Cities and towns are spatial manifestations of human and economic activities. Urbanization has created wide-ranging impacts on infrastructure development and its service provisions, thus resulting in challenges and problems. Their development needs to be planned, guided, and monitored to achieve an optimal utilization of resources required to make them sustainable. Keeping these facts in mind an attempt have been made in this chapter to highlight the major findings and some suggestions to improve the infrastructural condition of towns and cities of Murshidabad District.

10.1 MAJOR FINDINGS

Some of the major findings emerged from the previous chapters in which various issues related to urban infrastructure of Murshidabad have been analyzed in details are -

1) The first of the many findings is that a noticeably large section of the population in every town and cities is reported to be without any access to essential services like water, sanitation, health, education etc. The field data show that municipal bodies reach out to (a) 8 percent of population in respect of piped water supply (b) 20 percent of population solid waste disposal service. Further, it is important to note that reaching out does not necessarily mean that the services are adequate or efficiently provided. For example, as pointed out in the preceding sections, water supply norms are met in on one town and city of the study area. As far as the transport services are concerned, an increasing reliance on personalized modes of transport is reported from all towns and cities of Murshidabad. Further, the slum and squatter areas of the towns are found to be suffering enormously in the absence of basic civic amenities. So, it can be said the service like water supply sanitation and sewerage, road transport, education, health are not only inadequate and low quality but also far from the norms laid down by different agencies.

2) Usually old and technologically obsolete system which require significant investment for rehabilitation and capacity augmentation to meet requirements.
3) Inadequate utilization of the available facilities and infrastructure is a characteristic not only of the water supply but also of the sanitation sector.

4) There are multiple institutional arrangements in respect of both health and transport services in the towns of Murshidabad district which some time causes complexity in administration. There is a whole hierarchy of health services both in public and private sectors, and the relationships between them are extremely complex.

5) The most important finding is the weak financial position of urban local bodies (ULB) in the study area. For a number of reasons such as the access of municipal bodies to source of revenues, their inability to effectively use the instrument of user charges, local resistance to adjusting the tax rates etc municipal bodies could not function properly. The resource positions of most of the municipal bodies are in a state of mess. Very few, municipal bodies are in a position to balance their budget and can claim to have the capacity to generate resources internally. So, most of the ULBs are dependent on extensive subsidies from central and state governments. At the same time, mobilization of private funds is almost absent.

6) It is clear from the data of the towns and cities of Murshidabad that the government owned monopolies in providing most of infrastructure related services. Unfortunately, the absence of competition has led to operational inefficiencies and poor quality of services.

7) Inadequate staffs as well as unequal distribution of staff are also responsible for low quality of urban services.

8) The survey reveals quite unambiguously that the people and communities were no less responsible for mismanagement in the provision and delivery of services. Wastes and leakages occur in significant proportion at their ends. For example, they do not have the habits of throwing wastes in the dustbins.

9) Information about component like asset quality, coverage and service database etc. is not adequate and readily available with municipalities which is the one of the major causes to undertake long term project with private bodies.

10.2 SUGGESTIONS AND RECOMMENDATION

The concept of sustainable cities represents an overarching challenge. Since a city’s population is dependent on services like water, sanitation, power, transport, buildings, etc., for its survival, it is important that these services be planned, delivered, managed, and monitored in a proper way so as to ensure adequacy, equitable access, good quality, and least harm to the environment. The discussions of the previous chapters reveal some areas of lacuna regarding
urban infrastructure. These have its impact on urban infrastructure service provisions. These are as follows:

1. Lack of efficient operation of existing infrastructure.
2. Lack of comprehensive infrastructure development.
3. Lack of infrastructure provision for urban poor.
4. Lack of land use management in urban areas.
5. Lack of financial management in urban areas.
7. Lack of long term perspective and comprehensive approach.

In order to remove these lacunas and to improve the service provisions in the towns and cities of Murshidabad district some suggestion and recommendation have been worked out. These have been divided into two parts i.e. **general suggestions** and **sector wise specific suggestions**.

### 10.2.1 GENERAL SUGGESTIONS

1. **Development of Financial Resources for Sustainable Infrastructure Development**
   
   **(a) Sustenance of Infrastructure Investment**
   
   In order to address development issues and to cope with the increasing demands for urban infrastructures, the largest problem is how to secure funds that are required to sustain infrastructure investments. It has been already discussed in chapter VII. The cost of providing water supply to urban populations in the developing countries is estimated to be 5% of the GDP, according to the WB’s World Development Report 1999/2000. In this context, the agenda in developing urban infrastructures in the district should be to maximize their economic efficiencies, profitability, the expansion of existing funding sources, and the establishment of new ones. Institutional arrangements are also required to promote private sector participation and effective cross-subsidy mechanisms.

