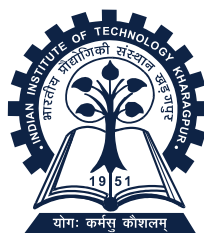SANDHI

RIVER BASED CREATIVE ECONOMY REGENERATION

The case of Hooghly River stretch in the Kolkata Metropolitan Area

SandHI Summer Intern Surveys & Analyses Report 2
Project Code: TTK

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

SandHI Summer Internship Report 1 (Surveys)
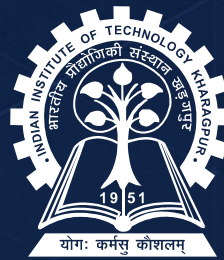
Indian Institute of Technology
Kharagpur

May-July 2015

Foreword

The SandHI Summer Interns of the Year 2015 have carried out an exemplary task. Every member of the team of interns exhibited sincerity, hard work and a rare sensitivity to survey works, observations, analyses and interpretations carried out on the data procured and thereby treading further to the making of the present report.

What is SandHI? SandHI is a spirit; an orchestrated movement of technical and artistic minds, who collectively re-explore the application and spirit of a Science-Heritage Interface. Sandhi is the acronym of this interface. SANDHI is a recovery and recognition of our heritage through the 'lens of science'. SANDHI is also the augmentation of scientific methodology by incorporating and absorbing neglected inputs and dormant processes embedded in our traditional knowledge systems. It is the 'SandHI', - the spirit of assimilation and integration of the two – Science and Heritage that matters.

The Present Report

The present report addresses a part of the creative economy projects centred and distributed around the metropolitan conurbation of Kolkata. Here, IIT Kharagpur is expected to steer a revival strategy based on creative economy regeneration projects drawing the ecological and historical inputs from an ancient land-river interface that had once shaped the metropolis.

The grass roots stakeholders of a country, or a city region and its economic base is usually diverse, and it includes resource and infrastructure companies, governments and their agencies, indigenous corporations and tourism and creative industries. The case of Kolkata is one such. It is the 'Creative Economic approach' based on an empowering of the frugal economy and revitalization of traditional urban and regional economy of services that can make a big difference in Kolkata. Hence, the creative economy projects of SandHI.

The creative industries refer to a range of economic activities, which are concerned with the generation or exploitation of knowledge and information. They may variously be referred to as the cultural industries or the units of creative economy. In the present venture, four important creative economic industries have been chosen:

1. River based economy – the case of Hooghly river stretch in the Kolkata Metropolitan area

2. Terracotta technology based creative economy – the case of Kumartuli belt, Kolkata

3. Knowledge and information based creative economy – the case of College Street Market, Kolkata

4. Informal-formal interface based small sector Hawker based micro creative economy – the case of Gariahat

In the present report, surveys concerning the first project have been presented.

Joy Sen

Principal Investigator, SandHI
Professor, Department of Architecture and Regional Planning
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September 2015

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III

Introduction

The present report is based on the survey exploration of the land-river interface of Kolkata Metropolitan Area (KMA). It has been conducted in and around eight nodes along the river Hugli stretching across both banks of KMA. The review aims to understand the emerging relationship between the land-river interaction and the potentials of the cultural resources in and around each node

The report examines the importance of the riverfront and the opportunities to bring forth the added value to the river based tourism development potential. The riverfront with presence of cultural assets offers interesting opportunities to development tourism sector as well as to betterment the quality of life, including economic regeneration, provision of infrastructure, safety and security of the neighbourhood etc.

The report is based on the combination of the desk study and original case study contribution through a reconnaissance survey on Chandpal Ghat, Panihati Ghat, Shyamnagar, Naihati Ghat, Bansberia, Bandel Church Area, Chinsurah Imambara Complex and Chandannagar Strand. The selection of case studies has been done on the basis of certain criteria, including spatial location, presence of cultural resources, connectivity and accessibility with the core city.

Acknowledgements

Summer Internship Report

The internship (Summer 2015) under SandHI project was initiated with the concept of interpreting the traditional facts in the modern aspects and correlating the scattered information in a synchronised manner. The investigation started on 18th of May with a team of students; a mix of Under Graduate, Post Graduate and Research Scholars; under the guidance of principle Investigator (SandHI) Prof. Joy Sen. A total of 16 topics were selected for study under this and the final output were individual research papers and exhibition templates depicting the varied topics which are compiled under Report I-SandHI Internship 2015.

The later part of the internship included the survey of Kolkata Metropolitan Area (KMA). It was a reconnaissance survey conducted between 17th and 20th of June. The whole SandHI team was divided in to four sub groups; each lead by one Research Scholar. The group had a mix of four Post Graduate Students and four Under Graduate Students. After reaching the selected nodes, all the groups scattered in various directions to compile a holistic overview of the area. Two groups went along the riverfront and rest groups conducted survey in the interior parts. The whole idea of the exercise is to identify of Spots and Points which have potential for development as tourism nodes. This would be done after a series of analysis (a part of which has been done in this report).

Team Sandhi

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	Bhupendra Kr. Verma
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	K. Vignesh
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	M. Dinesh
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	Priyanka Sahoo
	Purnimah Thota
	Raghava
	Riddha Das
	Sachin Prakash
	Satyendra
	Sawan Kr. Gope
	Shubham Sudhanshu
	Stetson

Team Details

To conduct the reconnaissance survey within the specific time period, the whole SandHI team was divided in to four sub groups. One Research Scholar led the group which consisted of four Post Graduate Students and four Under Graduate Students. The group hierarchy is given below:

RS			
Research Scholars			

PG	PG	PG	PG
Post graduate students (MCP)	Post graduate students (MCP)	Post graduate students (MCP)	Post graduate students (MCP)

UG	UG	UG	UG
Undergraduate students (B. Tech and B. Arch)	Undergraduate students (B. Tech and B. Arch)	Undergraduate students (B. Tech and B. Arch)	Undergraduate students (B. Tech and B. Arch)
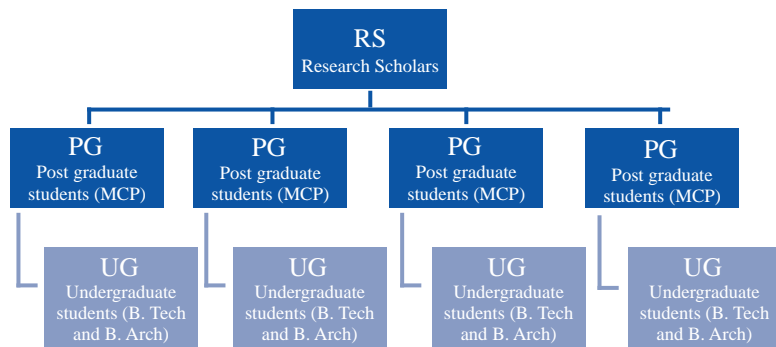
After reaching the selected nodes, all the groups had spread out. Two groups went along the riverfront and remaining groups conducted survey in the interior parts. The main aim of this group division was to capture the essence and diversity of the land river interaction and to identify the image of each place

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Introduction: KMA & Eight Nodes

1.1 Background

It is known historically that civilizations have developed along the water bodies, rivers in particular. The role of water in transport, industry, sanitation and nourishment have founded the reason of human settlement (as noted in 'Urban Waterfront Manifesto'). These rivers have been lifeline of the daily life of our ancestors since long and continue to do so even now. 'Ghats', or stepped embankments which lead us down to the river, act as entrance to these elixirs of life. Not only these help in giving access to water bodies, but also help in giving a unique character to the city which can easily be differentiated from a land-locked city. The potential of developing an urban environment consistent with the vibrancy of river banks is very high.

