9.1 PERCEPTION STUDY ON URBAN INFRASTRUCTURE

It is evinced that there is a wide gap between minimum entitlement of the service provisions and the supply constraints faced by the authorities. Municipal towns of Murshidabad are no exception. There is a pressing need to address the issues related to urban services. In view of the above situation the study has endeavoured to analyse the cognitive pattern of stakeholders on infrastructural facilities of municipal towns of Murshidabad district of West Bengal. Perception patterns are analysed through the basic understanding of the behavior of the people in terms of their opinion, attitudes, and levels of satisfaction. These parameters are taken as proxy elements as of sign, signals and their expressions as to how much they are getting and what actually they should get. The perceptual data are obtained from survey of opinions on respondents through structured questionnaire covering all municipal towns of the district. The study of perception of residents on the different aspects of infrastructure covering six sectors (water supply, sanitation, road and transportation, power, education and health) of infrastructure, show variation in the degrees of opinion. Chi-square ($\chi^2$) statistic has also been justifiably applied to examine the variation in degrees of opinion.

9.1.1 RESEARCH METHODOLOGY

A survey schedule has been used in the study to determine the perception and attitude towards urban infrastructure of towns of Murshidabad district. Item or statement has been asked in the survey form.

Summated scales or Likert type scales have been used by utilizing those items wherein a particular item is evaluated on the basis of how well respondents feel and appreciate the status of individual item. The respondents are asked to respond to each of the statement in terms of five degrees of agreement or disagreement. For example respondents may respond in any one of the following ways (i) Strongly agree (AS) (ii) Agree (A) (iii) Undecided (UD) (iv) Disagree (DA) (v) Strongly disagree (SDA).
The survey has been conducted in Municipal towns and cities of Murshidabad district. For primary source of information seventy respondents have been surveyed in the study areas selecting ten respondents from each municipal town in the district. For the selecting of individual, purposive stratified sampling method has been adopted. Finally observed data have been statistically tested with help of chi square test ($\chi^2$).

The respondents of the survey are selected using the demographic variables of gender, income, and age. Care is taken to ensure that respondents were fairly represented across major demographic groups. All the respondents are above 18 years in age. The questionnaires were administered in geographical localities across the city. On the basis of per capita income of the state (West Bengal Economic Review, 2008) three income group (Monthly income) of people have been taken into consideration namely, Lower income group (<Rs.3500), Middle income group (Rs.3500 – Rs. 29999), and Higher income group (>Rs.30000).

9.1.2 SURVEY RESULT AND DISCUSSION

Behaviour is best understood by focusing upon perception which influences these activities. So, cognitive analysis assesses the knowledge base and awareness, level of respondents about various dimensions on urban infrastructure. In view of the above situation, the study has endeavoured to analyse both the factual enquiry and the valued judgements of the stakeholders relating to the infrastructural facilities of municipal towns of Murshidabad. Thus people’s perception and basic factual knowledge about the issues of urban infrastructure as being understood by them are discussed below. (Alam et al, 2011)

**Urban Water Supply Facilities**

In order to study, the perception of citizen on urban water supply facilities, seven items have been taken. Survey shows that about 67.14 percent of the respondents expressed their strong dissatisfaction about the status and performance of urban local bodies (ULB’s) regarding household level connection. About 20 percent of the respondents expressed their disagreement to the same statement. So, it is clear more than 90 percent of respondents are not happy with the household level water supply connection. Regarding the issue of per capita quantum of water supplied, more than 62 percent strongly opposed to the statement that it is as per norm and sufficient while 22.85 percent respondent expressed their disagreement on this statement. So, more than 84 percent of the respondents thought that per capita urban water supply in towns of Murshidabad district is not as per norms and sufficient. About 47.14 percent of respondents reported that water is not treated before it supplied. While 35.7 percent of respondents reported that water is treated before it is supplied. About 17.14 percent of the respondent did not know whether water is treated or not before it is supplied. More than 67 percent of the respondents did not think that number of tube well and tap is sufficient as per
requirement of the locality. On the other hand, 32.85 percent respondents accepted the statement. About 71.43 percent of the respondents thought that tariff for water service in the town is negligible.