   **Enhancement of Tax Resources**
   
   Since urbanization increases the value of fixed properties, particularly when equipped with infrastructure, the strengthening taxation systems in the towns of Murshidabad district contribute in processes of infrastructure development.

   The adopted tax instruments are as follows:

   Benefits resulting from the development of urban infrastructures appear as increased prices of fixed properties such as lands adjacent to infrastructures. The government collects a part of this benefit in the form of fixed property tax. In developing countries, however, this has not been an effective fund source due to deficiencies in land registry, nontransparent evaluation
of land prices, political intervention, etc. The collection of fixed property taxes should be strengthened in the long run. The following measures are further recommended:

1. Imposition of a development tax when specific beneficiaries are identifiable (e.g. enterprises near railway stations).

2. Obligatory infrastructure provision by private developers for large-scale development, or imposition of a special tax corresponding to the cost of infrastructure development (e.g. At the time of establishment of large scale or small scale industry or plant like National Thermal Power Corporation, NTPC plant in Farraka town of Murshidabad district).

**Users Pay Principle for Cost Recovery**

For infrastructures whose users can be determined, it is natural to recover the cost of operation or maintenance through the collection of user charges. This type of infrastructure needs tariff setting with consideration of financial sustainability in order to provide stable services. Tariffs must be consistent with levels of service, elasticity of demand, and the users’ willingness to pay.

- **Appropriate Pricing**
  
  Basic public services, including water supply and sanitation, are traditionally provided at a lower price by the public sector in order to secure basic human needs. Subsidy has been justified as necessary when tariffs exceed the paying capacities of the poor. In developing countries, however, a number of problems arise such as tariffs inadvertently suppressed too low by political intervention and the provision of subsidies irrespective of needs. While the poor can be exempted from water fees from a piped system, those who benefit from subsidies are the people who already have access to water, while the subsidies have no real effects on the life of the actual poor (World Bank, 2004).

**Private Sector Participation**

Due to lack of public sector funds, private sector participation has become one of the effective and efficient methods of infrastructure development. Yet, a number of issues still remain unresolved, such as improper tariff setting, poor levels of services, political intervention, etc. To improve the situation in establishing public-private partnerships (PPP) vigorous efforts are currently being made toward the establishment of firm regulatory frameworks, enhancement of credibility and predictability, etc. Private sector participation could help to bring technical and managerial expertise, improve operating efficiency, large scale injection of capital, greater efficiency in using the capital, rationalization cost base tariffs for services, better responsiveness to consumer needs and satisfaction. The key factors on which the success of Public private partnership (PPP) depends are clear government commitment, legal and regulatory capacity, stakeholder involvement, intelligent transaction
design, cost-recovery tariffs, the right option and a systematic approach. The following option for PPP in urban infrastructure of the study area may be adopted (Table 92).

### TABLE 92: OPTION FOR PPP FOR URBAN INFRASTRUCTURE

<table>
<thead>
<tr>
<th>Option</th>
<th>Asset Ownership</th>
<th>O&amp;M</th>
<th>Capital Investment</th>
<th>Commercial Risk</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Contract</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Public</td>
<td>3-5 years</td>
</tr>
<tr>
<td>Lease</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Shared</td>
<td>8-15 years</td>
</tr>
<tr>
<td>Concession BOT</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>25-30 years</td>
</tr>
<tr>
<td>BOOT/BOO</td>
<td>Private/public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>20-30 years</td>
</tr>
</tbody>
</table>

Source: Compiled by the researcher from National Institute of Urban Affairs (NIUA), 2002

2. **Balance National Urban Policies**

   There is a strong correlation between urbanization and levels of development across countries. Growing cities, in fact, experience both external economies and diseconomies (such as congestion) implying an inverted U pattern in the relationships between city size and net external economic benefits (Mills 1967). Therefore, what is important is to devise effective policy measures that will influence urban growth patterns toward desirable ends. Another key issue in national land development is to develop linkages among metropolises, regional core cities with growth potential, selected smaller cities, and market towns. This concept should be followed in the study area.

3. **Management of growth of urbanization in cities**

   Excessive concentration of populations in cities (For example, Berhampore in case of Murshidabad) brings about densification of built-up areas and urban sprawls in peripheral areas. Urban infrastructures are expected to play a vital role in alleviating these situations, enabling cities to provide spaces for business activities and maintain sustainable and comfortable urban environments to enhance their competitiveness. In this context, the largest issue lies in the growth management of large cities in relation to urban infrastructures.