Development of 'Ghats' gives an economic edge to the city/town and projects it as a more sustainable economic system. These 'Ghats' act as great tourism spots and become endorse of architecture and indigenous cultural character of that particular place. Proper landscaping and urban interventions can lead to enhancement of 'Ghats' as 'Urban Places' where citizens of different age groups can spend their time (recreational activity) and interact with other people (interaction interface). They become hot spots of various activities like festivals, rituals and performing arts which render them as flexible congregation areas - an attribute of great importance in urban planning. Hence it becomes the need of the hour to conserve 'Ghats' for a holistic development of city and provide people a lifestyle unique to that place.

1.2 Riverfront Development

Riverfronts offer urban areas with environmental, economic and aesthetic opportunities. It acts as hub of activities for a wide spectrum of users, residents and tourists alike. These are dynamic platforms which also help define and shape the socio-
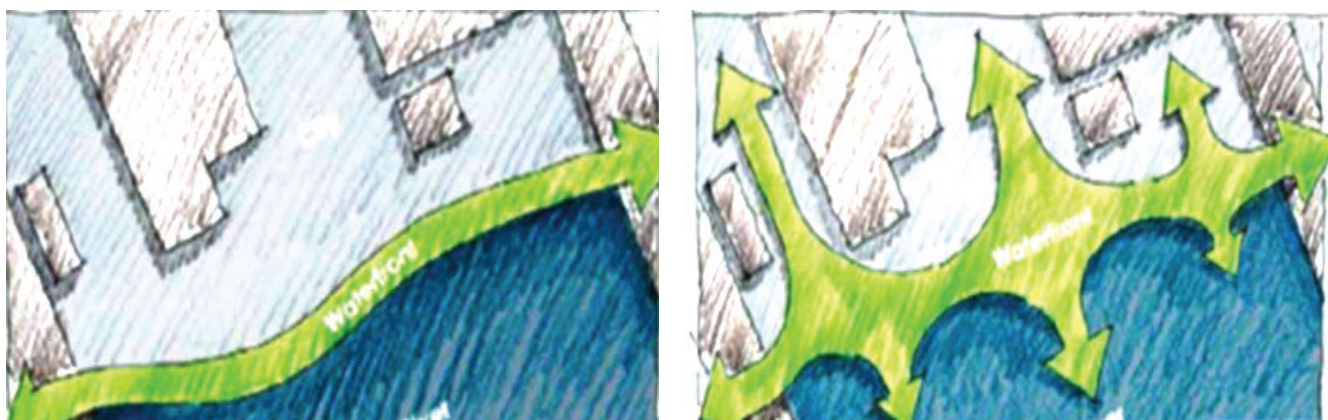
Figure 1: Passive and Active Waterfront (Source: Proposal for Riverfront Development Kanakapura (2012)

economic environment of spaces. Riverfronts, like other waterfronts, embody the socio-political history of development of settlements. In recent past, regeneration or redevelopment of riverfronts has been driven a variety of objectives, economic regeneration; place-making; adding to tourism destinations; creating new recreational spaces for the community. However, many of such riverfront development projects have been short-sighted and have insufficient consideration to ecological preservation of river-edge and environmental quality of water; and to the creative role of the native population who often gets displaced.
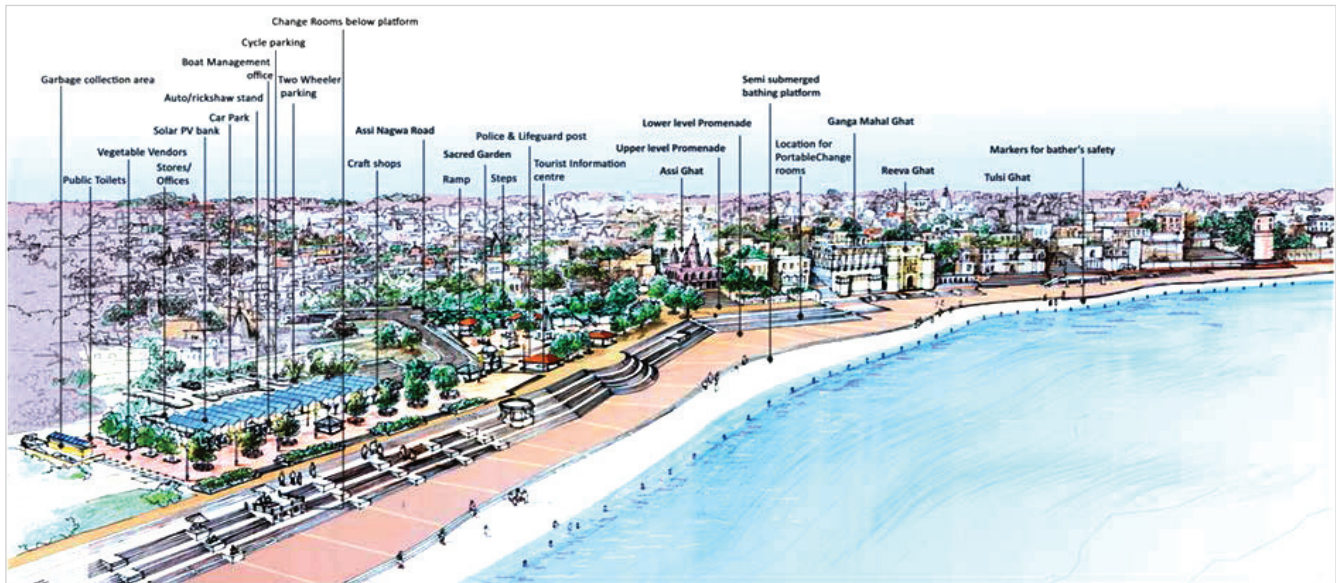
Figure 2: Proposal for Assi Ghat Riverfront Development in Varanasi (Source: PSDA)

1.3 Public Space

A public space is usually a place of congregation within the public realm. It is either a part of a neighbourhood, special districts, waterfront, or other areas that helps promote social interaction and builds a sense of community. Riverfronts pose great potential to develop and function as public spaces.

1.4 Riverfront as Public Space

• Develops human contact and builds social activities.

• Promotes human interaction and community participation.

• Reflects local culture or history.

• Establishes water's edge that is continuous and, publicly accessible.

• Creates a network of public spaces that attract and invite both locals and tourists Strengthens connections along the waterfront on both sides of the river.

• Develops strong link between existing communities and emerging riverfront communities and spaces.

• Improves the aquatic habitat and water quality along the riverfront.

• Coordinates the water usage and supporting land base to maximize the economic, recreational and environmental asset of the riverfront.

1.5 Hooghly Riverfront in KMA

The study area along both banks of River Hooghly in KMA has a unique character owing to its evolutionary history over centuries. The area developed as an industrial and trading hub since late 16th century, as numerous settlements, or colonies, were built by various European Imperial powers along the banks of River Hooghly, namely, Chandannagar (French Colony); Serampore (Danish); Calcutta (present day Kolkata) (British). Thus, historically, the Hooghly Riverfront has been shaped by a palette of socio-economic influences driven by multitude of political strategies; resulting into a cultural milieu nestled along the water-edge. Since then, this region has been the seat of urbanization. This continued post-independence with the delineation of Calcutta Metropolitan Planning Organization (CMPO), present day Kolkata Metropolitan Development Authority (KMDA); and the planned growth of this urban agglomeration. In this context, the riverfront may be seen as a lifeline of this region at a macro level. At micro level, the riverfront is at times the only urban-level public recreational area for these densely packed habitations. Out of the numerous stretches along the river, following eight cases have been selected for Reconnaissance Survey and further detailed study:

- Chandpal Ghat
- Panihati Ghat
- Shyamnagar
- Naihati Ghat
- Bansberia
- Bandel Church Area
- Chinsurah Imambara Complex
- Chandannagar Strand
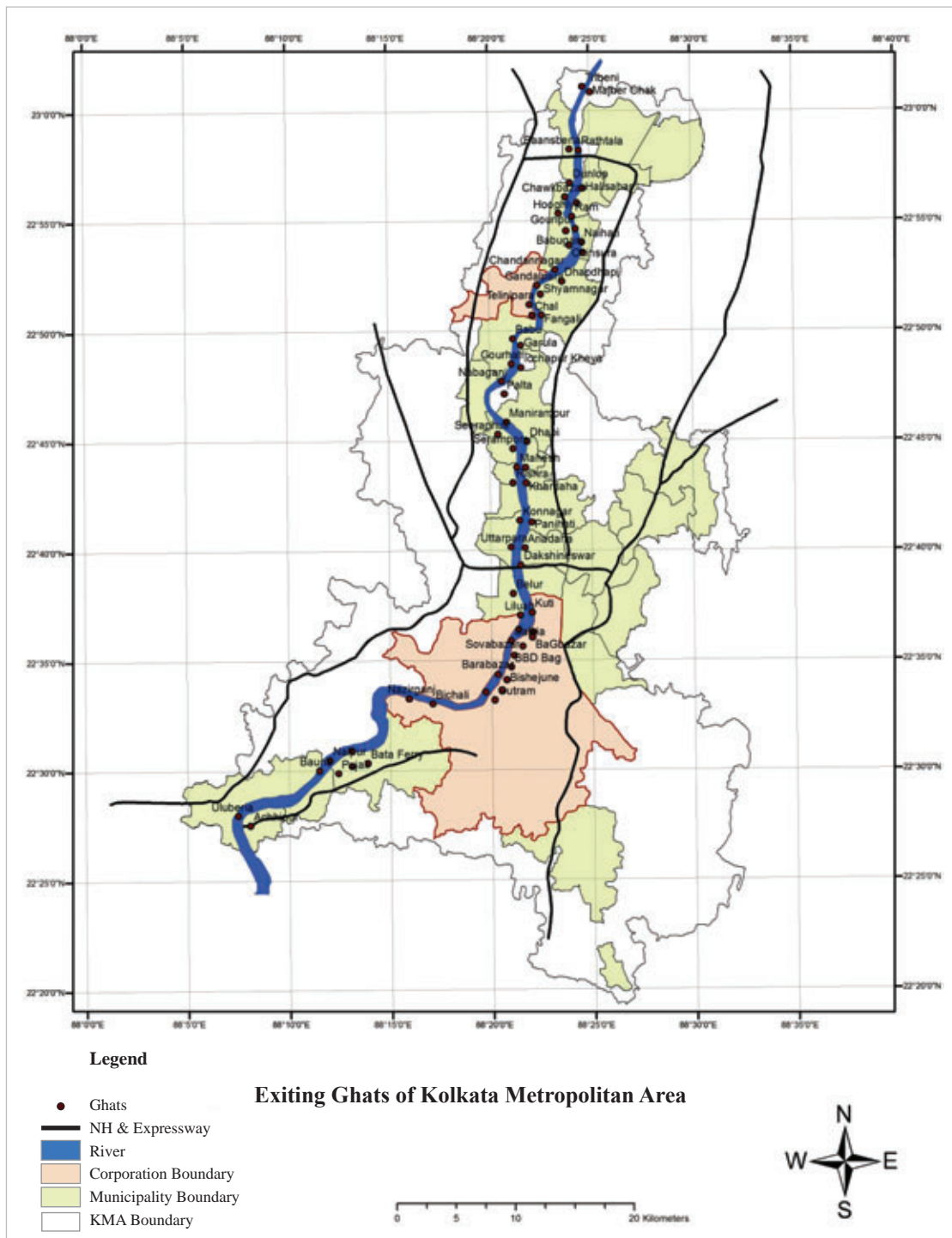
Figure 3: Existing ghats of KMA
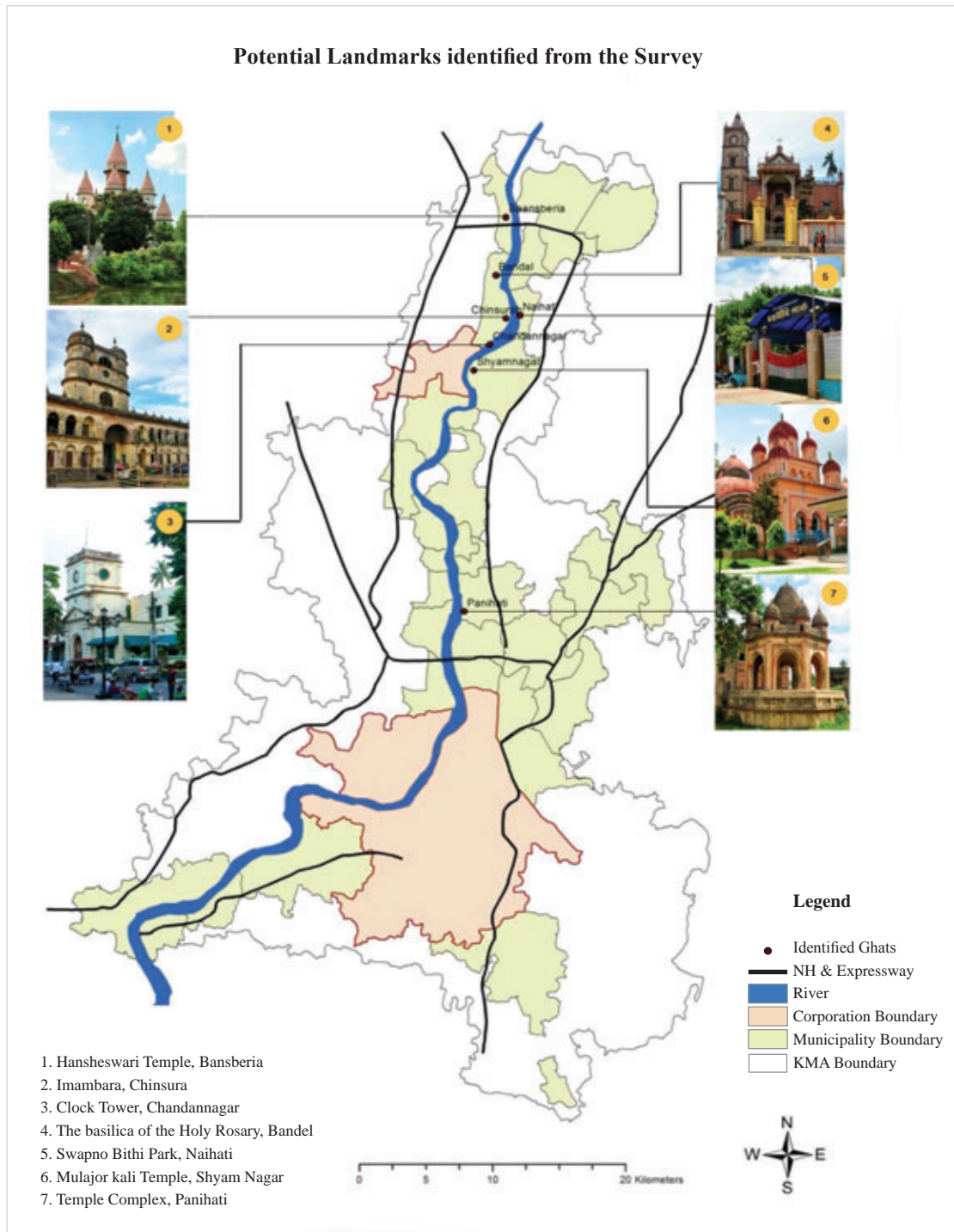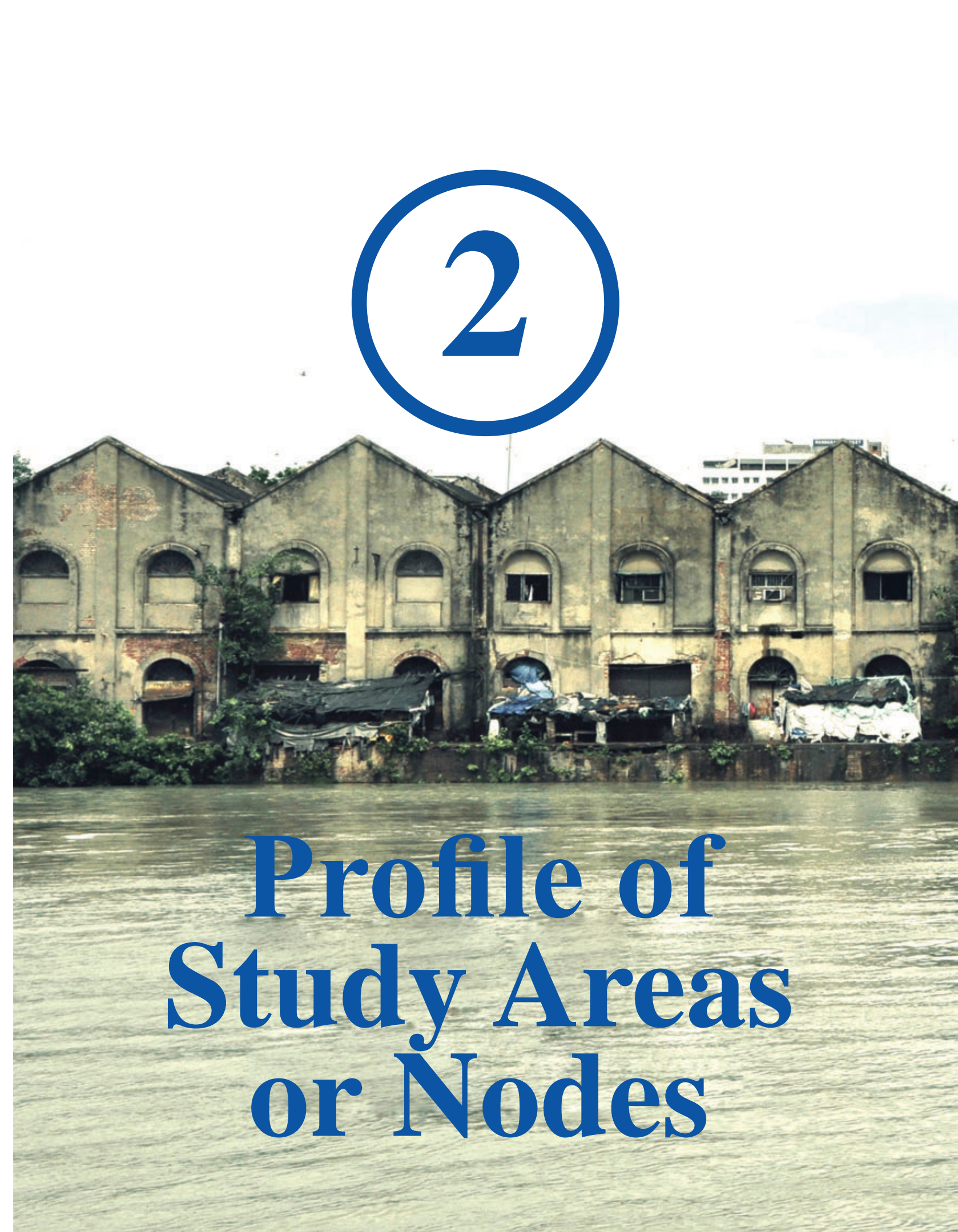
Figure 4: Identification of surveyed nodes

