

CHAPTER-01
BACKGROUND OF THE PROJECT

CHAPTER-02
STUDY AREA PROFILE

CHAPTER-03
MOBILIZATION AND RECONNAISSANCE SURVEY

CHAPTER-04
WORK PROGRAMME AND MANNING SCHEDULE

CHAPTER-05
WORK PROGRESS AND CONCLUSION

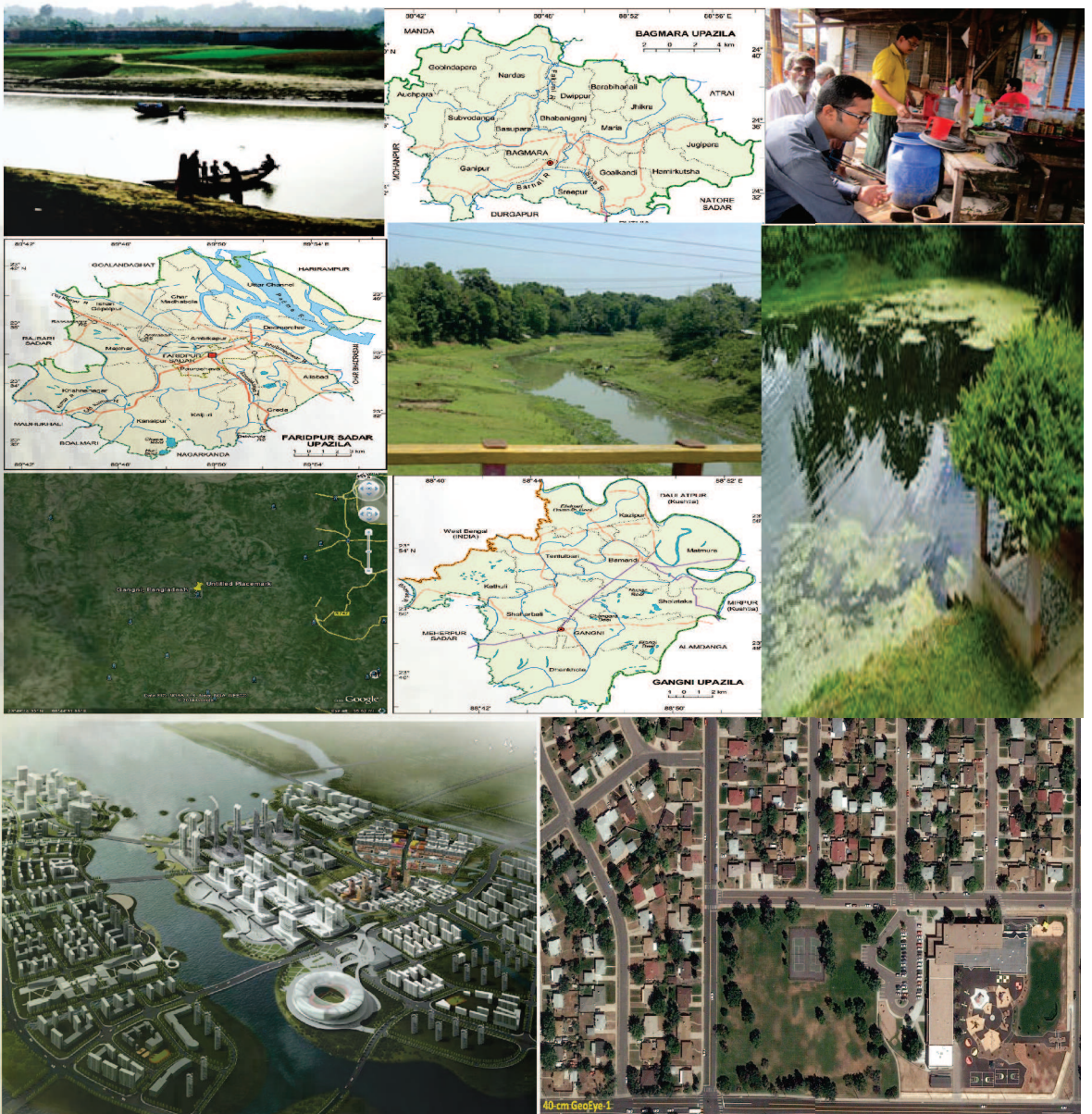


Government of the People's Republic of Bangladesh
MINISTRY OF HOUSING AND PUBLIC WORKS
Urban Development Directorate (UDD)
 82, Segunbagicha, Dhaka-1000.

MOBILIZATION REPORT

For

Preparation of Development Plan for **Package-3**; Bagmara Upazila (363.3 sq km), District-Rajshahi; Faridpur Sadar Upazila (407.02 sq km), District-Faridpur & Gangni Upazila (341.98 sq km), District- Meherpur; Total area of 1122.3 sq. km



Submitted by

Engineering Consultants and Associates Ltd

154, Monipuripara, Farmgate, Tejgaon, Dhaka-1215

Phone: 8116214 9111277 9110176 Fax: 88 02 8119761

e-mail: ecalimited@yahoo.com, ecalimitedbd@gmail.com

June 2015



Preparation of Development Plan for Fourteen Upazilas
Package-3;
Bagmara Upazila, District-Rajshahi, Faridpur Sadar Upazila, District:
Faridpur & Gangni Upazila District- Meherpur.

Mobilization Report
Main Report
June, 2015



ENGINEERING CONSULTANTS & ASSOCIATES LTD.

154, Monipuripara, Farmgate, Tejgaon, Dhaka-1215.

Phone: 8116214, 9110176, 9111277 Email: ecalimited@yahoo.com; ecalimitedbd@gmail.com

Executive Summary

Bangladesh is a small south Asian country having high population density of 1019 persons per km² (UN Data, 2011) and rapid population growth. The urban area of Bangladesh is facing rapid horizontal expansion due to rapid population growth in all urban areas all the country. The present trend of planning practice is mostly oriented towards planning of cities and towns in Bangladesh. This involves huge amount of financial allocation/grants every year for the development and improvement of urban facilities and utility services for only 20% of the country's population living in the urban areas. In the government's recent policy for overall administrative reorganization, the upazila has been recognized as the most significant tier of administration. So that these areas are need to be planned and developed to accommodate all social, economic, administrative, infrastructure services and service facilities for the region. The current government's intention is to reflect the national policy of bringing development administrative and service facilities to the door step of rural masses and to ensure better delivery of government services to the people. Realizing the fact and importance of formulating development plans for upazilas, Urban Development Directorate has come up with a great initiative to plan those areas. At the first phase of this initiative UDD has decided to prepare development plan for 14 upazilas all over Bangladesh into five different packages. For each package separate consultancy team has been appointed to carry out that job more fruitfully. ECAL has been selected for package-3 (covering Bagmara Upazila, Dist: Rajshahi; Faridpur Sadar Upazila, Dist: Faridpur; and Gangni Upazila, Dist: Meherpur) by project evaluation committee of UDD. The official agreement has been signed between UDD and ECAL on 10th June, 2015 in presence of high officials of UDD and witnesses from both sides.

Bagmara, the biggest upazila of Rajshahi Zila in respect of population, came into existence in 1869 as a thana and was upgraded to upazila in 1983. The upazila occupies an area of 366.26 Sq.km. It is located between 24° 30' and 24° 41' north latitudes and between 88° 41' and 88° 58' east longitudes. The Upazila is bounded on the north by Manda Upazila and Atrai Upazila of Naogaon Zila, east by Atrai Upazila and Natore Sadar Upazila, south by Puthia Upazila and Durgapur Upazila and west by Mohanpur Upazila. Bagmara (Town) located at Bhabaniganj, stands on the bank of the river Fakinni.

Faridpur Sadar came into existence as a thana in 1894. The upazila occupies an area of 412.86 sq.km. It is located between 23° 29' and 23° 34' north latitudes and between 89° 43' and 89° 56' east longitudes. The upazila is bounded on the north by Goalanda upazila of Rajbari zilla and Shibalaya and Harirampur upazilas of Manikganj zila, on the east by Char Bhadrassan upazila, on the south by Nagarkanda and Boalmari upazilas and on the west by Madhukhali upazila and Rajbari Sadar upazila of Rajbari zila.

Gangni Upazila (meherpur district) area 341.98 sq km, located in between 23°44' and 23°52' north latitudes and in between 88°34' and 88°47' east longitudes. It is bounded by daulatpur (kushtia) upazila on the north, alamdanga and meherpur sadar upazilas on the south, Daulatpur (Kushtia), mirpur (Kushtia) and' Alamdanga upazilas on the east, Meherpur Sadar upazila and west bengal state of India on the west.

This mobilization report consists of five chapters and eight appendices.

Chapter-1 mainly describes the initial background history, objective, scope of services, understanding the project, reporting schedule etc.

Chapter-2 is mainly stands for describing all the social, geographical, demographic, geological, administrative, landuse, hydrological and so on information of these study areas which will pave the base line profile information.

Chapter-3 is to attend the project schedule is to mobilize the team in to study area and conduct reconnaissance survey including required amount of stakeholder meetings and personal discussions. This chapter is mainly stands for reflecting the whole procedure including outcomes of mobilization meeting and reconnaissance survey.

Package-3 covers three different upazila at different parts of Bangladesh, which are also mutually long distant from each other. So it was very hard for the team to conduct reconnaissance survey in each areas within shortest period of time as well as sending the same in each areas. Realizing the fact, the consultant had formed one different team for each area, total three teams to conduct mobilization meeting and reconnaissance survey. These teams are formed with reserved urban planners of ECAL, proposed key experts and support experts. All the team are supervised by senior members of the team.

Chapter- 4 briefly discusses different types of management plan from consultant point of view such as manning schedule, work schedule, deployment of key experts, task and responsibility distribution, specific and highlighted future plan of the project etc.

Chapter-5 mainly shows the consultant progress of work as well as initiative for being ahead of time including the concluding remarks.

Country like Bangladesh where population burden is excessive and resources are limited, it carries more importance than any others. Since late 80's administrative and spatial pattern of Bangladesh has experienced rapid change in urbanization, specially because declaration of new areas as urban centers, cities, upazilas etc. Past experience shows that in context of Bangladesh rural-urban mix approach is the best suitable one to move forward. Unfortunately most of these new emerging areas including the old one don't have any specific development plan results lot of complicacy and conspiracy for executing any development programs there. Urban Development Directorate has come out with an appreciable initiative to formulate plan for those areas which are not highlighted too much centrally but have that potential to play a great role in national affairs. Being a part of that project ECAL express their hearty gratitude to UDD and other responsible persons and organizations for the initiative. Again, the team do believe that whenever the plan will be completed it will more easily for central and local authority for defining their acts, roles and responsibilities. It will certainly reflect a great positive change in development pattern for those areas added.

Table of Contents

	Page No.
EXECUTIVE SUMMARY	II
TABLE OF CONTENTS	IV
LIST OF FIGURES	VIII
LIST OF TABLES	IX
LIST OF MAPS.....	X
LIST OF PHOTOS.....	XI
LIST OF APPENDICES	XIII
LIST OF ABBREVIATIONS	XIV
CHAPTER-1.....	1
BACKGROUND OF THE STUDY.....	1
1.1 BACKGROUND OF THE PROJECT	1
1.2 UNDERSTANDING THE ASSIGNMENT	3
1.3 OBJECTIVES OF MOBILIZATION REPORT	4
1.4 UNDERSTANDING OF THE SCOPE OF SERVICES	6
1.5 OBJECTIVES OF MOBILIZATION REPORT	8
1.6 SCOPE OF MOBILIZATION REPORT	9
CHAPTER-2.....	10
STUDY AREA PROFILE	10
2.1 INTRODUCTION	10
2.2 BAGMARA UPAZILA, RAJSHAHI.....	11
2.2.1 <i>Brief Description of the Project Area</i>	11
2.2.2 <i>Area and Location</i>	11
2.2.3 <i>Administrative/Geographic Unit</i>	11
2.2.4 <i>Housing and Household Characteristics</i>	12
2.2.5 <i>Source of Drinking Water</i>	12
2.2.6 <i>Sanitation</i>	12
2.2.7 <i>Access to Electricity</i>	12
2.2.8 <i>Population Characteristics</i>	13
2.2.9 <i>Literacy and Education</i>	14
2.2.10 <i>Education</i>	15
2.2.11 <i>Water bodies Main River</i>	15
2.2.12 <i>Archaeological Heritage and Relics</i>	15
2.2.13 <i>Institutions</i>	15
2.2.14 <i>Educational institutions</i>	15
2.2.15 <i>Newspapers and Periodicals</i>	15
2.2.16 <i>Cultural Organizations</i>	15
2.2.17 <i>Main Sources of Income</i>	16
2.2.18 <i>Ownership of Agricultural Land</i>	16

2.2.19 Main crops	16
2.2.20 Communication Facilities	16
2.2.21 Industries.....	16
2.2.22 Markets and Bazars	16
2.2.23 Access to Electricity.....	16
2.2.24 Sources of Drinking Water	16
2.2.25 Health Centres.....	16
2.2.26 NGO Activities	16
2.3 FARIDPUR SADAR UPAZILA, FARIDPUR	17
2.3.1 Brief Description of the Project Area.....	17
2.3.2 Area and Location	17
2.3.3 Local Administration	17
2.3.4 Population	18
2.3.5 Water Bodies.....	18
2.3.6 Archaeological Heritage and Relics.....	18
2.3.7 Religious Institutions	19
2.3.8 Literacy Rate	19
2.3.9 Educational Institutions	19
2.3.10 Newspapers and Periodicals Daily	19
2.3.11 Cultural Organisations	19
2.3.12 Tourist Spots	19
2.3.13 Main Sources of Income.....	19
2.3.14 Ownership of Agricultural Land	19
2.3.15 Main Crops	19
2.3.16 Communication Facilities	20
2.3.17 Industries.....	20
2.3.18 Markets and Baazars	20
2.3.19 Access to Electricity.....	20
2.3.20 Sources of Drinking Water	20
2.3.21 Sanitation.....	20
2.3.22 Health Centres.....	20
2.3.23 Natural Disasters.....	20
2.3.24 NGO Activities	20
2.4 GANGNI UPAZILA, MEHERPUR.....	21
2.4.1 Area and Location	21
2.4.2 Administration and Population	21
2.4.3 Annual Average Temperature	22
2.4.4 Water bodies Main Rivers	22
2.4.5 Archaeological Heritage and Relics.....	22
2.4.6 Religious Institutions	22
2.4.7 Literacy Rate	22
2.4.8 Educational Institutions	22
2.4.9 Cultural Organizations	23
2.4.10 Tourist Spots	23
2.4.11 Main Sources of Income.....	23
2.4.12 Ownership of Agricultural Land	23
2.4.13 Main Crops	23
2.4.14 Communication Facilities	23

2.4.15 Factories and Industries	23
2.4.16 Market and Baazar	23
2.4.17 Access to Electricity.....	23
2.4.18 Sources of Drinking Water	23
2.4.19 Sanitation.....	24
2.4.20 Health Centres.....	24
2.4.21 NGO Activities	24
2.4.22 Flora and Fauna	24
2.5 TOPOGRAPHY	27
2.6 GEOLOGICAL FEATURES AND SOIL.....	28
2.7 GEOLOGICAL PLATE AND FAULT LINE.....	30
2.8 SIESMICITY	31
2.9 DISASTER AND HAZZARD FEATURES	33
2.10 HYDROLOGICAL CHARACTERSTICS	38
2.11 HYDROLIC CHARACTERSTICS OF THE PROJECT AREA.....	39
2.12 BIO ECOLOGICAL ZONES	40
2.13 AGRICULTURAL LANDUSE	41
2.14 IRRIGATION PATTERN.....	42
2.15 GROUND WATER	43
2.16 ARSENIC PROBLEM.....	44
2.17 CLIMATE AND METEROLOGICAL DATA	45
2.17.1 Faridpur Upazila.....	45
2.17.2 Gangni Upazila.....	46
2.17.3 Bagmara Upazila.....	47
CHAPTER-3.....	49
MOBILIZATION AND RECONNAISSANCE SURVEY	49
3.1 INTRODUCTION	49
3.2 TEAM MOBILIZATION	49
3.2.1 Team for Conducting Mobilization Survey	49
3.2.2 Team for Conducting Reconnaissance Survey.....	49
3.2.3 Resource Mobilization and Purchase of Equipment and Software	50
3.3 SETTING UP PROJECT OFFICE AT POURASHAVA	50
3.4 COLLECTION OF MOUZA MAPS AND OTHER SECONDARY MAPS AND MATERIALS	50
3.5 INTER REGIONAL CONSULTATION	51
3.5.1 Bagmara Upazila, Rajshahi.....	51
3.5.2 Gangni Upazila, Meherpur.....	52
3.5.3 Faridpur Sadar Upazila, Faridpur	55
3.6 EXPERIENCE OF RECONNAISSANCE SURVEY	57
3.6.1 Experience in Gangni Upazila, Meherpur.....	57
3.6.2 Experience in Faridpur Sadar Upazila, Faridpur.....	64
3.6.3 Experience in Bagmara Upazila, Rajshahi.....	72
CHAPTER-04	77
WORK PROGRAMME AND MANNING SCHEDULE	77
4.1 INTRODUCTION	77
4.2 MANNING SCHEDULE	77
4.3 TASK SPECIFICATION OF PROJECT TEAM	79

4.4	WORK SCHEDULE.....	82
4.5	DEPLOYMENT OF THE KEY PROFESSIONALS	83
4.6	TASKS AND RESPONSIBILITIES OF THE PROFESSIONALS	83
4.7	REPORTING SCHEDULE	87
CHAPTER-05		88
PROGRESS OF WORK AND CONCLUSION.....		88
5.1	PROGRESS OF WORK.....	88
5.2	WAY FORWARD.....	89
5.3	CONCLUSION	89

List of Figures

	Page No.
FIGURE 2-1: HOUSING STRUCTURE BY TYPE, 2011 (SOURCE: BBS, 2011)	12
FIGURE 4-1: MANNING OR STUFFING SCHEDULE PROPOSED BY CONSULTANCY TEAM	78
FIGURE 4-2: GANTT CHART OF WORK SCHEDULE PROPOSED BY CONSULTANCY TEAM	86

List of Tables

	Page No.
TABLE 1-1: PROJECTED GROWTH IN URBAN AND RURAL POPULATION, 1950-2030.....	1
TABLE 2-1: POPULATION DISTRIBUTION AT DIFFERENT ADMINISTRATIVE TIER IN BAGMARA UPAZILA	13
TABLE 2-1: DECADAL GROWTH RATE OF POPULATION, 1951-2011	13
TABLE 2-3: LITERACY RATE BY SEX, 1991-2011.....	14
FIGURE 2-2: LITERACY RATE BY SEX, 1991-2011 (<i>SOURCE: BBS, 2011</i>)	14
TABLE 2-4: SCHOOL ATTENDANCE RATE BY SEX, 2011	15
TABLE 2-5: ADMINISTRATIVE INFORMATION OF FARIDPUR SADAR UPAZILA.....	18
TABLE 2-6: POPULATION DISTRIBUTION AT DIFFERENT ADMINISTRATIVE TIER IN FARIDPUR SADAR UPAZILA..	18
TABLE 2-7: DEMOGRAPHIC AND ADMINISTRATIVE INFORMATION OF FARIDPUR SADAR UPAZILA.....	22
TABLE 3-1: TEAM COMPOSITION FOR CONDUCTING RECONNAISSANCE SURVEY.....	50
TABLE 3-2: SWOT ANALYSIS OF GANGNI UPAZILA, MEHERPUR.....	63
TABLE 3-3: SWOT ANALYSIS OF FARIDPUR SADAR UPAZILA, FARIDPUR	71
TABLE 3-4: SWOT ANALYSIS OF BAGMARA UPAZILA, RAJSHAHI	76
TABLE 4-1: REPORTING SCHEDULE FOR THE WHOLE PROJECT PERIOD	87

List of Maps

	Page No.
MAP 2-1: PROJECT AREA LOCATIONS WITH RESPECT TO BANGLADESH.....	10
MAP 2-2: GEOGRAPHIC LOCATION OF BAGMARA UPAZILA (SOURCE: LGED, 2011).....	11
MAP 2-3: GEOGRAPHIC LOCATION OF FARIDPUR SADAR UPAZILA (SOURCE: LGED, 2011).....	17
MAP 2-4: GEOGRAPHIC LOCATION OF GANGNI UPAZILA (SOURCE: LGED, 2011)	21
MAP 2-5: TOPOGRAPHIC MAP OF BANGLADESH SHOWING THE PROJECT AREAS (SOURCE BWDB).....	27
MAP 2-6: SOIL CLASSIFICATION OF BANGLADESH SHOWING THE PROJECT AREAS. (SOURCE :SURVEY OF BANGLADESH).....	28
MAP 2-7: GEOLOGICAL MAP OF BANGLADESH SHOWING THE PROJECT AREAS. (SOURCE SURVEY OF BANGLADESH).....	29
MAP 2-8: GEOLOGICAL PLATE MAP OF THE PROJECT AREA. (SOURCE SURVEY OF BANGLADESH)	30
MAP 2-9: LOCATION OF GEOLOGICAL / THRUST MAP OF THE PROJECT AREA. (SOURCE PETRO BANGLA).....	31
MAP 2-10: EARTH QUAKE ZONING MAP OF BANGLADESH. (SOURCE SURVEY OF BANGLADESH).....	32
MAP 2-12: AFFECTED FLOOD AREAS IN 1998 BY SHOWING THE PROJECT AREA (SOURCE BWDB)	34
MAP 2-13: AFFECTED FLOOD AREAS IN 2007 BY SHOWING THE PROJECT AREA (SOURCE : FFWC, BWDB)	35
MAP 2-14: IMPACT OF RECENT 2014 FLOOD SHOWING THE PROJECT AREA (SOURCE : BARC)	36
MAP 2-15: DROUGHT IMPACT IN PROJECT AREAS (SOURCE : BARC)	37
MAP 2-16: FLOOD INUNDATION MAP AND HYDROLOGICAL CHARACTERSTICS OF THE PROJECT AREAS (SOURCE : BARC)	38
MAP 2-17: HYDROLIC CHARACTERSTICS OF THE PROJECT AREA (SOURCE : BARC)	39
MAP 2-18: BIO-ECOLOGICAL MAP OF THE PROJECT AREA (SOURCE : BARC).....	40
MAP 2-19: AGRICULTURAL LANDUSE MAP OF THE PROJECT AREA (SOURCE : SRDI, 1997).....	41
MAP 2-20: IRRIGATION COVERAGE OF THE PROJECT AREA (SOURCE : LGED, 2003)	42
MAP 2-21: GROUND WATER ZONING MAP OF THE PROJECT AREAS (SOURCE : LGED, 2004)	43
MAP 2-22: ARSENIC CONTAMINATION IN GROUND WATER FOR THE PROJECT AREAS (SOURCE : LGED, 2004).44	
MAP 2-23: METEROLOGICAL AND CLIMATIC MAP OF BANGLADESH (SOURCE : RASHID, 2004)	48

List of Photos

	Page No.
PHOTO 3-1: CONSULTATION MEETING WITH POURASHAVA CHAIRMANS, BAGMARA UPAZILA	51
PHOTO 3-2: CONSULTATION MEETING WITH LOCAL PRESS MEMBERS , BAGMARA UPAZILA (SOURCE:FIELD VISIT, 2015)	52
PHOTO 3-3: VISITING UNO OFFICE, GANGNI UPAZILA (SOURCE: FIELD VISIT, 2015)	53
PHOTO 3-4: CONSULTATION MEETING WITH POURASHAVA CHAIRMAN, GANGNI UPAZILA (SOURCE: FIELD VISIT).....	54
PHOTO 3-5: CONSULTATION MEETING WITH LOCAL PRESS MEMBERS , GANGNI UPAZILA (SOURCE: FIELD VISIT)	54
PHOTO 3-6: TEA STALL MEETING WITH COMMON PEOPLE AT GANGNI UPAZILA (SOURCE: FIELD VISIT, 2015) .	55
PHOTO 3-7: MEETING WITH UPAZILA AGRICUTURAL OFFICER AT FARIDPUR SADAR UPAZILA PARISHAD.....	55
PHOTO 3-8: CONSULTATION MEETING WITH POURASHAVA CHAIRMAN AND COUNCILOR, FARIDPUR SADAR UPAZILA	56
PHOTO 3-9: CONSULTATION MEETING WITH LOCAL PRESS MEMBERS (VICE-PRESIDENT) , FARIDPUR SADAR UPAZILA (SOURCE: FIELD VISIT, 2015)	57
PHOTO 3-10: BLOW UP OF KUSTIA- MEHERPUR MAIN ROAD (SOURCE: FIELD VISIT, 2015)	58
PHOTO 3-11: POURASHAVA ROAD AND SONDHANI SCHOOL AND COLLEGE ROAD (SOURCE: FIELD VISIT, 2015)	59
PHOTO 3-12: POOR INTERNAL ROAD CONDITION (SOURCE: FIELD VISIT, 2015)	59
PHOTO 3-13: LOW LYING LAND BESIDE POURASHAVA. (SOURCE: FIELD VISIT, 2015)	59
PHOTO 3-14: KAJLA RIVER AT MONSOON AND BHAIRAB RIVER (SOURCE: FIELD VISIT, 2015).....	60
PHOTO 3-15: PADDY FIELD AT GANGNI UPAZILA (SOURCE: FIELD VISIT, 2015)	60
PHOTO 3-16: ZILLA PORISHAD MARKET AND ROAD-SIDE MARKET (SOURCE: FIELD VISIT, 2015)	61
PHOTO 3-17: UPAZILA HEALTH COMPLEX AND SANDHANI SCHOOL & COLLEGE (SOURCE: FIELD VISIT, 2015) ..	61
PHOTO 3-18: GHAGNI MOHILA DEGREE COLLEGE AND CHILD PARK (SOURCE: FIELD VISIT, 2015)	61
PHOTO 3-19: GANGNI UPAZILA PARISHAD AND OFFICE OF CHAIRMAN. (SOURCE: FIELD VISIT, 2015).....	62
PHOTO 3-20: UPAZILA LAND OFFICE AND UPAZILA NIRBAHI OFFICER'S OFFICE (SOURCE: FIELD VISIT, 2015)....	62
PHOTO 3-21: UPAZILA SERVER STATION AND UPAZILA EDUCATION BUILDING (SOURCE: FIELD VISIT, 2015)	62
PHOTO 3-22: GANGNI POURASHAVA AND GANGNI PRESS CLUB (SOURCE: FIELD VISIT, 2015)	63
PHOTO 3-23: FARIDPUR SADAR BAZAR. (SOURCE: FIELD VISIT, 2015)	64
PHOTO 3-24: FARIDPUR ZILA SCHOOL AND FARIDPUR MEDICAL COLLAGE. (SOURCE: FIELD VISIT, 2015).....	64
PHOTO 3-25: KUMAR RIVER AND EXISTING CANAL (SOURCE: FIELD VISIT, 2015)	65
PHOTO 3-26: SHUJON BADEYAR GHAT THE HOUSE OF POET JASHIMUDDIN. (SOURCE: FIELD VISIT, 2015)	65
PHOTO 3-27: POULTRY FARM AT FARIDPUR SADAR (SOURCE: FIELD VISIT, 2015)	66
PHOTO 3-28: KARIM JUTE MILL AT FARIDPUR SADAR (SOURCE: FIELD VISIT, 2015).....	66

PHOTO 3-29: ROAD SIDE GARBAGE (SOURCE: FIELD VISIT, 2015).....	67
PHOTO 3-30: DHAKA-FARIDDPUR MAIN ROAD (SOURCE: FIELD VISIT, 2015).....	68
PHOTO 3-31: EXISTING MOSQUE AND CHURCH IN FARIDPUR SADAR (SOURCE: FIELD VISIT, 2015).....	68
PHOTO 3-32: TEMPLE IN GAMBHIRA, FARIDPUR (SOURCE: FIELD VISIT, 2015)	69
PHOTO 3-33: FARIDPUR MEDICAL COLLEGE AND HEALTH COMPLEX CENTER (SOURCE: FIELD VISIT, 2015)	69
PHOTO 3-34: SHEIK RASEL SHISHU PARK AT FARIDPUR SADAR (SOURCE: FIELD VISIT, 2015)	70
PHOTO 3-35: PADDY FIELD AT FARIDPUR UPAZILA (SOURCE: FIELD VISIT, 2015)	70
PHOTO 3-36: BAGHMARA ROAD (SOURCE: FIELD VISIT, 2015)	72
PHOTO 3-37: POOR CONDITIONS OF ROADS (SOURCE: FIELD VISIT, 2015)	72
PHOTO 3-38: BARANAI RIVER AND FAKINNI RIVER (SOURCE: FIELD VISIT, 2015)	73
PHOTO 3-39: A SMALL POND AT BAGMARA UPAZILA (SOURCE: FIELD VISIT, 2015).....	73
PHOTO 3-40: PADDY FIELDS IN BAGHMARA (SOURCE: FIELD VISIT, 2015)	73
PHOTO 3-41: BIR-KUTSHA ABINASH HIGH SCHOOL AND TAHERPUR DEGREE COLLEGE (SOURCE: FIELD VISIT, 2015).....	74
PHOTO 3-42: UPAZILA HEALTH COMPLEX AND KACHA BAZAR AT BAGHMARA (SOURCE: FIELD VISIT, 2015) ...	74
PHOTO 3-43: TAHERPUR POURASHAVA AND OFFICE OF UNO AT BAGMARA (SOURCE: FIELD VISIT, 2015)	75
PHOTO 3-44: BHAWANIGANJ POURASHAVA AND BAGHMARAUPAZILLA PARISHAD (SOURCE: FIELD VISIT, 2015)	75
PHOTO 3-45: PANCHPIR MAZAR AT BAGMARA (SOURCE: FIELD VISIT, 2015)	75