**TABLE 87: PERCEPTION ON WATER SUPPLY**

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Item/ Statement</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>As far as household connection of water supply is concerned, municipality’s</td>
<td>00 (00) 06 (8.57) 03 (4.29) 14 (20) 47 (67.14)</td>
</tr>
<tr>
<td></td>
<td>performance is satisfactory.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Per capita quantum of water supplied by the municipality is as per norm and</td>
<td>03 (4.28) 07 (10) 00 (00) 16 (22.86) 44 (62.86)</td>
</tr>
<tr>
<td></td>
<td>sufficient.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Supply of water is continuous and available at the time when it is required.</td>
<td>06 (8.57) 21 (30) 00 (00) 31 (44.29) 12 (17.14)</td>
</tr>
<tr>
<td>4.</td>
<td>Water is treated before it is supplied.</td>
<td>05 (7.14) 20 (28.57) 12 (17.14) 25 (35.71) 08 (11.44)</td>
</tr>
<tr>
<td>5.</td>
<td>Number of tubewell and tap is sufficient as per requirement of the locality.</td>
<td>08 (11.43) 15 (21.43) 00 (00) 29 (41.43) 18 (25.71)</td>
</tr>
<tr>
<td>6.</td>
<td>Bill amount for the water service in the town is negligible. It should be</td>
<td>12 (17.14) 38 (54.29) 03 (4.29) 14 (20) 03 (4.28)</td>
</tr>
<tr>
<td></td>
<td>increased to recover the cost.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>PPP can improve the water supply facilities in the town.</td>
<td>13 (18.57) 35 (50) 04 (5.71) 11 (15.72) 7 (10)</td>
</tr>
</tbody>
</table>

*Figures within brackets are the corresponding percentages

**Source:** Collected and calculated by authors, 2011

**Note:** $\chi^2$ (Chi Square) = 219.74, df (Degree of Freedom) = 24, Tabulated value for .01 significance level = 42.980 and for .05 significance level = 36.415

It should be increased to recover the cost. More than 68 percent of the respondents expressed their views in favour of public private participation to improve the water supply facilities in the town. On the other hand, only 25.71 percent of the respondents were against the concept of public private participation.

It is clear from the Table 87, that the computed value of $\chi^2$ is higher than the table value at 24 degree of freedom at both .01 and .05 levels of significance. As the computed value is significant so it can be inferred that differences in the frequencies of respondent is not by chance but is a state of real difference.

**Sanitation and Waste Management facilities**

In order to assess the pattern of people’s perception on sanitation and waste management facilities 10 item have been taken. It is clear from the survey that about 58.57 percent of the respondents thought that the waste water network in the urban areas is not sufficient to cover the town. On the other hand, 41.43 percent thought that waste water network is sufficient to cover the town.
About 78.57 percent of the respondents indicated that household level coverage of solid waste management service through door to door collection of waste is not adequate. On the other hand, only 21.43 percent thought that door to door collection of waste is not adequate. About 60 percent of respondents expressed their agreement to the fact that collection of solid waste for disposal is not satisfactory in the towns. On the other hand, 40 percent of the respondents thought that collection of solid waste for disposal in the towns is satisfactory.

**TABLE 88: PERCEPTION ON SANITATION AND WASTE MANAGEMENT**

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Item / Statement</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AS</td>
</tr>
<tr>
<td>1.</td>
<td>Waste water network is sufficient to cover the town.</td>
<td>8 (11.43)</td>
</tr>
<tr>
<td>2.</td>
<td>Extent of recycling of waste water is sufficient</td>
<td>00 (00)</td>
</tr>
<tr>
<td>3.</td>
<td>Household level coverage of SWM service through door to door collection of waste is not adequate.</td>
<td>35 (50)</td>
</tr>
<tr>
<td>4.</td>
<td>Collection of solid waste for disposal in the town is not satisfactory.</td>
<td>30 (42.86)</td>
</tr>
<tr>
<td>5.</td>
<td>Wastes are collected by the workers in a segregated manner.</td>
<td>00 (00)</td>
</tr>
<tr>
<td>6.</td>
<td>Waste disposal ground is maintained in a scientific manner.</td>
<td>00 (00)</td>
</tr>
<tr>
<td>7.</td>
<td>Citizens are conscious enough not to throw waste on road side.</td>
<td>5 (7.14)</td>
</tr>
<tr>
<td>8.</td>
<td>Number of sanitary workers to collect waste is not sufficient enough to run the service efficiently.</td>
<td>15 (21.43)</td>
</tr>
<tr>
<td>9.</td>
<td>People are willing to pay for the service.</td>
<td>17 (24.29)</td>
</tr>
<tr>
<td>10.</td>
<td>PPP can improve the waste management facilities in the town</td>
<td>18 (25.71)</td>
</tr>
</tbody>
</table>