2

Profile of Study Areas or Nodes

2.1 Case Studies

The selected cases have been discussed in detail in the following sections

2.1.1 Chandpal Ghat

Chandpal Ghat is one the ghats on the east-bank of River Hooghly, located in the core of the city of Kolkata, built under British Rule. This ghat is mainly used for transportation purpose. It has two Jetties, one connects with the Howrah Station area and the other connects with Ramkrishnapur and Shibpur Ghats of Howrah. It adjoins the Babu Ghat bus terminus – one of the major access points of Kolkata.

Figure 5: Chadpal ghat

2.1.2 Panihati

Panihati, in north Kolkata is a municipal area under Khardaha/ Ghola Police Stations under Barrackpore City Police. It is one of the oldest residential zones under KMA. The reconnaissance survey has been done around the Ferry ghat area of Panihati. Ferry/Launch service are available across Ganges from 5:00 a.m to 10:30 p.m, at a regular interval of 10 - 15 minutes. Ferry service mainly connects this area with Konnagar.
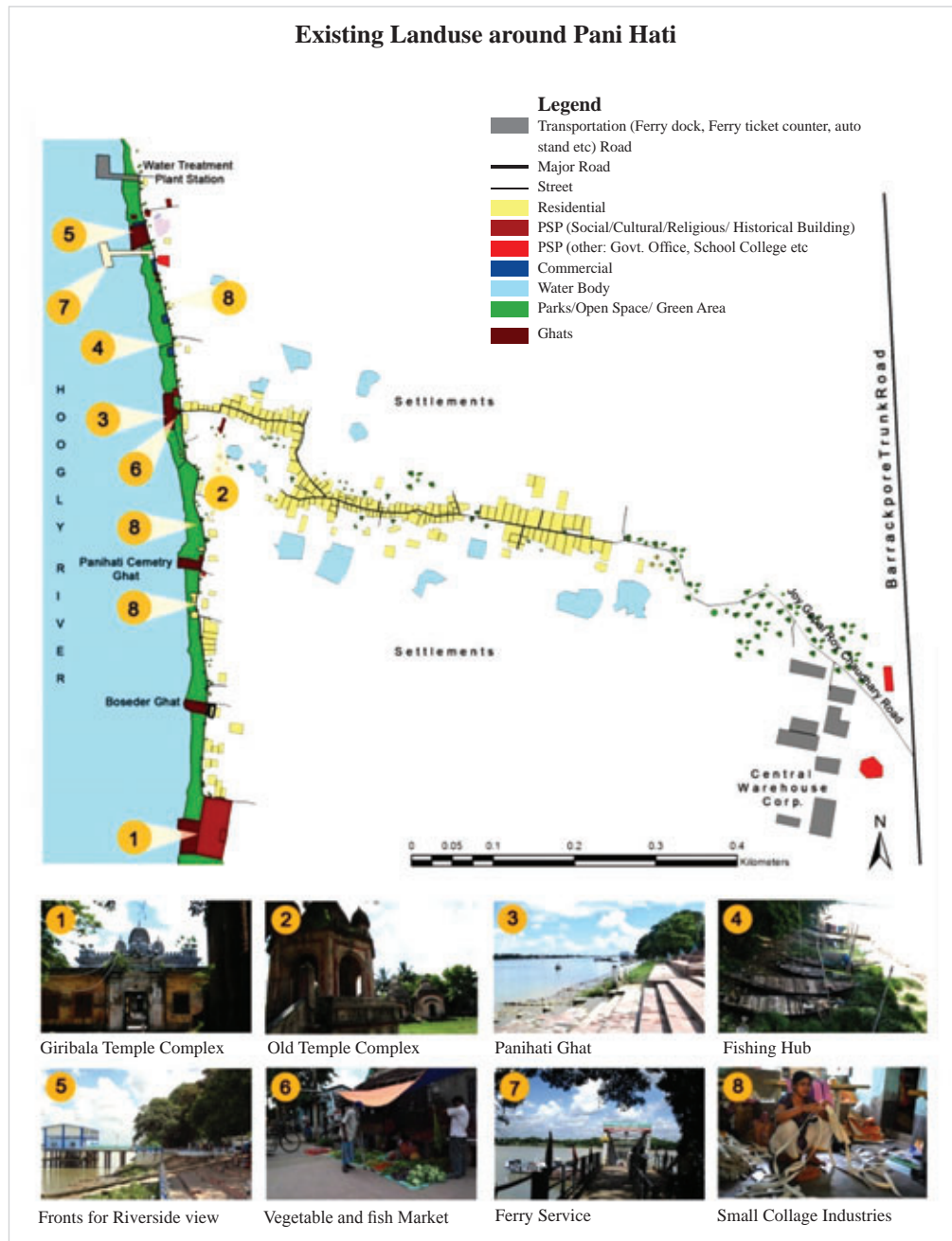
Figure 6: Panihati

2.1.3 Shyamnagar

Shyamnagar is a town situated 30 km away from Kolkata, in the district of North-24 Parganas. It is also considered as one of the major development hubs under KMA. The city spreads linearly along the Hooghly River. In the present time, this place displays an important role to cater the future population of KMA. The survey has been done at the 'Mulajore Kalibari' complex. It is a very famous temple complex, set up by the Tagore family of Jorasanko, Kolkata.