List of Appendices

Appendix-01: Minutes of the Mobilization Meeting at Upazila Level

Appendix-02: List of Attendant in the Mobilization Meeting

Appendix-03: Upazila Detailed Information

Appendix-04: Contract Agreement with Consultant Team Members

Appendix-05: Banner Ramu Upazila for Initial Consultation Meeting

Appendix-06: Sample Digitized Mouza Map

Appendix-07: Local Office Rental Letter to Upazila Parishad

Appendix-07: License Documents of Remote Sensing Work Station and ArcGIS Software

List of Abbreviations

ARI	Average Recurrence Interval
ADB	Asian Development Bank
BADC	Bangladesh Agricultural Development Corporation
BBS	Bangladesh Bureau of Statistics
BCAS	Bangladesh Center for Advanced Studies
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BHBFC	Bangladesh House Building Finance Corporation
BIWTA	Bangladesh Inland Water Transport Authority
BM	Bench Mark
BMD	Bangladesh Meteorological Department
BMP	Best Management Practice
BR	Bangladesh Railway
BSF	Bottomless Sand Filters
BTCL	Bangladesh Telecommunication Company Ltd.
BUET	Bangladesh University of Engineering and Technology
BWDB	Bangladesh Water Development Board
CAAB	Civil Aviation Authority, Bangladesh
CBO	Congressional Budget Office
CMU	Concrete Masonry Units
CPM	Critical Project Management
CN	Curve Number
DAP	Detailed Area Plan
DC	Drainage Compartment
DCC	Dhaka City Corporation
DEM	Digital Elevation Model
DoE	Department of Environment

DG	Director General
DPDC	Dhaka Power Distribution Company
DPHE	Department of Public Health Engineering
DPP	Development Program Proposal
DPZ	Detailed Planning Zone
EPA	Environmental Protection Agency
EQS	Environmental Quality Standards
ERI	Earthquake Risk index
ESCP	Erosion & Sediment Control Plan
FAP	Flood Action Plan
FEMA	Federal Emergency Management Agency
GAP	Gross Annual Product
GIS	Geographic Information System
GPS	Global Positioning System
GPT	Gross Pollutant Trap
ICM	Integrated Catchment Management
IDF	Intensity Duration Frequency
IWM	Institute of Water Management
JICA	Japan International Cooperation Agency
LGED	Local Government Engineering Department
LID	Low Impact Development
MoLGRD&C	Ministry of Local Government, Rural Development & Co-operatives
NFPI	Non Financial Performance Institution
NGO	Non-Government Organization
NHA	National Housing Authority
NPS	Non Point Source
NUF	National Urban Fellows

OSD	On-Site Detention
PMO	Project Management Office
PWD	Public Works Department
RCC	Reinforced Concrete Cement
RDC	Regional Detention Charge
RHD	Roads and Highways Department
RHM	Rational Hydrograph Method
RTK	Real Time Kinematic
SAE	Sub-Assistant Engineer
SCS	Soil Conservation Service
SDE	Sub-Divisional Engineer
SMA	Soil Moisture Accounting
SOB	Survey of Bangladesh
SPS	Standard Project Storm
Sq km	Square Kilometre
TBM	Temporary Bench Mark
ToR	Terms of Reference
TSS	Total Suspended Solid
TWG	Technical Working Group
TxDOT	Texas Department of Transportation
UH	Unit Hydrograph
UNDTCD	United Nations Department of Technical Cooperation for Development
UNEP	United Nations Environment Program
UNICEF	United Nations International Children's Emergency Fund
UPVC	Un-plasticized Polyvinyl Chloride

CHAPTER-1

BACKGROUND OF THE STUDY

1.1 Background of the project

Bangladesh is a small south Asian country having high population density of 1019 persons per km² (UN Data, 2011) and rapid population growth. The urban area of Bangladesh is facing rapid horizontal expansion due to rapid population growth in all urban areas all the country. Total four large metropolitans, fifty eight medium and more than four hundred small urban areas have one quarter of the total country population (UNICEF & CUS, 2010). Therefore it becomes an important issue to prepare Land-use Plan for the cities to manage the growth and development. After the liberation of Bangladesh, there was a little effort to prepare land-use plan. Haphazard urban growth along with poor governance made inconvenient urban life in most of the cases. In recent time, the Government of Bangladesh has been initiated preparing land-use plan for the urban areas to ensure better urban living. However, prepare appropriate land-use plan is not a simple task at all.

Need for an urban focus is urgent because it is no longer a secondary phenomenon. At its birth, Bangladesh had an urban population less than 5 million. By 1990, this had increased to 22.4 million and a decade and a half later, urban population stood at 42.3 million. At an annual growth rate of 3.7%, urban population growth in Bangladesh has been higher than all other countries in South Asia barring Nepal. A revised definition of urban has put current urban population at 23% (Census, 2011) but population density per sq. km which rose to 964 in 2011 from 834 in 2001 points towards an overall urbanized reality that is larger than that indicated by the formal definition of urban area. Projections show a possible urban population of nearly 100 million (98.6) by 2030 (Table 1-1).

Table 1-1: Projected Growth in Urban and Rural Population, 1950-2030

Year	Population (millions)		Share of incremental Population (millions)		percentage of the total	
	Rural	Urban	Rural	Urban	Rural	Urban
1950	40.0	1.8	-	-	95.7	4.3
1960	48.8	2.7	8.9	0.9	94.8	5.2
1970	61.4	5.1	12.5	2.4	92.3	7.7
1980	72.7	12.7	11.3	7.6	85.1	14.9
1990	88.3	21.8	10.6	9.1	80.3	19.8
2000	103.1	34.4	14.8	12.6	75.0	25.0
2010	115.7	52.2	12.6	17.8	68.9	31.1
2020	123.2	74.4	7.5	22.2	62.3	37.7
2030	124.1	98.6	0.9	24.2	55.8	44.3

Source: Computed from UN 2002: Table 3 and 4. Cited in ESCAP 2003:25

The consequences of urbanization for a country is not a given. Both the experience of Bangladesh as well as the general global experience is that urbanization is an inevitable feature of the development process. However, beyond this very general trend, urbanization holds both promise and problems for a country and which feature will come to dominate will very much depend on the nature and efficacy of policy engagement with the urban agenda. Existing urban discourse has proceeded on fragmented premises of physical planning, slum studies, municipal governance and migration studies while the economic dimension has been

a missing focus as have been the issues of social anomie and sustainability. Compounding this fragmented discourse is a process of policy engagement that is at best sporadic and disjointed.

The present trend of planning practice is mostly oriented towards planning of cities and towns in Bangladesh. This involves huge amount of financial allocation/grants every year for the development and improvement of urban facilities and utility services for only 20% of the country's population living in the urban areas. In absence of appropriate planning guidelines regarding the planned development of small urban centers at the local and regional level, important cities specially the major divisional headquarters (such as, Dhaka, Chittagong, Khulna; Rajshahi etc.) along with other important district towns of the country are experiencing tremendous pressure of urbanization for the last one and a half decade. Moreover, the rural to urban migration which is increasing at an alarming rate in search of shelter and occupation mainly, is acting as a big threat to the planned growth of the major division cities. As a consequence, urban dwellers living in the major cities are facing problems like overpopulation, unemployment, lack of utility and services, traffic congestion. Lack of housing and recreational facilities etc. As a part of their everyday life. Ultimately the cities are becoming overcrowded and dirty. As a result air, water and noise pollution is taking a devastating shape in the urban areas of the country. Hundreds of city dwellers specially the rickshaw pullers, drivers of different vehicles, regular road users and small children are becoming prey to various diseases like- blood pressure. Headache, eye infection, heart diseases, problems in the respiratory system, various skin diseases, cancer etc. So, decentralization of the urban activities among the thana and district headquarters can be very effective in getting rid of the present trend of unplanned and haphazard urbanization in the country. Proper initiatives can also be taken to develop small townships with respect to the region's own Potentials providing necessary administrative, economic/industrial activities, health, educational, recreational, housing and infrastructural facilities within the same town boundary. These urban centers should have adequate road/rail or water transport as well as telecommunication linkage with the respective district and divisional headquarter at the same time. This kind of decentralized urbanization can help reduce rural to urban migration to a great extent encouraging local inhabitants reside in the surrounding villages and engage themselves in the economic industrial activities at the thana or district headquarter level. In addition to this, the process of urban decentralization can ensure a sustainable local development throughout the whole country; which in turn can contribute the planned and pollution free healthy growth of the existing cities and towns as well to keep the cities inhabitable and clean, need to develop planning for majority (around 80%) of the total population living in the rural areas first.

City planning authority such as RAJUK, CDA, KDA, RDA etc. made their development plan for own territory. In this course the small towns and other administrative tiers such as district, upazilas and thanas are kept behind all of these. Unfortunately most of these towns, upazilas and growth centers do not have any development plan, so that government, executing agencies, local government and people all are constantly suffers with complicity and indecision. In the government's recent policy for overall administrative reorganization, the upazila has been recognized as the most significant tier of administration. So that these areas are need to be planned and developed to accommodate all social, economic, administrative, infrastructure services and service facilities for the region. The current government's intention is to reflect the national policy of bringing development administrative and service facilities to the door step of rural masses and to ensure better delivery of government services to the people.

Realizing the fact and importance of formulating development plans for upazilas, Urban Development Directorate has come up with a great initiative to plan those areas. At the first phase of this initiative UDD has decided to prepare development plan for 14 upazilas all over Bangladesh into five different packages. For each package separate consultancy team has been appointed to carry out that job more fruitfully. ECAL has been selected for package-3 (covering Bagmara Upazila, Dist: Rajshahi; Faridpur Sadar Upazila, Dist: Faridpur; and Gangni Upazila, Dist: Meherpur) by project evaluation committee of UDD. The official agreement has been signed between UDD and ECAL on 10th June, 2015 in presence of high officials of UDD and witnesses from both sides.

1.2 Understanding the Assignment

According to the Sixth Five Year Plan (SFYP) the main goal of the government's land use policy and management is to ensure the best possible use of land resources and delivery of land related services to the people through modernized and efficient land administration for sustainable development including accelerated poverty reduction. (SFYP, p.68).

A comprehensive development plan is required to address the required land use transformation which will not allow any unauthorized and unplanned development, either in urban area or in rural area. Due to lack of such plan, it is generally found that most of the upazilas in Bangladesh have developed with least coordinated manner possessing very little development control. Measures for the adequate provision of infrastructure, service, utility and modern amenities for maintaining a minimum standard of life, considering environment and sustainability has to be taken. Moreover, in preparing such plan, development constraints and local development potentials are to be identified clearly, and plans should be formulated addressing such development constraints and potentials of the area to make the plan practicable. In the government's recent policy of overall administrative re-organization, the upazila has been recognized as the most significant tier of the administration. It will be planned and developed to accommodate all social, economic, administrative and infrastructure services for the region.

This also reflects the national policy of bringing development, administrative and services facilities to the door step of the rural masses and to ensure better delivery of government services to the people. Initially the project area consisted of nine upazilas under Constitutional area of member of the Parliamentary Standing Committee concerning Ministry of Housing and Public works. The total Project area is 2748.37 sq.km. and total population is 2698872.

Above presents the briefly discussion on understanding of TOR

- Project Design
- Collection of Reports, Relevant Documents/Statistical Data and other Information from relevant sources
- Explanation, Discussion and Consultation with Local People/Local Leaders/Representatives/Communities to involve them in the Process of Plan Preparation through Participatory Rapid Appraisal (PRA). Incorporation of the knowledge and opinions of local/community people in formulating planning proposals.
- Reviewing and Updating Physical Feature Survey and Land Use Survey data using 3D Satellite Images and Field Survey.

- Prepared and make in inter linkage between all spatial data and attribute in ArcGIS
- Processing of 3D Satellite Images, Spatial analysis and Preparation of Maps/Charts/Diagram/Reports.
- Review and Analysis of Strategies, Policies, Plans and Programmes of every components of the project area
- Review and Analysis of policies and programmes of the Government/Semi- Government/ Corporation/Departments/ Institutions, NGOs and Donors Agencies.
- Detailed studies on demographic and other socio-economic forecasting, land use, land suitability for development, housing, area wise height and density zoning, transportation, flood & drainage, disaster, environment, energy, water supply, public space, growth management, legal frameworks and regulatory functions.

1.3 Objectives of Mobilization Report

A. National Development Objectives

To find out development issues and potential of the upazila and make a 20 years development vision for the upazila (both urban and rural area) and prepare a Master Plan in line with the vision for the development. Prepare plan for the people of the town to develop and update provisions for better transport network, housing, infrastructures for roads, markets, bus terminals, sanitation, water supply, drainage, solid waste management, electricity, education, leisure and such other infrastructure facilities for meeting the social and community needs of the poor and the disadvantaged groups for better quality of life and at the same time ensure the development of rural area within the project area;

- Prepare a multi-sector short and long term investment plan through participatory process for better living standards by identifying area based priority-drainage master plan, transportation and traffic management plan, other specific plan need as per requirement in accordance with the principle of sustainability;
- Provide controls for private sector development, clarity and security with regard to future development;
- Provide guide line for development considering the opportunity and constrains of future development of Upazilla Town; and Rural area.
- Prepare 20 years Development Plan to be used as a tool to ensure and promote growth of the city in line with the guiding principles of the Master Plan and control any unplanned growth by any private and public organization.
- Facilitating the Urban Growth to protect the valuable farmland and at the same time provide space and facilities for non-agricultural activities.
- Provision of standards for use by public bodies.
- Supporting the livelihood of the inhabitants of Bagmara, Faridpur Sadar and Gangni Upazila.
- Protecting the Eco-system with the understanding that we are a component of the system rather than the consumer of the system.
- Discouraging the involuntary displacement of the inhabitants in the name of development.
- Control of undesired development in all areas for which plans have been prepared.

B. Immediate Objectives

Following immediate objectives should have to be performed by the consultants for achieving the National Development Objectives:

Objective 1: Determination of Present and Future Function of the Upazila

Preparation of Sub Regional Plan, Structure Plan, Urban Area Plan, Rural Area Plan and Action Area Plan (AAP) are to be based on land use survey, topographical survey, environmental, disasters/hazards and agricultural studies. The major studies relating to Traffic & Transportation, Drainage & Environmental, Formal and Informal Economic Studies, Slums and Squatters, Unauthorized Encroachment, Recreational Facilities and Stakeholders Participation for planning and development control.

Objective 2: Mechanism for Improving and Guiding Development

The mechanisms for improving and guiding development are:

- ✓ Preparation of five tier Development Plan namely: Sub Regional Plan, Structure Plan, Urban Area Plan, Rural Area Plan and Action Area Plan.
- ✓ Development of mechanism for stakeholders, especially communities, control over all development initiatives.
- ✓ Preparation of a set of Institutional and Legislative Restructuring Proposals.
- ✓ Selection of appropriate standards and guidelines for improving present conditions and guiding future development.

Objective 3: Review of Existing Problems and Propose initiatives

Review of existing problems and proposed initiatives are as stated below

- ✓ Detailed analysis of problems presently hampering development, which can be eliminated by action in the short term.
- ✓ Development of sectoral programs to alleviate poverty problems
- ✓ Prepare a minimum number of action area plans for early area development or area upgrading of parts of the town that exhibits a representative cross section of development problems.
- ✓ Undertake initiative at town level to promote sustainable economic activity by formal private sector and individuals, groups, GOB and NGOs.

Objective 4: Formulation of Bankable Projects

The factors for formulation of bankable projects areas mentioned below:

- ✓ To determine methodology for identifying Multi-sectoral Investment Projects (MSIP) with their major priorities.
- ✓ Prepare a multi-sector investment plan through participatory process for better living standards by identifying areas based priority-Drainage Master Plan, Transportation and Traffic Management Plan and other specific plan as per requirement.

- ✓ Providing controls for private sector development and clarity and security with regard to future development for inhabitants and investors. The targeted objective and guideline of the development projects would be to initiate and implement through participation.
- ✓ To identify a range of projects suitable in both sectoral and spatial terms.
- ✓ To develop a package for the priority to a level suitable for financial appraisal.

Objective 5: Increasing Capacity/formulation of Local Authorities for Urban and Rural Management and Development

The factors to be considered in regard to increasing the capacity/formulation of local authorities for urban management and development are:

- ✓ To prepare a detailed analysis of the past budgets, their expenditure, liabilities and sources of funds of Pourashava, Upazila Prishad and Union Parishad.
- ✓ Providing Land use maps and information at Mouza dag level (parcel) as a professional manner for efficient updating, exchange, dissemination and decision support use.
- ✓ To prepare practical and detail proposal for increasing the income of the local authorities with reference to any forthcoming donors proposal to assist financial management and paying particular attention to the possibilities of increasing revenue from existing and proposed development activities.
- ✓ Providing guideline for development considering the Opportunity and Constraints of future development. Moreover for the betterment of the community, action would be taken through government, public private partnership, private and non-government initiatives as indicated in AAP.
- ✓ To prepare proposal for rationalizing the roles and divisions of responsibilities between Upazila and other development agencies.
- ✓ To prepare priority list of projects which can be funded from local resources and examine any new forms of funding for such developments.
- ✓ To assist Upazila, Pourashava and Union in drawing up schemes within the framework of Strategic Plan and Action Plans for inclusion in Development Programs.
- ✓ To strengthen the technical capabilities of local authorities involved in urban management and development.
- ✓ Providing Planned Development to ensure Sustainable Environment Action Area Plan (AAP) should be undertaken with the cooperation of other development agencies. So all the agencies should cooperate, coordinate and participate in the process of preparation of Master Plan for proper planning and development. The Plan would be the guiding document for implementation by all concern. GIS based data; map and information would be the resource which could be easily updated and when necessary.

1.4 Understanding of the Scope of Services

The scope of Consultancy Services encompasses for Preparation of four tiers Development Plan (five key plans) for three Upazilas, which includes Sub Regional Plan, Structure Plan, Urban Area Plan, Rural Area Plan and Action Area Plan. The study will cover surveys of physical features and preparation of Land use Plan, Traffic and Transportation Management Plan, Drainage and Environmental Plan and Action Plans for the project area.

Considering the above scope of services and to prepare an efficient Development Plan for Bagmara, Faridpur Sadar and Gangni Upazila, the specific tasks to be performed by the consultant in realization of the scope of services as spelled out in the TOR are given below in brief:

- ✓ Determination of study area based on suitable physical boundary.
- ✓ Explanation of the plan (report) indicating population, density, livelihood and its future plan.
- ✓ Collection of socio-economic and demographic information and data both from primary and secondary sources in the study context to forecast future population, requirement of different services, physical and social infrastructure facilities, employment generation.
- ✓ Identify the existing natural and man-made drains in the town and investigating the mechanisms of the drainage and local river system to assess the extent and frequency of flood damage and determine areas where flooding or poor drainage is most severe.
- ✓ Preparing a conceptual report on the various alternative solutions to the present storm water problems and selecting the most appropriate and economical alternatives.
- ✓ Prepare a Development Plan of the storm water drainage & sewerage system treatment plant for all areas in the town, which will include discharge calculations for the catchment areas, design of main and secondary drains/sewerage including their sizes, types and gradients and retention areas with preliminary cost estimates for the proposed drainage/sewerage system.
- ✓ Prepare a conceptual plan to show the phase-wise implementation schedule in an affordable and practical manner considering the technical, environment, institutional, economic and social feasibility of the proposed works.
- ✓ Proposal for preparation of hydraulic and structural designs for the priority areas of the study area and preparing a first phase implementation program.
- ✓ Study of the existing drainage maintenance procedures and budgets, if any including solid waste collection and design and estimate costs for a planned maintenance system to ensure that the drains are kept free from blockages and physical damage.
- ✓ Recommend planning, institutional and legal mechanisms to ensure provision of adequate land for rights of way for storm water drainage, which will also determine illegal encroachments.
- ✓ Investigate methods to find the other phases of the storm water drainages & Sewerage master plan.
- ✓ Assess additional data requirements, critical additional data, not currently available should be collected through reconnaissance and traffic surveys which should estimate present traffic volume and forecast the future traffic growth and identify travel patterns, areas of traffic, conflicts and their underlying causes.
- ✓ Study the viability of different solutions and develop a practical short term traffic management scheme of implementation, including one way systems, restricted access for large vehicles, improved signal system traffic islands, roundabout, pedestrian crossings, deceleration lanes for turning traffic, suitable turning radius, parking policies and separation of pedestrians and rickshaws.
- ✓ Assess the current land use with regard to transportation, bus and truck terminals, stations, railway stations etc. and recommend actions to optimize this land use.
- ✓ Assess existing plot information.
- ✓ Prepare a Long Term Traffic and Multimodal Transportation Plan for the designated areas by integrating all previous studies, government plan and own studies.

- ✓ The Development Plan shall assess major investments and activities of the various development agencies/Ministries and indicate the stages of development preferably through 5 year programming approach. Consultants shall be making to liaison with all government and semi-government and other agencies concerned with their development at the Study area.
- ✓ Contract should also be made with the headquarters of such agencies and full details of such plans should be referenced in the plan.
- ✓ Survey and evaluate Land Capabilities considering factors such as flood basin, topography, fertility etc.
- ✓ The Development/Master Plan Package shall indicate/outline possible frameworks/strategy for management and development control, institutional arrangement ensuring people's participation etc. for effective implementation of the plan.
- ✓ Development of Proposal of By-laws for Land Development, Real Estate Development. Urban Plan Development control and Natural Resources/Green belt and places of historical interest.
- ✓ In line with the Master Plan, propose a Detailed Area Plan with a list of priority schemes for the development of roads, drains, traffic management and other social infrastructure for implementation during the first five years of plan period.
- ✓ Facilitate City Authority, Union Parishad about the publicity of Development Plan, its preparation strategy, function and their role through making, leaflet, newspapers, cable line, FGD etc.
- ✓ Allocating zones for as high, middle and low density areas.
- ✓ Guidelines for control/promote industries at different locations according to their nature such as heavy industrial, light industrial and service industries including waste disposal / treatment plants.
- ✓ Guidelines for controlling/guiding location of commercial use.
- ✓ To identify the areas reserved for agriculture, flood flow, public / private open spaces, parks, playgrounds, play-lots and other recreational uses like green belts, retention pond, water bodies, water front, natural reservoirs, historical monuments.
- ✓ Action Area Plan will cover all related issues to bring about expected result.
- ✓ Allocating the zones where public utilities, institutions and civic services will be established. Moreover zones of urban deferred areas, for future development expanded areas and areas for new development have to be considered.
- ✓ To ensure planning principles/standards, gross/net densities, guideline for future development and development control.
- ✓ To exercise control over architectural features, elevations, frontage of buildings and structures including zoning regulations to regulate locations, preservation of heritage, and type of buildings within each zone.
- ✓ Earthquake hazard, vulnerability, risk and loss assessment for project area.
- ✓ Development of scenario based spatial earthquake contingency plan for project area.
- ✓ Prepare and submit Development Plan and Report with required standards as specified in the TOR.

1.5 Objectives of Mobilization Report

In accordance to contract agreement the consultancy team have to submit six different reports within 21 months time frame. Mobilization report is the first signpost of that schedule. The key objectives of mobilization report can be illustrated as

- To deploy of key personnel and supporting staff for the project.
- To conduct reconnaissance survey of the study area.
- To conduct team mobilization meeting in project areas.
- To inform local government, administrative persons and other stakeholders about the project and brief them about the project goal.
- To initiate the process of local office set up in the project areas.
- To initiate the collection of maps and other secondary materials.
- To formulate strategic plan for inception report and upcoming other responsibilities.

1.6 Scope of Mobilization Report

The scope of mobilization report is not too much extensive, mostly deals with the project initiation works. These scopes are as follows

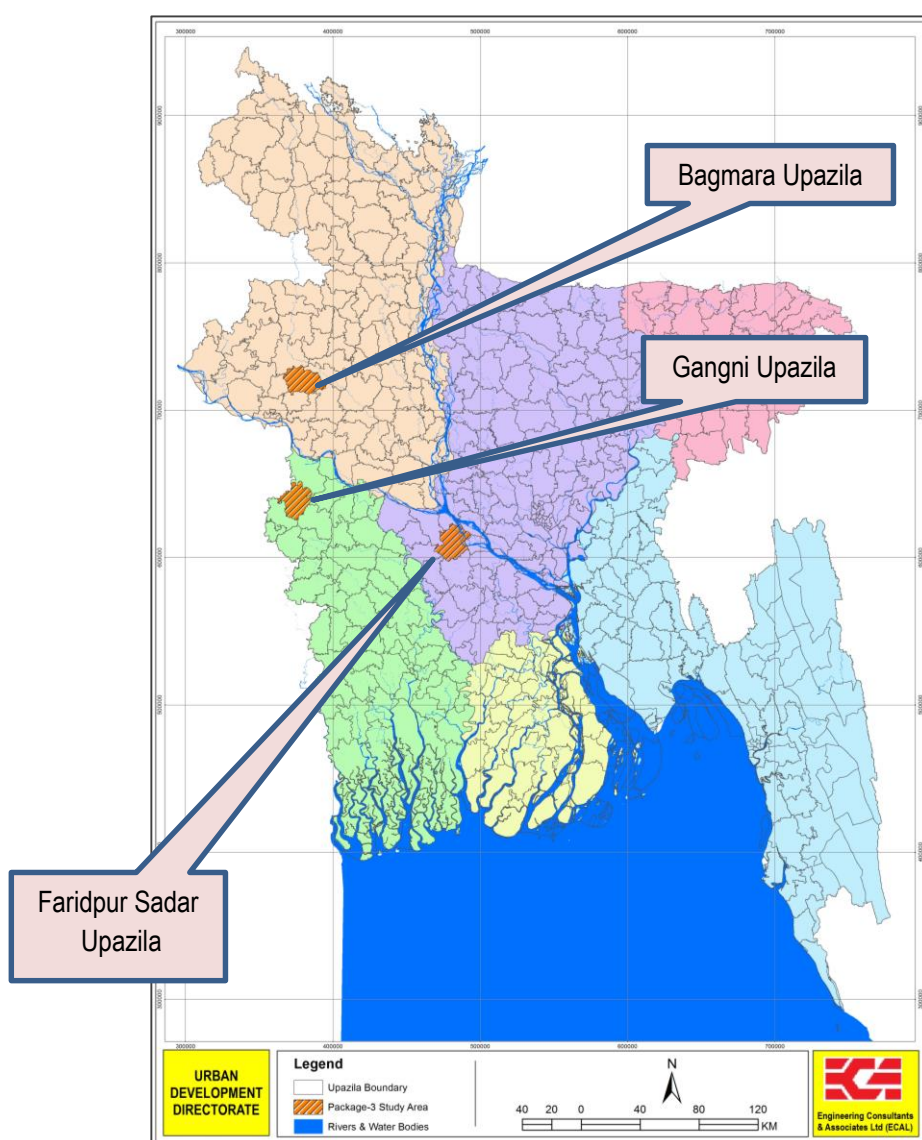
- Signing of contract agreement between consultancy firm and UDD
- To sign contract with key professionals selected for the consultancy team
- Deployment of the key professionals and team members
- To conduct reconnaissance survey
- To conduct mobilization meeting with local administrative persons and stakeholders
- To initiate project office setup at concerning areas
- Reporting
- Preparation of plan for next stages of the projects
- To start collection of secondary data

CHAPTER-2

STUDY AREA PROFILE

2.1 Introduction

Preparation of development plan for fourteen upazila project- package 3 covers three upazila as Bagmara, dist: Rajshahi; Faridpur Sadar, Dist: Faridpur and Gangni, Dist: Meherpur. Geographical location for these areas are shown in **Map 2-1**. This chapter will mainly describes all the social, geographical, demographic, geological, administrative, landuse, hydrological and so on information of these study areas which will pave the base line profile information. To maintain the sequence all three upazilas information are discussed one by one.