*Figures within brackets are the corresponding percentages

**Source:** Collected and calculated by authors, 2011

**Note:** $\chi^2$ (Chi Square) = 393.94, df (Degree of Freedom) = 36, Tabulated value for .01 significance level = 58.619 and for .05 significance level = 50.998

Near about 77.14 percent of the respondents believed that waste disposal ground is not maintained in a scientific manner while 18.57 percent thought that waste disposal ground is maintained in a scientific manner. More than 72 percent of the respondents are believed that number of sanitary workers to collect waste is not sufficient enough to run the service efficiently. About 72.86 percent of the respondents accepted that people are willing to pay for the service. On the other hand, 27.14 percent of the respondents thought that people are not willing to pay for the service. Near about 77.15 percent of the respondents believed that public private partnership can improve the waste management facilities in the town. On the other hand, only 17.14 percent of the respondents do not agree with this.
It is clear from the Table 88, that the computed value of $\chi^2$ is higher than the table value at 36 degree of freedom at both .01 and .05 level of significance. So, the computed value is significant at 36 degree of freedom at both .01 and .05 significance level.

**Road and Transportation**

To assess the citizen’s perception on urban road and transportation facilities 8 items have been taken.

**TABLE 89: PERCEPTION ON ROAD AND TRANSPORTATION**

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Item / Statement</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AS</td>
</tr>
<tr>
<td>1.</td>
<td>Growth in the number of motor vehicle is outmatched by a corresponding expansion of road space</td>
<td>37 (52.85)</td>
</tr>
<tr>
<td>2.</td>
<td>Inefficient system of construction coupled with poor maintenance has resulted in poor road infrastructure.</td>
<td>18 (25.71)</td>
</tr>
<tr>
<td>3.</td>
<td>Average speed on the road is very low.</td>
<td>42 (60)</td>
</tr>
<tr>
<td>4.</td>
<td>Mobility is not restricted to the speed of the slowest vehicles though there is no segregation of road for different vehicles.</td>
<td>02 (2.85)</td>
</tr>
<tr>
<td>5.</td>
<td>Rickshaw should be allowed on the roads as this is the main IPT mode of vehicles.</td>
<td>05 (7.15)</td>
</tr>
<tr>
<td>6.</td>
<td>Increased reliance on personal motor and absence of public transport vehicles aggravated the problem of congestion on road in the town.</td>
<td>31 (44.29)</td>
</tr>
<tr>
<td>7.</td>
<td>Presently, road side parking is not the main cause of shortening of available width of the road and hence congestion.</td>
<td>00 (00)</td>
</tr>
<tr>
<td>8.</td>
<td>Public transportation should be increased to reduce the congestion and avoid rickshaw.</td>
<td>19 (27.14)</td>
</tr>
</tbody>
</table>

*Figures within brackets are the corresponding percentages

**Source:** Collected and calculated by authors, 2011

**Note:** $\chi^2$(Chi Square) = 256.23, df (Degree of Freedom) = 28, Tabulated value for .01 significance level = 48.278 and for .05 significance level = 41.337

About 70 percent of the respondents believed that the growth in the number of motor vehicle is mismatched by a corresponding expansion of road space. About 65.71 percent of the respondents thought that inefficient system of construction coupled with poor maintenance has resulted in poor road infrastructure. On the other hand, 34.28 percent do not think so. Near about 81.43 percent of the respondents agreed that average speed on the road is very low. More than 67 percent of the respondents claimed that rickshaw should be allowed on the roads as this is the main IPT (Intermediate Public Transport) mode of vehicles while 32.85 percent thought that rickshaw should not be allowed on the road. Only 25.71 percent respondent believed that road side parking is not the main cause of curbing of available width of road and
hence congestion. On the other hand, 68.57 percent respondent disagreed to the statement; meant they thought that road side parking is the main cause of curbing of available width of the road and hence congestion. About 78.57 percent of the respondents accepted that public transportation should be increased to reduce the congestion and avoid rickshaw in the towns of the district.

It is clear that the calculated value of $\chi^2$ is higher than the table value at 28 degree of freedom at both .01 and .05 level of significance. As the computed value is significant so it can be said that the differences in the frequencies of respondent is not by chance but is a state of real difference.

**Educational Facilities**

It is clear from the figure that about 48.57 percent of the respondents agreed that the number of schools (Primary and Secondary) in the town is sufficient to cover the target population. But, about 51.43 percent respondent thought that the number of schools is not sufficient to cover the population. About 65.72 percent of the respondents believed that the quality of education is hampered due to high pupil teacher ratio in the school both in primary and secondary. Only 28.57 percent respondent do not agree with this concept. As far as the number of Degree College is concerned, 68.57 percent of the respondents thought that it is not sufficient.