Figure 7: Shyamnagar ghat

2.1.4 Naihati

Naihati is a town, 38 km from the city core and an important railway junction, situated in North-24 Parganas. It was established in 1869 as a municipality. This place is connected to Chinsurah by ferry. The survey has been done in and around the ferry ghat area.

Figure 8: Naihati

2.1.5 Bansberia

The municipal town of Bansberia lies in the Hooghly district, under Chinsurah subdivision. It is at a distance of 4 km from Bandel and lies on the western end of Kalyani Bridge. Some part of the area is covered under KMDA. It used to be one of the main villages of ancient Saptagram. Two famous temples lie in this region and the area covered under this survey includes one of them i.e. Hangseshwari Temple.

Existing Land Use around Bansberia Ghat and Hangseshwari temple complex

Legend
- ▨ Transportation (Ferry dock, Ferry ticket counter, auto stand etc) Road
- ▬ Major Road
- — Street
- ▨ Residential
- ▨ PSP (Social/Cultural/Religious/ Historical Building)
- ▨ PSP (other: Govt. Office, School College etc
- ▨ Commercial
- ▨ Water Body
- ▨ Parks/Open Space/ Green Area
- ▨ Ghats

Hangseshwari Temple

Ananta Basudeba Temple

Moat around the complex

Entrance to the complex

Houses along the road to Ghat

Water bodies are present in plenty

Steps leading to Ghat

One of the Ghat at Bansberia

Figure 9: Bansberia

2.1.6 Bandel

The urban area of Bandel in Chinsurah Mogra blocks was established by Portuguese settlers. It lies in Chinsurah Sub-division of Hooghly District. It is one of the major railway junctions in Eastern Railway and is 40 km from Howrah. In 1660, the Portuguese built a church and monastery in Bandel. The area covered by this survey, is around "Nossa Senhora da Boa Viagem", meaning "Our Lady of the Good Journey" (the church).

Existing Land Use around Bandel Church

1. Bandel Church
2. Don Bosco School
3. Auxilium Convent School
4. St. John's School

Legend

Transportation (Ferry dock, Ferry ticket counter, auto stand etc) Road
Major Road
Street
Residential
PSP (Social/Cultural/Religious/Historical Building)
PSP (other: Govt. Office, School College etc
Commercial
Water Body
Parks/Open Space/ Green Area
Ghats

Side gate of the Church next to the road

Waterbody at the east of church complex

Open space at the east of church complex

Informal shops next to the Church

View of the church from the road

Figure 10: Bandel

2.1.7 Chinsurah

Chinsurah lies on the banks of Hooghly River and is a part of KMDA. In 1865 Hooghly and Chinsurah was merged to form the municipality of Hooghly- Chinsurah. The area has district headquarters and houses of the district court building. The area included in this survey, is the Imambara area of Chinsurah, which makes an important tourist attraction and point of historical importance.

Existing Land Use around Chinsurah

Legend
- Transportation (Ferry dock, Ferry ticket counter, auto stand etc) Road
- Major Road
- Street
- Residential
- PSP (Social/Cultural/Religious/ Historical Building)
- PSP (other: Govt. Office, School College etc
- Commercial
- Water Body
- Parks/Open Space/ Green Area
- Ghats

Aerial view towards Jubilee bridge from clock tower, Imambara

Aerial view towards Hooghly River from clock tower, Imambara

View of Hooghly River from the Ghats

Kids dispersing from Abbott Shishu School situated in front of Imambara

Imambara-Front view the clock tower at the centre of it

Imambara- Internal courtyard water body in the centre

Back face of the Imambara. The Declaration of the Monument is inscribed in the wall

Imambar- Street View

Figure 11: Chinsurah

2.1.8 Chandannagar

Chandannagar is one of the three municipal corporations of KMDA and is located around 35 km north of Kolkata. The riverfront is comparatively much developed by the french settlements in the surrounding area and has many tourism attraction points like, Chandannagar Strand, Patal Bari, Sacred Heart Church, etc. The area under this survey was Chandannagar riverfront/strand area, which is an active public recreational plaza.

Existing Land Use around Chandannagar

Legend
- Transportation (Ferry dock, Ferry ticket counter, auto stand etc) Road
- Major Road
- Street
- Residential
- PSP (Social/Cultural/Religious/ Historical Building)
- PSP (other: Govt. Office, School College etc
- Commercial
- Water Body
- Parks/Open Space/ Green Area
- Ghats

1. Sacred heart church, 1875 (Roman catholic church)
2. St. Joseph's Convent, 1861 (Oldest educational institution
3. Institute De Chandernnagar, 1814, Chandernnagar Museum and Institute
4. Rabindra Bhawan (Rabindra Nath inaugurated the 20th Bengali Literary conference in 1937
5. Chandannagar Strand (Public Place, River front Chandannagar
6. Rani Ghat Chandannagar
7. Clock House, 1850 (Jail)

Figure 12: Chandannagar

3

Analysis

3.1 Survey Details

To understand the liveability pattern of each nodes and its relation to the river system, three indicators has been selected through extensive literature reviews, for the Reconnaissance survey:

- Availability of amenities and facilities along land-river interface.
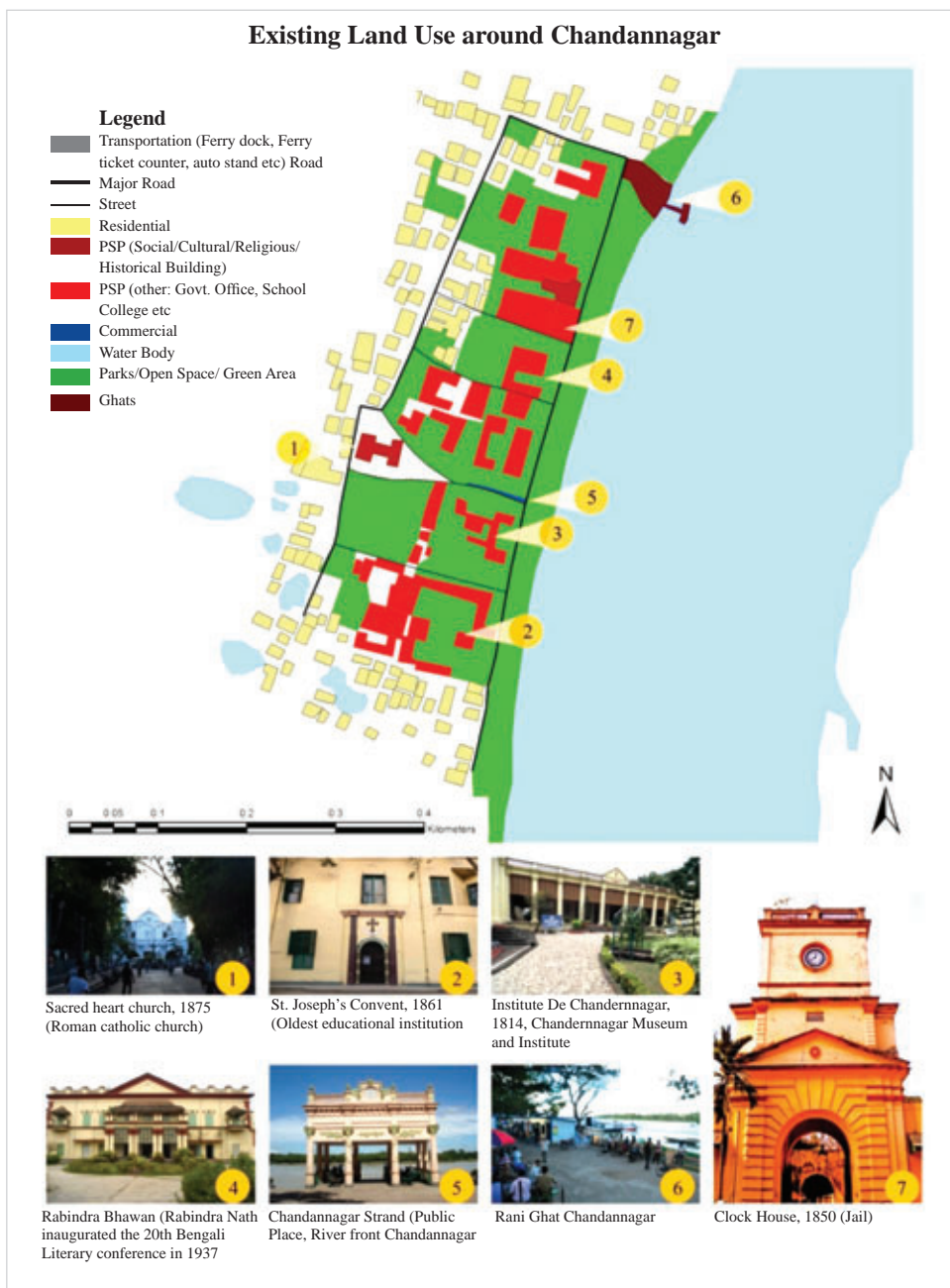- Liveability Criteria, and
- Availability of Infrastructure

The first one, i.e., Assessment of availability/presence of places along the riverside, mainly indicates the area of attractions, which make the place more vibrant. In this indicator, the following parameters have been selected,

- Presence of River Ghats along places of worship.
- Presence of River Ghats along with historical structures
- Presence of River Ghats along with creative communities/settlements
- Presence of historical/heritages structures (monument, Zamindar houses etc.)
- Presence of museums/libraries.

The second indicator is Liveability Criteria, which deals with the factors to boost up the quality of life of that area. In this case we divide it in three parts, mainly Physical criteria, Cultural criteria and Tourism based criteria. The following parameters have been chosen,

- Physical Criteria
  - Availability of parks
  - Availability of natural green areas
  - Availability of water bodies
- Cultural Criteria
  - Presence of cultural industries (cottage/creative)
  - Presence of local performing arts/art centres/ art organizations
  - Tourism Based Criteria
  - Presence of Hotels/guest house/lodges
  - Presence of Restaurants & cafes (formal)
  - Presence of Road side Dhabas/ food stalls (informal)

The third indicator is the Availability of infrastructure, which indicates the basic physical, social and organizational structures and facilities of the area. This indicator mainly helps to build the social cohesion. In this case we divide into two categories, namely Logistics, counts the accessibility and connectivity of that area, and Services & Utilities, counts the system of supplying a public needs.

- Availability of Infrastructure
  - Cleanliness of the streets
  - Accessibility of the streets (side lanes/ alley)
  - Availability of buses

- ○ Availability of taxi/autos/vans/rickshaw (Paratransit)
- ○ Availability of water transportation facilities (ferries/jetties)
- • Services & Utilities
  - ○ Availability of Parking facilities
  - ○ Availability of footpaths
  - ○ Presence of waste-yards/ garbage bin
  - ○ Availability of retail shopping (small scale)
  - ○ Ganga Action Plan facility (office/branch)
  - ○ Municipal facilities (office/jetty tickets counter)
  - ○ Other organizations (ngo/cbo/clubs/others)

3.2 Survey Design:

In this Reconnaissance Survey, mostly an examination of a part of an area has been conducted with a detail generalization of the presence and utilization of existing resources along the river interfaces. Three methods have been taken for completion of this study:

- • Survey Description.: A detailed questionnaire survey to describe the existing situation of the study area. To scaling responses in survey research, Likert scaling approach has been used.
- • Delineation. Mapping is another way to illustrate the area of potential effects.
- • Photographs: Photographs were taken showing the existing situations of the study area, existing cultural resources, available facilities and services etc.

Table 1: Comparative study of the eight nodes, KMA

Indicators	Categories	Parameters	Chadpal Ghat	Panihati	Syamnagar	Naihati	Bansberia	Bandel	Chinsurah	Chandannagar	Overall mean values
Assessment of availability/presence of places along the riverside	Attractions	Presence of River Ghats	3.50	3.75	2.50	3.50	2.75	2.50	1.25	4.25	3.00
		Presence of River Ghats along with Temple/Mosque/Church/others	3.00	3.50	4.25	2.50	3.25	3.25	3.25	4.50	3.44
		Presence of River Ghats along with historical structures	2.50	2.75	2.00	1.75	2.25	2.50	2.75	3.00	2.44
		Presence of River Ghats along with creative communities/settlements	1.25	1.75	1.25	1.25	1.50	2.25	1.50	2.00	1.59
		Presence of historical/heritages structures (monument, zamindari house etc)	1.75	2.50	2.25	1.25	3.00	2.25	2.50	2.50	2.25
		Presence of museums/libraries	2.00	1.50	2.00	1.25	1.75	2.00	1.75	3.25	1.94
Livability Criteria	Physical	Availability of parks	2.25	2.75	2.50	4.00	1.50	1.75	1.50	3.50	2.47
		Availability of natural green areas	1.50	2.50	1.75	3.25	2.75	2.75	1.50	3.50	2.44

Availability of Infrastructure											
Cultural	Availability of water bodies	1.25	2.00	1.00	1.25	3.00	1.50	1.25	1.75	1.63
	Presence of cultural industries (cottage/creative)	1.50	2.50	1.00	1.25	1.50	1.25	1.75	1.75	1.56
	Presence of local performing arts/ art centres/ art organizations	1.75	2.00	1.75	1.75	1.25	1.75	1.50	2.25	1.75
Tourism Based	Presence of Hotels/guest house/lodges	2.75	2.25	1.75	1.50	1.25	1.50	1.75	2.50	1.91
	Presence of Restaurants & cafes (formal)	3.00	1.50	2.00	1.25	1.25	2.50	1.75	2.50	1.97
	Presence of Road side Dhabas/ food stalls (informal)	3.75	2.50	2.50	2.75	2.75	2.50	2.50	3.50	2.84
Logistics	Availability of motorable road	4.75	2.75	2.75	3.25	3.75	2.75	2.75	4.50	3.41
	Accessibility of the streets (side lanes/ alley)	3.75	2.50	2.75	3.50	2.50	2.75	3.00	4.25	3.13
	Cleanliness of the streets	3.75	2.25	2.75	3.50	3.75	2.50	2.50	3.75	3.09
	Availability of buses	4.25	3.00	3.00	2.25	2.00	1.75	1.75	2.25	2.53
	Availability of taxi/autos/vans/ rickshaw (Para transit)	4.50	3.50	3.75	3.25	3.00	2.50	3.00	4.00	3.44

Indicators	Categories	Parameters	Chadpal Ghat	Panihati	Syamnagar	Naihati	Bansberia	Bandel	Chinsurah	Chandannagar	Overall mean values
	Services & Utilities	Availability of water transportation facilities (ferries/jetties)	4.50	3.75	3.75	2.50	1.75	1.50	2.25	4.25	3.03
		Availability of Parking facilities	2.50	1.50	1.75	2.75	2.25	2.50	3.50	3.25	2.50
		Availability of footpaths	4.00	1.00	1.00	1.00	2.25	1.25	1.25	4.50	2.03
		Presence of waste-yards/garbage bins	2.25	2.25	1.75	3.00	1.50	2.00	2.25	2.00	2.13
		Availability of retail shopping (small scale)	2.50	2.75	3.75	2.25	2.00	2.25	3.25	1.75	2.56
		Availability of street lights	3.75	2.75	3.00	3.25	4.00	2.25	3.25	4.25	3.31
		Ganga Action Plan facility (office/branch)	1.25	1.00	1.50	1.00	2.75	1.00	1.50	1.00	1.38
		Municipal facilities (office/jetty tickets counter)	3.75	3.00	4.00	1.50	2.75	1.00	3.00	3.25	2.78
		Other organizations (NGO/CBO/clubs/others)	2.75	2.50	3.25	2.00	2.50	1.75	1.75	2.25	2.34

3.3 Survey Results

After the Reconnaissance Survey, the whole data set has been compiled in the above mentioned format. From this data set, the mean value of each observation for every parameter has been calculated. Node wise comparative analyses have been formulated. To evaluate the existing condition of these surveyed nodes, mean of every parameter has been compared with the sample mean. To evaluate social and cultural importance of the surveyed nodes and their interaction with the land-river interface, data has been analysed on the basis of above mentioned twenty seven parameters. From the survey, the following facts have been observed,

- River ghats are the common phenomena for the eight surveyed nodes, but from the point of view of existing situation of ghats, the mean values of Chandpal Ghat, Panihati and Chandannagar are greater than the overall mean value.

Figure 13: River ghats and heritage assets, Chadpal Ghat

Figure 14: River ghats and heritage assets, Panihati

Figure 15: River ghats and heritage assets, Shyamnagar

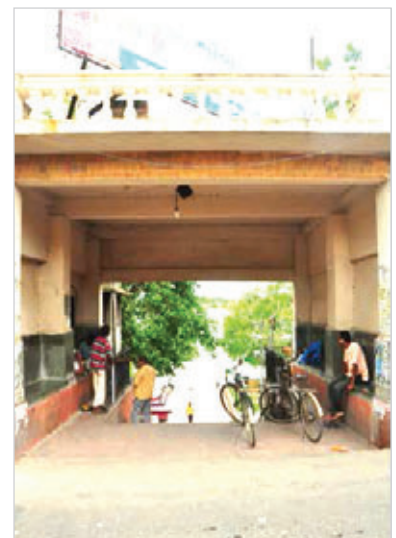Figure 16: River ghats and heritage assets, Naihati

Figure 17: River ghats and heritage assets, Bansberia

Figure 18: River ghats and heritage assets, Bandel

Figure 19: River ghats and heritage assets, Chinsurah

Figure 20: River ghats and heritage assets, Chandannagar

- Historical and cultural structures (mainly temples) in and around the surveyed nodes have been found. But in Bandel and Chandannagar churches have found near the river ghats and in Bansberia, Imambara has been noticed. On the basis of this parameter, an appropriate comparison has been conducted, between the east and west ghats of river Hugli. A number of places of worship are prominently located close to the riverfront; for instance, the number of temple-structures at the 'ghats'; churches at Bandel and Chandannagar; Imambara at Chinsurah (Refer Figure 13 to Figure 20). With the emerging colonies of European nations with a majority on the western bank of River Hooghly, Christian churches are located there; in addition to , Hindu temples dotting both the banks and predominantly the eastern bank, except the stretch of British colony of Calcutta (Refer Figure 21).

Strand
Chandannagar

Zamidar House, Bansberia

The Sacred Heard Church,
Chandannagar

Mulajar Kali Temple
Shyamnagar

Bandel Church,
Bandel

Hugli Imambara, Chinsurah

Hanseswari Temple

Basudev Temple, Bansberia

Rasmanch, Panihati

- From the point of view of presence of historical/heritage structures, most of the former colonial structures have been found on the western bank of river Hugli, namely Chinsurah (Dutch Settlement), Chandernagore (French Settlement), Bandel (Portuguese Settlement), whereas on the eastern side British Colonial fabrics have been found. (Refer Figure 13 to Figure 20).

- Along the river stretch, in all the surveyed nodes, various building forms have been noted, like mansion, heritage structures, temples etc. The nodes at Panihati, Bansberia, Chinsurah and Chandannagar have mean observatory values higher than the overall mean.

- Chandpal Ghat area, Chandannagar, Syamnagar and Bandel have library facilitates and presence of museums in a better setting than at the other four nodes.

- The ghats were surveyed on the basis of seven broad criteria. One of them is the liveability criteria consisting of three parameters. These were divided into physical, cultural and tourism based heads. 'Physical' parameter consisted of the following variables: availability of parks, availability of natural green areas. 'Cultural' parameter consisted of following sub-parameters: presence of cultural industries (cottage/creative), presence of local performing arts (Refer Figure 22). 'Tourism based' consisted of following sub parameters: Presence of hotels/ guest houses/ lodges, presence of cafés and restaurants, and presence of roadside 'dhabas' or food stalls. Upon analysing the observations, it may be concluded that Panihati and Chnadonnagore score higher than average on the all the parameters of liveability criteria (refer Table 1).

- Infrastructure is the backbone of any economic subsystem. Ghats being an economic system, were surveyed under these criteria. The parameter chosen for this criterion were 'Logistics' and 'Services and utilities'. (Refer Figure 22) The sub-parameters under this category were as follows: availability of motor-able road, accessibility of the streets (side lanes/ alleys), cleanliness of streets, availability of buses, availability of taxi/autos/vans/rickshaw (para-transit), and availability of parking facilities (ferries/jetties). Under this criterion, Chandpal Ghat scores higher than average in almost all the sub-parameters. It is followed by Chandannagore which scores fairly above average in all but one sub-parameter (Refer Table 1).

River Ghat, Panihati

Chandpal Ghat

Slum, Chinsurah

Panihati

Ferry Ghat, Naihati

Bandel

Chandannagar

Shyamnagar

- In the Survey, Ghats were also surveyed on the criterion of their provision of services and utilities. The following sub-parameters were included under it: Availability of parking facilities, availability of footpaths, presence of waste-yards/garbage bin, availability of retail shopping (small scale), availability of street lights, Ganga Action Plan facility (office/branch), Municipal facilities (office/ jetty tickets counter) and other organizations (NGO/CBO/clubs/others). Chandpal Ghat and Chinsurah ghat score above average in this parameter. (Refer Table 1).

From the primary observation, a SWOT analysis has been conducted.

3.4 SWOT Analysis

Chandpal Ghat	Strengths	Weaknesses	Opportunities	Threats
	• Good connectivity with the city and its peri-urban areas. • Presence of all modes of transportation. (trains, trams, buses and ferries) • Presence of bus terminus • Presence of administrative units along this area. • Presence of market areas. • Heritage Assets	• No designated waste collection points. • Footpath occupied by the informal vendors. • No proper signal system along the railway track near the ferry ghat. • Lack of ancillary facilities along with the bus terminus. • Absence of mixed-use development in adjoining areas. • Poor illumination.	• Availability of physical and social infrastructure. • Organization of informal market into an active waterfront development • Potential for development of public spaces and recreational areas • Increment in mixed use areas.	• Increment in crime rate • Accident prone stretch. • Environmental degradation of the river edge owing to unregulated dumping of waste.
	• Presence of heritage assets (Temples, Rasmanch, Zamindari house) • Availability of ferry service. • Presence of informal markets along the river. • Residential area surrounding the ghat. • Presence of para-transit facilities.	• Absence of parking areas. • Roads connecting the highway are narrow. • Absence of ATM outlet. • Absence of physical infrastructure.	• Restoration of the Rasmanch and the temple complex. • High tourism potential.	• Environmental degradation of the river edge owing to unregulated dumping of waste.

	Strengths	Weaknesses	Opportunities	Threats
Shyamnagar	• Presence of heritage structures (Kali Temple). • Presence of market facilities. • The temple precinct has conducive buffer spaces which provide an ambience for public interaction/can act as interactive spaces. • Availability of open spaces.	• No waste dumping site. • Poor conditions of the river ghat. • The ferry terminal is not well-developed. • The road leading to the ghat is narrow. • The road condition around the temple area is not in good condition.	• Development of infrastructure for the ferry terminals. • Betterment of ghat area. • High tourism potential. • Formal market should be formulated.	• Congestion on narrow roads leading to the Ghat
Naihati Ghat	• Presence of ferry services. • Presence of formal market around the ghat area. • Presence of an amusement-cum-nature park. • Well connected with the surrounding areas. • Presence of cultural centres. • Presence of paratransit facilities.	• Ghats used as dumping sites. • Traffic congestion near the market area. • Lack of parking space	• Awareness values to be promoted. • Betterment of ghat area.	• Environmental degradation of the river edge owing to unregulated dumping of waste.

	Strengths	Weaknesses	Opportunities	Threats
Bansberia	• Presence of cultural legacy. • Presence of a well maintained river ghat. • The road leading to the ghat is wide, well maintained, accessible and clean. • The city scape is pleasant. • Informal market is found along the river ghat. • Presence of historical monuments. • Presence of street lights.	• Connectivity with the arterial linkages is poor. • Lack of formal retail market. • Narrow roads. • No waste dumping site. • Lack of formal lodging facilities.	• Improved the ferry terminal. • High tourism potential • Improved physical infrastructure.	• Increment in crime rate.
Bandel	• Presence of heritage assets from Colonial Era (Portuguese). • Parking facilities available around the Church. • Presence of informal market. • Connectivity with the arterial roads is good. • Presence of formal lodging facilities. • Availability of ferry service.	• Narrow inner roads. • Low lying area. • No waste dumping site. • Low maintenance of backwater area. • Dumping waste product at the river ghats, also generates environmental pollution	• High tourism potential. • Improved physical infrastructure.	• Environmental degradation of the river edge owing to unregulated dumping of waste

	Strengths	Weaknesses	Opportunities	Threats
Chinsurah	• Presence of heritage structure (Imambara). • The roadside near Imambara is broad and well maintained. • Presence of parking facilities. • The ferry terminal and river ghat is well maintained. • Presence of paratransit facilities.	• Poor maintenance of Imambara. • The river ghat, behind the Imambara, doesn't maintain properly by the authority. • Presence of slums around the Imambara. • Poor condition of sub arterial roads.	• High tourism potential • Provision of public spaces.	• Environmental degradation of the river edge owing to unregulated dumping of waste
Chandannagar	• Well maintained river ghat. • Presence of public spaces along the Strand. • Availability of civic infrastructure. • Presence of formal market around the river ghat. • Presence of Chandannagar to Jagatdal ferry terminal. • Availability of physical and social infrastructure. • Presence of heritage assets from Colonial Era (French). • Institutional and cultural club.	• Absence of waste bins along the Chandanagar Strand. • Absence of bus facilities. • Lack of parking facilities.	• Active public recreation and cultural hub of the urban area and the region. • High tourism potential.	• Extension of the promenade difficult. • Environmental degradation of the river edge owing to unregulated dumping of waste.

4.1 Conclusion

Based on the reconnaissance survey conducted at eight prominent ghats and their adjoining areas, a set of observations can be drawn:

- Riverfronts with stepped embankments, or 'ghats' (in Bangla and Hindi) are active nodes at the selected study-areas. 'Ghats' with ferry-services (water-transit points) are major transit nodes here. However, in most of the cases, roads connecting these urban areas to the 'ghat' being narrow result in traffic congestion. Hence, a major redesigning of the road-network need be conducted so as to ease connectivity to the water-transit points, and consequently promote cleaner mass-transit alternative of water-transport, instead of over-reliance on road-transport.

- Riverfronts or 'ghats' have evolved as active public recreational areas / nodes in these towns. Appropriate design, development and monitoring of such public-places need be conducted; e.g. design of an active riverfront dotted with recreational activity-hubs or centres; pedestrianism of roads adjoining the river-edge; maintenance of cleanliness at 'ghats'; etc. Active riverfronts, if adequately designed and maintained may help in building a civic identity and add to the assets of tourism based on land-river interface.

- Comparing the eight designated cases, upon the selected set of criteria, it may be argued that Chandannagar, Bansberia and Chandpal Ghat are better facilitated in comparison to the rest of the cases.

- A variety of heritage resources, in terms of architectural, historical (owing to Colonial history, distinct to each study area), and cultural heritage, are aplenty in these areas close to the riverfront; and hence, may add to tourism-assets of the place.

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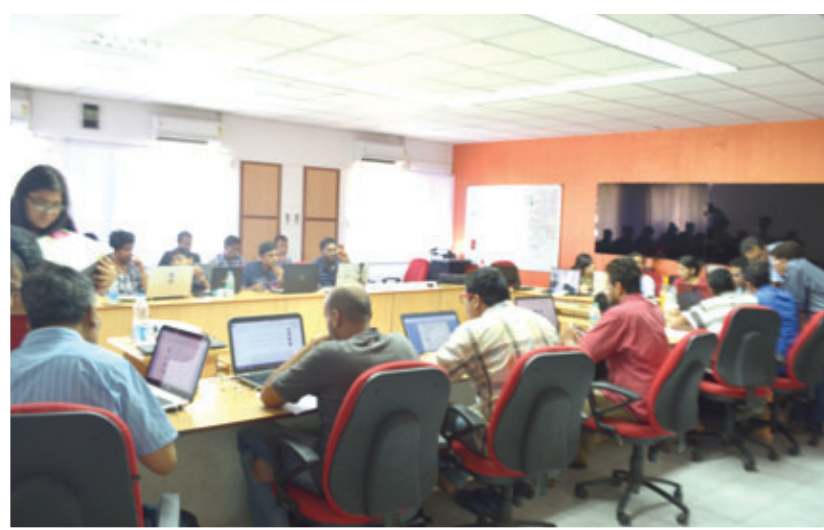
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4.3 Questionnaire

Indicators	Categories	Parameters	VL 1	L 2	M 3	H 4	VH 5
Assessment of availability / presence of places along the riverside	Attractions	Presence of River Ghats					
		Presence of River Ghats along with Temple/Mosque/Church/others					
		Presence of River Ghats along with historical structures					
		Presence of River Ghats along with creative communities/settlements					
		Presence of historical/heritages structures (monument, zamindari house etc)					
		Presence of museums/libraries					
Livability Criteria	Physical	Availability of parks					
		Availability of natural green areas					
		Availability of water bodies					
	Cultural	Presence of cultural industries (cottage/creative)					
		Presence of local performing arts/art centres/ art organizations					
	Tourism Based	Presence of Hotels/guest house/lodges					
		Presence of Restaurants & cafes (formal)					
		Presence of Road side Dhabas/ food stalls (informal)					
Availability of Infrastructure	Accessibility	Availability of motorable road					
		Accessibility of the streets (side lanes/ alley)					
		Cleanliness of the streets					
		Availability of buses					
		Availability of taxi/autos/vans/rickshaw (Paratransit)					
		Availability of water transportation facilities (ferries/jetties)					
	Services & Utilities	Availability of Parking facilities					
		Availability of footpaths					
		Presence of waste-yards/ garbage bin					
		Availability of retail shopping (small scale)					
		Availability of street lights					
		Ganga Action Plan facility (office/branch)					
		Municipal facilities (office/jetty tickets counter)					
		Other organizations (NGO/CBO/clubs/others)					

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