Map 2-1: Project Area Locations with respect to Bangladesh

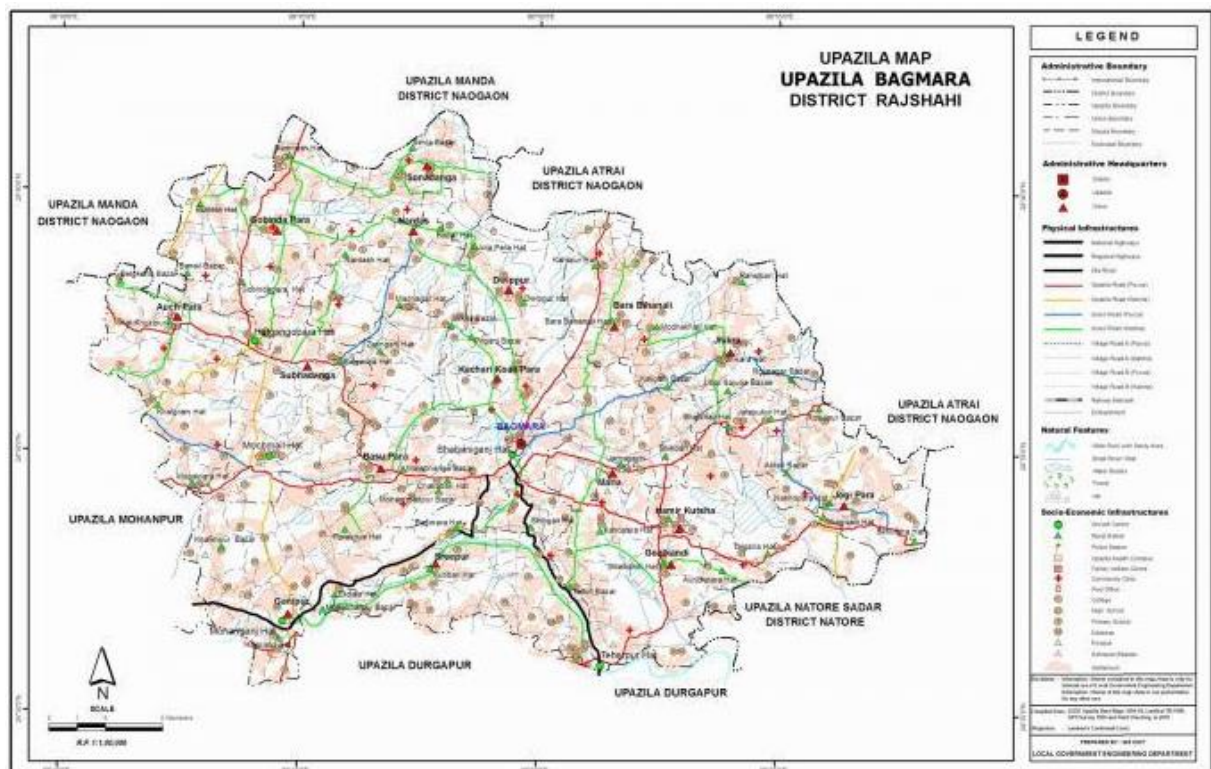
2.2 Bagmara Upazila, Rajshahi

2.2.1 Brief Description of the Project Area

Bagmara, the biggest upazila of Rajshahi Zila in respect of population, came into existence in 1869 as a thana and was upgraded to upazila in 1983. Nothing is definitely known about the origin of the upazila name. It is learnt that in the past, this area was full of jungles and forests. There is a hearsay that while cleaning the jungles a tiger means Bagh (in Bengali) was killed and after that this area became popularly known as Bagmara. It is believed that the upazila might have been named Baghmara at the time of its creation.

2.2.2 Area and Location

The upazila occupies an area of 366.26 Sq.km. It is located between 24° 30' to 24° 41' north latitudes and between 88° 41' to 88° 58' east longitudes. The Upazila is bounded on the north by Manda Upazila and Atrai Upazila of Naogaon Zila, east by Atrai Upazila and Natore Sadar Upazila, south by Puthia Upazila and Durgapur Upazila and west by Mohanpur Upazila. Bagmara (Town) located at Bhabaniganj, stands on the bank of the river Fakinni. The following Map 2-2 shows the geographic location of Bagmara Upazila.



Map 2-2: Geographic Location of Bagmara Upazila (Source: LGED, 2011)

2.2.3 Administrative/Geographic Unit

The upazila consists of 2 paurashavas, 18 wards, 40 mahallas, 16 unions, 273 populated mauzas and 332 villages. The average size of population of each ward and mahalla are 1994 and 897 respectively. On the other hand, the average size of population of each union, mauza and village are 19923, 1168 and 960 respectively.

2.2.4 Housing and Household Characteristics

In the upazila, there are 94050 households. Distribution of household by type shows that there are 99.91% general unit, 0.02% institutional and 0.07% other unit (Source: Community Zila Series Census, 2011).

The average household size (General) for the upazila is 3.8 persons, for rural area the size is slightly lower i.e. 3.7 and for urban area the size is slightly higher i.e. 4.0. Type of Housing Structure: In the upazila, 3.8% general households live in pucca house, 29.3% in semi-pucca house, 66.0% in kutcha house and the remaining 0.9% live in jhupri which is shown in a pie-chart in **Figure 2-1**.

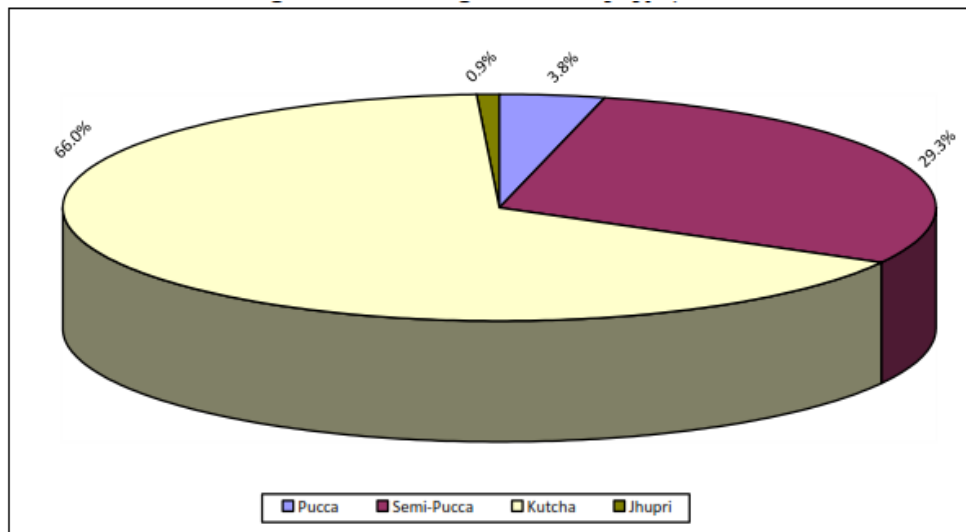


Figure 2-1: Housing Structure by type, 2011 (Source: BBS, 2011)

2.2.5 Source of Drinking Water

In Bahgmara Upazila, 91.4% general households get the facility of drinking water from tube-well, 3.0% from tap and the remaining 5.6% household get water from other sources. (Source: Community Zila Series Census, 2011)

2.2.6 Sanitation

In the upazila, 57.1% general households use sanitary latrine, 36.0% non- sanitary latrine and the remaining 6.9% have no toilet facility. Sanitation 16.24% (rural 16.28% and urban 15.85%) of dwelling households of the upazila use sanitary latrines and 44.22% (rural 42.72% and urban 56.78%) of dwelling households use non-sanitary latrines; 39.55% of households do not have latrine facilities (Source: Community Zila Series Census, 2011).

2.2.7 Access to Electricity

All the 16 unions of the upazila have brought under the Rural Electrification Program. However, a total of 41.6% general households reported to have electricity connection in the entire upazila in 2011 as against 15.8% in 2001 (Source Rural Electrification Board, 2012).

2.2.8 Population Characteristics

According to Population and Housing Census 2011, the total population of the upazila is 354664 of which 177157 are males and 177507 are females. The sex ratio of the upazila is 100 in 2011 as against 104 in 2001. **Table 2-1** shows the population distribution of Bagmara Upazila.

Table 2-1: Population Distribution at Different Administrative Tier in Bagmara Upazila

Upazila								
Municipality	Union	Mouza	Village	Population		Density (per sq km)	Literacy rate (%)	
				Urban	Rural		Urban	Rural
2	16	292	332	34632	285336	881	44.30	38.31
Bhawaniganj Municipality								
Area (sq km)	Ward	Mahalla	Population		Density (per sq km)	Literacy rate (%)		
13.34	9	23	15714		1178	Ñ		
Taherpur Municipality								
Area (sq km)	Ward	Mahalla	Population		Density (per sq km)	Literacy rate (%)		
10.84	9	18	16826		1552	60.83		
Upazila Town								
Area (sq km)	Mouza	Population		Density (per sq km)	Literacy rate (%)			
2.40	1	2092		872	49.83			

(Source: BBS, 2011)

Growth Rate: The decadal population growth rate for the upazila is 10.84% and the annual compound growth rate is 1.02%. The decadal growth rates over the last half-century are shown in **Table 2-2**.

Table 2-1: Decadal growth rate of population, 1951-2011

Decades	Growth Rate (%)
1951-1961	17.3
1961-1974	50.1
1974-1981	20.9
1981-1991	20.0
1991-2001	13.3
2001-2011	10.8

(Source: BBS, 2011)

2.2.9 Literacy and Education

In Bagmara Upazila, it is found that 46.3% population aged 7 years and over are literate. Literacy rates by sex of three consecutive censuses are shown in **Table 2-3**.

Table 2-3: Literacy Rate by Sex, 1991-2011

Item	1991	2001	2011
Both Sex	22.9	39.0	46.3
Male	32.5	47.0	52.2

(Source: BBS, 2011)

Literacy rate is also shown in a Bar-Diagram in **Figure 2-2**.

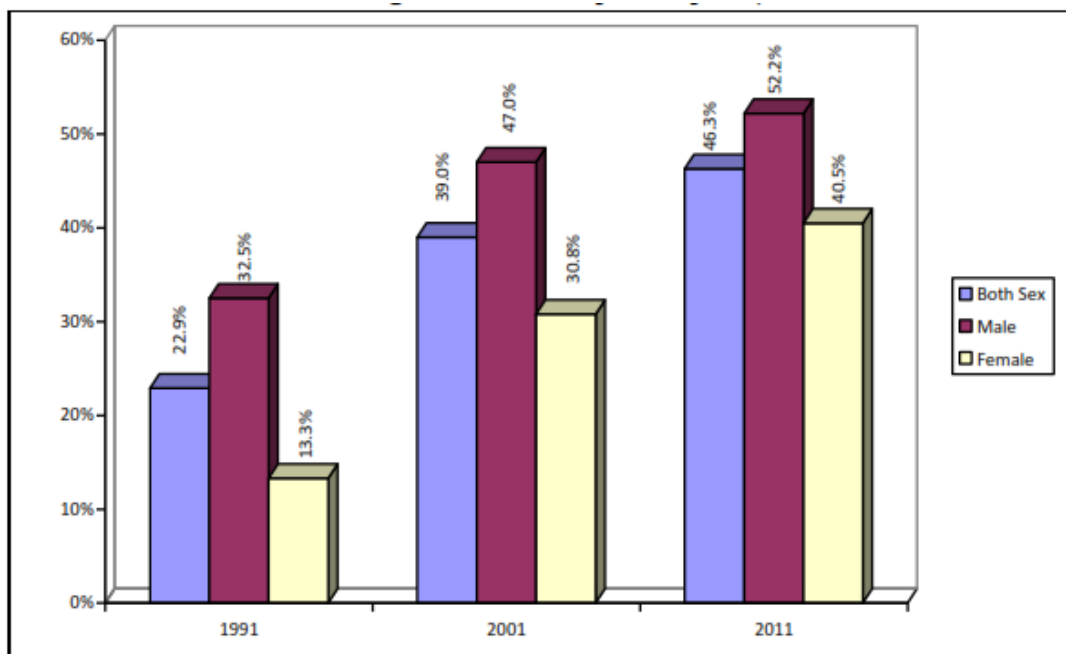


Figure 2-2: Literacy Rate by Sex, 1991-2011 (Source: BBS, 2011)

Table 2.2 shows that the literacy rate of the upazila in 2011 is 46.3% for both sex, 52.2% for male and 40.5% for female. It shows an increase of 7.3, 5.2 and 9.7 percent point in 2011 over 2001 for both sex, male and female respectively. In the upazila, the literacy is the highest 71.0% in Ward No. 05 of Bhabani Paurashava and the lowest i.e. 37.0% in Durippur Union.

2.2.10 Education

School attendance of boys and girls between age 3-29 years is presented in **Table 2-4**.

Table 2-4: School Attendance Rate by Sex, 2011

Item	3-5 Years	6-10 Years	11-14 Years	15-19 Years	20-24 Years	25-29 Years
Both Sex 2.44	10.00	82.05	90.25	59.57	13.14	
Male 4.35	9.67	81.65	87.82	66.95	23.48	
Female 0.89	10.35	82.49	93.10	49.90	5.71	

(Source: BBS, 2011)

There exist differences in school attendance rates in various age groups which can be observed from the **Table 2-4**. The female attendance rate in the age groups 3-5, 6-10 and 11-

14 years is higher than their male counterparts. On the other hand, male attendance rate in the age groups 15-19, 20-24 and 25-29 years is higher than female. The highest school attendance rate is 93.10% which is found for female in the age group 11-14 years.

2.2.11 Water bodies Main River.

Baranai; Fakinni river, Beel Joshoi, Takta Beel, Mosher Beel, Nakkati Beel, Katila Beel and Bagir Dara (water channel), Talgharia Dara and Komorpur Dara are notable.

2.2.12 Archaeological Heritage and Relics

Mazar of Panchpir and Shahi Mosque at village Achin Ghat on the bank of the river Baranai.

2.2.13 Institutions

Mosque 1239, temple 65, tomb 6. Noted religious institutions: Taherpur Bara Mosque.

2.2.14 Educational institutions

College 16, technical education institute 2, secondary school 120, primary school 210, madrasa 80. Noted educational institutions: Taherpur Degree College, Pania Nardas College, Bhawaniganj College, Machmail College, Mohanganj College, Bir-kutsha Abinash High School (1917), Hat Ganga Para High School (1925).

2.2.15 Newspapers and Periodicals

Shilpa and Krishi.

2.2.16 Cultural Organizations

Club 100, theatre group 5, jatra party 5, cinema hall 4.

2.2.17 Main Sources of Income

Agriculture 76.76%, non-agricultural labourer 1.97%, industry 0.05%, commerce 9.35%, transport and communication 2.55%, service 3.33%, construction 0.63%, religious service 0.08%, rent and remittance 0.09% and others 4.72%. (Source: Community Zila Series BBS, 2011)

2.2.18 Ownership of Agricultural Land

Landowner 69.88%, landless 30.12%; agricultural landowner: urban 59.29% and rural 71.14%. (Source: BBS 2011).

2.2.19 Main crops

Paddy, wheat, potato, corn, mustard, sesame, betel leaf, vegetables. Extinct or nearly extinct crops Barley, kaun, jute, linseed, masuri, gram, khesari.

Main Fruits: Mango, banana, jackfruit, litchi, papaya, guava, plum.

Fisheries, dairies and poultries: Poultry 20, dairy 45, hatchery 11.

2.2.20 Communication Facilities

Pucca road 127 km, mud road 406 km. Extinct or nearly extinct traditional transport Palanquin, bullock cart and horse carriage.

2.2.21 Industries

Noted manufactories Ice factory 15, welding 20, cold-storage 4. Cottage industries Blacksmith 80, potteries 140, weaving 15, bamboo work 230, cane work 76.

2.2.22 Markets and Bazars

Hats, bazars and fairs Hats and bazars are 30, fairs 5, most noted of which are Taherpur, Bhawaniganj, Mohanganj, Madariganj, Machmail, Gangopara, Barahat, Hamir Kutsha, Akdala, Nardas, Damnash, Shikdari hats and Dekhaltala Mela.

2.2.23 Access to Electricity

All the wards and unions of the upazila are under rural electrification net-work. However 15.76% of the dwelling households have access to electricity.

2.2.24 Sources of Drinking Water

Tube-well 96.6%, tap 0.14%, pond 0.11% and others 3.15%. The presence of arsenic has been detected in shallow tube-well water of the upazila.

2.2.25 Health Centres

Upazila health centre 1, family planning centre 10, satellite clinic 6.

2.2.26 NGO Activities

Operationally important NGOs are brac, asa, proshika, thengamara mahila sabuj sangha.

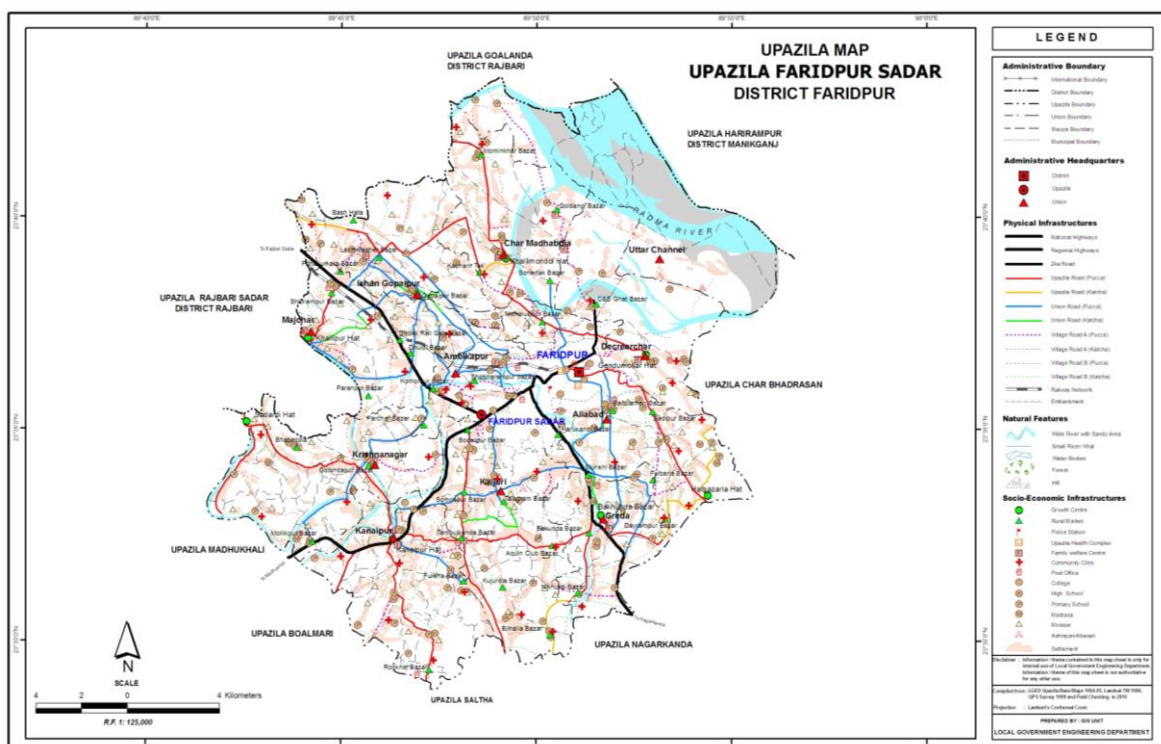
2.3 Faridpur Sadar Upazila, Faridpur

2.3.1 Brief Description of the Project Area

Faridpur Sadar came into existence as a thana in 1894. Nothing is definitely known about the origin of the upazila name. It is learnt that, there lived a renowned religious leader and pious saint named Shah Farid in this locality. He was buried in the present place of Faridpur town after his death. It is generally believed that the upazila might have derived its name Faridpur Sadar from the name of that great saint Shah Farid.

2.3.2 Area and Location

The upazila occupies an area of 412.86 sq.km. It is located between 23° 29' to 23° 34' north latitudes and between 89° 43' to 89° 56' east longitudes. The upazila is bounded on the north by Goalanda upazila of Rajbari zilla and Shibalaya and Harirampur upazilas of Manikganj zila, on the east by Char Bhadrassan upazila, on the south by Nagarkanda and Boalmari upazilas and on the west by Madhukhali upazila and Rajbari Sadar upazila of Rajbari zila. The following **Map 2-3** shows the geographic location of Faridpur Sadar Upazila.



Map 2-3: Geographic Location of Faridpur Sadar Upazila (Source: LGED, 2011)

2.3.3 Local Administration

Administration Faridpur Sadar Thana was formed in 1896 and it was turned into an upazila in 1983. The following **Table 2-5** shows the different administrative units located within Faridpur Sadar Upazila.

Table 2-5: Administrative Information of Faridpur Sadar Upazila

Items	Zila		Upazila	
	2011	2001	2011	2001
Upazila/Thana	9	8	-	-
Union	79	79	11	11
Mauza	997	1,038	150	157
Village	1,899	1,860	342	332
Paurashava	4	4	1	1
Paura Ward	36	36	9	9
Paura Mahalla	100	94	41	35

Source: BBS, 2011

2.3.4 Population

Total 413485; male 213765, female 199720; Muslim 367829, Hindu 44615, Buddhist 967, Christian 31 and others 43. The following **Table 2-6** shows the demographic Information of Faridpur Sadar Upazila.

Table 2-6: Population Distribution at Different Administrative Tier in Faridpur Sadar Upazila

Upazila								
Municipality	Union	Mouza	Village	Population		Density (per sq km)	Literacy rate (%)	
				Urban	Rural		Urban	Rural
1	11	157	332	101084	312401	1016	73.3	41.6
Municipality								
Area (sq km)	Ward	Mahalla	Population	Density (per sq km)		Literacy rate (%)		
22.65	9	35	99945	4413		73.6		
Upazila Town								
Area (sq km)	Mouza	Population	Density (per sq km)		Literacy rate (%)			
0.80	2	1139	1424		49.2			

Source: BBS, 2011

2.3.5 Water Bodies

Main rivers: padma, Kumar, Old Kumar, Bhubaneshwar; Chapa Beel, Hari Beel, Shakuner Beel, Dhol Samudra, Kole (a strip of shallow water) of Beel Mamunpur and Tapa Kholar Lake (excavated) are notable.

2.3.6 Archaeological Heritage and Relics

Mosque at Gerda (1013 AH), Dargah of Sheikh Farid, Shiva Mandir at Chawkbazar, Jagabandhu Ashram (Sree Angan), Mazar of Bismillah Shah, Court Mosque, Faridpur Christian Mission, Gaur Gopal Angina (courtyard), house of Shah Saheb at Goalchamat, Math of Mahim Babu. Marks of the War of Liberation Mass grave 2 (Faridpur Stadium, Faridpur Housing Estate), memorial sculpture 1, memorial monument 1. (Source: Community Zila Series Census, 2011).

2.3.7 Religious Institutions

Mosque 321, temple 30, church 3, sacred place 1.

2.3.8 Literacy Rate

Average literacy 49.7%; male 53.7%, female 45.4%. (Source: BBS, 2011)

2.3.9 Educational Institutions

Medical college 1, law college 1, homeopathic college 1, teachers' training college 1, technical and vocational college 1, primary teachers' training institute 1, college 13, open university 1, secondary school 40, primary school 148, satellite school 13, community school 14, orphanage 3, madrasa 39. Noted educational institutions: Faridpur Medical College (1992), Government Rajendra College (1918), Faridpur High School (1889), Hitoishi High School (1889), Ishan Girls' High School (1908), Shiva Ram RD Academy (1917), Faridpur Government Girls' High School (1918), Moiez Uddin High School (1926), Adarsha Girls' High School (1927), Faridpur Zila School (1840).

2.3.10 Newspapers and Periodicals Daily

Thekana, Gana Samhati, Bhorer Runner, Kumar (2006); Weekly: Ganaman (BS1370), Jagaran, Al-Mizan, Chasibarta, Pragatir Din (1995), Idaning, Faridpur Kantha, Kalvabna (2004), Faridpur Barta, Bangla Sambad; Defunct: Akal (Weekly), Al Muazzen.

2.3.11 Cultural Organisations

Club 140, library 3, museum 1, cinema hall 3, theatre stage 5, theatre group 17, women's organization 45. (Source: Community Series, BBS, 2011).

2.3.12 Tourist Spots

House of Palli Kabi Jasimuddin, Moiez Manzil and Graveyard, house of Khan Bahadur Abdul Gani, Faridpur Town Theatre (1915), house of Ambikacharan, campus of River Research Institute (1977), Kanaipur Shikdar Bari, house of Shah Saheb at Goalchamat, Sluice Gate.

2.3.13 Main Sources of Income

Agriculture 39.72%, non-agricultural labourer 4.03%, industry 1.65%, commerce 17.49%, transport and communication 9.19%, service 14.23%, construction 3.68%, religious service 0.15%, rent and remittance 1.41% and others 8.45%. (Source: Community Series, BBS, 2011).

2.3.14 Ownership of Agricultural Land

Landowner 77.77%, landless 22.23%; agricultural landowner: urban 72.28% and rural 77.95%. (Source: BARC, 2007).

2.3.15 Main Crops

Paddy, jute, wheat, potato, sugarcane, onion, garlic, turmeric, pulse, vegetables. Extinct or nearly extinct crops Kaun, kusum phul, sesame, sonamuk, china, barley, arahar, sweet potato.

Main fruits Mango, jackfruit, litchi, banana, papaya, coconut.

Fisheries, Dairies And Poultry: Fishery 22, dairy 109, poultry 32, hatchery 3. (Source: BARC, 2007).

2.3.16 Communication Facilities

Pucca road 223 km, semi-pucca road 120 km, mud road 408 km; railway 25 km; waterway 40.50 nautical miles; bridge 70, culvert 90. Extinct or nearly extinct traditional transport Palanquin, bullock cart, buffalo cart. (Source: Community Series, BBS, 2011).

2.3.17 Industries

Jute mill, textile mill, rice mill, flour mill, pulse mill, ice cream factory.

Cottage Industries: Goldsmith, blacksmith, potteries, wood work, bamboo work, cane work.

2.3.18 Markets and Baazars

Hats, bazars and fairs Hats and bazars are 37, fairs 6, most noted of which are Kanaipur, Tepakhola, Mominkha, Gendu Mollar, Gajaria, Tambulkhana, Bakhunda and Khalilpur hats; Angina, Chawdhury Bari, Jasim Palli and Akpara melas.

Main Exports: Jute, onion, garlic, sugarcane molasses, pulse, vegetables, turmeric.

2.3.19 Access to Electricity

All the wards and unions of the upazila are under rural electrification net-work. However 35.41% (urban 79.96% and rural 22.12%) of the dwellings have access to electricity. (Source: Community Zila Series Census, 2011).

2.3.20 Sources of Drinking Water

Tube-well 93.51%, tap 3.91%, pond 0.16% and others 2.42%. (Source: DPHE, 2009)

2.3.21 Sanitation

55.95% (urban 89.37% and rural 45.98%) of dwelling households of the upazila use sanitary latrines and 39.02% (urban 9.22% and rural 47.91%) of dwelling households use non-sanitary latrines; 5.03% (urban 1.41% and rural 6.10%) of households do not have latrine facilities. (Source: DPHE, 2009)

2.3.22 Health Centres

Medical college hospital 1, hospital 10, family planning centre 9, TB hospital 1, child and maternity centre 1, health centre 1, national heart foundation 1, clinic 18, community clinic 38 (Source: Community Series, BBS, 2011).

2.3.23 Natural Disasters

The cyclone, originated from the eastern region of meghna, of 9-10 and 30-31 October 1960 caused huge damages to settlements, livestock and crops of the upazila. The eastern part of the upazila is under constant threat due to river erosion (Source: CDMP, 2011)

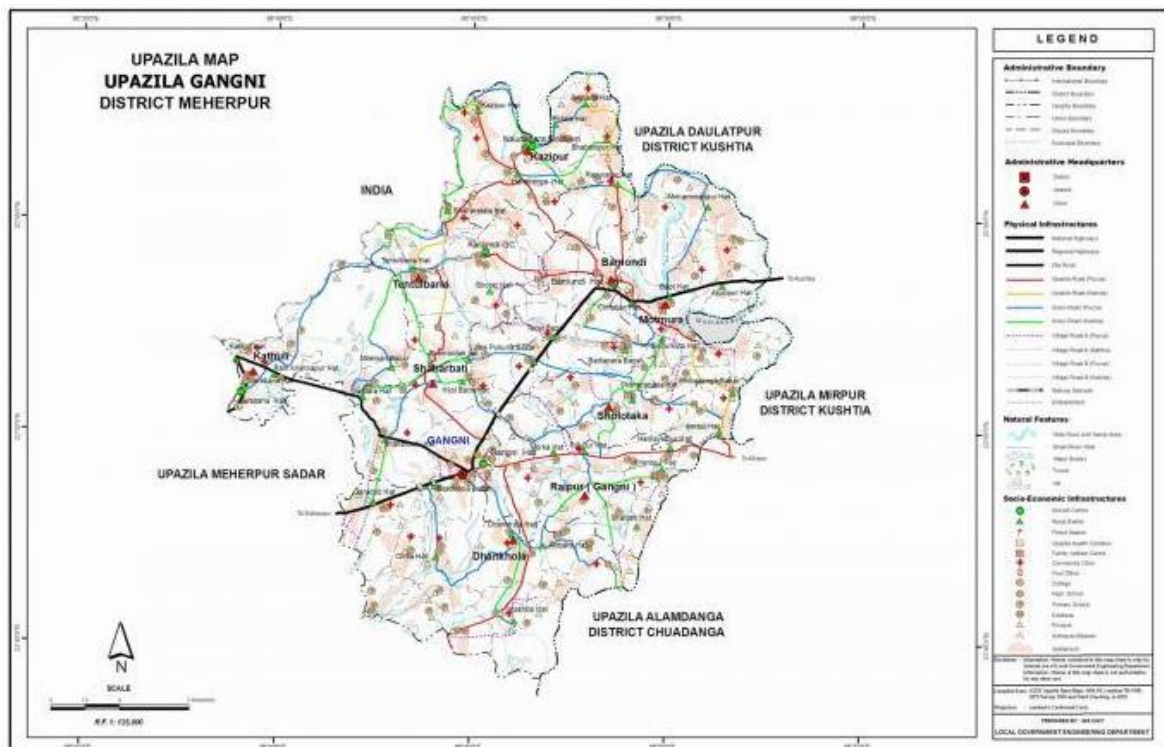
2.3.24 NGO Activities

ASA, World Vision, NGO Forum for Drinking Water Supply and Sanitation.