**TABLE 90: PERCEPTION ON EDUCATIONAL FACILITIES**

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Item / Statement</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Number of schools (Primary &amp; Secondary) in your locality is sufficient to cover population.</td>
<td>12 (17.14)</td>
</tr>
<tr>
<td>2.</td>
<td>Number of technical or professional school in the town is sufficient.</td>
<td>06 (8.57)</td>
</tr>
<tr>
<td>3.</td>
<td>Quality education is hampered due to high pupil teacher ratio in the schools both primary and secondary.</td>
<td>19 (27.14)</td>
</tr>
<tr>
<td>4.</td>
<td>Number of degree college is not sufficient in the town</td>
<td>21 (30)</td>
</tr>
<tr>
<td>5.</td>
<td>Guardians are not conscious about their child’s school governance.</td>
<td>27 (35.58)</td>
</tr>
<tr>
<td>6.</td>
<td>Teachers are not accountable for learning outcomes of children.</td>
<td>15 (21.43)</td>
</tr>
<tr>
<td>7.</td>
<td>Quality of education is better in private institution than public institution.</td>
<td>17 (24.29)</td>
</tr>
<tr>
<td>8.</td>
<td>Many schools in the town lacks access to basic amenities like play ground, toilet facilities, room.</td>
<td>16 (22.86)</td>
</tr>
</tbody>
</table>

*Figures within brackets are the corresponding percentages

Source: Collected and calculated by authors, 2011

**Note:** $\chi^2$ (Chi Square) = 71.196, $df$ (Degree of Freedom) = 28, Tabulated value for .01 significance level = 48.278 and for .05 significance level = 41.337

215
About 65.72 percent respondent believed that guardians are not conscious about their child’s school governance. On the other hand, only 30 percent respondent accepted that guardians are conscious about their child’s school governances. About 55.71 percent respondent believed that the quality of education is better in private institution than public institution. On the other hand, 38.57 do not think so. About 55.72 percent of the respondents thought that many schools in the town lack access to basic amenities like playground, toilet facilities, and class room while 47.14 percent do not think so.

The calculated value of $\chi^2$ is higher than the table value at 28 degree of freedom at both 0.01 and 0.05 level of significance. As the computed value is significant so it can be inferred that the differences in the frequencies of respondent is not by chance but is a state of real difference.

**Health Facilities**

It is clear from the survey that about 50 percent respondent thought that number of public health centers in the town is sufficient to render good health service while about 44.28 percent of the respondents do not think so.

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Item / Statement</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AS</td>
</tr>
<tr>
<td>1.</td>
<td>Number of public health centers in the town is sufficient to render the good health service.</td>
<td>09 (12.86)</td>
</tr>
<tr>
<td>2.</td>
<td>Number of patient per doctor is very high. As a result time per patient is very low.</td>
<td>19 (27.14)</td>
</tr>
<tr>
<td>3.</td>
<td>Number of hospitals beds is sufficient to cover the patient treated in public hospitals.</td>
<td>06 (8.57)</td>
</tr>
<tr>
<td>4.</td>
<td>Most people prefer to go to private health centers.</td>
<td>21 (30)</td>
</tr>
<tr>
<td>5.</td>
<td>Private health facilities is more expensive but easily available than the public health facilities.</td>
<td>23 (32.86)</td>
</tr>
<tr>
<td>6.</td>
<td>Medicine is not available free of cost in the public hospitals as per rules.</td>
<td>24 (34.29)</td>
</tr>
<tr>
<td>7.</td>
<td>In order to improve health facilities in the town public-private partnership will be more effective.</td>
<td>14 (20)</td>
</tr>
</tbody>
</table>

*Figures within brackets are the corresponding percentages

**Source:** Collected and calculated by authors, 2011

**Note:** $\chi^2$ (Chi Square) = 62.94, df (Degree of Freedom) = 24, Tabulated value for .01 significance level = 42.980 and for .05 significance level = 36.415

Near about 72.85 percent respondents agreed that the number of patient per doctor is very high. As a result, time per patient is very low. On the other hand, only 27.15 percent respondent
does not agree with the above concept. About 52.86 percent respondent do not accept that the number of hospitals beds is sufficient to cover the patient treated in public hospitals while 40 percent agreed with this. About 30 percent respondent strongly agreed that most people prefer to go to private health centers. So, more than 65.71 percent of the respondents thought that most people prefer to go to private health centers. Near about 71.44 percent respondent agreed with statement that private health facilities is more expensive but easily available than the public health facilities while 28.57 percent do not think so. About 74.28 percent of the respondent reported that medicine is not available free of cost in the public hospitals as per rules. Near about 58.58 percent respondent believed that public-private partnership will be more effective to improve health facilities in the towns of the district.