   **Long-term Perspective and Comprehensive Approaches**

   Formulation of long-term development plans in the study area is essential to realize growth management through infrastructure and improve living conditions in a city. Its objectives are the following:

   1) To secure in advance public space necessary for infrastructure, such as roads, railways, parks, and schools, before uncontrolled urbanization progresses.
2) To control land use in consistency with infrastructure development.
3) To establish basis for public authority in relation to planned actions.

**Land-use Management**

The most fundamental issue of growth management is land-use control. The basic strategies of land-use management are two-fold: incentives and restrictions. Incentives include the combined development of infrastructure and residential areas and various bonuses for specific types of development. Restrictions are, basically, legal constraints that determine type, scale, and form of development.

**Efficient Operation of Existing Infrastructures**

The demand-supply gap of infrastructure in cities is expanding as rapid urbanization continues. It is almost impossible for the supply to catch up with demand in the short term. Therefore, it has become one of the key strategies to maximize the use of existing infrastructures. From this standpoint, the importance of maintenance and demand management in the study area should be stressed.

**Comprehensive Infrastructure Development**

To improve quality of life in high-density areas, it is reported that sector-wise approaches (e.g. road, water supply, housing, etc.) is not effective. Integrated multisectoral approaches should instead be pursued (ADB. 1999). Another aspect of intra-urban disparity is the urban poor. The urban poor are distributed mainly in overcrowded areas in and around city centers, and in the peri-urbanized areas where infrastructure is poorly provided and difficult to improve. To improve these areas, a multisectoral and integrated approach should be taken, including infrastructure development and socio-economic countermeasures, such as the creation of job opportunities, education, and anti-criminality campaigns.

**Infrastructure Provision for Urban Poor**

The urban poor in illegal settlements are not equipped with infrastructure services i.e., power, water and sanitation, telecommunication, and transport. Lack of infrastructure services deprive them of opportunities to get out of poverty. It has been discussed in chapter VI in details. Without infrastructure services, they cannot run small businesses at their residences, (such as manufacturing and petty trading), as a means of typical informal livelihood activities. Therefore, improvement of the urban poor’s access to infrastructure services contributes to upgrade their living conditions and livelihood. One of the most serious constraints on their access to infrastructure services is that they do not have secure tenure status (UN-HABITAT. 2003). In order to provide infrastructure services for the urban poor in the study area, it is essential to develop infrastructure in the poor area physically and functionally integrated to the other areas in order to formally involve urban poor into urban economy, as well as to provide low-income households and implement slum-upgrading program separately.
Governance Improvement and Capacity Development

As urbanization progresses, good governance and capacity development become key issues in infrastructure development in urban areas. The ADB has pointed out the importance of improving governance in urban development in four aspects: (i) Accountability of public sector staff and organizations; (ii) Greater participation of community and interest groups in decision making on the delivery of services and demand management; (iii) Predictability of markets, regulations, and legal frameworks; (iv) Transparency in dealings between the private sector and government (ADB. 1999 Urban Sector Strategy). One of the important governance-related issues is community participation. Community participation can help in understanding resident’s need and also contributes in enhancing ownership by the local people. And the accumulated local knowledge and intimacy of the project facilitates the efficient and sustainable maintenance of local infrastructures.

10.2.2 SECTOR WISE SOME SPECIFIC RECOMMENDATION

10.2.2.1 Urban Water Supply

Loss management

A number of options have been suggested which a local body in the study area can adopt for loss reduction. They are listed below.

- Reducing water loss through pressure management.
- Reducing unmetered supplies/improving meter accuracy.
- Reducing Unaccounted for Water (UFW) through asset management.
- Actively controlling leakage to reduce UFW.

Tariff rationalization:

Roles that the authority can play in this regard include the following.

- Set principles for tariff setting or baseline parameters.
- Monitor regularly based on incentives and disincentives.
- Hear consumer appeal/case/conflict settlements.

Apart from adopting cost-coverage principles for tariff rationalization, local bodies should also look for ways to reduce their operation and maintenance (O&M) cost. Local bodies should make all efforts to reduce operational wastage and improve cost effectiveness.

Source development and protection

Catchments or water bodies should be conserved from encroachment. Traditional water bodies should be restored before looking for alternative expensive augmentation measures like desiltation or import of water from far off sources. Non-conventional water sources like rainwater harvesting; flood-water harvesting can be used as complementary supplies for water utilities.
**Water quality**

In order to provide more clarity about the prescribed water quality standards provided by Bureau of Indian Standards (BIS) there is a need for thorough re-evaluation of the setting of standards of the quality of drinking water by BIS, which again should incorporate the views of different stakeholders like research institutes, NGOs, and water experts.