2.4 Gangni Upazila, Meherpur

2.4.1 Area and Location

Gangni Upazila (meherpur district) area 341.98 sq km, located in between 23°44' to 23°52' north latitudes and in between 88°34' to 88°47' east longitudes. It is bounded by daulatpur (kushtia) upazila on the north, alamdanga and meherpur sadar upazilas on the south, Daulatpur (Kushtia), mirpur (Kushtia) and Alamdanga upazilas on the east, Meherpur Sadar upazila and west bengal state of India on the west. The following **Map 2-4** shows the geographic location of Gangni Upazila.



Map 2-4: Geographic Location of Gangni Upazila (Source: LGED, 2011)

2.4.2 Administration and Population

Administration Gangni Thana was formed in 1923 and it was turned into an upazila on 24 February 1984. Population Total 269085; male 137921, female 131164; Muslim 264976, Hindu 2239, Buddhist 1677 and others 193. Demographic and administrative information of Gangni Upazila are shown in **Table 2-7**.

Table 2-7: Demographic and Administrative Information of Faridpur Sadar Upazila

Upazila								
Municipality	Union	Mouza	Village	Population		Density (per sq km)	Literacy rate (%)	
				Urban	Rural		Urban	Rural
1	9	103	143	23846	245239	787	50.00	35.1
Municipality								
Area (sq km)	Ward	Mahalla	Population		Density (per sq km)	Literacy rate (%)		
12.17	9	13	20780		1707.47	48.94		
Upazila Town								
Area (sq km)	Mouza	Population		Density (per sq km)	Literacy rate (%)			
22.86	5	23846		1043	50.00			

(Source: Community Series, BBS, 2011).

2.4.3 Annual Average Temperature

Maximum 37.1°C and lowest 11.2°C; annual rainfall 1467 mm.

2.4.4 Water bodies Main Rivers

Bhairab, Ichamati, Mathabhanga and Kazla; Elangi Beel, Nuner Beel and Elalgari Damash Beel are notable. Archaeological heritage and relics Shaharbari Neelkuthi (1859), Gosaidubi Mosque at Karamdi.

2.4.5 Archaeological Heritage and Relics

Shaharbari Neelkuthi (1859), Gosaidubi Mosque at Karamdi. Marks of the War of Liberation Mass grave 2 (Kazipur and Tepukhali Playground) (Source: Community Zila Series Census, 2011).

2.4.6 Religious Institutions

Mosque 245, temple 6, church 6.

2.4.7 Literacy Rate

Average literacy 36.5%; male 38.7%, female 34.1%. (Source: Community Series, BBS, 2011).

2.4.8 Educational Institutions

College 9, secondary school 68, primary school 164, kindergarten 14, community school 4, madrasa 9. Noted educational institutions: Gangni Degree College (1983), Gangni Mohila College (1995), Hoglabaria Mohammadpur Hazi Bharasuddin Secondary School (1945), Gangni Secondary School (1945).

2.4.9 Cultural Organizations

Library 4, club 10, music learning institution 3, theatre group 2, cinema hall 2, playground 20.

2.4.10 Tourist Spots

Bhatpara Neelkuthi and Chitla Jute Seed Farm.'

2.4.11 Main Sources of Income

Agriculture 70%, non-agricultural labourer 2.83%, industry 0.96%, commerce 13.38%, transport and communication 1.90%, service 3.13%, construction 1.03%, religious service 0.13%, rent and remittance 0.59% and others 6.05%. (Source: Community Series, BBS, 2011).

2.4.12 Ownership of Agricultural Land

Landowner 57.82%, landless 42.18%; agricultural landowner: urban 59.02% and rural 57.71% (Source: Community Zila Series Census, 2011).

2.4.13 Main Crops

Paddy, jute, wheat, tobacco, maize, vegetables. Extinct or nearly extinct crops Indigo, arahar, khesari pulse.
Main fruits Mango, jackfruit, litchi.

Fisheries, Dairies and Poultryes: This upazila has a number of fisheries, dairies, poultryes and hatcheries.'

2.4.14 Communication Facilities

Pucca road 223.59 km, mud road 467.25 km. Extinct or nearly extinct traditional transport Palanquin, bullock cart, horse carriage. (Source: Community Zila Series Census, 2011).

2.4.15 Factories and Industries

Flour mill, jute mill, ice factory.

Cottage industries: Weaving, blacksmith, potteries, bamboo work, wood work, nakshi kantha.

Main Exports: Tobacco, paddy, jute, wheat.

2.4.16 Market and Baazar

Hats, bazars and fairs Hats and bazars are 20, fair 1, most noted of which are Garabari Hat, Tentulbaria Hat, Karamdi Hat, Kazipur Hat, Betbaria Hat, Naodapara Hat and Baishakhi Mela.

2.4.17 Access to Electricity

All the wards and unions of the upazila are under rural electrification net-work. However 26.27% of the dwellings have access to electricity. (Source: Community Zila Series Census, 2011).

2.4.18 Sources of Drinking Water

Tube-well 92.72%, tap 1%, pond 0.16% and others 6.12%. The presence of arsenic has been detected in 12.02% out of the 31965 shallow tube-wells of the upazila.

2.4.19 Sanitation

17.19% (rural 15.98% and urban 30.10%) of dwelling households of the upazila use sanitary latrines and 45.49% (rural 44.76% and urban 53.30%) of dwelling households use non-sanitary latrines; 37.32% of households do not have latrine facilities. (Source: Community Series, BBS, 2011).

2.4.20 Health Centres

Upazila health complex 1, satellite clinic and family planning centre 6, hospital 1, clinic 5, health centre 1.

2.4.21 NGO Activities

Proshika, Brac, Asa, Sandhani, Nijera Kari.

2.4.22 Flora and Fauna

Flora: Gangni Upazila is located at mid west part of Bangladesh. The entire western boundary line of the district borders West Bengal(India). Gangni Upazila district was a part of greater Kustia district. Trees and plants growing in this district are almost similar in the adjacent Kustia and Chuadanga districts. Earlier the major portion of the district was covered by bamboo clumps and other indigenous low jungle growths interlaced with wild creepers, which are used for fuel. Gangni Upazila district is famous for growing teak and mehogony. The mango-grove of Baidynathtala in Gangni Upazila district is well known all over the country for the history of independence of Bangladesh. The highways of the district were planted with mehogony(*Swietenia macrophylla*), teak, shishu (*Dalbergia sissoo*), and rain trees(*Samanca saman*). Khayer trees are quite common. Date palm trees are widely grown in the district for juice and patali gur, popularly known as Hazari gur. Palmyra palm trees also are grown to a considerable extent for which juice is obtained for brewing tari (liquor), a sort of gur and sugar candy known as Talmisri is also made out of it. Large area formerly covered with jungles has been brought under cultivation by local inhabitants. The stretches of low lying land under rice cultivation afford a foothold for many spices, while the numerous ponds and ditches are filled with submerged and floating water plants. The edges of sluggish creeks are lined with large sedges and bulrushes and the banks of rivers frequently have a hedge like shrub jungle. The sides of embankments and village sites, where not occupied by human habitations, are densely covered with large growth of semi spontaneous vegetation, often interspersed with clumps of planted bamboos and groves of areca *Moringa*, *Mangifera* and *Anona*. Waysides and waste places are filled with grasses and weeds usually of little intrinsic interest, but sometime striking because of their distribution. A large proportion of the species of this class to be met within the district has been inadvertently introduced by human agency. In many places of the district, the soil does not seem to suit some important common indigenous trees and consequently the poorer classes are in times of scarcity and famine deprived of one resource which they can fall back upon in more favored districts.

Among the common varieties of trees the following are found in abundance. Mango (*Mangifera indica*) is generally grown in orchards with much care and properly nursed and reared. Some important varieties are, bombay, gopalbhog, lengra, and fazli. Jack fruit (*Artocarpus heterophyllus*) are also widely grown. Jam (*Eugenia jambolanavav*), guava (*Psidium guajava*), shimul (*Bombax ceiba*), palash (*Butea monosperna*), sonalu (*Cassia fistula*), pitraj (*Aphanamixis ponystachia*), kanai, suruj and a host of other trees grown in wild in fallow and vacant lands and abandoned orchards, on banks of derelict tanks, on the edge of the marshes

and other unexploited places. Banyan (*Ficus indica*), peepal (*Ficus religiosa*), neem (*Azadirachta indica*), krishnachura (*Delonix regia*), babla (*Acacia nilotica*) grown in wild at all convenient places. Among the palm group, palmyra palm, date-palm (*Phoenix sylvestris*), areca-nut and coconut (*Cocos nucifera*) are commonly grown around homestead, paddy fields, banks of tanks and ditches. Various kinds of reeds abound in the marshes, derelict tanks, ditches and choked up rivers.

Fauna

Mammals: Among the carnivore, tigers were commonly found at the beginning of the 19th century in the more sparsely inhabited areas in the district. However many years have passed since the last of these animals disappeared and none are now to be seen nearer than in the Sundarbans. Leopards (*Panthera pardus*), however, continued to be fairly common in the district. Wild hogs were also common, especially where they were protected for the purpose of pig sticking have long gone. Among the lesser fauna are foxes (*Vulpes bengalensis*), hares (*Lepus nigricollis*), porcupines, jackals (*Canis aureus*), monkeys (*Macaca mullata*), wild cats etc.

Birds: Of game birds, the florican used to breed on the vast lonely fields of district but they deserted the district during the part of the rains and the beginning of the cold weather. Various kinds of wild duck and other aquatic birds are found in large numbers in the district during the cold weather. Big and small snipes in great number are available in the end of March in the big beels and the rivers. A few partridges and quails are occasionally met with. Among the common birds crows and kites are abundant as in all other districts of Bangladesh. Vultures (*Gyps bengalensis*) and eagles (*Circus badius*) are seldom seen. Hawks and owls (*Tyto alta*) are also uncommon. Among small birds of handsome plumage or otherwise attractive appearance are the hoopoe (*Upupa epops*), the golden oriole, the blue jay, the bee-eaters (*Merops orientalis*), with long slender bills, swallows, martins, mainas and kingfishers (*Alcedo atthis*) are also very common.

Reptiles and Amphibians: Snakes, mostly poisonous are very common in the district. Cobras of various types, panak and king cobra prefer high lands, alats usually prefer water edges, darash and shankhur are also commonly found. guishap (*Varanus salvator*) eat away the eggs laid by snakes and mongoose fight and kill them.

Fishes: Fish is found in the rivers and beels. Almost all varieties of the fresh water fish are available in the district. The more important among them are ruhi or salmon (*Labeo rohita*), mrigel (*Cirrhinus mrigala*), kalbous (*Labeo calbasu*), katla or carp (*Catla catla*), etc. Soal fish (*Channa striatus*), scorpion-fish or singi (*Heteropneustes fossilis*) are also found in large quantity in beels and khals. Many other species of river and fresh water fishes are also found in the district. Of these the principal varieties are boal/sheat fish (*Wollago attu*), dhain, chital (*Notopterus chitala*), ghona, airh (*Mystus aor*), bagair (*Bagarius yarrellii*), pangas (*Pangasius pangasia*), rita (*Rita rita*), bain or eel (*Mastacembelus armatus*), chapila (*Gudusia chapra*), bhagna (*Labeo boga*), nandail bacha, pon, gargle (*Arius gagora*), golsha, tengra (*Mystus vittatus*), chanda (*Mene mukulata*), tekchanda (*Gerres argyreus*), kachki (*Corica soborna*), baila (*Glossogobius giuris*), bheda (*Nandus nandus*), batashi (*Pseudeutropius atserinoides*), gulsha (*Mystus calasus*), kakila (*Strogylura strogylura*), phalli or flat fish (*Notopterus notopterus*), tatkeni (*Crosscheilus latius*), pabda or butter fish (*Ompok pabda*), chela (*Chela cachius*), gangchela, gazar (*Channa marulius*), koi or climbing fish (*Anabas testudineus*), kholisha (*Colisa fasciatus*), puti (*Barbus punctatus*), sharputi (*Puntius sarana*), taki (*Channa punctatus*), walking fish (*Ophicephalus striatus*), malandi, bashpata (*Danio devario*), kakra (*Scylla serrata*), meani, shrimps, and prawn are found in the district. However, some of these varieties, specially those which

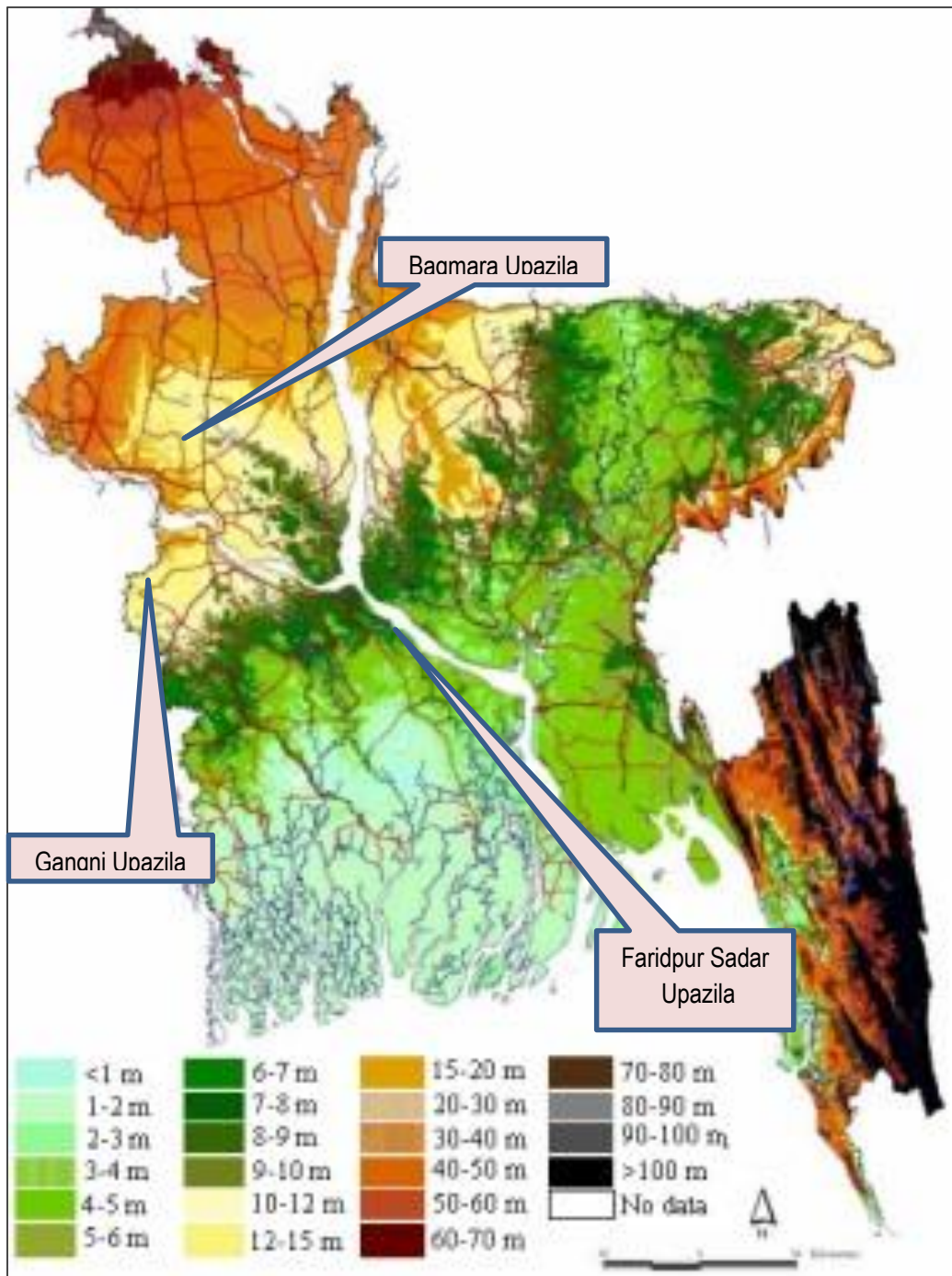
inhabit the marshes and tanks, are dwindling due to over catching and other reasons such as use of insecticides and pesticides for crop production, etc.

In addition, some exotic varieties of fish such as telapia (*Oreochromis mossambicus*), nilotica (*Oreochromis niloticus*), silvers carp (*Hypophthalmichthys molitrix*), grasscarp (*Cteopharyngodon idella*) are also cultivated in the district and they are also becoming very popular.

All these three upazila's statistical detail information is given with this document at **Appendix-3**.

2.5 Topography

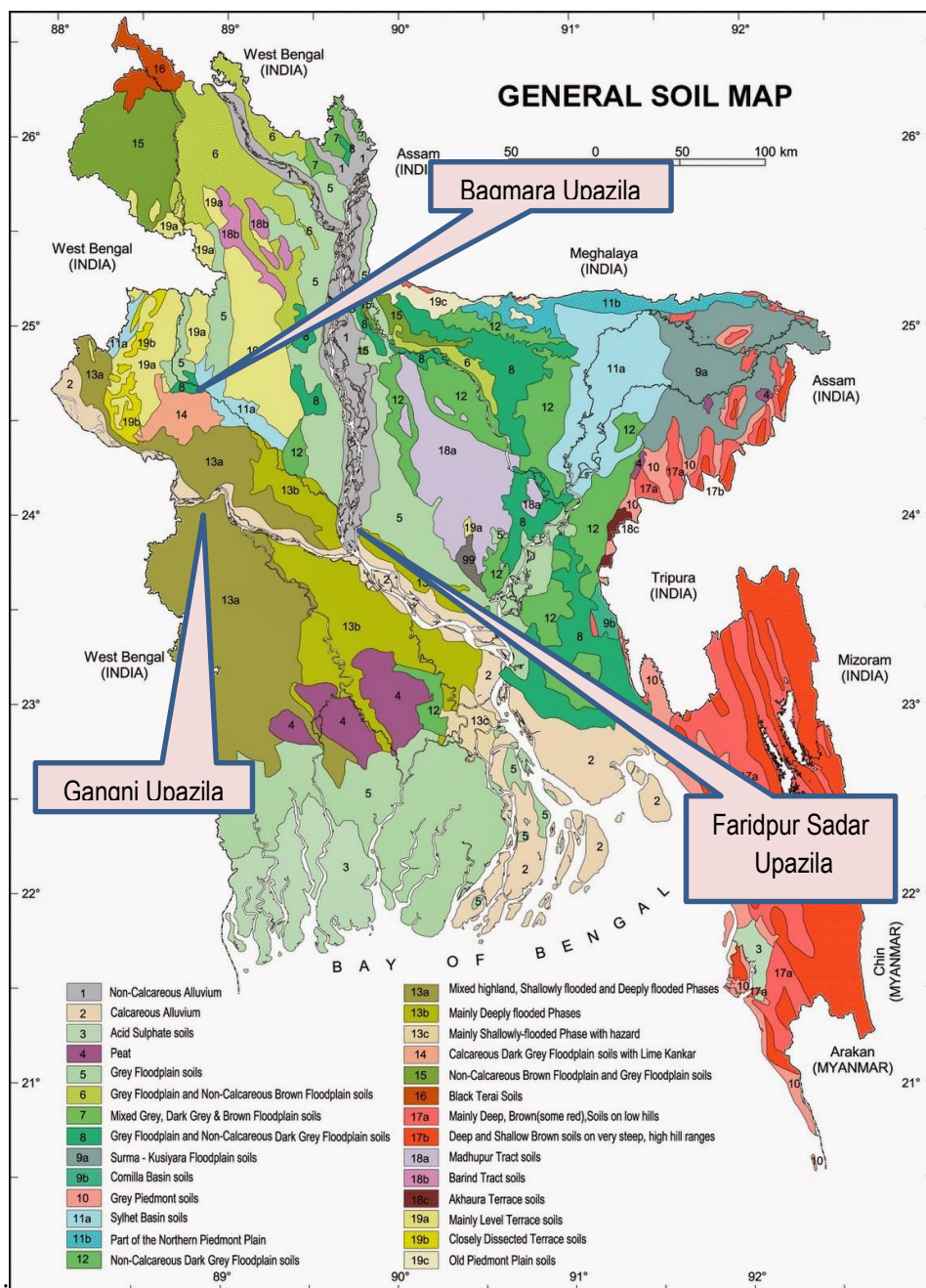
Topographical characteristics of all three upazilas are flat and plain in character. Among the three Faridpur Sadar Upazila contains the maximum amount of low lying lands (average land elevation varies from 3.00 to 4.00 MSL). On the other hand Bagmara Upazila and Gangni Upazila located on the higher side. Average land elevation for these two upazilas 10.00 to 12.00 MSL. Topographical characteristics of these study areas are shown in **Map 2-5**.



Map 2-5: Topographic Map of Bangladesh showing the Project Areas (Source BWDB)

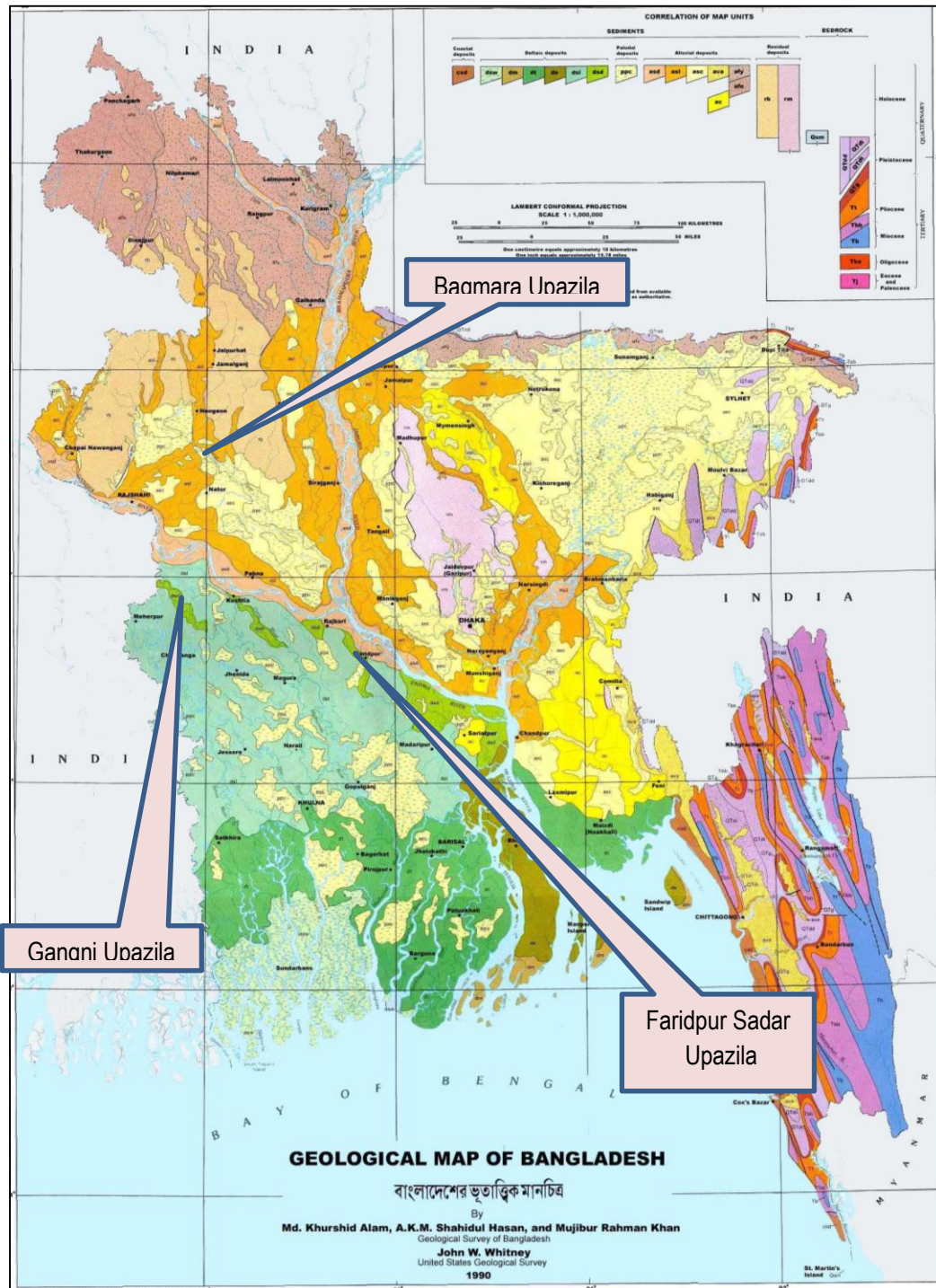
2.6 Geological Features and Soil

Geological and soil characteristics of three upazilas has been collected from Geological Survey Map of Bangladesh conducted by Survey of Bangladesh. Almost 100% land of Faridpur Sadar Upazila contains category 13 b soil (Deeply Flooded Phases), Bagmara Upazila contains two types of soil- category 14 mostly (Calcareous Dark Grey Flood Plain Soils with Lime Klinker) and very few amount of category 8 soil (Grey Flood plain and Non-calcareous Dark Grey Flood Plain Soils). Gangni Upazila solely contains category 13a soil which mainly mixed highland, shallowly flooded and deeply flooded phases. All these soil characteristics are shown in **Map 2-6** with respect to other areas of Bangladesh.



Map 2-6: Soil Classification of Bangladesh showing the project Areas. (Source :Survey of Bangladesh)

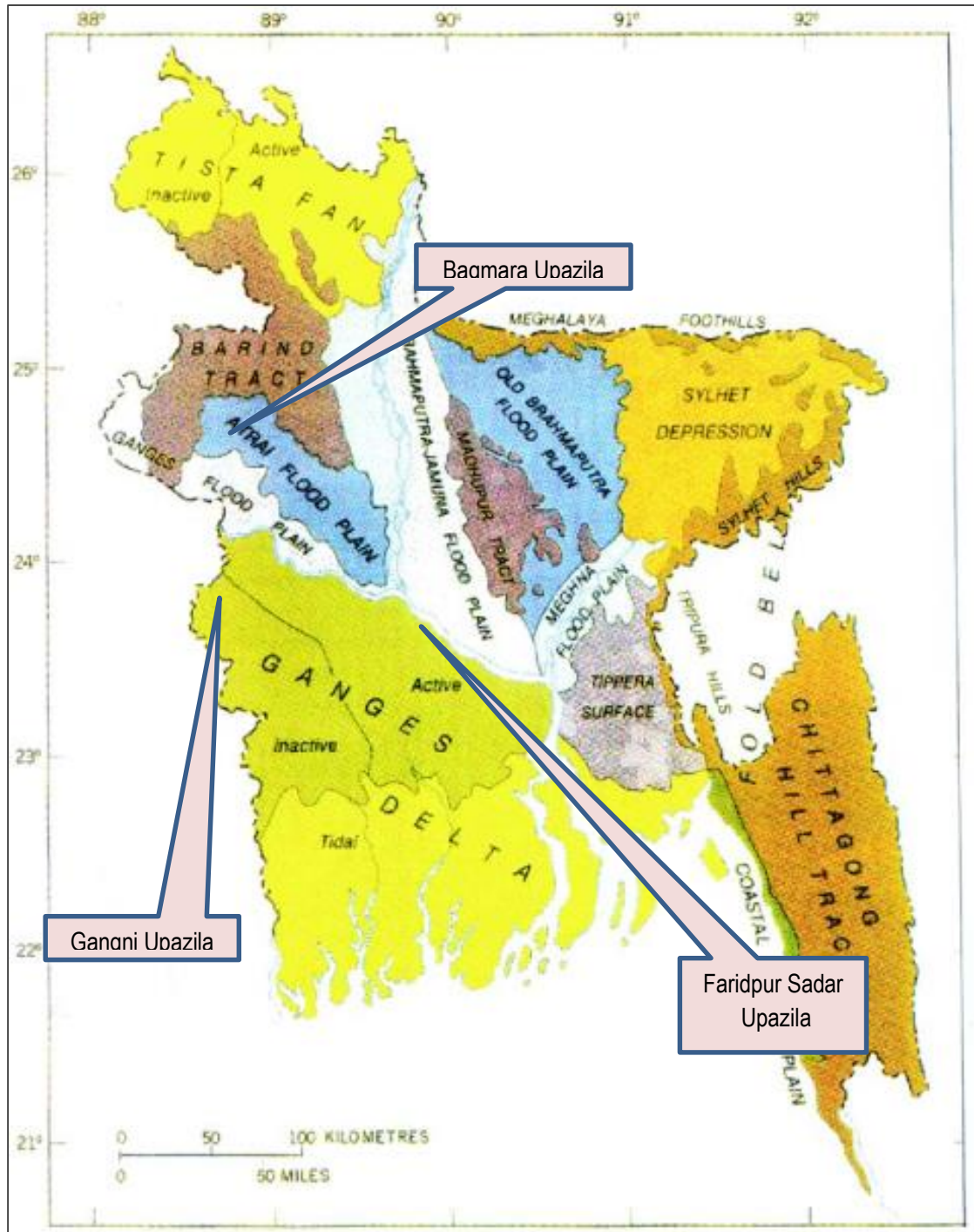
Geological characteristics of three upazilas area also different from each other in a great scale. For Faridpur Sadar Upazila land form is mainly constructed by deltaic deposits. In case of Bagmara Upazila Land form mainly constructed by two types of alluvial deposits (AS1 and ASC), whereas land form in Gangni Upazila constructed by delatic deposits (DSW). All these geological characteristics are shown in **Map 2-7**.