It is clear from the Table 91, that the calculated value of $x^2$ is higher than the table value at 24 degree of freedom at both .01 and .05 level of significance. The computed value is significant. So, it can be inferred that the differences in the frequencies of respondent is not by chance but is a real difference.

### 9.1.3 Income as correlates perception

A question whether they are satisfied or not with the existing condition of infrastructural facilities have also been asked to the respondents at the time of survey. It is clear from the survey that the pattern of answer varies between various income groups as described below.

Survey shows that about 38.7 percent, 53.8 percent, 62.2 percent of the respondents from lower income group, middle income group and higher income group respectively are satisfied with the existing condition of water supply facilities. The survey also shows that about 76.2 percent of the women respondents from lower income group are not satisfied with the existing condition of water supply facilities. The figure in case of middle income group is about 64.3 percent and for higher income group it is 46.4 percent. So, it is clear that women from lower income group are mostly dissatisfied with condition of existing water supply facilities. It is because of that the people from lower income group mostly depend upon the municipal water supply which is irregular and not sufficient as they perceived.

It is clear from the survey that about 68.6 percent of the respondents from lower income group are not satisfied with the existing condition of sanitation and solid waste management in the towns of the district whereas this percentage for middle income group is 56.2. In high income group 54.6 percent of the respondents are satisfied with the existing condition of sanitation. So, it is clear from the figure that the percentage of respondents who are dissatisfied is higher in lower income group than the middle and high income group.

Survey reveals that about 68.3 percent of the respondents from lower income group are satisfied with the existing condition of educational facilities. This figure in case of middle
income group is 61.25 percent, and for higher income group it is 58.6 percent. Both the figure is slightly higher than the lower income group. This may be due to their preferences in favour of private education system for their children.

It is clear from the survey that about 71.8 percent of the respondents from lower income group are not satisfied with condition of existing public health facilities. While this percentage in case of middle income group is 66 percent. In case of high income group, this percentage is about 45.5. So, it is clear from the analysis that the percentage of respondents who are dissatisfied is higher among the middle and lower income group than the higher income group. This may be due to the fact that the people from the lower income group are largely dependent upon public health care system.

9.1.4 Conclusion

The study reveals many important facets of citizen’s perception and attitudes towards urban infrastructure.

As far as water supply facilities are concerned, most of the respondents stated that household level connection in the towns of the district is not satisfactory. According to them per capita quantum of water supply is below norm and is not available when it is required. Water is not treated before it is supplied. Number of tube well is not sufficient in the study area. Most of the respondents thought that the tariff for the service is negligible and it should be increased for better service. They also thought that the public private partnership in the management can improve the urban infrastructure.

It is clear from the people’s perception regarding sanitation and waste management that there is lack of waste water network, recycling capacity of waste water in the town. There is an absence of door to door collection of waste and disposal ground. Waste collection efficiency is low. Waste is not collected in a segregated manner and collection ground is not maintained in a scientific manner. Number of sanitary workers to collect waste is also low. Most of the respondents perceived that people are willing to pay more for the better service and at the same time they welcome private public joint venture for the improvement of the service in the towns of the district.

It is clear from the citizen’s perception that the number of motor vehicles is out matched by corresponding expansion of road space. Poor maintenance of road is one of the main reasons for poor road infrastructure. Average speed on the road is low. Mobility of vehicle is restricted due to mixed vehicles as there are no separate lanes for for different vehicles. They thought that road side parking and a large number of rickshaws are the other causes of congestion on the road. According to them rickshaw should not be allowed on road and at the same time there should be public transportation system to avoid congestion on road.
Regarding the educational facilities they thought that the number of schools, (Primary, Secondary and technical), colleges till now are not sufficient for the entire population. They perceived that the quality of education is being hampered due to the high teacher pupil ratio. Teachers are not accountable for learning outcomes of children. They perceived that the quality of education is better in private institution than public one.

Regarding health facilities they perceived that the numbers of health centers as well as bed in those centers are not sufficient to render good health service in the town. The number of patients per doctor is high. They thought that the most people prefer to go to private health centers due to their easy availability despite the service offered being more expansive. They believed that public-private partnership will be more effective to improve health facilities in the towns of the district.

