
AN OVERVIEW FOR PROMOTING SUSTAINABLE URBAN DEVELOPMENT IN INDIA

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Abstract

This paper gives an overview of suggestions and actions which could be a part of an urban management programme for promoting sustainable development. It mainly targets the developing countries of Asia as nine out of the world's thirteen mega-cities, with populations exceeding 10 million, are in Asia.

Today we need multidimensional approaches, looking beyond the local scale and integrating dynamic perspective of interactions between local, regional and global biophysical and social processes that are generated by and affect settlements. Understanding and integration between natural and social sciences is necessary. Paths towards sustainability can be found in the dynamic relationship between human and biophysical systems.

According to U.N. projections, half of the world's population now live in urban areas and about 70 percent will be city dwellers by 2050, with cities and towns in Asia and Africa registering the biggest growth. This hyper-urbanization trend and the concentration of urban population in the big cities in developing countries brings not only the problem of resource limitations to the fore, but adds new problems. For example, the major implications of rapid urban growth include increasing unemployment, lack of urban services, overburdening on existing infrastructure and lack of access to land, finance and adequate shelter, increasing violent crime and sexually transmitted diseases, and environmental degradation. Even as national output is rising, a decline in the quality of life for a majority of population that offsets the benefit of national economic growth is often witnessed. Urbanization thus imposes a significant burden to sustainable development, which needs a composite action plan to save our living environment.

The management of the urban environment is a complex and difficult task and its increasing momentum of degradation has both direct and indirect impacts on a variety of concerns and sectors. There is a distinct need to take a look at the effectiveness of historical efforts to resolve urban environmental problems and to analyze which are the innovative methods we can adapt in future. Of particular concern are the scope and magnitude of these efforts in relation to the needs of a dynamic urban environment.

The paper gives an overview of ways and means to promote sustainable development with environment concerns from high-level policy making to local regulation and plan implementation. The purpose of this paper is primarily to raise the issues and suggest relevant action for either improving or imposing ways to achieve sustainable development.

INTRODUCTION

UN Habitat (2008, p.xi) noted that “By 2050, the urban population of the developing world will be 5.3 billion; Asia alone will host 63 per cent of the world’s urban population, or 3.3 billion people, while Africa, with an urban population of 1.2 billion, will host nearly a quarter of the world’s urban population”. The urban centres are the nodes of economic activities, so actions are needed for proper planning and development of the urban centres. To ensure proper functioning of the activities and effective utilization of the land in urban areas town planning regulations are exercised by the local authorities.

In many Commonwealth countries, ‘Development’ is conventionally defined as the carrying out of building, mining or other operations in and over the land or making of any material change in the use of any buildings or other land. Such Regulations related to building activities or concerning material change in any building or land use is the subject matter of discussion. Can such regulations promote sustainable development? How might existing policies be adapted?

WHY THERE IS A NEED

Environmental planning no longer deals only with resource planning and ecological benefits. The context has widened due to better understanding of complex interrelationships between different components of the environment and technological interventions.

Urban development in most of the towns and cities in developing countries (except for few new planned towns and cities) has not been up to the desired level. There are lots of uncontrolled organic developments within the cities. Chaos and congestion prevails in the nodal locations and in the central areas, unauthorized settlements on public land, congested narrow roads, uncontrolled growth in the fringe areas and scattered dumps of solid waste are prevalent. Are the regulations that have been prescribed responsible for this situation, or it is the lack of enforcement measures? We need to discuss these issues and take actions for improvement. The most common response is the excessive pressure of population, lack of public funding for infrastructure development and maintenance, lack of proper enforcement and proper monitoring systems and management systems. Initiatives have already been started towards attracting the private sector into development, operation and maintenance of urban infrastructures and facilities. But it is time to examine the scope for prescribing regulations for advance actions in respect of provision of facilities and amenities in urban areas for proper functioning of the system and ensuring the required environmental standards.

Overview of Policy Level Measures

a. The concept of “healthy cities” could be adapted

The Healthy Cities programme was launched by the World Health Organization (WHO) European Regional Office in the 1986. Healthy Cities projects aim at developing health-enhancing public policies that create physical and social environments that support health and strengthen community action for health. They also emphasize the principles of health promotion

to develop new styles of enabling, facilitating, mediating, advocating and building new partnerships and coalitions for health.

There are currently more than 1000 cities worldwide, implementing Healthy Cities projects. In the Asia-Pacific region, the Healthy Cities approach was first introduced to Australia, Japan and New Zealand in the late 1980s and early 1990s. It was introduced to the rest of the Asia-Pacific region in 1993-94. Countries in which Healthy Cities are implemented include: Bangladesh, Cambodia, China, Fiji, India, Indonesia, Lao PDR, Malaysia, Mongolia, Myanmar, Thailand, Nepal, Papua New Guinea, Philippines, Republic of Korea, Sri Lanka, and Viet Nam

b. Local(ising) Agenda 21

This capacity-building programme responds to Chapter 28 of Agenda 21, where local authorities were called upon to develop and implement a "Local Agenda 21" with their communities. This process is reinforced through supporting key actors in selected secondary towns to implement environmental action plans with a view towards long-term sustainability. Local Agenda 21 has been widely used by UN agencies for environmental management and planning projects in cities.

The United Nations Centre for Human Settlements (UNCHS) has been implementing the Localising Agenda 21 Programme, in collaboration with a wide range of international, national and local partners. The programme is operational in Vinh City, Viet Nam, the only one in the Asia-Pacific region.

c. Urban Management Programme to be launched

The Urban Management Programme (UMP) is a global technical cooperation programme. Beginning in 1997, UMP has been implementing its third phase, the thrust of which is to build the capacity of governments and other stakeholders to address urban problems specifically through consultations involving partner institutions at the regional, country and local levels. These consultations focus on urban poverty reduction, urban environmental management and participatory urban governance.

d. Regional Network of Local Authorities for the Management of Human Settlements (CITYNET)

CITYNET is a network of cities, NGOs and CBOs that aims to promote the creation of conditions and appropriate mechanisms for communities to plan and manage their own settlements and environment. It serves as a catalyst to encourage partnerships for technical exchange of expertise among local authorities, NGOs and grassroots organizations in Asia and the Pacific. It also contributes to self-reliant development and international understanding among its members.

As a reaction to the shortcomings of traditional planning approaches, and more recently to address the needs of sustainable development, various countries have adopted new processes and approaches to urban planning. **Action planning** is a 'learning by doing' approach to resolve urbanization and environmental degradation problems in a short term perspective, with minimum

data collection and planning procedures. Local community participation in decision-making is deemed a key to success. **Strategic planning** is also a participatory approach to integrated urban development to achieve growth management and remedial actions at both the city-wide and community scales to achieve sustainable development. The output of the process is not just a physical development plan but a set of inter-related strategies for city development covering land, infrastructure, finance and institutions

Measures that could be adapted at city level

a. City Development Strategies (CDS)

The City Development Strategies (CDS) is a "partnership approach" to city assistance launched by the World Bank. This approach calls for broad coalitions of stakeholders and development partners, both local and international, to work together to develop a strategy for a particular city/urban area. The city development strategy is both a process and a product that together identifies ways of creating the conditions for sustainability of the city along four dimensions: livability, competitiveness, good management and governance, and bankability.

b. Local level governance

The participation element of good local governance is important in that it enables integrated approaches to solving environmental problems to be initiated locally. Local and community-based efforts have the advantage of more affordable resource requirements, simpler management structures, and greater flexibility in institutional arrangements and decision-making. The challenge is how to initiate local efforts and yet be able to place these efforts within a larger context of an integrated strategy where each local effort complements the other.

A related challenge is how to speed up decentralization of power (involving autonomy of local bodies and legislative changes in decision-making) while at the same time speeding up capacity building in managing new responsibilities. Meeting this challenge is critical as inter-sector cooperation has been found to be easier to initiate and sustain at the local levels.

Strengthening local governance and a shift from purely regulatory roles to enabling roles is necessary to encourage the participation of other key stakeholders in environmental management. Public-private partnerships in urban environmental services, for example, succeed only where local governments have the requisite capacity for good governance. From experience in developing countries of private sector involvement in solid waste management, it has been observed that there should be transparency and accountability in the system. Local governments have to have competent, adequate professional staff and the autonomy to enter into multi-year agreements that capture economies-of-scale as well as efficiencies.

c. Financing and Resource Generation at city level

The magnitude and momentum of urban environment problems are such that massive financial resources are needed to deal with them. The Asian Development Bank (ADB) estimates that 80 percent of the region's growth in the 1990s was generated by urban economies. A key challenge

for developing countries is how to mobilize local resources and create the substantial finances needed. Financing needs are also met through savings in costs. Community participation becomes vital as volunteer work and even community contributions in both cash and kind reduce costs. The challenge lies in developing changes in thinking as well as in the knowledge base and skills of administrators, decision-makers and the providers of funding.

d. Technology Transfer, Adaptation and Innovation

Opportunities exist for utilizing advances in technology that lead to the provision of high quality and more environmentally friendly public transport systems, increased recycling, and increased efficiency of energy and water use. Innovative approaches can also be implemented to reduce the "ecological footprint" of urban areas - an 'Ecopolis' concept of settlements where urban agriculture, urban forestry, urban biodiversity conservation, and building designs to save energy and materials become important aspects of the city.

The rapid development in information technology is another opportunity for improving the urban environment. It could improve monitoring and database management. It could create the foundation for communication and advocacy networks. The challenge is how to make it work for urban environmental rehabilitation and management and how to bridge what is seen as a growing digital divide between those that can afford and have access to such technology and those that cannot.

These approaches that have been outlined above point the way to sustainable development at the city level. Physical planning needs to be adapted to meet the challenge of sustainability.

Adapting physical planning to promote sustainable development: regulation.

Control of Development on Fringe Areas: In metropolitan cities and mega cities, urban development is mostly in new settlement areas and new activity centres with planned infrastructures and facilities in the fringe areas to accommodate the increasing population and activities. Unplanned urban sprawl grows around such centres on the agricultural lands taking advantage of the nearby facilities and infrastructure. In such cases, from an environmental perspective, regulations for protecting the agricultural and vacant lands by restricting developments and the stipulations of the regulations may be as below.

- i) No use, other than agriculture or irrigation facilities, is permitted.
- ii) Existing water bodies to be preserved.
- iii) No new building or extension of any existing building exceeding the height of 3.75 metres shall be allowed subject to the total covered area of 50 sq. m.
- iv) The minimum front and side open spaces shall be 2 metres and the minimum rear open space shall be 5.00 metres.

Redevelopment of Blighted Pockets in the Central Area: Blighted pockets of low key commercial areas are observed within the core areas which, due to the small sizes and multiple land ownerships, do not get redeveloped as per the existing regulations. If these areas can be redeveloped in a planned manner much of the demand for commercial floor spaces can be

served. For the redevelopment of such areas incentives towards land assembly by amalgamation of plots and additional floorspace ratios need to be given. The regulations in this respect may be:-

1. For land assembly exceeding one acre in size, the additional floorspace ratio would be 20% above the permissible limit.
2. In case of land assembly of less than one acre the additional floorspace would be 10% above the permissible limit.
3. In such cases the developments should confirm the zoning regulations.

Compulsory Rainwater Harvesting in New Area Development: Private developments in the form of sub-division of mother plots (for plotted developments and for apartments) is taking place in the fringe areas and adjoining municipal and non-municipal areas. There are regulations in most of the plans which vary according to the size of the mother plots and the regulations specify the minimum width of roads, the percentage of open spaces, the land for physical and social infrastructures viz. drainage, water supply (pump house & water treatment plants), sewerage (sewage treatment plants or oxidation ponds), school, health centre, market, milk booth, post office, power substation etc.

In order to comply with the present efforts towards utilization of natural resources by rainwater harvesting and ground water recharging, the regulations for subdivision should include the mandatory provision of community pools of sufficient size so that the rain water from the area can be stored in such pools. The water may be supplied to the community for uses such as gardening, car washing etc.

Adapting physical planning to promote sustainable development: efficient infrastructure planning.

Prescription of street alignments for regional roads in fringe areas: The regional roads (National Highways, State Highways or District Roads), connecting a city with the hinterland are often constricted in the fringe areas due to lack of scope for widening owing to dense developments and abutting built up areas. To avoid such situations where the regional roads pass through vacant areas in the fringe of the city, advance actions for prescription of street alignments may be made without acquiring land. The proposed right-of-way as per future requirements may be prescribed and the regulations may be as below.

- i) For any development on the adjoining plots on the regional roads, the owner/developer would have to make a setback following the proposed right-of-way line and the owners/developers would be allowed the same floorspace as they were eligible for the original plot.
- ii) In such cases after the alignment is notified no subdivision of the adjoining plots would be allowed.
- iii) In cases where the plot size is such that no development is possible by allowing the setback, the local body would have to acquire it.

Dispersal facilities around transport nodes: The railway stations, the regional bus terminals/stops are the important transport nodal points of the urban areas. These areas get congested with dense unplanned commercial and residential developments and in course of time become too congested for easy dispersal of passenger and vehicular traffic. Given the urban growth rates future public transport will carry larger volumes of passengers. Therefore, the areas required for dispersal facilities will need to be increased. Where such areas are already congested, redevelopment plans are to be prepared by the local body and the redevelopment actions may be initiated, including through private-public partnership projects. In less pressured situations regulations for control of development should be made at least for the area within 200 metres on all sides. In such areas provision should be made for adequate parking facilities for different categories of vehicles including the parking and loading/unloading facilities for transit and para-transit vehicles. Adequate width of the connecting roads, exclusive roads for pedestrians or grade separated pedestrian facilities should be made. In order to achieve these, specific plans should be prepared indicating the future right-of way of the roads, the parking areas for different categories of vehicles, the pedestrian-only roads and the integration with the railway station or the bus terminal. The regulations in such areas may include the following:

- i) The Floor Area Ratio (FAR) for buildings of different use categories and means of access would be half of the permissible FAR in other areas.
- ii) The compulsory provision of parking spaces for buildings of different use categories would be double of that required in other zones.
- iii) No new cinema halls, theatres and entertainment centres would be allowed within the area.
- iv) For buildings with retail commercial in the ground floor, the minimum front open space would be 5 metres.

Environment protection around relocated hazardous uses: For implementing the development plans, the non-conforming uses located in a scattered way are required to be relocated in the specified areas in the fringe within a stipulated period. Such uses may be the obnoxious and hazardous industries, tanneries etc. Normally, such areas for relocation are selected beyond the city limits and in the vacant and agricultural lands.

When such relocation of activities takes place, unplanned developments adjoining such centres occur and gradually these areas grow. To avoid further environmental hazards, the relocation areas should be provided with a buffer zone where no developments other than agriculture and pisciculture are permitted. In this regard, regulations of the Pollution Control Board are to be followed. But in the development plans there should be specific regulations in respect of the buffer zones. The regulations in this respect may be:-

- i) The area covered by 200 meters on all sides from the boundary of such areas would be designated as Buffer Zone.
- ii) No developments other than agriculture, pisciculture and plantation of trees would be allowed within this zone.
- iii) The existing residential uses within the Buffer Zone would have to be relocated within a stipulated period.

Adapting physical planning to promote sustainable development: conservation of water resources and waste management

Protection of Water Fronts: The water fronts (sides of rivers, canals, lakes and big ponds) in many cities are encroached by unauthorized users and developed in an unplanned manner. These water fronts need to be protected to ensure proper drainage, and access for open-air recreation, water transportation and protection against soil erosion. Area within 100 metres from the banks should be designated as Water Front zone and specific regulations should be prescribed. The regulations for such zone may include: -

- i) No new building within 30 meters from the edge of the banks would be allowed.
- ii) In the area lying between 30 metres and 100 metres from the edge of the banks no building more than 5.00 metres in height and 30 metres along the waterfront would be allowed. In case of buildings on stilts the maximum height of the buildings shall be 6.50 metres.
- iii) There shall be a linear gap of 50 metres between two buildings alongside the water front.

Environment protection around solid waste disposal sites: Solid waste management is one of the most critical problems of cities. The locations of the intermediate collection sites and the final disposal grounds need special attention in consideration of the environment hazards of the nearby localities.

The intermediate collection sites are generally located within or near the settlements and therefore need to have a buffer zone. This buffer zone should cover at least 30 metres on all sides. The regulations in this respect may be: -

1. The intermediate collection site may be designated as Inner Disposal Zone.
2. The area should be provided with boundary walls of at least 3 metres high on three sides.
3. The actual dumping area should be circumscribed by two to three rows of trees in the buffer zone.

The final disposal areas for sanitary land filling and composting are normally located in the fringe areas and the regulations in this respect may be: -

1. The final disposal area may be designated as Outer Disposal Zone.
2. There should be a buffer zone of at least 100 metres wide on all side of the disposal areas.
3. No developments would be allowed within the buffer zone except for agriculture, pisciculture and plantation of big trees.
4. The residential uses within the buffer zone would not be allowed and would require relocation within a stipulated time.

Conclusions

In the preceding paragraphs, some of the most common issues related to environmentally sustainable urban development have been discussed. There may be some urban areas where these issues have already been dealt with, but there are many urban areas where these issues are still neglected. Cities should be viewed as human ecosystems. A balance between environmental justice and ecological structures will define the extent of sustainability in the fabric.

The impact of the regulations depends largely on how they are enforced. In many of the local bodies all the regulations are not strictly enforced. Once such practices start, the tendency of flouting of regulations goes on increasing, and the basic objectives of the planning regulations get frustrated. It is more important to overview the enforcement standards rather than formulation of new regulations. The local bodies would have to be involved in a larger way for the formulation and implementation of the development plans and extending municipal services to the people. So with the increased responsibility, how the local bodies would overcome the existing deficiencies is the main issue.

In some platforms it has been remarked that the performances of the local bodies in implementation of development plans, resource generation and extending urban governance need to be monitored regularly and should be related to the state grant. Whatever may be the decision in this regard, if the local bodies do not improve their performances towards plan implementation and enforcement of regulation the living standards in the urban areas would not improve. It is therefore a pertinent question whether we need regulations for the enforcement of the existing regulations?

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