Map 2-7: Geological Map of Bangladesh showing the project Areas. (Source Survey of Bangladesh)

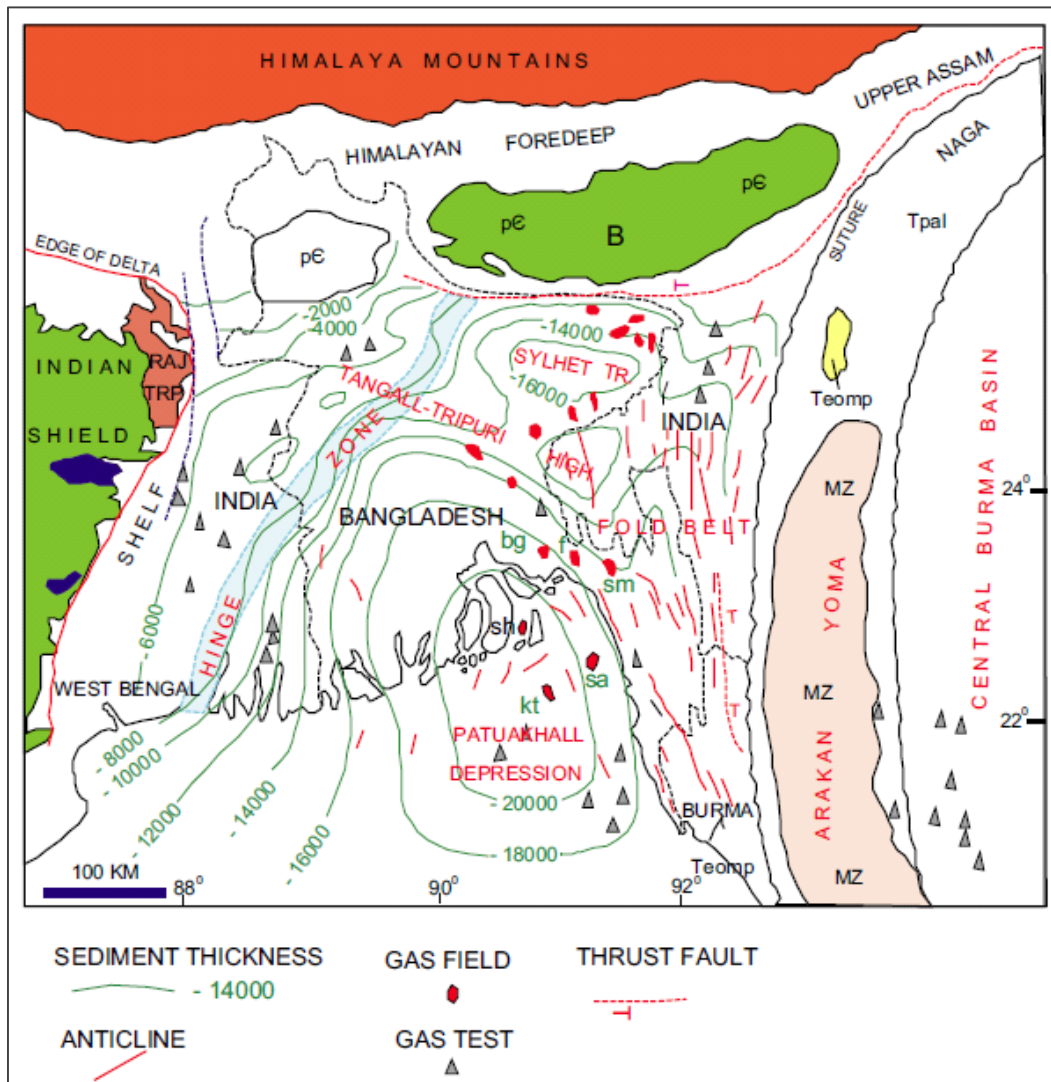
2.7 Geological Plate and Fault Line

Bagmara Upazila is located within Atrai Flood Plane Zone which is not an active plate. Gangni Upazila and Faridpur Sadar Upazila both located with Ganges Flood Plain. Ganges flood plain at Faridpur part is active which increase the suscepability of ground shake and earth quake in this region. Ganges flood Plain at Gangni Upazila is inactive. All these ground plate informations are shown in **Map 2-8**.



Map 2-8: Geological Plate Map of the Project Area. (Source Survey of Bangladesh)

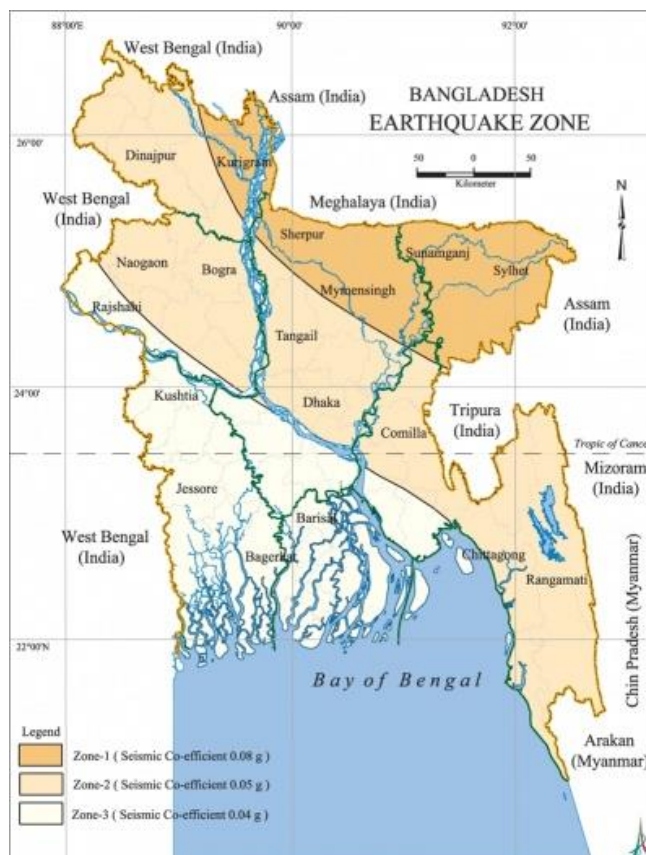
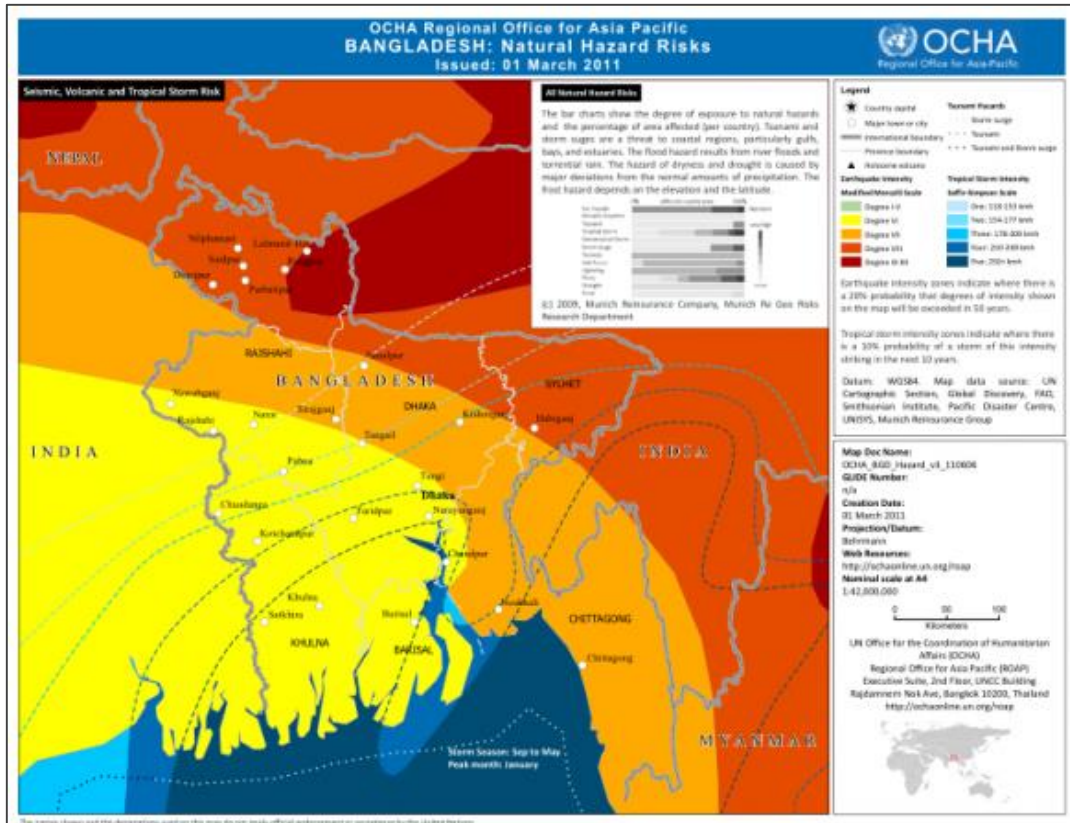
There is no active thrust fault line exists within the designated project areas. Nearest two thrust fault line exists at Khulna-jessore region but those fault lines are not too much active. Location of nearest fault line are shows in **Map 2-9**.



Map 2-9: Location of Geological / Thrust Map of the Project Area. (Source Petro Bangla)

2.8 Siesmicity

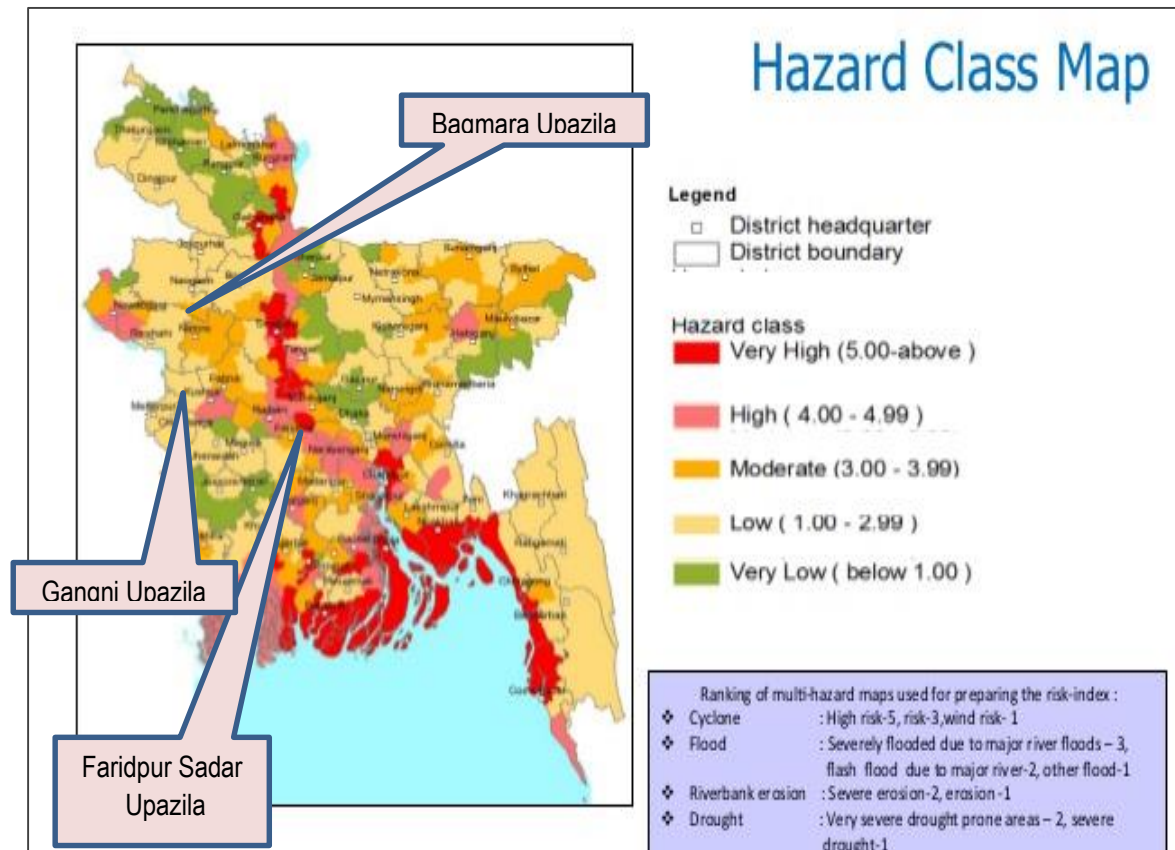
Because of no existance of active thrust fault line in all three upazilas seismicity and earth quake vulnerability are in medium scale. Faridpur Sadar Upazila and Gangni Upazila falls within earth quake zone- 2 (share wave “g” value 0.05). Bagmara Upazila falls in earthquake zone-3 which is highest in earth quake vulnerability (share wave “g” value 0.08). All these assumptions and eart quake zoning are shown in **Map 2-10**.



Map 2-10: Earth quake Zoning Map of Bangladesh. (Source Survey of Bangladesh)

2.9 Disaster and Hazard Features

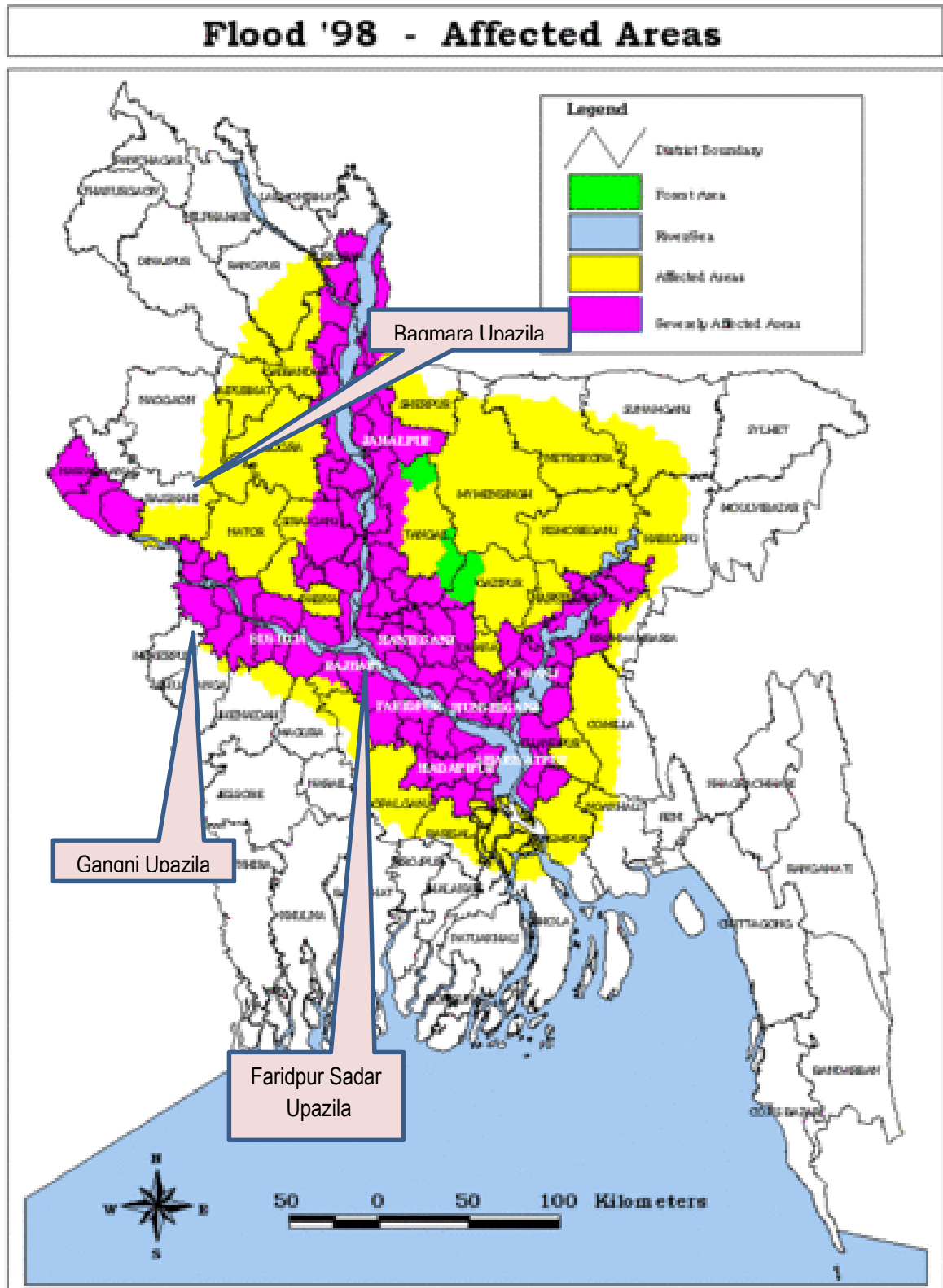
Bangladesh Meteorological Department (BMD) has classified all over Bangladesh into five hazard class based on the severity. Faridpur Sadar is remarked as high risk area because it has high susceptibility to flood, drought and river bank erosion. On the other hand Gangni Upazila free and Bagmara Upazila is slightly free from flood but encountered with drought. The severity of hazards for these two areas is rated as low. Hazard class map generated by BMD is shown in **Map 2-11**.



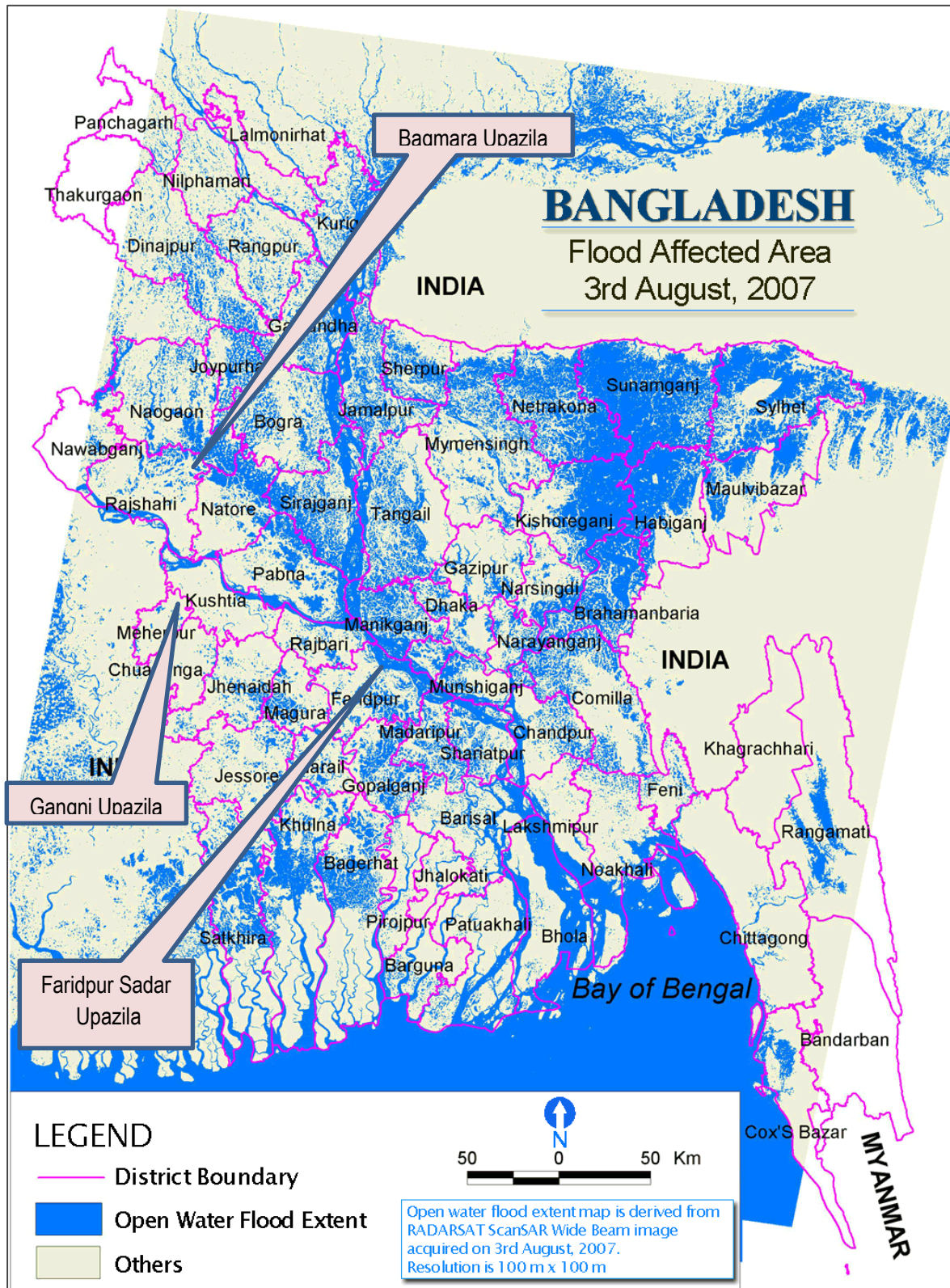
Map 2-11: Hazard Map of Bangladesh showing the Project Areas (Source BMD,2007)

To blow up the hazard scenario for the study areas flood and drought scenario are depicted in **Map 2-12** to **Map 2-14** and **Map 2-15**. To represent the trend of flood impact in the project areas three flood impact maps are shown below as impact of floods in 1998 (major), impacts of flood in 2007 and financial and agricultural loss in recent 2014 flood. These maps clearly show that Gangni Upazila was free from flood in these three events, whereas Faridpur Sadar Upazila is in the worst condition in terms of duration and losses. Bagmara Upazila was heavily affected during 1998 flood, severity of 2007 flood was very less and no impact in event of 2014.

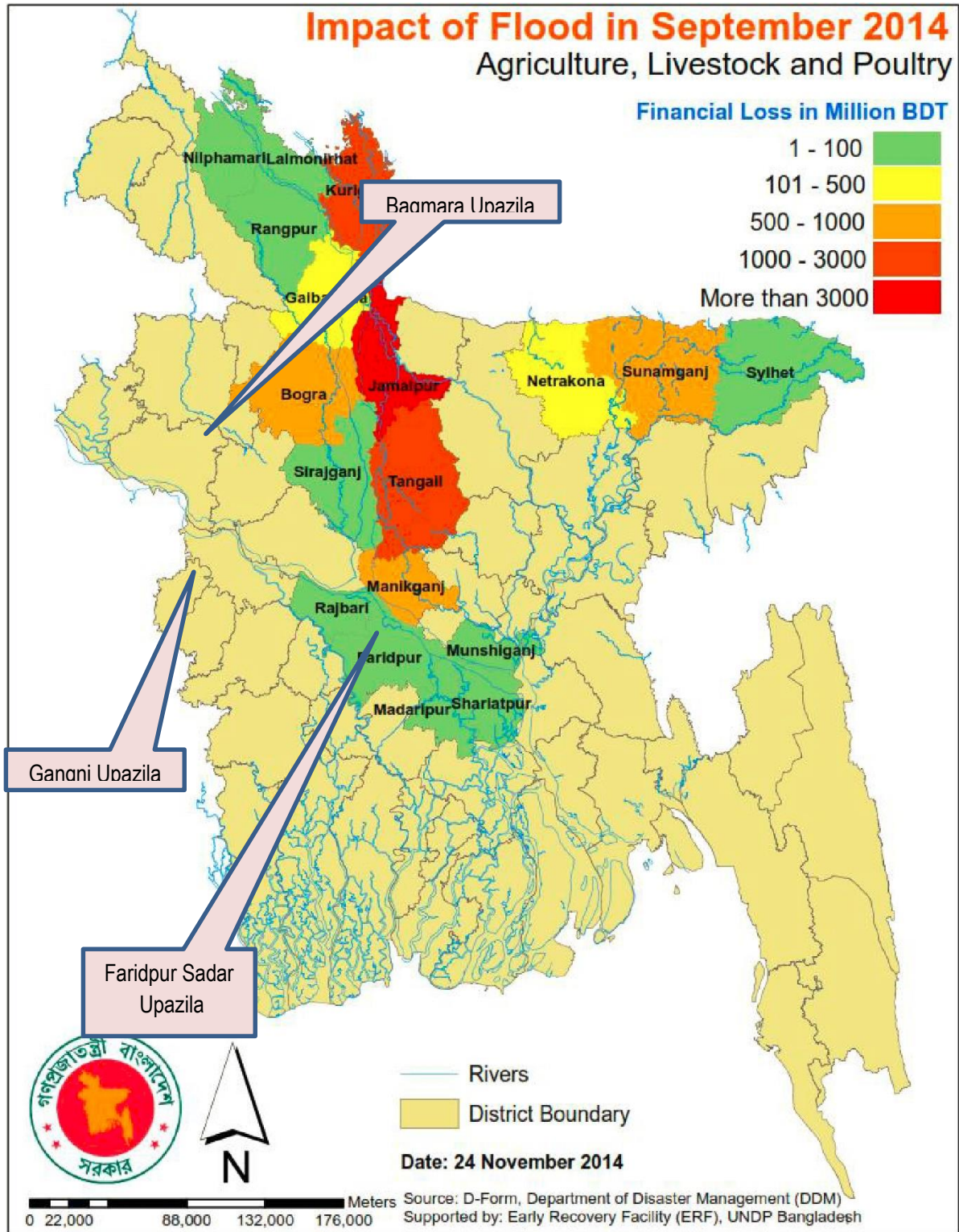
In case of drought Faridpur Sadar Upazila is relatively good condition, drought risk varies from low to medium here. The Padma River, Kumar River and availability of others small and medium scale water bodies are mainly responsible for adding this advantage. Remaining two Upazila Bagmara and Gangni is very much exposed to drought, risk index varies from medium to high (Kharif Season only). All these drought scenarios for the project areas are shown in **Map 2-15**.