The sum up, the pattern of perception indicated a good level of awareness, emotional concern and action tendencies among the respondents which forced the city dwellers to think seriously on various issues of urban infrastructure. Though there happened to exist differences in their views, the level of awareness, and nature of emotional concern between respondents, there was general consensus upon recognition of unpleasant events that are taking place in various sector of urban infrastructure of Murshidabad. Also, it is very much apparent that respondents are becoming more and more serious about the issues on urban infrastructure and they do expect that steps and initiatives are to be taken from both individual and institutional levels as expressed by their willingness to cooperate and intension to act for the same cause. Therefore it is imperative for the policy makers to consider the people’s perception regarding the various issues and problems of urban infrastructure at the time of policy making.

9.2 PLANNING OF INFRASTRUCTURE

The process of urbanization created a huge gap between demand and supply of urban services and infrastructure. For instances, ninth plan working group on Housing has estimated the investment requirement for housing in urban areas at Rs.52,600 crores. The funds required by tenth plan for 100 percent coverage of urban population with water supply facilities and 75 percent of urban population with sewerage and sanitation by end of plan is estimated at over Rs.53,000 crores. The India infrastructure, 1996 estimates the annual investment need for urban water supply, sanitation and roads at Rs.28,635 crores for the next ten years. The Central Public Health Engineering (CPHEEO) has estimated the requirement of funds for 100 percent coverage of urban population under safe water supply and sanitation services by the year 2021 at Rs.172,905 crores. Such a big quantum of requisite investment for supply of urban infrastructure cannot be allocated within the budgetary resources of central and state
The consequence of the growth in urban population even at a declining annual rate (2.7 percent) during decade 1991-2001 is that 8 million people need to be provided for each year in terms of land, housing roads, water, electricity sewerage etc (Toutain and Gopi Prasad, 2006). In this section, an attempt has been made to highlight the way to initiate more effective and responsive urban planning by reviewing the conditions indispensable to its implementation and also critically analyse the contemporary planning approach to the urban infrastructure system and finally suggest an alternate and appropriate planning philosophy.

9.2.1 CRITICAL ASSESSMENT OF EXISTING PLANNING PROCEDURE IN THE STUDY AREA

A study of urban planning process by Mckinsey Global Institute (2010) analysis reveals four lessons for good urban planning. These are (i) Clear planning mandate and roles (ii) Casecading plans with integrated contents (iii) Planning organizational structure with effective reporting, relationships, talents, budgets and technology resources (iv) Effective execution and enforcement mechanisms.

There is an existence of an institutional framework for urban planning. After independence the State Town Planning Acts (STPA) suggested the setting up of town and country planning department (TCPD) to create master plan for cities. Then in 1991 the 74th Amendment to the constitution suggested three main urban planning reforms. These are (i) The full transfer of city planning to local government (ii) The formation of a Metropolitan Planning Committee (MPC) for each of the metropolitan areas and (iii) The formation of a District Planning Committee (DPC) for each of India’s districts. At this juncture it may be pointed out that the creation of city development plans is a key prerequisite for accessing funds from the Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

The researcher has gone through the ongoing project or development programmes in the municipalities of the district like Swarna Jayanti Sahari Rozger Yojana (SJSRY), Valmiki Ambedkar Awas Yojana (VAMBAY), Integrated Low Cost Sanitation (ILCS), Integrated Development of Small and Medium Towns (IDSMT), National Slum Development (NSDP), Sishu Siksha Kendra (SSK), Eleventh Finance Commission, Food Processing and Horticulture Scheme. A critical observation of these programmes brings out some important points which indicate some lacuna in the process of effective implementation of these programmes.

1. There is lack of clear planning roles and mandates among the organisations. In India there is no single umbrella authority empowered to urban planning. At the metropolitan level, only 4 of the requisite 10 states and 20 of the 29 states have constituted Metropolitan
Planning Committee (MPC) and District Planning Committee (DPC) respectively (McKinsey Global institute, 2010). At the local level the planning function has not been fully transferred to municipalities in 12 states. In the study area, it is found that there is lack of clear planning roles and mandates among the organizations.

2. The current urban planning mechanism promotes top-down approaches where the state government has all the powers to revert any decision taken by planning officer in the lower level.

3. There is no link between administrative boundaries and planning boundaries and there is no link between city’s budget and its landuse plans. As a result, the planning department and agencies function parallel to the urban local bodies where the planning decision and the day to day functional decision often do not match.

4. The actual mapping of the ground realities requires access to maps and spatial data such as remote sensing. But, availability of data restricted by the government under official secrets Act 1923 (Toutain and Gopiprasad, 2006). As a result, some time planning agencies have to depend on obsolete spatial data. Moreover, there is a lack of technical competence to handle complex spatial data. The real challenge revolves around the issues of integration and inter-operability of different systems.

5. Socio economic data supplied by census of India is not sufficient to convey any social or economic analysis based on spatial approach (Census of India, 2001). Planning today is largely based on normative and empirical assumption based on data.

6. There is a lack of sufficient talents, budgets, and technology resources. Moreover, there are few urban economists, sectoral experts, architects or designers in these departments.

7. Little attention has been paid to social services such as education, health care and affordable housing; there are no estimates of demand for hospitals, schools and affordable housing units or any indication of policies and zoning norms for these sectors.

8. Only one planning norm for the whole city instead of separate norms for separate growth centers. There is no mention of regeneration projects for old areas.

9. Only incremental transportation projects are taken without estimating long terms (say 25-30 years) demand. There is no provision of financial backing in the existing plans.

10. There is no effective mechanism of the participation of the stakeholders in the entire process.

### 9.2.2 APPROACHES TO THE PLANNING PROCESSES

Conventional approach to urban infrastructure management is based on the premise “Facilitation Infrastructure Supply”. But, in new built developments serviced within a supply oriented framework, any explicit consideration of various environmental and social effect is rare. The increased awareness towards environment and a sustainable society coupled with a
need to make our cities worth living, demand side interference in the provision and management of urban infrastructure is being advocated (Fig. 34). Demand side interference broadly has two aspects managing the existing demand and channeling or monitoring the ever-increasing demand covers the issues of regional planning i.e. micro as well as macro planning covering the intricacies of rural-urban interaction.

FIG. 34, SHOWING THE URBAN PLANNING PHILOSOPHY

Source: Compiled by the researcher

9.2.2.1 PLANNING OF URBAN AREAS: REGIONAL APPROACH

The disparity in infrastructure between large and small urban areas has always been prevalent and the gap is expected to widen in the years to come. Small and medium towns have an important role to play in the development of the rural hinterland. For a balanced approach to territorial development, the relationship between the towns and rural hinterland should become a part of the core issue of regional planning (IIR, 2006).

Better integration of the regional space and rebalancing of urban centers can spare the metropolises the task of attracting and accommodating rural population. Intermediately towns as well as small and medium towns, can absorb the rural over-population and act as links between the rural markets and the big cities while the big and large urban centers can continue the task of promoting economic development and wealth generation. (IIR, 2006).

The regional plan can arbitrate the urbanization pattern between that of the cities addressing the global economy on the on hand, while acting as catalyst for change in rural
hinterland on the other hand. This level of planning is based on territorial vision with different levels and hierarchies of plan and management.

Integrating the metropolis, medium towns, small towns and rural hinterland requirement and investment programmes for urban infrastructure must be defined at the state level by taking into account available financial resources (central, state, local taxes, loan etc.) across different urban levels (metropolises, medium cities and towns). The public funds both central and state must be earmarked to urban centers that are well governed and are in need of financial support (Toutain and Gopi Prasad, 2006).

9.2.2.2 NEED FOR A SPATIAL POLICY FOR URBAN AREAS

In this approach and framework public authorities (central and states) have an important role to play in defining underlying social, economic and cultural dimensions to formulate an explicit urban policy integrating the national economic objectives and various sectoral goals. This policy can be framed covering social infrastructure like education, health, transportation, housing, environment, energy and protection of environment. There is a strong need of a shift from current practice to include tools for correct identification and evolution of social and urban needs at both the macro level and micro levels. The policy can help to promote effective resource management of the urban centers, provide incentives for private and public participation in development of infrastructure services.

It has already been stated that planning documents are usually based on general principles, more or less common to all the cities. But, each town has its own specificity or constraints determined by history, geography and economy. Planning strategies should focus on issues peculiar to each town regarding the identification of main constraints and the kind of development that is envisaged to overcome the constraints in the next 10 to 15 years.

An urban spatial plan must define strategies for future urban development taking into account the economic, social and urban evolution and strategic alternatives related to infrastructure, transport, and energy management. This is essentially in line with decentralization initiatives by the states to municipal bodies to carry out planning and management.

9.2.2.3 MAJOR ISSUES OF EFFECTIVE IMPLEMENTATION OF URBAN SPATIAL PLANNING

The major aspects through which spatial policy can be implemented in urban areas of Murshidabad district is as follows:
Economically viable and realistic approach

This requires linking urbanization to the availability and feasibility of network, land constraints, topography. Primary concern is of spatial extension and its impact on transport, drinking water, sanitation. Planners have to keep in mind about social demand in this regard.

Structuring of urban space

This implies structuring of urban space into functional sector i.e. industrial zone, transport network, business and logistics. Many cities and urban areas in the Indian context offer possibilities of enhancing the role of the central business district (CBD) as economic, political and cultural health.

Identification of shadow area in terms of deficiencies in infrastructure and upgradation of these areas

Planner should identify shadow area at the level of wards through a mix of several available indicators with regard to the physical and social infrastructure. Keeping in the mind the economic dimension of these problems and principle of social equity, these areas need to be upgraded. A plan objective to upgrade these needs to be drawn up in the planning processes.

Urban renewal option

In the old areas of urban centers, urban renewal policies should promote more intensive utilization of land by increasing construction rights depending on regulation and laws. Providing more housing and employment would consequently reduce the demand for spatial extension and transport services. Planner must take into account the social impact of re-development of these areas occupied low income group and minority community.

Protection of Environmental Resource

A spatial policy should concern about the preservation of natural resources. Urban pollution absorbents, green buffer, water bodies can prevent various disasters and at the same time protect our environment.

9.2.3 MODEL FOR PROCESS OF PREPARATION OF MICRO LEVEL INFRASTRUCTURE PLAN

The process of preparation of the plan is illustrated in Figure 35. The process of planning of infrastructure at micro level will comprise of task across (1) The Stages of Situation Assessment. (2) Planning.

T_1, T_2 and T_3 represent the task of situation assessment. While remaining task represent planning process. The Details of the processes are described below:
**T1:**

a) Identification of basic municipal services based on map, survey result, GIS Map data sheet etc.

b) With the combined inputs from field visits, technical inputs mentioned above, asset registers and other sources, a detailed asset inventory and condition assessment should be conducted.

c) On completion of the asset inventory and condition assessment, a ward basis assessment on quality of service being rendered.

d) Institutional responsibilities and mandates as currently practiced should be early identified and examined.

**FIG. 35: PROCESS OF PLANNING OF URBAN INFRASTRUCTURE**

Source: Alam, Nandi and Malik, 2008
T2:

T2 will comprise activities pertaining to capturing the voice of citizen because citizen participation is key to the planning process. Activities involved are:-

a) Ward committee consultation – Citizen’s expectation and prioritization of issues that they need is addressed and important input to the ULB in order to priorities and project proposals. Ward committee is the primary instrument of citizen participation in this planning process.

b) On specific infrastructure issues concerned citizen groups may consult for example for planning of facilities related to sports citizen groups related to these fields may be consulted.

T3:

This level, represent the task of integration of T1 and T2 i.e. integration of T1 and citizen’s feedback to develop broad consensus on priorities.

T4:

ULB’s should examine proposed plans or project at regional level by any development authority without which these plans or project should not be received. The task of planning comprises the following activities.

T5:

With reference to the defined priority areas ULB’s undertake assessment of current deficiencies in prioritized service based on Government of India norms and urban planning guidelines. Once the current deficiency has been quantified future demand (over 10 years should be projected.

T6:

It represent the task of preparation of project proposal for significant improvements in operating and maintenance method that will involve low level of capital infusion, but will result in significant improvement in services.

T7:

Project proposal involving significant capital investment may be short term or long term project. In seeking solution and formulating proposal emphasis would be on “least cost” solution. Alternate technology may be consciously explored.

T8:

Projects are to be prioritized on the basis of their merit based on certain parameter such as number of beneficiaries, conformity with other plans, priority of the sector etc. A score card should be developed to each project and on the basis of final scores the project proposals may be prioritized.
\( T_{IM} \)

It represents the task of Implementation of plan which would necessitate (i) Integration of physical and financial aspect of the plan (ii) Orienting the public administration for carrying out the plan.

\( T_{EV} \)

It represents provision of a continuous evaluation of the implemented programme. The plan making process should have conscious effort to upgrade the capacities of not just the relevant planning authority but also the apex plan making agency for the state. The planning cells of both the agencies have to be roped during a plan making process, for a detailed long training and capacity building process and to transfer the knowhow and expertise used by the consultants to draw out the plan. There is need to create the vast GIS based data repository. Additionally, during the public objection and suggestion stage, the authority should ensure a longer and sustained public participation process to get the relevant feedback. The civil society section is encouraged to mobilize different interest groups or stakeholders in the city to elicit their response on the Plan; something that has never been attempted before in the city. The plan will be successful in this initiative. Moreover, 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. If the local bodies do not improve their performances towards plan implementation and enforcement of the regulations, the living standards in the urban areas would not improve.

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