and future generations. Through research, analysis, and recommendations, WRI India puts ideas into action to build transformative solutions to protect the earth, promote livelihoods, and enhance human well-being. We are inspired by and associated with World Resources Institute (WRI), a global research organization. Currently over 150 researchers are working with WRI India in our offices in Delhi, Mumbai and Bengaluru. www.wri-india.org

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