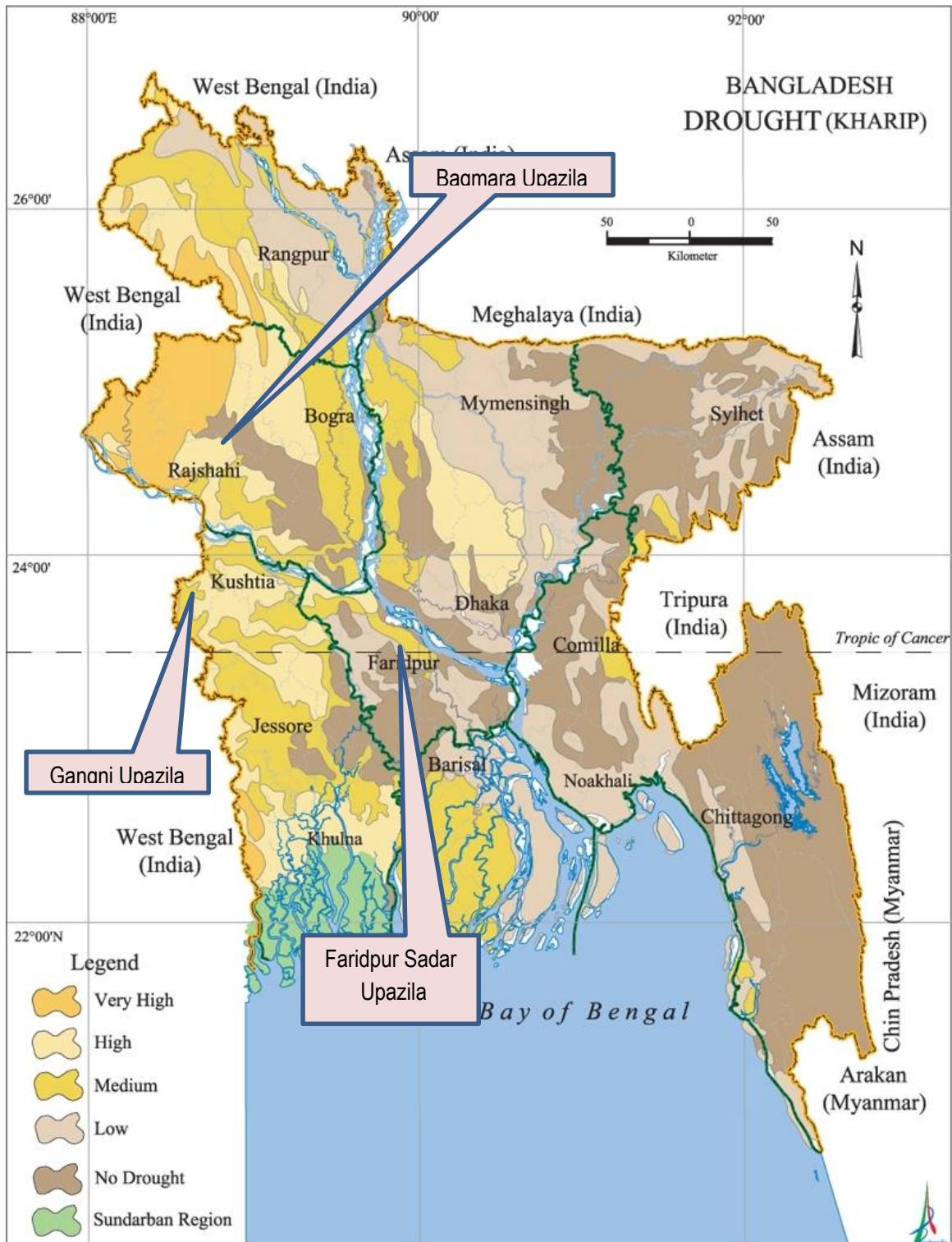
Map 2-12: Affected Flood Areas in 1998 by showing the project Area (Source BWDB)



Map 2-13: Affected Flood Areas in 2007 by showing the project Area (Source : FFWC, BWDB)



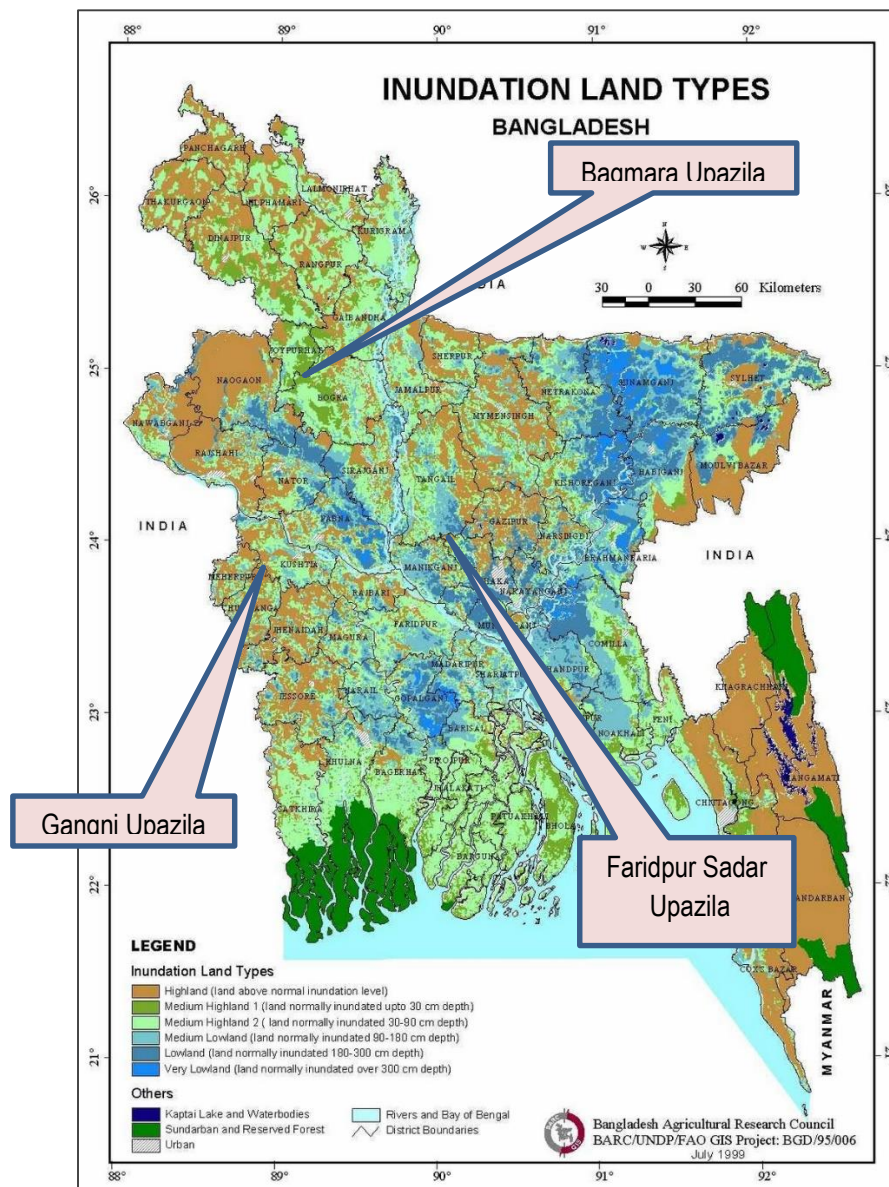
Map 2-14: Impact of Recent 2014 Flood showing the project Area (Source : BARC)



Map 2-15: Drought Impact in Project Areas (Source : BARC)

2.10 Hydrological Characteristics

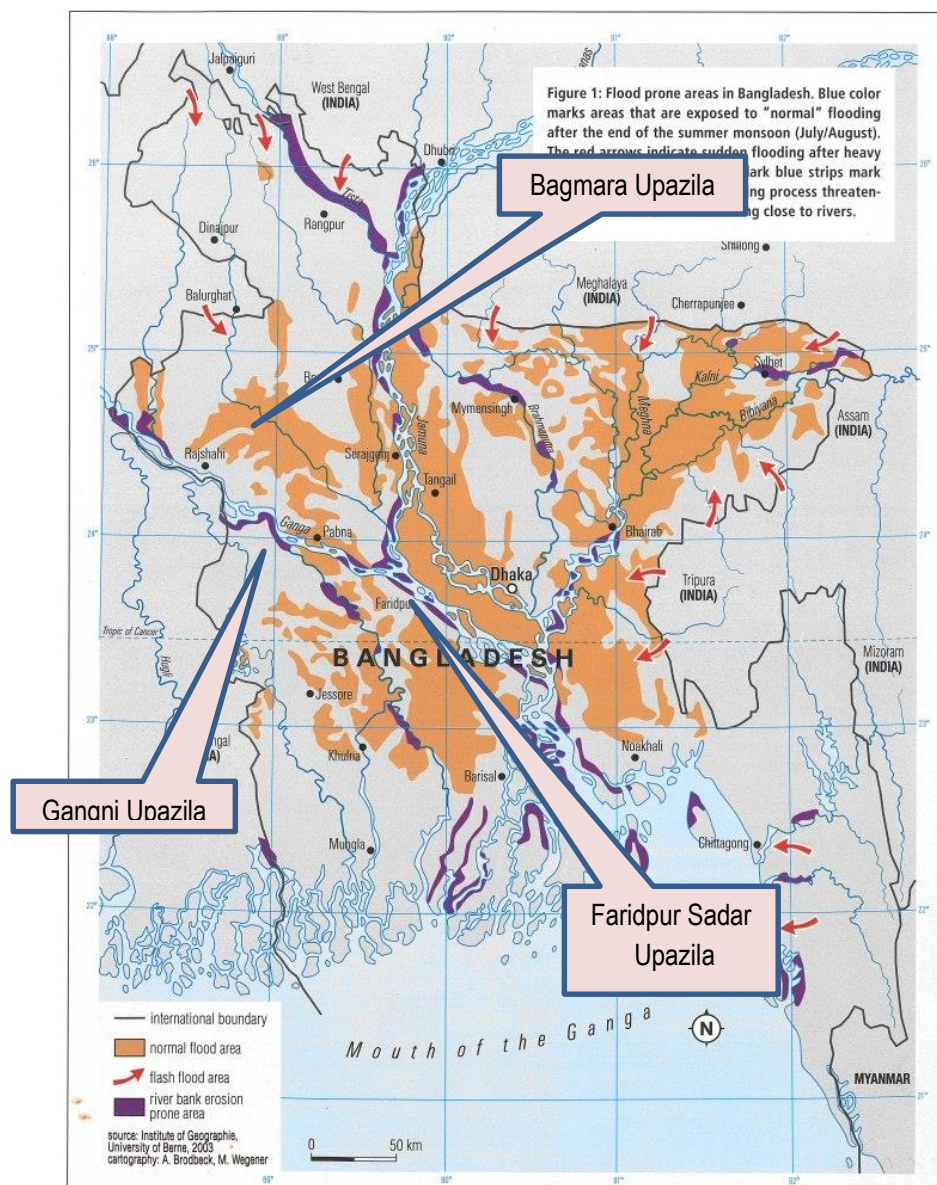
Hydrological pattern of all three upazilas is flat and plain, contains considerable amount of low lying areas. Hydrological pattern of three upazilas are shown in **Map 2-16**. From the map it is clearly visible that in Faridpur Sadar Upazila maximum amount of land is medium highland (normally inundated up to 30-90 cm depth in heavy rainfall). Remaining amount of the lands can be termed as medium lowland (normally inundated up to 90-180 cm depth in heavy rainfall) to lowland (normally inundated up to 180-300 cm depth in heavy rainfall). Maximum part of Gangni Upzila contains high land situated above the normal flood level. In case of Bagmara Upazila maximum amount of lands are medium highland (normally inundated up to 30-90 cm depth in heavy rainfall). Remaining lands can be termed as medium lowland (normally inundated up to 90-180 cm depth in heavy rainfall) to lowland (normally inundated up to 180-300 cm depth in heavy rainfall).



Map 2-16: Flood Inundation Map and Hydrological Characteristics of the Project Areas (Source : BARC)

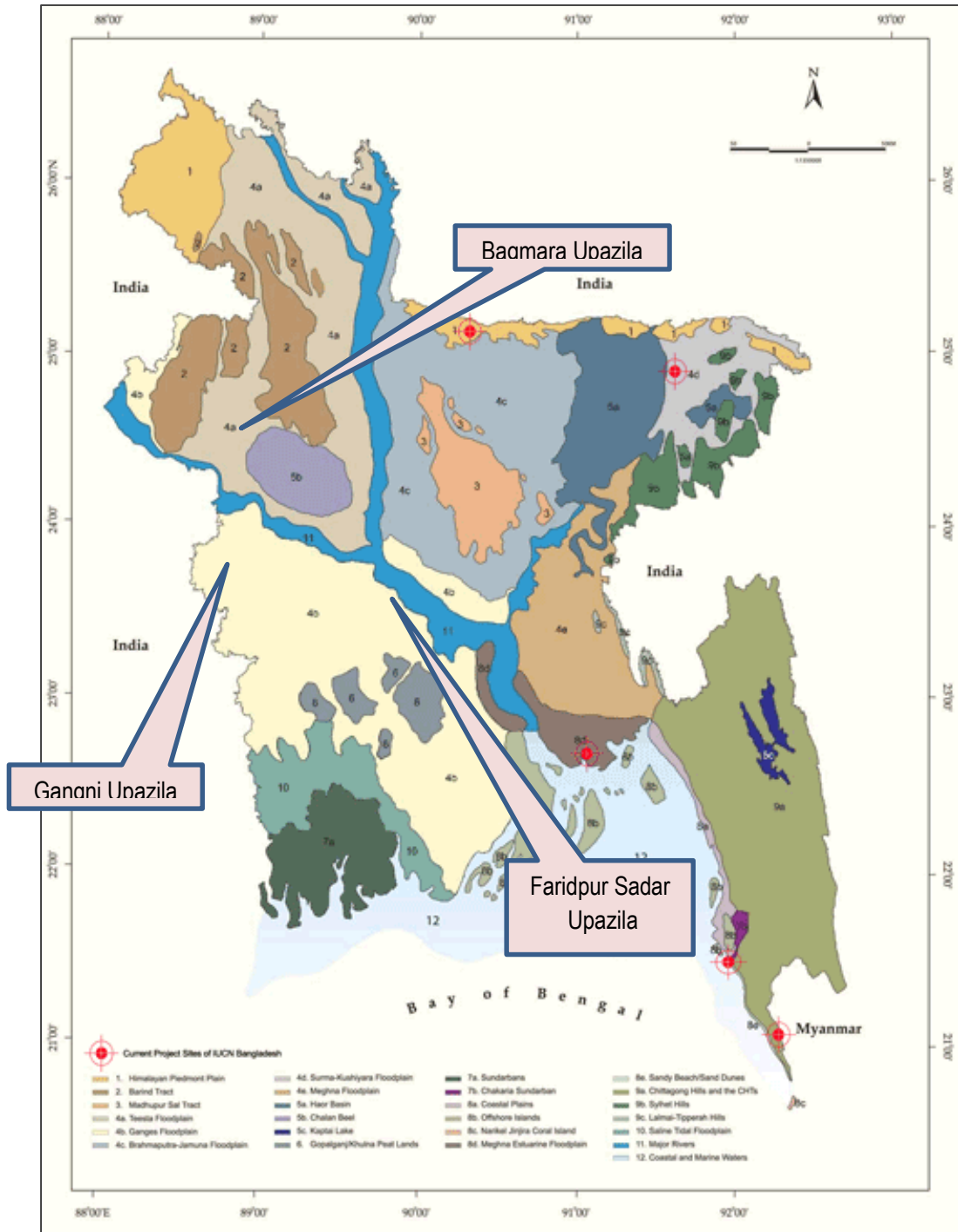
2.11 Hydrolic Characteristics of the Project Area

Hydrolic characteristics for three different is very different from each other. Faridpur Sadar Upazila is very much exposed for river bank erosion. The Padma River and Kumar river in rainy season filled with full beams caused huge amount of river erosion every year. Embankment along the Padma river has already broken which exposed lots of river side village residents to be homeless and landless. In case of Meherpur and Bagmara Upazila the hydrolic scenario is not too much worst as Faridpur. In Bangmara major rivers are Baranai; Fakinni River, Beel Joshoi; Mathavanga, Bhairav and Kajla are the three major rivers in Gangni areas. These rivers are not too much tidal affected and causes no flash flood in any periods of the year. The Upazila area is no also threatened by river erosion due low tidal effects of the river. The major problem of Gangni Upazila maximum khals and ponds are filling up with lands and garbage which poses great threat for hydrological and hydrolic balance of the area.



2.12 Bio Ecological Zones

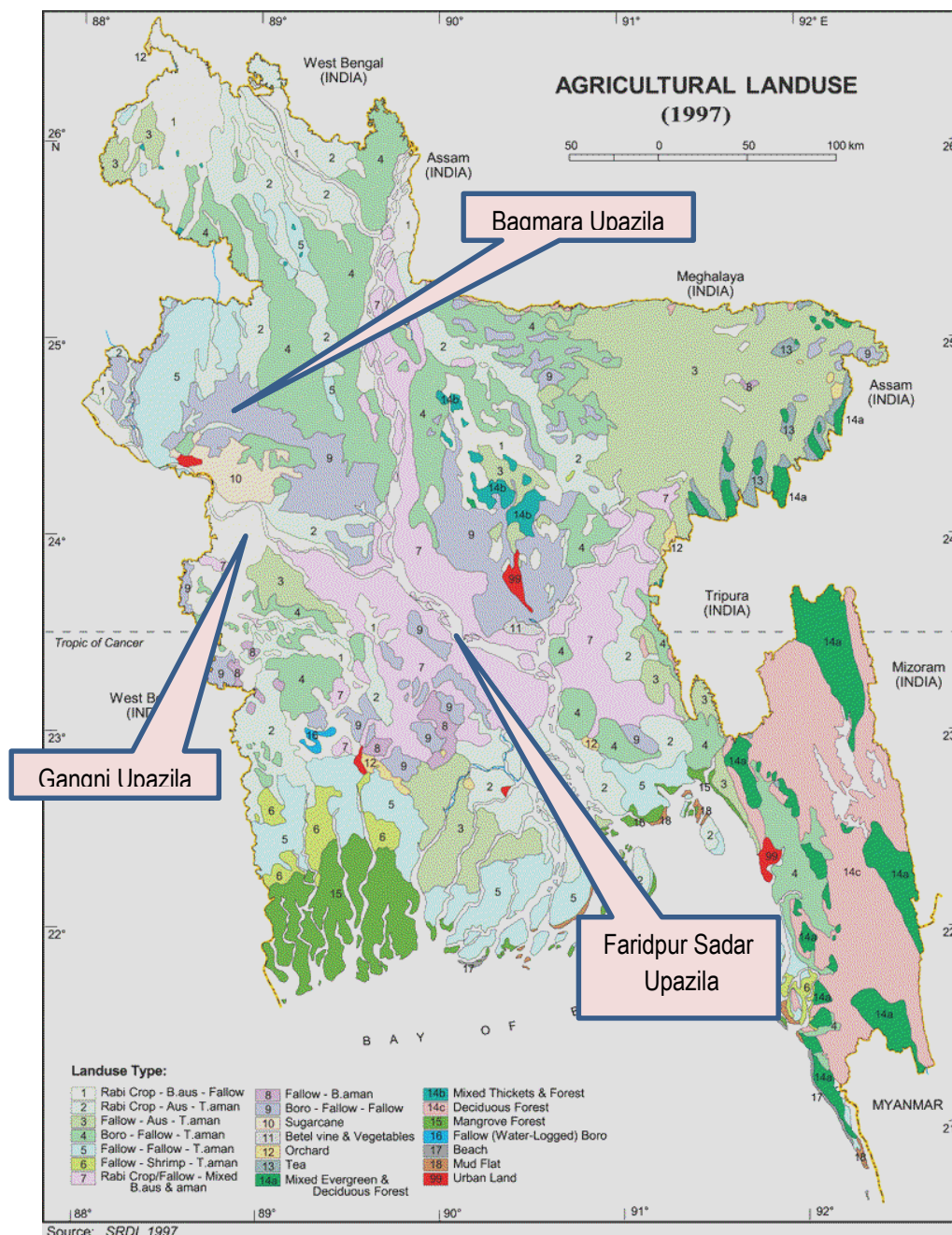
Bio-ecological classification of three project areas are very prototype in character. Both Faridpur Sadar Upazila and Gangni Upazila located within Ganges Flood Plain and Bagmar Upazila located within Atrai Flood plain. All these areas are normal plain land with very few amount of forest and diversification. **Map 2-18** shows the bio-ecological map by showing the project areas.



Map 2-18: Bio-ecological Map of the Project Area (Source : BARC)

2.13 Agricultural Landuse

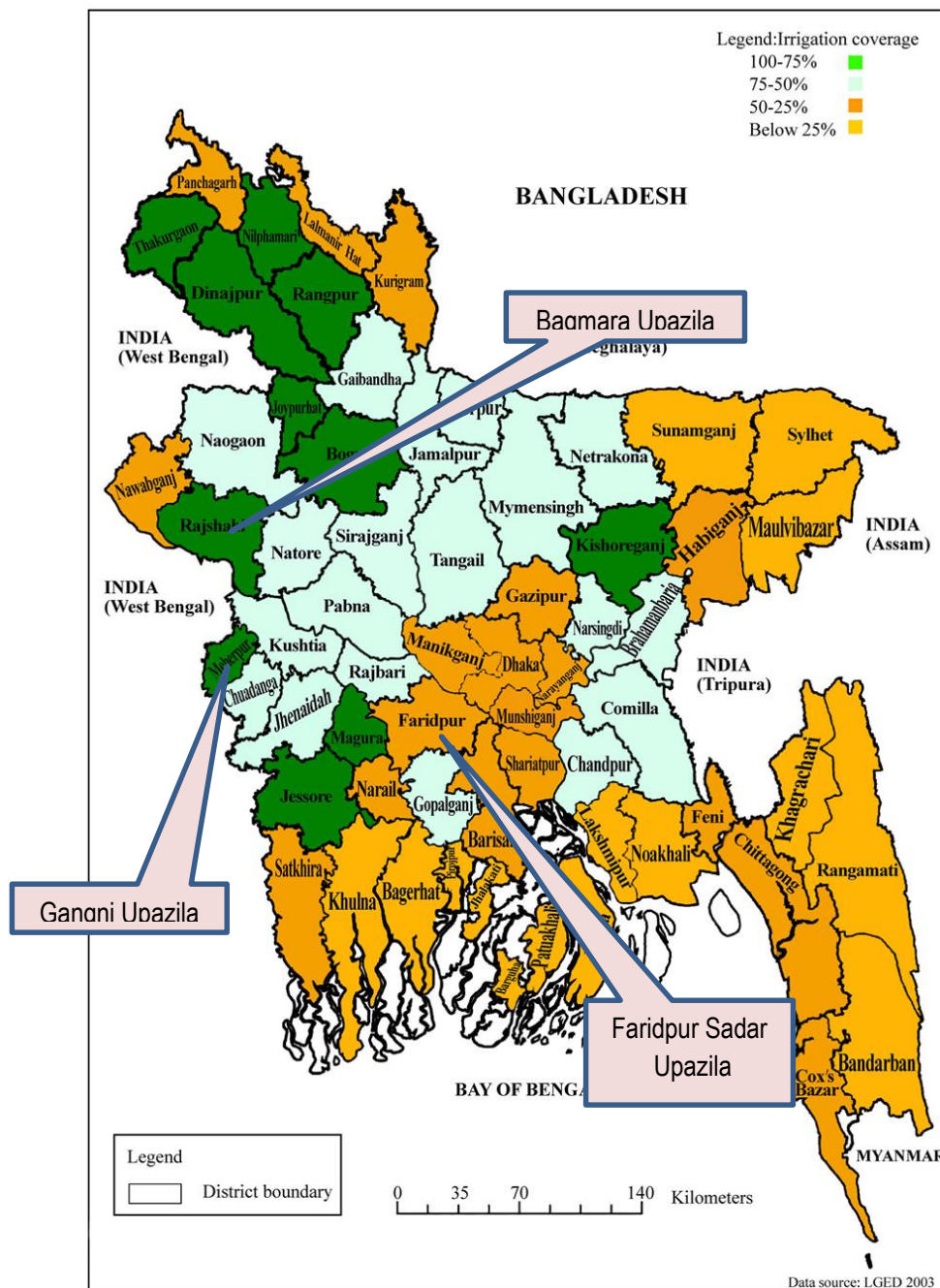
Different types of crops are cultivated in three designated study areas. These are mainly paddy (Aus, Aman, Boro and Irri), sugarcane, gram, potato, orchard etc. Maximum agricultural lands in Faridpur Sadar upazila one cropped (Fallow- B. Aman). Very few amount of land are two cropped in a year (Boro-Fallow-B. Aman). Gangni Upazila contains one two cropped land most of the cases unless any thing rare (Robi Crop-B. Aus-Fallow). On the other hand Bagmara Upazila about 40% cultivable land mainly used for sugarcane. Remaining cultivable land are two cropped in a year (Boro-Fallow-T.Aman). Agricultural landuse of these study areas are shown in **Map 2-19**.



Map 2-19: Agricultural landuse Map of the Project Area (Source : SRDI, 1997)

2.14 Irrigation Pattern

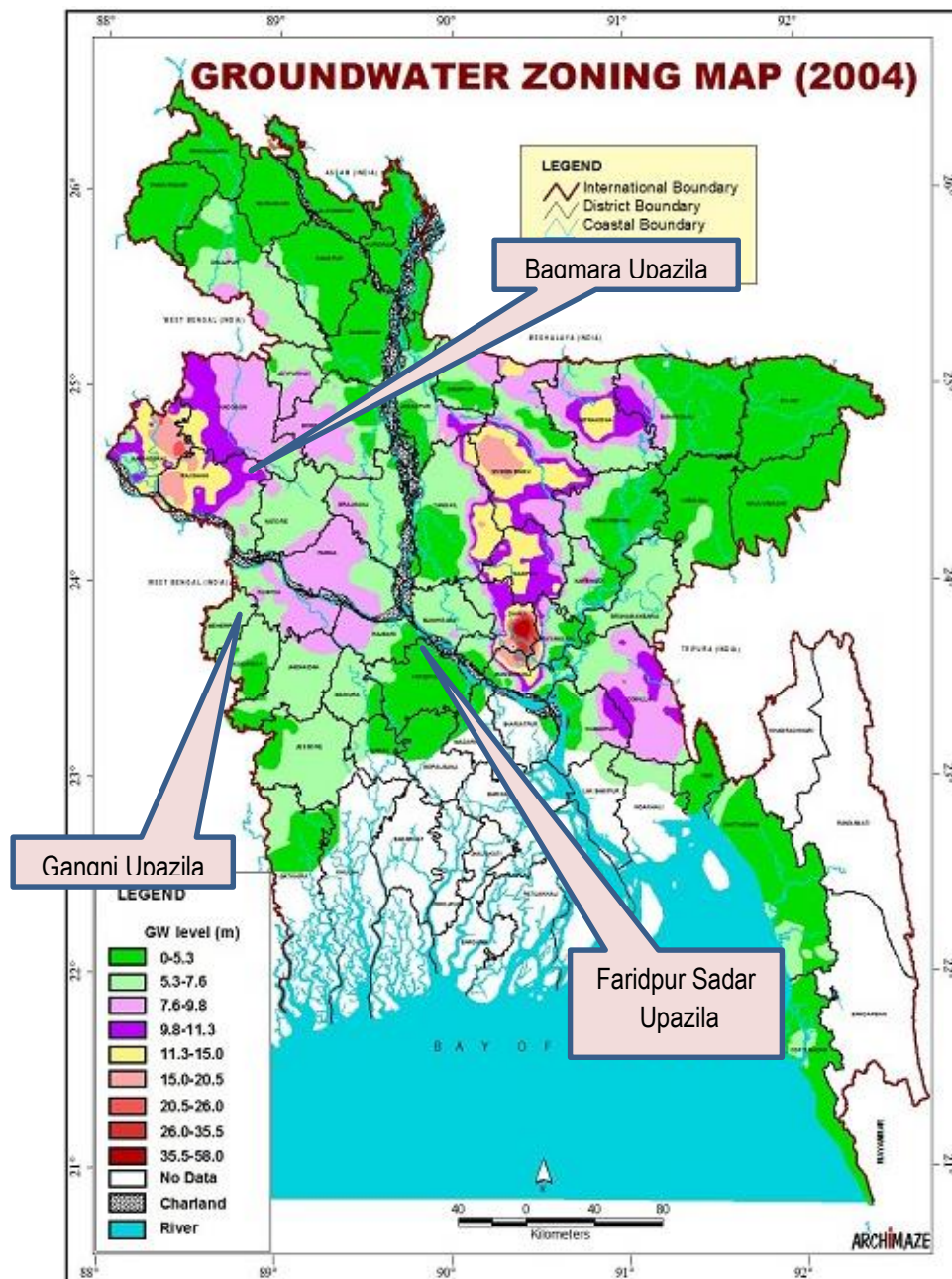
For irrigation purpose Faridpur Sadar Upazila largely depends on ground water. Most of the farmers use rain water in monsoon and rest of the years they are heavily dependent on ground water. Kumar river is the surface water for irrigation here but it only covers 10-15% of all cultivable lands. Irrigation coverage in Bagmara and Gangni Upazila is quite satisfactory but like Faridpur Sadar these are also heavily dependent on ground water. Main surface water sources for irrigation in Bagmara and Gangni Upazila are Barani, and Kajla River respectively. Except monsoon Kajla river is almost dead and come no use in irrigation purposes. Irrigation coverage of these three areas are shown in Map 2-20.



Map 2-20: Irrigation Coverage of the Project Area (Source : LGED, 2003)

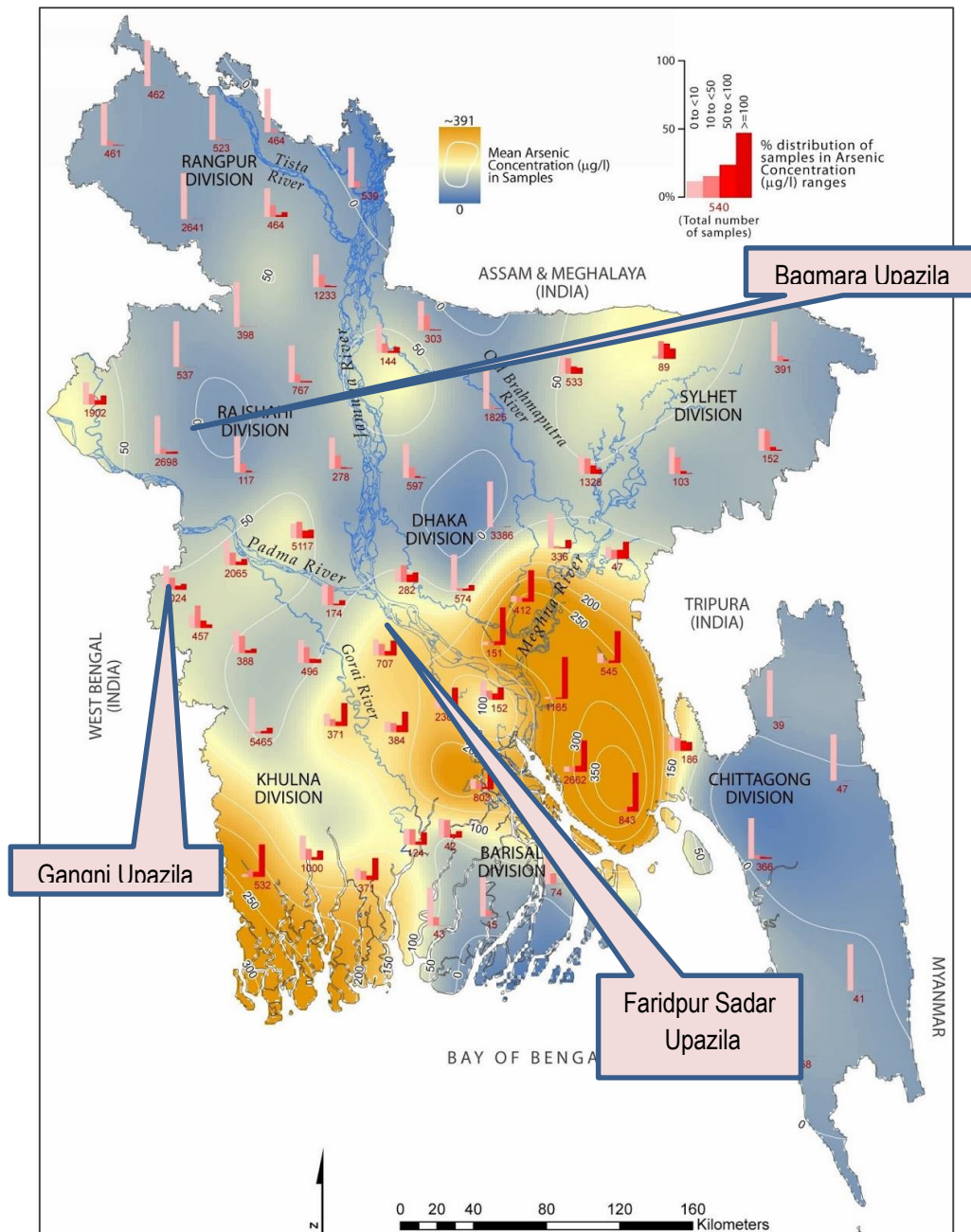
2.15 Ground Water

Due to heavy dependency on ground water for irrigation, drinking and other purposes ground water level is lowering day by day. Present condition of ground water level is in acceptable level, but over the last decade it is lowering at alarming rate. Filling up of water bodies and low lying areas and scarcity of water into canals and rivers except monsoon season forcing people to use ground water extensively. Ground water level for Gangni and Faridpur Sadar upazila can be found between 0.5m to 6.0 m beneath the earth surface and in case of Bagmara it stays below 9.8m to 15.0 m. Ground water table of these three Upazilas are shown in Map 2-21.



2.16 Arsenic Problem

Arsenic problem is very much acute in Meherpur and Faridpur region. In Gangni upazila almost 60% of tube wells contains arsenic level from 0 to 50 mg/L, remaining 40% of tubewells contains arsenic level 50 to more than 100 mg/L. In Faridpur Upazila around 70% tube well contains arsenic level from 0 to 50 mg/L. Remaining amounts are polluted with arsenic. Scenario in Bagmara Upazila is relatively better than other two upazilas. Maximum tubewell in Bagmara Upazila contains arsenic 0 to 10 mg/L (almost 85%). Arsenic contamination in the project areas are shown in **Map 2-22**.



Map 2-22: Arsenic Contamination in Ground Water for the Project Areas (Source : LGED, 2004)

2.17 Climate and Meteorological Data

2.17.1 Faridpur Upazila

Temperature

Throughout the month of June daytime temperatures will generally reach highs of around 31°C that's about 88°F. At night the average minimum temperature drops down to around 24°C, that's 75°F. In recent times the highest recorded temperature in June has been 39°C that's 103°F, with the lowest recorded temperature 17°C, about 62°F.

Relative Humidity

The average daily relative humidity for June is around 84%.

Heat Index

The Heat Index is a measure of how hot it feels when relative humidity is added to actual air temperature. From this a comfort level is calculated providing categories on how heat conditions might adversely affect someone.

Comfort Levels

Given average maximum temperatures and humidity levels you can expect dangerous heat conditions. Sunstroke, muscle cramps and heat exhaustion are likely. Heatstroke is possible with prolonged exposure and/or physical activity.

Precipitation

The average monthly amount of precipitation has been recorded at around 335 mm, that's 13 inches. Throughout the month you can expect to see rain or drizzle falling on 19 days of the month.

Estimated Hours of Sunshine per Day

The calculated/estimated sunshine hours per day using our past forecast data. For June expect the sun to shine for an average of 7 hours per day. This represents the average number of hours in the daytime that the sun is visible and not obscured by cloud e.g. the average number of hours the sun is actually out and shining. Note we calculate hours of sunshine per day using our past forecast data, not observation data, thus it is an estimate and not actual.

Wind

The average daily wind speed in June has been around 5 km/h, that's the equivalent to about 3 mph, or 3 knots. In recent years the maximum sustained wind speed has reached 74 km/h, that's the equivalent of around 46 mph, or 40 knots.

Fog

On average the month of June is not affected by foggy conditions.

2.17.2 Gangni Upazila

Temperature

Throughout the month of June daytime temperatures will generally reach highs of around 34°C that's about 93°F. At night the average minimum temperature drops down to around 26°C, that's 79°F. In recent times the highest recorded temperature in June has been 42°C that's 108°F, with the lowest recorded temperature 17°C, about 63°F.

Relative Humidity

The average daily relative humidity for June is around 80%.

Heat Index

The Heat Index is a measure of how hot it feels when relative humidity is added to actual air temperature. From this a comfort level is calculated providing categories on how heat conditions might adversely affect someone.

Comfort Levels

Given average maximum temperatures and humidity levels you can expect dangerous heat conditions. Sunstroke, muscle cramps and heat exhaustion are likely. Heatstroke is possible with prolonged exposure and/or physical activity.

Precipitation

The average monthly amount of precipitation has been recorded at around 330 mm, that's 13 inches. Throughout the month you can expect to see rain or drizzle falling on 18 days of the month.

Estimated Hours of Sunshine per Day

The calculated/estimated sunshine hours per day using our past forecast data. For June expect the sun to shine for an average of 9 hours per day. This represents the average number of hours in the daytime that the sun is visible and not obscured by cloud e.g. the average number of hours the sun is actually out and shining. Note we calculate hours of sunshine per day using our past forecast data, not observation data, thus it is an estimate and not actual.

Wind

The average daily wind speed in June has been around 7 km/h, that's the equivalent to about 4 mph, or 4 knots. In recent years the maximum sustained wind speed has reached 83 km/h, that's the equivalent of around 52 mph, or 45 knots.

Fog

On average the month of June is not affected by foggy conditions.

2.17.3 Bagmara Upazila

Temperature

Throughout the month of June daytime temperatures will generally reach highs of around 34°C that's about 93°F. At night the average minimum temperature drops down to around 26°C, that's 79°F. In recent times the highest recorded temperature in June has been 42°C that's 108°F, with the lowest recorded temperature 17°C, about 63°F.

Relative Humidity

The average daily relative humidity for June is around 80%.

Heat Index

The Heat Index is a measure of how hot it feels when relative humidity is added to actual air temperature. From this a comfort level is calculated providing categories on how heat conditions might adversely affect someone.

Comfort Levels

Given average maximum temperatures and humidity levels you can expect dangerous heat conditions. Sunstroke, muscle cramps and heat exhaustion are likely. Heatstroke is possible with prolonged exposure and/or physical activity.

Precipitation

The average monthly amount of precipitation has been recorded at around 330 mm, that's 13 inches. Throughout the month you can expect to see rain or drizzle falling on 18 days of the month.

Estimated Hours of Sunshine per Day

The calculated / estimated sunshine hours per day using our past forecast data. For June expect the sun to shine for an average of 9 hours per day. This represents the average number of hours in the daytime that the sun is visible and not obscured by cloud e.g. the average number of hours the sun is actually out and shining. Note we calculate hours of sunshine per day using our past forecast data, not observation data, thus it is an estimate and not actual.

Wind

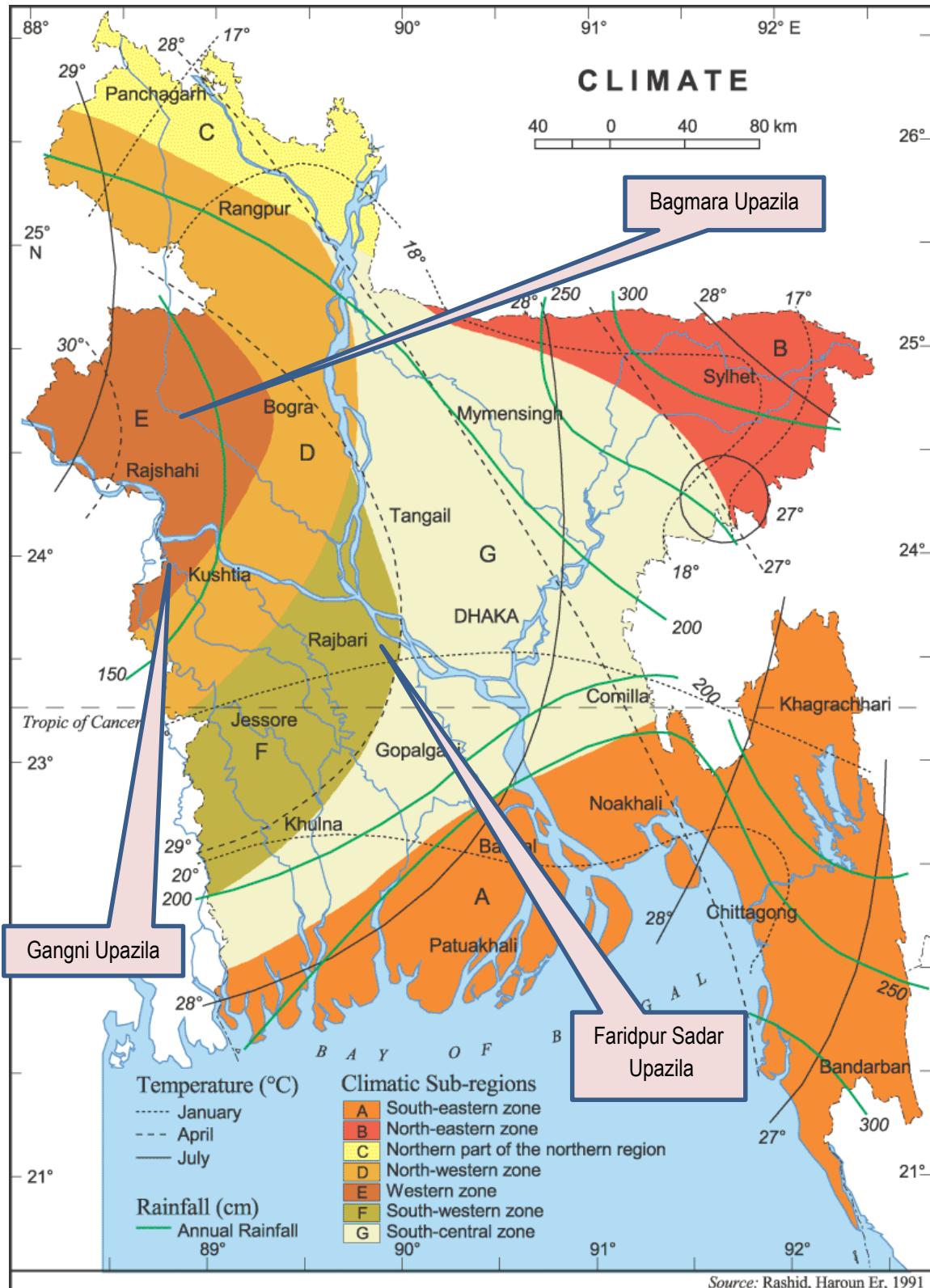
The average daily wind speed in June has been around 7 km/h, that's the equivalent to about 4 mph, or 4 knots. In recent years the maximum sustained wind speed has reached 83 km/h, that's the equivalent of around 52 mph, or 45 knots.

Fog

On average the month of June is not affected by foggy conditions.

Note: All the data are accessed from BBC weather forecasting and climate section, 2015.

.The following **Map 2-23** climatic scenario of three upazilas in a view.



Map 2-23: Meterological and Climatic Map of Bangladesh (Source : Rashid, 2004)

CHAPTER-3

MOBILIZATION AND RECONNAISSANCE SURVEY

3.1 Introduction

The first assignment for the consultancy team to attend the project schedule is to mobilize the team in to study area and conduct reconnaissance survey including required amount of stakeholder meetings and personal discussions. This chapter is mainly stands for reflecting the whole procedure including outcomes of mobilization meeting and reconnaissance survey.

3.2 Team Mobilization

Package-3 covers three different upazila at different parts of Bangladesh, which are also mutually long distant from each other. So it was very hard for the team to conduct reconnaissance survey in each areas within shortest period of time as well as sending the same in each areas. Realizing the fact, the consultant had formed one different team for each area, total three teams to conduct mobilization meeting and reconnaissance survey. These teams are formed with reserved urban planners of ECAL, proposed key experts and support experts. The key components of Team mobilization discussed below by turns.

3.2.1 Team for Conducting Mobilization Survey

The key members of the project team who has already signed contract with ECAL (Contract agreements are available for key team members at **Appendix-4**) are mainly formed the team for mobilization meeting at three upazilas. Most commonly all the three teams carried three different Mobilization Meeting Banner (available at **Appendix-05**) as a memorandum for conducting mobilization meeting stakeholders and administrative personnel. All these teams had visited their respective project areas during 11th and 12th June, 2015. The absolute duties of these team were to conduct personal discussion with public representatives, administrative figures, stakeholders, common people of the study area. To do these all the mobilization team personally met with Local Upazila Parishad Chairman, Upazila Nirbahi Officer (UNO), Local municipality Mayor and Councilors and other available stakeholders. The team had shared the project goal and motive to them and get feedback from them also. Each and every discussion with group meeting was so fruitful in sense of gathering preliminary real field data. Detail discussions and main agendas of these meeting are briefly discussed in **Appendix- 1**.

3.2.2 Team for Conducting Reconnaissance Survey

Three reconnaissance survey team has formed with support stuff and junior planners of ECAL. These teams has conducted reconnaissance survey at three upazila simultaneously with mobilization meeting by key professional. All the reconnaissance team are supervised by senior members and key experts of the team. The following Table 3-1 shows the team composition for each area. All these teams are supervised by team leader and senior members of the team before going out for field works.

Table 3-1: Team Composition for Conducting Reconnaissance Survey

Destination	Team Members	Designation
Faridpur Sadar Upazila	Md. Torikul Islam	Super Visor
	Nezamal islam topu	Urban Planner
	Ranajet sardar	Urban Planner
	Mehedi Hasan	Urban Planner
Bagmara Upazila	Md. Akter Uz Zaman	Super Visor
	Masuda li shahriar	Urban Planner
	Anup Biswas Antu	Urban Planner
	Niaz Rasel Sheikh	Urban Planner
Gangni Upazila	Sejad jahir	Super Visor
	Mohammad Fahim Abedin	Urban Planner
	Abdur Rashed Shakil	Urban Planner
	Shabbir Ahmed	Urban Planner

3.3.3 Resource Mobilization and Purchase of Equipment and Software

The consultant team has already set licensed remote sensing work station for photogrammetric works and ArcGIS platform in Dhaka project office. Leica Photogrammetric System including stereo analyst has been set in Dhaka project office for effective and reliable works. All the legal documents of these equipment's and softwares are given in **Appendix-8**. Again the consultant has already started initial conversation with international vendors for purchasing high resolution image.

3.3 Setting up Project Office at Pourashava

The consultant is taking steps to set up a site office in three upazilas from July, 2015. The Upazila Nirbahi Officer Upazila Nirbahi Officer of each upazila will be requested through a letter to allocate space if possible in the Upazila premises. In case the space is not available in the Upazila premises, the consultant will make its own arrangements for setting up site office. All the drafted letters are attached in **Appendix-7**.

3.4 Collection of Mouza Maps and Other Secondary Maps and Materials

The consultant team has already taken the initiative for collecting Cadastral Land Record Maps (Mouza Maps) from DRLS office, Dhaka and local Land Office. Till up to date the team has succeed 50 % of mouza maps for Faridpur Sadar Upazila and hoping that within a week remaining mouza maps including two other upazilas will be in hand. Collection of other secondary data from different organizations are on the process. At present the consultant team is preparing a list of secondary data those are supposed to be collected from different organization such as LGED, UDD, BIWTA, RHD, BIWTC, Local Pourashava and Upazlia Parishad, DoE etc. Within a short time after completing the list team members will start to contact with designated persons of respective via project director to collect all these secondary data.

A sample digitized (GIS based) map has been enclosed with this document at **Appendix-06**.

3.5 Inter Regional Consultation

3.5.1 Bagmara Upazila, Rajshahi

Consultation Meeting with Upazila Nirbahi Officer

Reconnaissance team assigned for Bagmara Upazila met with Upazila Nirbanhi Officer Mr. Torikul Islam at 11th June, 2015 at his office. He is a very kind person and welcome the team in his administrative areas. Initially the team members brief the project detail to him and listened all these very patiently. He appreciate the initiative of UDD for conducting such important project in his area. Later he briefed the team about his administrative areas including problems, prospects and other different issues. He explained his area as one most potential urban area in that region and can play a great role national politics and economy if proper development measures can be taken with definite plan. Later he promised the team to all sort of possible help for conducting surveys and data collection in Bagmara. He refused to participate in photoshoot with mobilization team, that's why the consultant team is unable to provide meeting snapshot for his personal problem.

Consultation Meeting with Upazila Parishad Chairman

Reconnaissance team assigned for Bagmara Upazila unable to meet with Upazila Parishad Chairman as he was out of Bagmara on that time.

Consultation Meeting with Pourashava Chairman, Councilors and Others

Bagmara Upazila got two Pourashava as Bhawbaniganj Paurashava and Tahirpur Pourashava .Team met with two Pourashava Chairman separately at 12th June, 2015. Like other person Pourashava chairmans are also appreciated the initiative and promised to provide their all sort of possible help. They also promised the team to provide their in hand required information by the team. **Photo 3-1** shows a snap of consultation meeting between team members and Pourashav Chairmans.



(a) Meeting at Bhawbaniganj Paurashava



(b) Meeting at Tahirpur Pourashava

Photo 3-1: Consultation Meeting with Pourashava Chairmans, Bagmara Upazila

Later on the consultancy team had visited location of some other stakeholders such as local press club members and so on. Detail outputs and participants of these meetings are given at Appendix-1. **Photo 3-2** shows the discussion meeting moments at local press club.



Photo 3-2: Consultation Meeting with Local Press Members , Bagmara Upazila (Source:Field Visit, 2015)

3.5.2 Gangni Upazila, Meherpur

Consultation Meeting with Upazila Nirbahi Officer

Reconnaissance team assigned for Gangni Upazila met with Upazila Nirbanhi Officer at 11th June, 2015 at his office. After briefing him the project goal objective and other details he appreciated the project very much. Later on he briefly discussed the existing problems and prospects of his area to the team members. He also promised to provide all possible help for project succession in future. **Photo 3-3** shows a snap of consultation meeting between team members and UNO.



Photo 3-3: Visiting UNO Office, Gangni Upazila (Source: Field Visit, 2015)

Consultation Meeting with Upazila Parishad Chairman

The reconnaissance team also met with Upanizla Parishad Chairman 10th June, 2015,. He also welcomed the team to his area and explained the importance of master plan for his area. He briefly explained the existing problem prevails within his area and request the consultant team to highlight those issues in their plan. Distance between central administrative in Dhaka and Gangni is the major obstruction for the development here, he mentioned. Most of the times Gangni remains as an underrated and deprived area. He also explained the glorious history of Meherpur region during Liberation War at 1971. He urged that, being very near to boarder Gangni and Meherpur area can be developed as one of the pioneer land port which will certainly contribute local and national economy in a great deal. He promised to the team to provide all sorts of help from his point of view during the job. He also suggested that all the public representative must be included as permanent member of this project so they can play more effective role. He refused to participate in photoshoot with mobilization team, that's why the consultant team is unable to provide meeting snapshot for his personal problem.

Consultation Meeting with Pourashava Chairman, Councilors and Others

The team met with Gangni Pourashava Chairman 12th June, 2015. He is a very kind person and briefly explain the problem and prospect of his area to the team. He also offered a field visit in oresence of the team in later part of the project. Like other person Pourashava chairman are also appreciated the initiative and promised to provide their all sort of possible help. They also promised the team to provide their in hand required information by the team. **Photo 3-4** shows a snap of consultation meeting between team members and Pourashav Chairman.



Photo 3-4: Consultation Meeting with Pourashava Chairman, Gangni Upazila (Source: Field Visit)

The team also visited the local press club at Gangni and met with the President of that organization. He also claimed remoteness of the area and political unwillingness as the major obstruction for the development of this area. **Photo 3-5** shows the discussion meeting moments at local press club.



Photo 3-5: Consultation Meeting with Local Press Members , Gangni Upazila (Source: Field Visit)



Photo 3-6: Tea Stall Meeting with Common People at Gangni Upazila (Source: Field Visit, 2015)

Detail outputs and participants of these meetings are given at Appendix-1.

3.5.3 Faridpur Sadar Upazila, Faridpur

Consultation Meeting with Upazila Nirbahi Officer

Reconnaissance team assigned for Faridpur Sadar Upazila unable to meet with Upazila Nirbanhi Officer as he was out of Faridpur on that time. Instead of him the team has met with Upazila Agricultural Officer (see **Photo 3-7**). They appreciate the initiative and gave their time to the team. But they refused to participate in photo shoot without concern of UNO.



Photo 3-7: Meeting with Upazila Agricultural Officer at Faridpur Sadar Upazila Parishad

Consultation Meeting with Upazila Parishad Chairman

The reconnaissance team also met with Upazila Parishad Chairman 11th June, 2015,. He also welcomed the team to his area and explained the importance of master plan for his area. He briefly explained the existing problem prevails within his area and request the consultant team to highlight those issues in their plan. Distance between central administrative in Dhaka and Faridpur is the major obstruction for the development here, he mentioned. He promised to the team to provide all sorts of help from his point of view during the job. He also suggested that all the public representative must be included as permanent member of this project so they can play more effective role.

Consultation Meeting with Pourashava Chairman, Councillors and Others

The team met with Gangni Pourashava Chairman at 11th June, 2015. He is a very kind person and briefly explain the problem and prospect of his area to the team. He also offered a field visit in oresence of the team in later part of the project. Like other person Pourashava chairman are also appreciated the initiative and promised to provide their all sort of possible help. They also promised the team to provide their in hand required information by the team. **Photo 3-8** shows a snap of consultation meeting between team members and Pourashava Chairman.



Photo 3-8: Consultation Meeting with Pourashava Chairman and Councilor, Faridpur Sadar Upazila

The team also visited the local press club at Faridpur and met with the Vice-President of that organization. He also claimed remoteness of the area and political unwillingness as the major obstruction for the development of this area. **Photo 3-9** shows the discussion meeting moments at local press club.



Photo 3-9: Consultation Meeting with Local Press Members (Vice-president) , Faridpur Sadar Upazila (Source: Field Visit, 2015)

Detail outputs and participants of these meetings are given at Appendix-1.

3.6 Experience of Reconnaissance Survey

3.6.1 Experience in Gangni Upazila, Meherpur

External Road:

The coded name of this road is R745 which known as Kustia-Meherpur main road. The main rolling part of this road is that this plays external as well as internal mainroad of Gangni Upazila. All the leading institutions, government office and markets are situated beside the road. The market named Kohinur Plaza and Zilla Parishad Market, which plays the most vital role closed to this main road.



Photo 3-10: Blow up of Kustia- Meherpur Main Road (Source: Field Visit, 2015)

Internal Road:

The total length of Pucca road is 223.59 km, mud road is 467.25 km. The overall conditions of the interior roads of this area are not satisfactory except the Pourshava road. The average width of these roads is between 3-8 feet. The inhabitants and the school-going children have to suffer a lot in the rainy season due to the bad conditions of these internal roads.



Photo 3-11: Pourashava Road and Sondhani School and College Road (Source: Field Visit, 2015)



Photo 3-12: Poor Internal Road condition (Source: Field Visit, 2015)

Low land and water body:

People in this are badly suffering from drinking and harvesting water. Meherpur is one of the most highlands in Bangladesh. The low-lying lands in this area are almost dry. In addition, that is why this is the most appropriate example of cross diversity.



Photo 3-13: Low Lying Land beside Pourashava. (Source: Field Visit, 2015)



Photo 3-14: Kajla River at Monsoon and Bhairab River (Source: Field Visit, 2015)

Paddy Field:

Gangni is an agriculture-based area. There are huge amount of agricultural land. Main crops are Paddy, jute, wheat, tobacco, maize, vegetables. Extinct or nearly extinct crops are Indigo, arahar, khesari pulse and so on.



Photo 3-15: Paddy field at Gangni Upazila (Source: Field Visit, 2015)

Community Facilities:

Hats, bazars and fairs are 20, fair 1, most noted of which are Garabari Hat, Tentulbaria Hat, Karamdi Hat, Kazipur Hat, Betbaria Hat, Naodapara Hat and Baishakhi Mela. The number of schools, colleges are very few and not well maintained. It is due to the lack of furniture and infra structural development. The well-known educational institutions are Sondani school and college, Gangni mohila degree college. The available health facilities in this area are also very low. For getting health facilities people have to go to the centre of the maherpur sadar area, which is most probably 20 kilometers far away from the Gangni upazilla. In a word, it can be said that there is no recreational facilities for the people of this area. There is only a child park, which is very small in dimension.



Photo 3-16: Zilla Porishad Market and Road-side Market (Source: Field Visit, 2015)



Photo 3-17: Upazila Health Complex and Sandhani School & College (Source: Field Visit, 2015)



Photo 3-18: Ghagni Mohila Degree College and Child Park (Source: Field Visit, 2015)

Administration:

The administrative infra structure and the overall condition related to it, is not strong enough to appear. There is a huge lack of man power in this sector and again the amount of fund for development is also very little. On the other hand the existing different political groups become engaged in collision in case of decision

making procedure of the development project. In spite of these obstacles the pourashava is trying its level best for providing utilities and other facilities to the inhabitants. There is also a upazilla complex which is trying its best for the same purpose.



Photo 3-19: Gangni Upazila Parishad and Office of Chairman. (Source: Field Visit, 2015)



Photo 3-20: Upazila Land Office and Upazila Nirbahi Officer's office (Source: Field Visit, 2015)



Photo 3-21: Upazila Server Station and Upazila Education Building (Source: Field Visit, 2015)



Photo 3-22: Gangni Pourashava and Gangni Press Club (Source: Field Visit, 2015)

Attraction:

There is no attractive place in this area. But the overall scene of the surrounding is really mind blowing. People who are too depressed due to the monotonous life style of the urban area can go to this area and enjoy the most scenic natural beauty of our country.

Based on the findings the consultant team has prepared a SWOT Analysis Gangni Upazila which reflects all the major aspects of the area. (See **Table 3-2**)

Table 3-2: SWOT Analysis of Gangni Upazila, Meherpur

Strength	Weakness
<ul style="list-style-type: none"> <input type="checkbox"/> Potential to be a Land Port <input type="checkbox"/> Agriculturally Self-dependent <input type="checkbox"/> Huge Amount of Fruit Production <input type="checkbox"/> Free from Flood 	<ul style="list-style-type: none"> ❖ Drought Prone Area ❖ Lack of Roads and Poor Road Condition ❖ Low Income and Living Condition ❖ Lack of community and municipality service ❖ Limited employment opportunities ❖ Illegal Activities ❖ No Long Route Bus Station and highly dependent on Meherpur Sadar. ❖ Filling of Water Bodies and low lying Lands ❖ Arsenic problem
Opportunity	Threat
<ul style="list-style-type: none"> <input type="checkbox"/> Export-import Business Center <input type="checkbox"/> More Urbanization <input type="checkbox"/> Installation of Railway Network will open the door new advancement obviously. 	<ul style="list-style-type: none"> ❖ Long Distance from Capital ❖ Adjacent to Boarder ❖ Poor Transport Network with other areas ❖ Lack of financial allocation from central government.

Source: Field Visit and Reconnaissance Survey, 2015

3.6.2 Experience in Faridpur Sadar Upazila, Faridpur

In the reconnaissance survey the team of consultants visited and gathered knowledge and ideas on heritage and religious sites, tourist attractions, education facilities, economic activities, major rivers and canals, natural resources, utility facilities, waste management facilities and industrial of the Upazila and so on.

Local Market: Most of the people depend on the local markets for their daily necessities. The main bazar is Faridpur Sadar bazar which is located at the center of the area. Hats and bazars are 37, fairs 6, most noted of which are Kanaipur, Tepakhola, Mominkha, Gendu Mollar, Gajaria, Tambulkhana, Bakhunda and Khalilpur hats; Angina, Chawdhury Bari, Jasim Palli and Akpara melas.



Photo 3-23: Faridpur Sadar Bazar. (Source: Field Visit, 2015)

Educational institutions: Faridpur sadar upazila is a compact developed area with sufficient educational institutions. The total number of institutions are medical college 1, law college 1, homeopathic college 1, teachers' training college 1, technical and vocational college 1, primary teachers' training institute 1, college 13, open university 1, secondary school 40, primary school 148, satellite school 13, community school 14, orphanage 3, madrasa 39.

Noted educational institutions are available in this area such as Faridpur Medical College (1992), Government Rajendra College (1918), Faridpur High School (1889), Hitoishi High School (1889), Ishan Girls' High School (1908), Shiva Ram RD Academy (1917), Faridpur Government Girls' High School (1918), Moiez Uddin High School (1926), Adarsha Girls' High School (1927), Faridpur Zila School (1840).



Photo 3-24: Faridpur Zila School and Faridpur Medical Collage. (Source: Field Visit, 2015)

Major rivers and canals: Different sizes of rivers and canals are passed through Faridpur Sadar upazila. The eastern part of the upazila is under constant threat due to river erosion. The main river of the site is Kumar River.



Photo 3-25: Kumar River and Existing canal (Source: Field Visit, 2015)

Tourist attractions: This area is renowned for tourist spots. The main spots are House of Palli Kabi Jasimuddin, Moiez Manzil and Graveyard, house of Khan Bahadur Abdul Gani, Faridpur Town Theatre (1915), house of Ambikacharan, campus of River Research Institute (1977), Kanaipur Shikdar Bari, house of Shah Saheb at Goalchamat, Sluice Gate.



Photo 3-26: Shujon Badeyar Ghat The House of Poet Jashimuddin. (Source: Field Visit, 2015)

Economic activities: The prominent businesses of the site are fisheries and poultries. The total number of fishery is 22, dairy 109, poultry 32, hatchery 3.



Photo 3-27: Poultry Farm at Faridpur Sadar (Source: Field Visit, 2015)

Industries: Most of the lower and lower middle class people in this area are engaged in different types of mills and factories. Noted manufactories are Jute mill, textile mill, rice mill, flour mill, pulse mill, ice cream factory.



Photo 3-28: Karim Jute Mill at Faridpur Sadar (Source: Field Visit, 2015)

Waste management facilities: The waste management systems of this area are not adequate to manage domestics as well as mills and factory wastes. Most of wastes are disposed beside roads which pollute the environment as well as creates odor pollution.



Photo 3-29: Road Side Garbage (Source: Field Visit, 2015)

Infrastructure and Social Service

Houses and Accommodation: Most of the houses and infrastructure of this upazila is building, metalled, semi-metalled. But there are some ten shed houses for road side residents. Though the school, mosque and various infrastructures are pucca and semi pucca but most of the houses are semipucca out side of the center of upazila. Total number of households in this area are 1,03,535. Among these 27,384 are urban, 190 are others urban and 75,961 are rural.

Embankment: Padma river is situated at the north site of the Faridpur Sadar Upazila. Embankment of padma river gradually erodes which is threaten for the upazila.

Sluice Gate, Bridge and Culvert: Major bridges are khabashpur bridge and char kamlapur bridge and one sluice gate.

Roads:

The coded name of this road is N803 which known as Dhaka-Faridpur main road. The main rolling part of this road is that this plays external as well as internal main road of Faridpur Sadar Upazilla. Roadway communication is the major communication of Faridpur Sadar Upazilla. Types of transport used in this sub district are jeep, taxi, tom-tom, auto-rickshaw and engine boat.



Photo 3-30: Dhaka-Faridpur Main Road (Source: Field Visit, 2015)

People are travelling usually by foot, rickshaw on earthen road, rickshaw, auto rickshaw and taxi in metaled road and boat in river among different unions and different wards of unions of this Upazilla.

Religious Institution: Religious institutions Mosque 321, temple 30, church 3, sacred place.



Photo 3-31: Existing Mosque and Church in Faridpur Sadar (Source: Field Visit, 2015)



Photo 3-32: Temple in Gambhira, Faridpur (Source: Field Visit, 2015)

Health care: There is a medical college hospital, 10 hospital, 9 family planning centre, a Tuberculosis hospital, a health care center, a national heart foundation, 18 clinic, 38 community clinic. Apart from this people from many of the unions depend upon pharmacy and Herbal medicine to cure illness.



Photo 3-33: Faridpur Medical College and Health Complex Center (Source: Field Visit, 2015)

Cultural Center: There are 140 club, 3 library, 1 museum, 3 cinema hall, 5 theatre stage, 17 theatre group, 45 women's organization in Faridpur sadar Upazila. The main park is sheik rasel shishu park which is situated near the new bus stand in the Upazilla.



Photo 3-34: Sheik Rasel Shishu Park at Faridpur Sadar (Source: Field Visit, 2015)

Main Sports:

Football, Cricket, Volleyball, Ha-do do-do and Pole game are local sports.

Agricultural Land: Landowner 77.77%, landless 22.23%; agricultural landowner: urban 72.28% and rural 77.95%. Agriculture and food related information of Agriculture and food related information of Rangunia Rangunia Upazilla are given bellow:

Main Crops: Paddy, jute, wheat, potato, sugarcane, onion, garlic, turmeric, pulse, vegetables. Extinct or nearly extinct crops Kaun, kusum phul, sesame, sonamuk, china, barley, arahar, sweet potato.



Photo 3-35: Paddy Field at Faridpur Upazila (Source: Field Visit, 2015)

Bio-Diversity:

Birds: dowel, grebes, tropicbirds, sarosh, pankure, chill, pigeon, cuckoo, pecha, gugu, drongo, bulbuli, crow, wood pecker.

Wild animal: Wild cat and fox.

Reptile: Cobra, lizard, Water Monitor, Russell's Viper, Pangolin, Dara's etc

Amphibians: Different types of frogs such as sona, kuno, kola etc.

Domestic animals: Cow, goat, buffalo, ram, hen, pigeon, cat, dogs etc Cow, goat, buffalo, ram, hen, pigeon, cat, dogs etc

Fishes: Tilapia, carp, catla, African catfish, Nile tilapia, yellow tail catfish, Mrigal, Rohita, Barbe, Tengra, Shrimp, Pursh, Stinging catfish, etc.

SWOT Analysis

Based on the findings the consultant team has prepared a SWOT Analysis Faridpur Sadar Upazila which reflects all the major aspects of the area. (See Table 3-3)

Table 3-3: SWOT Analysis of Faridpur Sadar Upazila, Faridpur

Strength	Weakness
<ul style="list-style-type: none"> <input type="checkbox"/> Recognition all over the country <input type="checkbox"/> Agricultural and Jute Production <input type="checkbox"/> Huge amount of Poultry Farms <input type="checkbox"/> Sufficient water bodies and open spaces of different sizes. <input type="checkbox"/> Campus of River Research Institute. <input type="checkbox"/> Central Administrative and Other Offices <input type="checkbox"/> University Level Educational Institutions <input type="checkbox"/> High Literacy Rate and satisfactory living condition with income. <input type="checkbox"/> Diversified employment opportunities. <input type="checkbox"/> Tourist attractive locations. <input type="checkbox"/> Padma and Other Rivers can play a great role water based transportation. 	<ul style="list-style-type: none"> ❖ Flood and River Bank Erosion ❖ Poor Internal Road Condition ❖ Haphazard Development ❖ High Population Density in Urban Area. ❖ Traffic Congestion. ❖ Inadequate municipality services ❖ Inadequate waste management system ❖ Poor Drainage and Sanitation System ❖ Huge Arsenic Problem.
Opportunity	Threat
<ul style="list-style-type: none"> <input type="checkbox"/> Transport Network with other parts of the country <input type="checkbox"/> Implementation of Padma Bridge will certainly foster the development rate in this area. <input type="checkbox"/> Investors attraction. 	<ul style="list-style-type: none"> ❖ Huge amount of Temporary Visitors come here. ❖ Monsoon Flood ❖ Miserable Connection with Dhaka.

(Source: Field Visit, 2015)

3.6.3 Experience in Bagmara Upazila, Rajshahi

External Road:

The coded name of this road is Z6815 which known as Bagmara main road. The main rolling part of this road is that this plays external as well as internal mainroad of Bagmara Upazila. Main institutions, government office and markets are situated beside the road. The market named Bhawaniganj market and Zilla Parishad, which plays the most vital role closed to this main road.



Photo 3-36: Bagmara road (Source: Field Visit, 2015)

Internal Road:

The total length of Pucca road is 127 km, mud road is 406 km. The overall conditions of the interior roads of this area are poor and damaged. The average width of these roads is between 6-10 feet. The inhabitants have to suffer a lot and sometimes face accidents due to the bad conditions of these internal roads.



Photo 3-37: Poor Conditions of Roads (Source: Field Visit, 2015)

Water body and river: People are suffering from lack of harvesting water. There are some rivers but they are not enough. The low-lying lands in this area are almost dry. Waterbodies are also for fishing, transportation and irrigation purpose.



Photo 3-38: Baranai River and Fakinni River (Source: Field Visit, 2015)



Photo 3-39: A Small Pond at Bagmara Upazila (Source: Field Visit, 2015)

Paddy Field:

At Bagmara, ownership of agricultural landowner 69.88%, landless 30.12%; agricultural landowner: urban 59.29% and rural 71.14%. Main crops Paddy, wheat, potato, corn, mustard, sesame, betel leaf, vegetables.



Photo 3-40: Paddy fields in Bagmara (Source: Field Visit, 2015)

Community Facilities:

Number of Hats and bazars are 30, fairs 5, most noted of which are Taherpur, Bhawaniganj, Mohanganj, Madariganj, Machmail, Gangopara, Barahat, Hamir Kutsha, Akdala, Nardas, Damnash, Shikdari hats and Dekhaltala Mela. Literacy rate and educational institutions of this area are following. Average literacy 38.99%; male 46.97%, female 30.76%. Educational institutions: college 16, technical education institute 2, secondary school 120, primary school 210, madrasa 80. Noted educational institutions: Taherpur Degree College, Pania Nardas College, Bhawaniganj College, Machmail College, Mohanganj College, Bir-kutsha Abinash High School (1917), Hat Ganga Para High School (1925). There are Upazila health centre 1, family planning centre 10, satellite clinic 6.



Photo 3-41: Bir-kutsha Abinash High School and Taherpur Degree College (Source: Field Visit, 2015)



Photo 3-42: Upazila Health Complex and Kacha Bazar at Bagmara (Source: Field Visit, 2015)



Photo 3-43: Taherpur pourashava and Office of UNO at Bagmara (Source: Field Visit, 2015)



Photo 3-44: Bhawaniganj Pourashava and Baghmar Upazilla Parishad (Source: Field Visit, 2015)

Attraction:

Mazar of Panchpir and Shahi Mosque at village Achin Ghat on the bank of the river Baranai. Besides, the whole place gives a natural pleasant view.



Photo 3-45: Panchpir Mazar at Bagmara (Source: Field Visit, 2015)

Occupation and Income Source:

Main sources of income Agriculture 76.76%, non-agricultural labourer 1.97%, industry 0.05%, commerce 9.35%, transport and communication 2.55%, service 3.33%, construction 0.63%, religious service 0.08%,

rent and remittance 0.09% and others 4.72%. Ownership of agricultural land Landowner 69.88%, landless 30.12%; agricultural landowner: urban 59.29% and rural 71.14%.

Based on the findings the consultant team has prepared a SWOT Analysis Bagmara Upazila which reflects all the major aspects of the area. (See **Table 3-4**)

Table 3-4: SWOT Analysis of Bagmara Upazila, Rajshahi

Strength	Weakness
<ul style="list-style-type: none"> <input type="checkbox"/> High Agricultural Production <input type="checkbox"/> Considerable amount of foreign remittance <input type="checkbox"/> Huge amount of fruits <input type="checkbox"/> Well communication system with Rajshahi <input type="checkbox"/> Enough open space <input type="checkbox"/> Notable amount of greenery <input type="checkbox"/> Natural Gas exists, in accordance to local consultation. 	<ul style="list-style-type: none"> ❖ Bagmara is not a urban area in reality ❖ Low level of Urbanization and Development. ❖ No long route bus service and poor road condition. ❖ Low literacy rate and living. ❖ Poor municipality service. ❖ Waste management problem ❖ Lack of electricity ❖ Lack of Markets and Bazaars ❖ Scarcity of surface water except monsoon. ❖ Flood and Drought prone area. ❖ Poor Weather.
Opportunity	Threat
<ul style="list-style-type: none"> <input type="checkbox"/> Government Strategy and Initiative may turn this area biggest fruit exporting zone. <input type="checkbox"/> Level of Urbanization will increase whenever transport will develop. <input type="checkbox"/> Ganges-Kapotakkha (GK) and Barendra Project will add hydrological advancement to this area. 	<ul style="list-style-type: none"> ❖ Remote Area ❖ Lack government level funding and initiative. ❖ Farakka Barrage is a great threat for maintaining water availability in this area.

(Source: Field Visit, 2015)

CHAPTER-04

WORK PROGRAMME AND MANNING SCHEDULE

4.1 Introduction

The whole study comprises of multi-sectoral components, activities, survey works, research works and so on. Again this package is entitled as the largest one among the five packages of fourteen Upazila Development plan project, which also adds load of additional survey works, time requirement, study, data collection and others. The consultancy team is very much aware of that and deeply realizes that having a proper task plan, schedule and management work flow can be an immensely effective tool overcome such hurdles. This chapter will briefly discuss different types of management plan from consultant point of view such as manning schedule, work schedule, deployment of key experts, task and responsibility distribution, specific and highlighted future plan of the project etc. During demarcating the extents of such above mentioned plans, different absolute components of the project such as survey works (both manual and mechanized), in house office work / desk work, image purchase and processing, digital or GIS based database generation, workshop, seminar, stakeholder discussion, reporting schedule etc. are considered.

4.2 Manning Schedule

Team composition of the consultancy team has been specified by the Terms of Reference provided by UDD during selection process of consultancy firm for this specific package. The team is composed with 13 key professionals as- Team Leader, Survey Expert, Urban Planner, GIS Expert, Agricultural scientist, Urban Economist, Transport Planner, Geologist, Associate Geologist, Geological Survey Technician, Civil engineer cum Hydrologist, Photogrammetric Expert and Social Expert/ Sociologist including support stuffs. Inputs of these key stuffs are varies from 0 to 21 man month based on requirements. Initially the minimum idea of key stuff inputs were provided by the ToR, later on consultancy team do realizing the specific roles for separate key stuff in both survey and planning period come up with some effective changes by keeping that minimum prescribed amount. For example in ToR expected input from team leader was 13 man month, but ECAL is proposing 15 man month team leader instead of that by realizing his importance and role in survey period. For conducting the survey works more fruitfully each and every key expert need to be involved in that process partially for and supervising the team. Considering the fact ECAL is offering non-continuous (based on requirements) inputs from key professionals in survey periods.

The ToR specifies a total of 146 man-months (mm) for the PDPFU Consultant's team of which 89 mm kept for Consultants and Experts and 57 mm (will be assigned / defined based on requirements and team leader's suggestion) for supporting staffs with varying man month from 02 to 21 per consultant over the total period (21 months) of consultancy assignment. The total man-months have been distributed by the consultants in accordance with the planned work schedule provided in **Figure 4-1**

4.3 Task Specification of Project Team

Team leader as the head of the consultancy team will be responsible for all sorts of activities or package of works both in survey and planning phase under this project. Other key experts will play certain prefixed role as per ToR and official agreement. The specific task assigned for each and every key experts in both phase is discussed briefly below by turns.

Team leader

(i) To take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ii) To review the land use planning guidelines developed during survey part of the project, considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics; and make necessary corrections in consultation with PD. (iii) To review land category and land use matrix for the project area; and make necessary corrections in consultation with the PD. (iv) To identify and plan development project for the area; (v) To review the recommendations on sectoral studies into spatial form, and plan implementation strategy and policy; and make necessary corrections in consultation with the PD. (vi) To coordinate preparation of different planning components including analytical reports, prepared by different consultants, for the planning package (structure plan, urban area plan, rural area plan, and action plan). (vii) To compile different planning components including analytical reports, prepared by different consultants, for the planning package; and prepare and finalize the planning package (structure plan, urban area plan, rural area plan, action plan) and report for the upazilas. (viii) To be responsible for Knowledge transfer to Project Personnel to the UDD Project Team; and (ix) Any other related Jobs as assigned by PD.

Survey Expert

(i) To design different surveys for the project (ii) To conduct, coordinate and monitor physical feature, topographical and landuse, survey; (ii) Ensure quality and accuracy of survey data; (iii) To compile all the survey data into digital format; (iv) Experienced in RTK GPS/Total Station/Digital Level survey and processing; (v) To arrange survey trainings for Project staff. (iv) Preparation of working paper, reports and plan of the project as assigned by the PD; (vii) Any other survey and studies related Jobs as assigned by PD.

Urban Planner

(i) To supervise and monitor land use, socio-economic, physical feature, topographic and other related surveys and studies; and coordinate among the consultant team; (ii) To review the existing plans and implementation problems; (iii) To prepare land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-economic and livelihood pattern and other relevant characteristics; (iv) To prepare land category for the project area; (v) To prepare land use matrix; (vi) To identify and plan development project for the area; (vii) To interpret the recommendations of sectoral studies into spatial form; (viii) To assist the team leader to take over the charges on all surveyed data and information form UDD Project Team; and coordinate among all the consultant team; (ix) To assist the team leader in reviewing the existing plans and implementation problems; (x) To assist the team leader in reviewing land use planning guidelines considering hydrological, physiographic, agricultural land classification, soils condition, ecological and environmental, socio-

economic and livelihood pattern and other relevant characteristics,; (xi) To assist the team leader in reviewing land category for the project area; and also to prepare land use matrix; (xii) To assist the team leader to identify and plan development project for the area; and also to interpret the recommendations of sectoral studies into spatial form (xiii) To assist the team leader in formulating plan implementation strategy and policy; (xiv) To formulate plan implementation strategy and policy; (xv) To prepare report, working papers, sectoral studies and prepare report for submission to the PD; (xvi) Preparation of working paper, reports and plan of the project as assigned by the PD; (xvii) To assist the UDD team members in preparing land use plan according to sectoral studies of the Structure Plan, (xviii) To be responsible for Knowledge transfer to Project Personnel and Preparation of working paper, and analytical reports; and (xix) Any other related Jobs as assigned by PD.

GIS Expert

(i) To prepare topographic, physical feature, landuse and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-sectoral data into GIS database. (vi) To take over the charges of prepare topographic, physical feature, landuse and other related map of the area, (vii) To conduct GIS based analysis for preparation of the planning package for the project as directed by Team Leader and the PD. (viii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (ix) To support consulting team members to prepare multi-sectoral planning component by using GIS and integrate these components into the planning package. (x) Preparation of working paper, reports and plan of the project as assigned by the PD; (xi) Any other related Jobs as assigned by PD.

Agricultural Scientist

(i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies. (ii) To conduct, monitor and supervise agriculture related data collection process and ensure quality of data collected. (iii) To classify the agricultural land by land type including cropping pattern, productivity, utilization and other related parameter as directed by the PD. (iv) To review and identify the characteristics of agricultural production of the region. (v) To determine the agricultural water demand for the region. (vi) To identify the potential characteristics of farmland and agro-based industries on the basis of character of the agricultural production of the region, agricultural water demand and other related parameters. (vii) To work in a multi-disciplinary team to integrated agriculture related issues in to the planning package. (viii) To work closely with the GIS/RS analyst to include the agriculture related data into GIS database. (ix) Preparation of working paper, sand analytical report based on study and survey (x) any other related jobs assigned by PD.

Urban Economist

(i) To prepare questionnaire and other necessary arrangements for conducting surveys and studies related to urban and rural economy. (ii) To conduct, monitor and supervise urban and rural economy related data collection process and ensure quality of data collected. (iii) To review and analyze economic growth variables of the town in the last six decades and forecast future trends in relation to the region to identify

economic potential of the area. (iv) To prepare multi-sectoral investment program. (v) To conduct feasibility studies of urban and rural development project/action area plans. (vi) To work with members of the consulting team to relate the results of such analyses with other parameters of urban and regional planning to form an inter-active multi-sectoral development criteria matrix. (vii) To assist other consulting team members to translate the trends and patterns of urban and rural economic activities in space. (viii) To conduct various economic analysis including economic viability analysis and calculation of opportunity cost for the bankable projects in the area to prepare Action Plan. (ix) Preparation of working paper, and analytical report based on study and survey (x) Any other assignment pertaining to urban and rural economic activities and analysis as assigned by PD.

Transport Planning Expert

(i) To conduct different traffic surveys and studies, and also analyze transportation network of the project area and ensure quality of data collected. (ii) To propose a transportation network to establish an efficient inter and intra town circulation system and also establish rural-urban linkage for the project area. (iii) To develop traffic prediction model of 20-year period for the project area. (iv) To work with a multidisciplinary team to integrate the output of the traffic surveys and transportation studies with both attribute and spatial data of different other components of the project. (iv) Preparation of working paper, and analytical report based on study and survey; and (vi) Any other related Jobs as assigned by PD.

Geologist

(i) To conduct and supervise boreholes for geological surveys for the study area; (ii) To check and monitor the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To conduct lab test of the collected samples and interpretation of the results of lab test; (iv) To prepare seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To prepare macro zonation map for the area. (vi) Any other related jobs assigned by PD.

Associate Geologist

(i) To assist the geologist in conducting and supervising boreholes for geological surveys for the study area; (ii) To assist the geologist in checking and monitoring the accuracy of the borehole preparation process, collected sample and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples and interpretation of the results of lab test; (iv) To assist the geologist in preparation of seismic hazard, vulnerability, damage and risk assessment map for the area, (v) To assist the geologist in preparation of macro zonation map for the area. (vi) Any other related jobs assigned by PD.

Geological Survey Technician

(i) To prepare boreholes for geological surveys for the study area; (ii) To collect samples and data for the geological survey; (iii) To assist the geologist in conducting lab test of the collected samples; (iii) Any other related jobs assigned by PD.

Civil Engineer cum Hydrologist

(i) To work the geologist for conducting engineering and hydro-geological survey and analysis for the study; (ii) To assess the strength of road, buildings and other infrastructures to measure seismic vulnerability; (iii)

To assist the geologist in conducting aquifer test for delineating the area for ground water harvesting; (iv) Any other related Jobs (v) Assist PD and PM in preparing plans and reports.

Photogrammetric Expert

(i) To prepare topographic, physical feature, land use and other related map of the area, (ii) To prepare, supervise, manage and monitor digital database (Spatial and attribute) of the project. (iii) Installation and troubleshooting of GIS in UDD project office and head office; (iv) Ensure the quality of the map and related work. (v) To work with a multi-disciplinary team environment to synchronize the multi-sectoral data into GIS database. (vi) Preparation of working paper, reports and plan of the project as assigned by the PD; (vii) Any other related Jobs as assigned by PD.

Social Expert

(i) To prepare, piloting, editing and finalization of socio-economic and other related questionnaire; and make necessary arrangements for PRA in consultation with the Team Leader and PD. (ii) To conduct, supervise and monitor socio-economic and other related questionnaire surveys including PRA for the project area. (iii) To supervise and monitor data entry, editing and presentation of data in tabular form. (iv) To analyze the data as directed by the Team Leader and PD and presentation in graphs and figures. (v) Preparation of working paper, reports with recommendation as assigned by PD; (vi) Preparation of Socio-economic development model for the project area for the next 20-years. (vii) To work with a multidisciplinary team to integrate the outputs of socio-economic and other questionnaire surveys and PRA as well with attribute and spatial data of other components of the project in GIS database (vii) Any other related Jobs as assigned by the Team Leader and PD.

4.4 Work Schedule

The project / work schedule is an important time management document that defines and schedules the major phases of project work being carried out to fulfill the desired project objective(s) and achieve the expected deliverables. The schedule creates a framework for the whole project plan and facilitates creation of the work breakdown structure (WBS) by placing the related activities, tasks and responsibilities on timeline. The schedule outlines the project phases and their overlaps and shows them on the common project's timeline.

To prepare the project / work schedule, the following information (as the key components) are provided by the consultant team.

- **Number and brief descriptions of project phases.** A project phase is a manageable portion of work that is accurately defined and measured by a deliverable and time-frame. Usually the project phase is divided into logically dependent activities to compete a certain job. Each project phase is briefly described during the Project Setup process to provide an overview of the jobs being initiated and completed during that phase.
- **The deliverables set being archived within each project phase.** Completion of each project phase results in achieving or producing deliverables. The implementation schedule has specified a specific set of deliverables being achieved after successful completion of every project phase.

- **Major activities for each deliverable.** During implementation of each project phase, the major activities has been outlined in order to achieve each deliverable, within the defined time-frame of that phase.
- **Key milestones.** The way to audit and control implementation of each project phase is to define check-points (the key milestones) to be conducted on a regular basis during the implementation process.
- **Responsibilities and assignments.** Completion of each project phase requires allocation of responsibilities. The team leader should will employee responsibilities and assignments per project phase and also defines who is responsible for and assigned to the delivery of the major activities within each project phase.
- **Dependencies.** A dependency is a measure of interaction between two or more project phases that identifies how one project phase exerts influence on other phases. Dependencies define an overlap between several project phases and identify what deliverables result in successful completion of two or more phases.

Considering the above mentioned key components or informations the consultant team has revised the work schedule with respect to signing of contract between UDD and ECAL. Project starting date has been considered as the contract singing date 10th June, 2015, the revised work schedule is shown in **Figure 4-2**.

4.5 Deployment of the Key Professionals

The official contract agreement between proposed key professional and the consultancy firm has already been signed. Accordance to ToR copies of agreement for each and every key stuff has been attached with this report as **Appendix-4** to draw the attention of project director and other UDD officials.

4.6 Tasks and Responsibilities of the Professionals

ECAL as a standalone consultancy firm, were very much aware for choosing key professional for this certain project based on work experience and efficiency. Highly trained and well learned professionals are proposed by the firm to carry out this job more fruitfully. The firm has paid highest thought and consideration for selecting those professional and they are committed to the team as well as UDD to do their responsibility with maximum amount of labor, concentration and association.

4.7 Reporting Schedule

The consultant has to submit six report (both hard and soft copy) to UDD as per contract with client and ToR within the time frame of 21 months. This time frame will be considered from the date of signing contract. Initially for each and every report the team need to submit draft copy to UDD and after taking concern of project director and members of technical committee final copy will be submitted in to commenced amount. The following **Table 4-1** shows the detail reporting schedule as per ToR for the whole project time frame.

Table 4-1: Reporting Schedule for the whole Project Period

Report	Language	Number of Copies to be Submitted		Period of Submission
		Draft	Final	
Mobilization Report	English	02	20	End of 15 Days
Inception Report	English	02	20	End of 1 st Month
Draft Survey Report	English	02	20	End of 6 th Month
Final Survey Report	English	02	20	End of 8 th Month
Draft Final Plan Report	English	02	20	End of 19 th Month
Final Plan Report	English	20		End of 21th Month

CHAPTER-05

PROGRESS OF WORK AND CONCLUSION

5.1 Progress of Work

The total project plan is very much tight in sense of time management that requires proactive approach from the consultancy team to finish the job within the fixed time budget. To get ahead of time the consultancy team has already taken some advanced initiatives as follows

- First signpost of the assignment as mobilization report is submitted by 15th June, 2015 within a week of contract signing. Initially 15 days was allocated for submitting this one in accordance to ToR, but the whole team pack up all relevant works for this signpost very rapidly including field visit, reconnaissance survey and team mobilization consultation meeting in project areas.
- Collection of cadastral maps (Mouza maps) one of the prior task for the team and they have already initiated the process of collecting those maps from DLRS, Dhaka office. Till mobilization report the consultancy team has abled to collect 40 mouza maps out of 150 of Faridpur Sadar Upazila. Remaining mouza maps collection including Gangni Upazila and Bagmara Upazila are in pipeline now and team is hoping that within 7-10 days all mouza maps will be in hand. A separate Appendix-8 with a sample CS mouza map of Faridpur Sadar Upazila is attached with this document which reflects the team's proactive approach and commitment for this project.
- The consultancy team has already started contact with BWDB, local DC office, LGED, Roads and Highway Department, Survey of Bangladesh (SOB), BIWTA, BIWTC, Local police station, Press organizations and other relevant organization for collecting available secondary data for the project areas.
- Purchasing high resolution satellite image is another critical task for the initial phase of the project. To being ahead of time consultancy team has already made contact with three satellite image provided vendor in USA and Singapore. General queries and pricing of image are going on now between these two parties. The consultant team do believe that all these issues will be settled within 10-15 days and they can issue purchase order of image. Copies of purchase orders later on will be forwarded to project director, UDD.
- The consultancy team has already requested Upazila Parishad Chairman for each project area to provide a space in Upazila Parishad premises to set the local project office from where all project related local activities can be moved. In case, consultancy team fail to get that space they will manage another space by own in some other place within the project area. After inception report, the consultancy team will surely set local project office in each and every project area.
- Time allocated for completing a comprehensive inception report is not quite enough, realizing the fact all the key member of the team has already started their input for inception report.

5.2 Way Forward

The next milestone for the consultant team is to prepare inception report. In accordance to ToR the consultant team have to submit Inception report at the end of first month from contract signing. To establish the detail methodology is the prime goal of inception report. To achieve that milestone ECAL has already deployed all key experts and the team has started their works on this purpose.

5.3 Conclusion

Having a defined development plan for any area adds a great advantage for authority as well as the government to execute their plans with more efficacy. Country like Bangladesh where population burden is excessive and resources are limited, it carries more importance than any others. Since late 80's administrative and spatial pattern of Bangladesh has experienced rapid change in urbanization, specially because declaration of new areas as urban centers, cities, upazilas etc. Past experience shows that in context of Bangladesh rural-urban mix approach is the best suitable one to move forward. Unfortunately most of these new emerging areas including the old one don't have any specific development plan results lot of complicity and conspiracy for executing any development programs there. Urban Development Directorate has come out with an appreciable initiative to formulate plan for those areas which are not highlighted too much centrally but have that potential to play a great role in national affairs. Being a part of that project ECAL express their hearty gratitude to UDD and other responsible persons and organizations for the initiative. Again, the team do believe that whenever the plan will be completed it will more easily for central and local authority for defining their acts, roles and responsibilities. It will certainly reflect a great positive change in development pattern for those areas added. At the end consultancy team hoping all the success of this project and thankful to every one whoever helps the team to carry out their job.