**Institutional mechanism**

Some of the institutional reforms that need to be taken up for proper enforcement of the recommendations made are the following. The existing institutional framework dealing with groundwater needs to be strengthened, which calls for review of the institutional responsibilities and legal provision. Public–private partnership needs to be explored further in areas such as service contract (billing and collection), management contract (water treatment, etc.), small piped networks, leakage control/reduction, and mapping of distribution network. Public community partnership can be developed through development and implementation of decentralized water system.

Above all, the existing service delivery should be improved through the following action. Improvement in the condition of tankers, regular cleaning schedule for the tankers, inspection schedule for adequate residential chlorine in the tankers, metering of water supplied through tankers and stand posts. Supplies based on tankers and stand posts should be gradually replaced by piped water supply system.

### 10.2.2.2 Sewerage and Solid Waste Management

The most applied tool for achieving sustainability in waste management is to adopt the concept of integrated sustainable waste management approach (ISWM). The concept of ISWM recognizes three important dimensions in waste management.

1. Involvement of the stakeholder
2. Technical and management-related aspects
3. Local context affecting sustainability in a given geographical setting

Apart from these issues, there are also regulatory provisions as stated under MSW Rule, 2000 notified by MoEF (Ministry of Environment and Forests), Government of India. The MSW Rules specify the necessary conditions to be adopted by ULBs to enable them to perform solid waste management services in an environmentally and socially desirable manner. These conditions include segregated doorstep collection of waste, proper processing, and sanitary disposal. Sustainable solid waste management delivery addresses the following issues:

(a) Provision of services in an integrated manner by ULBs
(b) Provision for cost recovery
(c) Satisfaction of citizens with the solid waste management services adherence to MSW rules by ULBs. There are however additional measures which would be required to improve the
functioning of local bodies in terms of improving SWM services. These measures can be summarized as follows.

Separate cell should be established for SWM within the municipal body. The cell should be headed by the environmental engineer or civil engineer as against the public health officer as is done still in smaller cities. The cell should be guided by the steering committee of eminent technocrats and senior citizens of the city for planning process.

Decentralization of municipal functioning at the zone and ward level to bring out the accountability and efficiency improvement as is done in the case of Surat. Formation of ward committees as envisaged under 74th Constitutional Amendment for creating public awareness. Inviting the private sector for service improvement and better cost recovery would require local bodies to gain expertise in the preparation of contracts and to understand the technical and legal issues related to the requirements regarding processing facilities, landfill sites, and so on. The technical capacity of local bodies needs to be enhanced to cover such aspects as well.

### 10.2.2.3 Urban Transportation

The action plan to achieve the goals of sustainable public transport services in the towns and cities of Murshidabad would broadly include the following actions:

- Improving availability of modes by using private sector participation to acquire and run buses based on carefully drafted agreements.
- There should be planning for improved access for the more vulnerable user groups like the urban poor, the elderly, and disabled, as well as improving bus designs and providing differentiated services.
- Improving operations by better route planning, rational fare setting, using modern technologies, giving priority to public transport, and better intermodal integration.
- Improving internal efficiencies, monitoring performance, and setting benchmarks.
- Becoming ‘customer oriented’ through trainings, customer satisfaction surveys, enforcing the citizens’ charters, and so on.
- Identifying supporting demand management strategies to discourage use of private vehicle and encourage usage of public transport modes
- Identifying financing options to implement improvement actions
- Strengthening HRD (human resource development) and capacity building at various levels in various organizations.

It seems logical and sensible for a city to take responsibility for planning and managing its urban transportation system, particularly planning, managing, and running its public transport systems. Either through initiative of the state governments (as in case of Surat) or by self initiative (as in case of Indore), other city authorities in study area should also take on the responsibility of augmenting and managing their public transport systems. This can be done in
collaboration with the state governments, particularly, the proposed public transport division. To start with, state governments should empower city municipal authorities to address urban transportation functions, particularly public transportation systems. Setting up of an ‘urban transport cell’ in the ULB with the assistance of the state governments should then be done.

10.2.2.4 Power Supply

This should be the first step for the local bodies in order to contribute to the improvement of power services in the city by becoming an efficient consumer. ULBs being a bulk consumer, almost consuming 8%-10% of the total electricity supplied by the utility, can significantly bring down the consumption of power in the city by undertaking demand side measures such as efficient public lighting system, efficient water pumping system, etc. To undertake the conservation activities local bodies can also form an in-house DSM (demand side management) cell (as done by the SMC (Surat Municipal Corporation). With increasing urbanization in the cities, provision of access to basic infrastructure services such as electricity, especially to urban poor has become a formidable task. One of the ways to address this issue is through the introduction of prepaid metering for slum electrification and use of smart cards for providing the subsidies directly to the urban poor. On the other hand, consumers would benefit from legal connections and would not be required to pay high upfront payment in terms of security charges. Implementation of such a system also promotes equity in the society. ULBs have an important role to play in order to promote renewable energy generation. Property tax rebates may be used as an option to encourage consumers to adopt solar technologies especially solar water heating systems. Further, an integrated planning approach is required on behalf of local bodies in order to facilitate waste-to-energy projects, wherein suitable provisions such as land availability are provided for both the processing of waste and installation of power plant, making the project more viable and cost-effective.

10.2.2.5 Urban Health Facilities

Strengthening service delivery

Institutionalizing the existing 3-tier primary health care model by

- Strengthening community outreach through the Honorary Health Worker (HHW) and First Tier Supervisor (FTS) at the sub-center.
- Strengthening infrastructure – physical and human resource including introduction of a new cadre of personnel called First Tier Supervisor (FTS).
- Community empowerment and involvement through a number of measures like recruitment of HHWS from the community, discussions and awareness generation on health and nutrition issues and determinants of health through existing community groups (CDS / SHG’s etc), participation of these groups in ward committees and through them providing organizational inputs in planning and managing the programs.
• Supporting and strengthening existing facilities in ULBs, where needed.
• Preparation of ULB specific action plan to reflect the operational strategies, and address the ULB specific determinants of health
• Introducing newer models of service delivery where necessary like:
  o Public Private Partnerships (PPPs) with NGOs/private sector for training, data management etc.
  o Mobile health care services in hard to reach areas etc.
• Adopting and implementing appropriate Behaviour Change Communication (BCC) strategies to improve health communication – this will combine interactive group and interpersonal methods on the ground, mass media initiatives and advocacy with various stakeholders.

**Strengthening institutional arrangements**
• Strengthening the capacity of Department of Municipal Affairs (DMA) through establishment of an Urban Health Cell with dedicated officials to oversee urban health and strengthening the implementation capacity of the State Urban Development Agency.
• Defining the roles and responsibilities of the departments, including patterns of fund flows
• ULB and ward level health committees to coordinate multi departmental responsibilities.
• To continue with the decentralisation of management and implementation of the program to the municipalities.
• Referral linkages with the District and the Block facilities of the DHFW.

### 10.3 CONCLUSION

The foregoing analysis brings out that there is positive relationship between the development of urbanization and development of infrastructure, each being the cause of the other. Increase in the availability of infrastructure would increase the level of urbanization in the economy and vice versa. At the same time, it is also revealed that provisions of essential services in the study area are grossly inadequate, overstructured and overstrained. More interestingly if we closely follow the trend of growth of population during the last two decades it will amply be clear that the growth is more pronounced in the small and medium sized ULB’s rather than large one. It is not only in the study area but also in the state. So, effective and appropriate policy intervention is required to keep urbanization on proper track. Urbanization is a process which generates many problems. It calls for creation of a lot of infrastructure. The changed focus on urbanization has necessitated the preparation of land use map in urban areas. Balanced and meaningful decentralization of urbanization calls for dealing with the number of issues like providing sewerage, drainage
water supply and transport. Under such a situation land becomes very important and proper use of land becomes extremely necessary. There is a strong need for a policy decisions to give direction to the entire gamut of urbanization process. This policy includes ensuring the decentralization process through decentralized planning and implementation, giving importance to socio-economic development in addition to routine municipal services, making the entire process participatory giving emphasis to the improvement of the urban poor life and finally makes the municipalities capable of modern transparent administrative units. The use of local resources and material should as far as possible be maximized. Relevant reforms are to be brought in the out dated municipal rules and regulations as well as new laws have to formed and enforced to help the urban local bodies (ULB) keeping tract with rapidly changing urbanization process. A time-bound program is needed to address the problems of water supply, garbage disposal, health, roads and communication in an integrated manner for solving emergent problems of utilities and functions of towns and cities. Again, these problems arise in the services sector cannot be solved in isolation by improving the existing facilities of the urban areas only. The policy should aim at settling the disputes in an integrated manner on the whole spectrum of rural and urban places taken together. If we can implement the aim of bridging the rural and urban nexus, then the additional burden on our towns and cities will be released and the town or city health would be sustainable.

REFERENCE:


