

**A STUDY ON IDENTIFICATION OF FACTORS
RESPONSIBLE FOR NON-DESIGNATED USE OF
MULTIPURPOSE CYCLONE SHELTER IN
KALAPARA UPAZILLA**

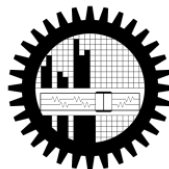
Submitted to the Department of Urban and Regional Planning
Bangladesh University of Engineering and Technology, Dhaka in
partial fulfillment of the requirements for the degree of

MASTER OF URBAN AND REGIONAL PLANNING

BY

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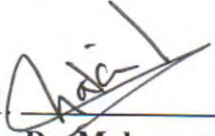

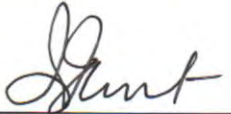
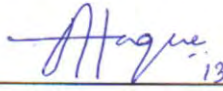

**DEPARTMENT OF URBAN AND REGIONAL PLANNING
BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY
DHAKA**

MARCH, 2015

CERTIFICATE

The thesis titled "A STUDY ON IDENTIFICATION OF FACTORS RESPONSIBLE FOR NON-DESIGNATED USE OF MULTIPURPOSE CYCLONE SHELTER IN KALAPARA UPAZILLA" submitted by MD. TOFAZZEL HOSSAIN MANIK, Roll No.:040815001P, Session: April 2008, has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Master of Urban and Regional Planning (MURP) by Course and Thesis on 28th March, 2015.

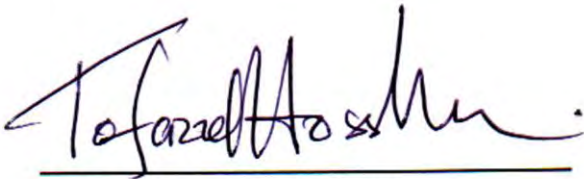
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The author wishes to dedicate this Master's thesis to his family members and the people who are fighting against natural disaster in coastal region.

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Md. Tofazzel Hossain Manik
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ABSTRACT

Bangladesh, a low-lying delta nation at the foot of the Himalayas, is prone to many natural disasters, especially floods and windstorms – including tornadoes and cyclones (Jamal, 2001). Cyclone is a tropical storm or atmospheric turbulence involving circular motion of winds, occurs in Bangladesh almost every year. About one tenth of the global tropical cyclone occurs in the Bay of Bengal. About one sixth of tropical cyclones developed in the Bay of Bengal had landfall on the Bangladesh coast (BUET and BIDS, 1993). The cyclone accompanied with torrential rain and devastating tidal surge causes havoc to lives and properties in the cyclone path, and the environment in the affected area (Mahmood et al., 1994).

From 1960-61, government and non-government organization of Bangladesh constructed many Multi-purpose Cyclone Shelter (MPCS) in the coastal region. Objectives of the construction of multi-purpose cyclone shelter in coastal region is to provide shelter and to reduce disaster risks for their lives and properties during emergency period and to increase institutional facilities for community people during normal time. However there are reports in media that there are misuses of the multi-purpose cyclone shelters. In this background, the study has been undertaken to find out if there is misuse of the MPCS and the factors behind the misuses. Considering the resource constraint, a coastal Upazilla (Kalapara of Patuakhali district) was chosen as the study area.

The research used physical survey, questionnaire survey, key informant interview and focus group discussion to identify the existing use of MPCS against the designed use and to find out the factors which encourage use other than the designated use both during cyclone and off-cyclone period. It was found though all the MPCS are in use as cyclone shelter during cyclone period; only 14 out of 105 are in designated use during non-cyclone period. There are many factors behind the non-designed use of MPCS during off -cyclone period. These factors could be classified in six categories like geographical, design, social, economical, institutional, and political. In conclusion it could be said that measures including institutional management have to take to ensure that MPCS are in use during and off-cyclone period.

TABLE OF CONTENTS

	Page No.
Acknowledgement.....	i-ii
Abstract.....	iii
Table of Contents.....	iv-xxi
List of Tables.....	ix
List of Maps.....	x
List of Figures.....	xi
List of Photographs.....	xii-xiv
Case Study.....	xv
Glossary.....	xvi-xvii
Acronyms and Abbreviations.....	xviii-xx
Physical Units.....	xxi
Chapter 1: Introduction.....	1-05
1.1 Background.....	01-03
1.2 Objectives with specific aims.....	04
1.3 Scope and Limitation.....	04
1.4 Organization of the Thesis.....	05
Chapter 2: Methodology.....	06-19
2.1 Introduction.....	06
2.2 Initial Phase.....	06-13
2.2.1 Initiation.....	06-07
2.2.2 Literature Review.....	08-13
2.2.3 Reconnaissance Survey.....	13
2.3 Data Collection and Survey Phase.....	14-18
2.3.1 Primary Data Collection.....	14-17
2.3.1.1 Field Visit.....	14
2.3.1.2 Key Informant Interview (KII).....	15-16
2.3.1.3 Focused Group Discussion (FGD).....	17
2.3.1.4 Case Study.....	17

2.3.2 Secondary Data Collection.....	17-18
2.4 Analysis Phase.....	18-19
2.4.1 Data Analysis and Interpretation.....	18-19
2.4.2 Preparation of Maps.....	19
2.4.3 Report Preparation.....	19
Chapter 3: Profile of the Study Area.....	20-35
3.1 Introduction.....	20
3.2 Area and Location.....	20
3.3 Administrative Features.....	21
3.4 Demographic Features.....	22
3.5 Income and Occupation.....	22
3.6 Cyclone in the Study Area.....	22-23
3.7 Profile of Cyclone Shelter in the Study Area.....	23-35
3.7.1 Distribution of Cyclone Shelter.....	23-26
3.7.2 Constructing Authority of Cyclone Shelter.....	26-27
3.7.3 Constructing Year of Cyclone Shelter.....	28
3.7.4 Existing Capacity Scenario of Cyclone Shelter.....	28-29
3.7.5 Existing Toilets Provision of Cyclone Shelter.....	29
3.7.6 Existing Water Supply Provision of Cyclone Shelter.....	30
3.7.7 Existing Stair Facilities of Cyclone Shelter.....	31
3.7.8 Existing Design Aspect of Cyclone Shelter.....	31-33
3.7.9 Separate Room both Male and Female of MPCS.....	34
3.7.10 Provision for Domestic Animal in MPCS.....	34
3.7.11 Store Room of MPCS.....	35
Chapter 4: Identification of the Use of MPCS.....	36-50
4.1 Introduction.....	36
4.2 Designated Use of MPCS during Cyclone and Off-cyclone Period.....	36-37
4.3 Non-designated Use of MPCS.....	37-45

4.3.1 Agricultural Production.....	39-40
4.3.2 Garage.....	41
4.3.3 Residential use.....	41-42
4.3.4 Storage Facility.....	43
4.3.5 Animal Shed.....	44
4.3.6 Miscellaneous Non-Designated Use of MPCP.....	44-45
4.3.6.1 Shop.....	44
4.3.6.2 Solid Waste and Garbage Site.....	45
4.3.6.3 Ground Floor Used as Prayer Room.....	45
4.4 Non-designated use and Location.....	46
4.5 Non-designated use and Year of Construction.....	47
4.6 Non-designated use and Management Authority.....	48-50
Chapter 5: Factors Responsible for Non-designated use.....	51-73
5.1 Introduction.....	51
5.2 Responsible Factors for Non-Designated Use.....	51-71
5.2.1 Geographical Factors.....	51-54
5.2.2 Design Factors.....	55-64
5.2.2.1 Capacity.....	55
5.2.2.2 Facilities for Different Groups.....	56
5.2.2.3 Facilities for Physically Challenged.....	56
5.2.2.4 Condition of Utilities.....	57-61
5.2.2.5 Facilities for Livestock.....	61
5.2.2.6 Facilities for Valuable Assets.....	61
5.2.2.7 Store Room of MPCP.....	62-63
5.2.2.8 Issues of privacy in MPCP.....	63-64
5.2.3 Social Factors.....	64-66
5.2.3.1 Awareness.....	64
5.2.3.2 Social behavior.....	64-65
5.2.3.3 Security Conditions.....	66
5.2.4 Institutional Factor.....	66-67
5.2.4.1 Management Authority.....	66-67
5.2.4.2 Peoples Participation.....	67

5.2.5 Political Factors.....	67-69
5.2.5.1 Power.....	67-68
5.2.5.2 Power Relation.....	68-69
5.2.6 Other Factors.....	69-71
5.2.6.1 Economic Status.....	69-70
5.2.6.2 Lack of Study and Research.....	70
5.2.6.3 Boundary Wall.....	71
5.3 Responsible Factors for Non-designated Use: <i>Findings from Focused Group Discussion (FGD)</i>	72-73
5.4 Summary of Findings	73
Chapter 6: Findings and Recommendation.....	74-79
6.1 Introduction.....	74
6.2 Major Findings of the Research.....	74-75
6.3 Recommendations for Non-designated use.....	75-78
6.3.1 Recommendations for Geographical Aspect.....	75
6.3.2 Recommendations for Design Aspect.....	75-76
6.3.3 Recommendations for Social Aspect.....	76
6.3.4 Recommendations for Institutional and Political Aspect...	77
6.3.5 Others.....	77-78
6.4 Conclusion.....	78-79
References.....	80-84
Appendices.....	85-136
Appendix A: Field Visit.....	85 – 119
Appendix A1: Field Visit Checklists.....	85 – 86
Appendix A2: Key Informant’s Interview (KII)	87 – 102
Appendix A2.1: Checklists for Key Informant’s Interview.....	87 – 88
Appendix A2.2: Description of Key Informant’s Interview	89 – 97
Appendix A2.3: Important Information of Key Informant..	98 – 102
Appendix A3 :Focused Group Discussion (FGD).....	103-125

Appendix A3.1: Checklist for Focused Group Discussion (FGD)...	103
Appendix A3.2: Participants List of Focused Group Discussion (FGD).....	104-109
Appendix A3.3: Description of Focused Group Discussion (FGD).....	110-119
Appendix A3.4: Pair-wise Ranking of the Factors during Focused Group Discussion (FGD).....	120-125
Appendix B: Use of MPCs during Off-Cyclone Period.....	126-133
Appendix C: <i>Killahs</i> in Kalapara Upazilla.....	134 -136
Appendix C.1: Union Wise Distribution and Year Wise Construction of the <i>Killahs</i> in Kalapara Upazilla.....	134 -135
Appendix C.2: Location of <i>Killahs</i> in Kalapara Upazilla.....	136

LIST OF TABLES

	Page No.
<i>Table 2.1:</i> Sources of Secondary Data.....	18
<i>Table 3.1:</i> Major Cyclone in the Study Area with Wind Speed.....	22-23
<i>Table 3.2:</i> Distribution of Multi-purpose Cyclone Shelter in the Study Area.....	23
<i>Table 3.3:</i> MPCS Constructed by Government Authority.....	27
<i>Table 3.4:</i> MPCS constructed by Non-Government Authority.....	27
<i>Table 3.5:</i> Constructed year of MPCS.....	28
<i>Table 3.6:</i> Capacity status of MPCS in the Study Area.....	29
<i>Table 3.7:</i> Water supply Provision of MPCS.....	30
<i>Table 3.8:</i> Provision of Stair of MPCS.....	31
<i>Table 4.1:</i> Designated Use of MPCS in Off-Cyclone Period.....	37
<i>Table 4.2:</i> Non-designated Use of MPCS.....	37-38
<i>Table 4.3:</i> Survey Result of Designated and Non-designated Use of MPCS.....	38-39
<i>Table 4.4:</i> Distribution of non-designated uses of MPCSs in different Union.....	46
<i>Table 4.5:</i> Management Authority of MPCS in the Study Area.....	48
<i>Table 4.6:</i> Distribution of Non-designated uses of MPCSs and Management Authority.....	49
<i>Table 5.1:</i> Pair-wise ranking method: Problem prioritization of responsible factors of non-designated.....	72

LIST OF MAPS

	Page No.
<i>Map 1.1: Location of the Study Area (Kalapara Upazilla).....</i>	3
<i>Map 2.1: Map Showing the Coastal Area of Bangladesh.....</i>	12
<i>Map 3.1: Map Showing the Study Area (Kalapara Upazila) in Satellite Image.....</i>	20
<i>Map 3.2: Map Showing the Study Area (Kalapara Upazila) with Surrounding Region.....</i>	21
<i>Map 3.3: Location of Multi-purpose Cyclone Shelter in the Study Area</i>	24

LIST OF FIGURES

	Page No.
<i>Figure 2.1: Initial Phase to Conduct the Study</i>	13
<i>Figure 2.2: Data Collection and Survey Phase</i>	16
<i>Figure 3.1: Existing KILLA (round in shape)</i>	25
<i>Figure 5.1: Service Area of Multi-purpose Cyclone Shelter in the Study Area</i>	54

LIST OF PHOTOGRAPHS

	Page No.
<i>Photo 3.1:</i> Existing KILLA of Tiakhali Union.....	26
<i>Photo 3.2:</i> Existing KILLA of Lalua Union.....	26
<i>Photo 3.3:</i> Existing KILLA of Mithaganj Union.....	26
<i>Photo 3.4:</i> Separate toilet of MPCs in Tiakhali Union.....	29
<i>Photo 3.5:</i> Separate toilet of MPCs in Dhulashar Union.....	29
<i>Photo 3.6:</i> Tube-well and Toilet is in Ground floor of MPCs in Neelganj Union.....	30
<i>Photo 3.7:</i> Tube-well and Toilet is in Ground floor of MPCs in Dhankhali Union.....	30
<i>Photo 3.8:</i> One stair of MPCs without ramp made by LGED.....	31
<i>Photo 3.9:</i> Three Storied Building of MPCs Made by Grameen Bank in Nilganj Union.....	31
<i>Photo 3.10:</i> Three Storied Building of MPCs Made by Facilities Department in Dhulashar Union.....	31
<i>Photo 3.11:</i> Rectangular shape School cum Cyclone Shelter in Chakamaiya Union.....	32
<i>Photo 3.12:</i> L- shape Union Parishad cum Cyclone Shelter in Lalua Union.	32
<i>Photo 3.13:</i> Triangular shape Community Centre cum Cyclone Shelter in Neelganj Union.....	32
<i>Photo 3.14:</i> MPCs made by CARITAS in Neelganj Union Introduced Ramp (Facilities for Old and Disable Person).....	33
<i>Photo 3.15:</i> MPCs made by CARITAS in Dhankhali Union (Ground Floor Toilet and Tube-well).....	33
<i>Photo 3.16:</i> MPCs in Mithaganj Union Constructed by LGED is Two Storied Building.....	33
<i>Photo 3.17:</i> MPCs in Lalua Union Constructed by LGED without provision of Water Facilities.....	33
<i>Photo 3.18:</i> Both male and female live together in MPCs of Mohipur Union during cyclone period.....	34
<i>Photo 3.19:</i> Both male and female live together in MPCs of Latachapali Union during cyclone period.....	34

<i>Photo 3.20:</i> Ground floor of MPCS in Dhankhali Union is used to keep domestic animal.....	34
<i>Photo 3.21:</i> Benches, tables and people live together in MPCS in Latachapali Union.....	35
<i>Photo 3.22:</i> Small Store Room of MPCS in Mithaganj Union.....	35
<i>Photo 4.1:</i> MPCS in Neelganj Union used as to cultivate vegetables.....	39
<i>Photo 4.2:</i> MPCS in Mithaganj Union used as to cultivate vegetables.....	39
<i>Photo 4.3:</i> Agricultural productions are adjacent and surrounds the MPCS of Lalua Union.....	40
<i>Photo 4.4:</i> Agricultural productions are adjacent and surrounds the MPCS of Chakamaiya Union.....	40
<i>Photo 4.5:</i> Vegetables Cultivations adjacent the MPCS of Neelganj Union	40
<i>Photo 4.6:</i> MPCS in Neelganj Union used as Ricksha Stand.....	41
<i>Photo 4.7:</i> MPCS in Lalua Union used as Garage.....	41
<i>Photo 4.8:</i> MPCS in Tiakhali Union used as Residence by Local People.....	41
<i>Photo 4.9:</i> MPCS in Chakamaiya Union used as Quarter by School Teacher	41
<i>Photo 4.10:</i> MPCS in Mohipur Union used as Residence by Construction Worker..	41
<i>Photo 4.11:</i> MPCS in Chakamaiya Union used as Quarter by School.....	41
<i>Photo 4.12:</i> MPCS used as Students Dormitory in Lalua Union.....	42
<i>Photo 4.13:</i> MPCS used as Students Dormitory in Mithaganj Union.....	42
<i>Photo 4.14:</i> MPCS in Tiakhali Union used as Residence by Office Staff.	42
<i>Photo 4.15:</i> MPCS in Dhankhali Union used as Store Room for Crops....	43
<i>Photo 4.16:</i> MPCS in Latachapali Union used as Store Room for Crops..	43
<i>Photo 4.17:</i> MPCS in Dhulashar Union used as to keep Construction Materials	43
<i>Photo 4.18:</i> MPCS in Lalua Union used as to keep Construction Materials..	43
<i>Photo 4.19:</i> MPCS in Neelganj Union used as to keep Cattle Shed.....	44
<i>Photo 4.20:</i> MPCS in Mithaganj Union used as to keep Goat Shed.....	44
<i>Photo 4.21:</i> MPCS in Latachapali Union used as to keep Sheep Shed.....	44
<i>Photo 4.22:</i> MPCS in Dhankhali Union used as to keep Animal Shed....	44
<i>Photo 4.23:</i> Ground floor Shop of MPCS in Lalua Union.....	44
<i>Photo 4.24:</i> Inside of MPCS in Lalua Union Used as to Keep Waste and Garbage.....	45
<i>Photo 4.25:</i> Outside of MPCS in Latachapali Union Used as to Keep Waste	45

and Garbage.....	
<i>Photo 4.26:</i> MPCS’s Ground Floor in Chakamaiya Union Used as Prayer Room.....	45
<i>Photo 5.1:</i> MPCS without connecting road used as agricultural activity in its adjacent, surrounds in Neelganj Union.....	53
<i>Photo 5.2:</i> MPCS constructed in open agricultural field without connecting road used as garbage site in Lalua Union.....	53
<i>Photo 5.3:</i> A newly constructed MPCS by LGED in Chakamaiya Union which has no attached toilet.....	57
<i>Photo 5.4:</i> MPCS constructed by CARITAS Mithaganj Union which toilets are outside the main building.....	57
<i>Photo 5.5:</i> MPCSs outside toilet is used by local people in Dhankhali Union.....	57
<i>Photo 5.6:</i> Ground floor tube-well of MPCS use by local people for washing in Tiakhali Union.....	59
<i>Photo 5.7:</i> Ground floor tube-well of MPCS use by local people for bathing in Dhulashar Union.....	59
<i>Photo 5.8</i> MPCS in Mithaganj Union made by LGED.....	60
<i>Photo 5.9:</i> Narrow and dirty of MPCS in Latachapali Union made by CARITAS.....	60
<i>Photo 5.10:</i> Damaged plastering of stair of MPCS in Lalua Union.....	60
<i>Photo 5.11:</i> MPCS’s gate of stair is locked by the people who use it as residence in Mohipur Union.....	61
<i>Photo 5.12:</i> Store room of MPCS in Dhulashar Union used as residence by office employee.....	63
<i>Photo 5.13:</i> Store room of MPCS in Mithaganj Union used as residence by school teacher.....	63
<i>Photo 5.14:</i> Toilets are not marked to use both male and female in MPCS of Dhankhali Union.....	64
<i>Photo 5.15:</i> Living rooms are not marked to use both male and female in MPCS of Dhulashar Union.....	64
<i>Photo 5.16:</i> No boundary wall of MPCS in Mithaganj Union made by CARITAS.....	71

CASE STUDY

	Page No.
<i>Case Study 5.1: Non-designated use due to Design of Toilet.....</i>	58
<i>Case Study 5.2: Non-designated use due to poor Water Facility.....</i>	59
<i>Case Study 5.3: Non-designated use due to Lack of Awareness.....</i>	64
<i>Case Study 5.4: MPCS is not used due to Social Relation.....</i>	65
<i>Case Study 5.5: Non-designated use due to Social Behavior.....</i>	65
<i>Case Study 5.6: Non-designated Use due to Security Guard.....</i>	67
<i>Case Study 5.7: MPCS used as Residence due to Power.....</i>	68
<i>Case Study 5.8: Non-designated use due to Power Relation.....</i>	69
<i>Case Study 5.9: Misuse of MPCS due to Economic Status.....</i>	70

GLOSSARY

<i>Bari</i>	A homestead-cluster of agnatically related households usually consisting of an inner courtyard surrounded by dwelling units
<i>Benami</i> (land)	Possession of asset (e.g., land) by fictitious name
<i>Districts</i>	Administrative unit with a “Deputy Commissioners” as representative
<i>Durjog</i>	Hazard; natural hazard
<i>Gusthi</i>	Patrilineage
<i>Hat</i>	Local weekly bazaar
<i>Kutchra</i>	Earthen ;(temporary house)
<i>Kutchra Road</i>	Unpaved Road
<i>Khana</i>	A household under which a group of people live as a family by sharing the same kitchen
<i>Khas</i> (land)	Unused Government owned land
<i>Kot</i>	Mortgage, normally applicable to land for house construction
<i>Killas</i>	Raised earthen mound, built for providing shelter, primarily for Livestock during cyclone period
<i>Madrasha</i>	Educational Institution which emphasis on Muslim religious education
<i>Mathbor</i>	Locally powerful and respectable person
<i>Masjid</i>	Mosque
<i>Mouza</i>	A geographically defined land revenue unit/ Smallest land revenue unit
<i>Nauka</i>	Country boat
<i>Para</i>	A small society/ Community
<i>Paribar</i>	Usually a single family unit comprising of husband, wife and children
<i>Parishad</i>	Council
<i>Pucca</i>	Permanent construction of brick and/or concrete
<i>Pucca Road</i>	Paved Road
<i>Samaj</i>	An informal village association based on neighbored or religious sects.

<i>Samity</i>	Common interest group association often formed as a cooperative body.
<i>Thana</i>	Administrative units below <i>Districts</i> /Medium-sized administrative unit, equivalent to a sub-district/ The lowest bureaucratic tier of government.
<i>Union</i>	Lowest administrative unit in Bangladesh which comprises of several villages
<i>Union Parishad</i>	Administrative unit below <i>Thana</i> , with a chairman as elected representative/The lowest and only democratically-elected level of local government, consisting of 13 members.
<i>Village</i>	A geo-social entity
<i>Zila</i>	District
<i>Zila Parishad</i>	District Council

ACRONYMS AND ABBREVIATIONS

BBS	Bangladesh Bureau of Statistics
BCAS	Bangladesh Centre for Advanced Studies
BDRCS	Bangladesh Red Crescent Society
BIDS	Bangladesh Institute of Development Studies
BUET	Bangladesh University of Engineering and Technology
BWDB	Bangladesh Water Development Board
CARITAS	The Catholic Agency for International Aid and Development
CCC	Coastal Community Center
CDMP	Comprehensive Disaster Management Programme
CEGIS	Center for Environmental and Geographic Information Services
CERP	Coastal Embankment Rehabilitation Project
cm	centimeter
CS	Cyclone Shelter
CSMP	Cyclone Shelter Master Plan
CSPS	Cyclone Shelter Preparatory Study
COB	Community Based Organization
CPP	Cyclone Preparedness Programme
CPP II	Cyclone Protection Project II
CSCO	Cyclone Shelter Construction Organization
CYSMIS	Cyclone Shelter Management Information System
DANIDA	Danish International Development Agency
DEM	Digital Elevation Model
DFID-B	Department for International Development – Bangladesh
DMB	Disaster Management Bureau
DPP	Disaster Prepared Programme
DRRO	District Rehabilitation & Relief Officer
DRR	Disaster Risk Reduction
EC	European Commission
ESCAP	Economic and Social Commission for Asia and Pacific
GF	Ground Floor
GL	Ground Level

GIS	Geographic Information System
GO	Government Order
GO	Government Organization
GoB	Government of Bangladesh
GPS	Global Positioning System
GUK	Gram Unnayan Kendraw
HH	Household
HQ	Head Quarter
HRA	High Risk Area
IAB	Institute of Architecture, Bangladesh
IDA	International Development Agency
ICZM	Integrated Coastal Zone Management
IEB	Institute of Engineers, Bangladesh
IMO	Implementing Organization
in	inch
km	kilometer
KPH	Kilometre per Hour
ISDR	International Strategy for Disaster Reduction
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department
MCSP	Multi-purpose Cyclone Shelter Programme
MPCS	Multi-purpose Cyclone Shelter
m	metre
mm	millimeter
mph	mile per hour
MoDMR	Ministry of Disaster Management and Relief
MoFDM	Ministry of Flood and Disaster Management
MSL	Mean Sea Level
MWR	Ministry of Water Resources
NGO	Non Government Organization
NWRD	National Water Resources Database
O&M	Operation and Maintenance
PDO	Project Development Office
PHC	Primary Health Care

PIU	Project Implementation Unit
PWD	Public Works Department
RRA	Remote Rural Area
RA	Risk Area
RCC	Reinforced Cement Concrete
RFP	Request for Proposal
RHD	Roads and Highways Department
RZ	Risk Zone
SC	Steering Committee
SDC	Swiss Development Cooperation
SEMP	Supporting Environmental Management Programme
SKS	Samaj Kallan Sanstha
sq.ft/sft	square foot
sq.km	square kilometer
sm	square metre
TAPP	Technical Assistance Project Proforma
TP	Thana Parishad
ToR	Terms of Reference
UDMC	Union Disaster Management Committee
UDMC	Upazilla Disaster Management Committee
UNCRD	United Nations Centre for Regional Development
UNDP	United Nations Development Programme
UNDRO	United Nations Disaster Relief Coordination
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNO	Upazila Nirbahi Officer
UP	Union Parshad
VHF	Very High Frequency
WB	World Bank
WMO	World Meteorological Organization

PHYSICAL UNITS

m	-	meter	1 Kg. = 1000 gm.
k.m	-	kilometers	1 Bigha = 33 Decimals
sq.m	-	square meter	=0.3305785 Acres
sq.km	-	square kilometer	=0.13378038 Hectare
l	-	liter	1 Acre =3.025 Bigha
			=100 Decimals
			= 0.4046856 Hectare
			1 Hectare = 2.4711 Acres
			1 Acre = 3.025 Bigha
			1 Foot = 0.3048 metre
			1 Sq.ft.=0.0929 Sq.m.
			1 Mile = 1.6093 km
			1 Sq. Mile = 2.590 Sq.km.
			1 km = 0.6214 mile
			1 Crore = 10 million
			1 Lakh = 0.1 million

CHAPTER 1
INTRODUCTION

1.1 Background

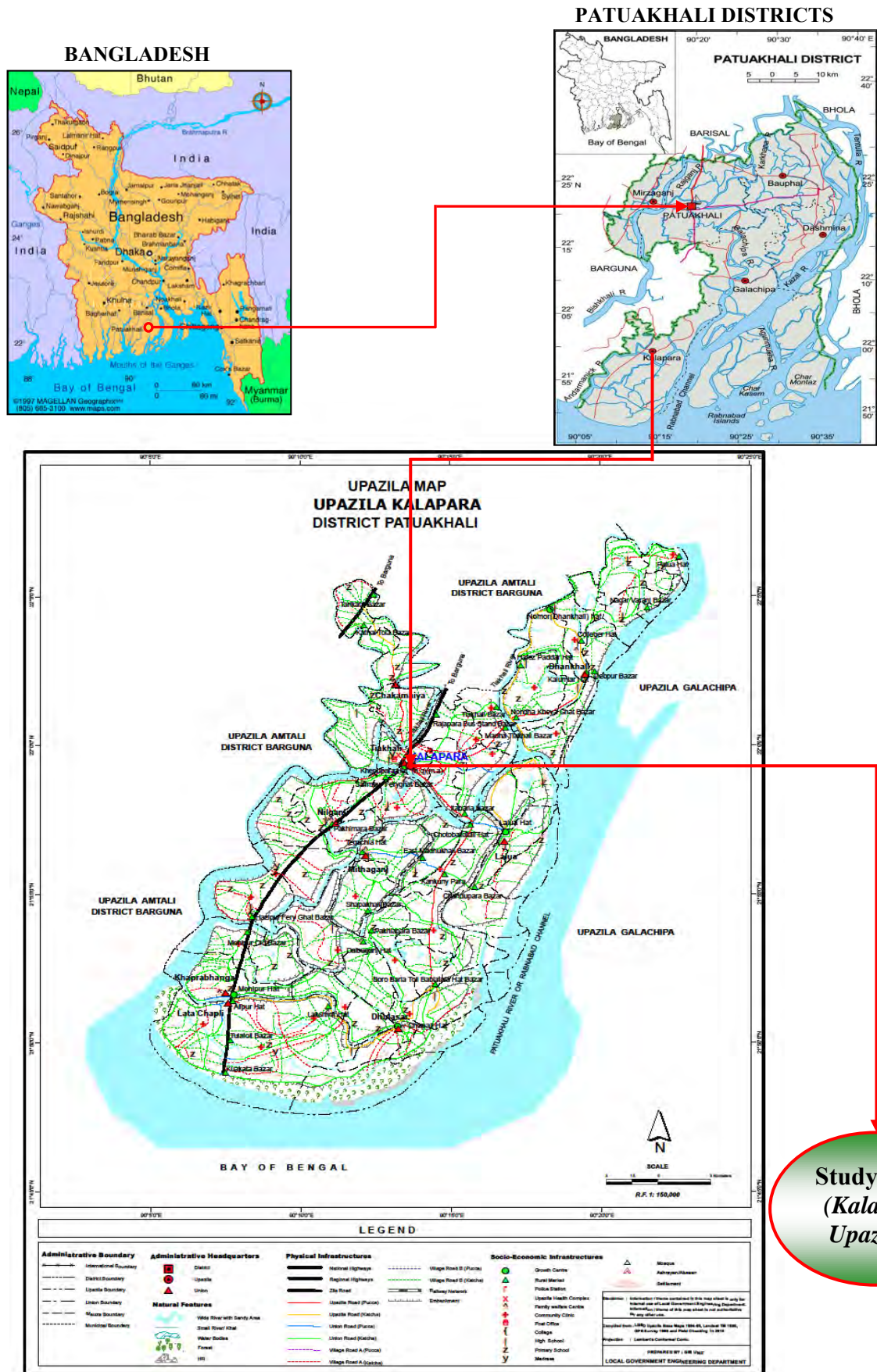
Due to geographic location and geophysical conditions, Bangladesh is one of the most disaster-prone countries in the world (GoB, 2011). Bangladesh is always affected by cyclones of varying severity due to geographical and climate pattern. Catastrophic cyclones and disasters generating from the Bay of Bengal over the years have killed lives, destroyed huge resources and have caused severe damage to the country's social and economic infrastructure (Islam, 2007). To save lives and properties of the coastal region, government and non-government organization of Bangladesh constructed cyclone shelter. A cyclone shelter is a building specifically located, designed and built to provide protection to occupants from the effects of the most severe cyclones. Multi-purpose Cyclone Shelter (MPCS) means the cyclone shelter which is designed or used for several purposes. In coastal region of Bangladesh, MPCS is constructed primarily to use it as shelter during emergency period and normal time to use it as educational institutions, primary school, secondary school, vocational training institutions, colleges, health and family welfare centre's, community centre's, offices, passenger terminal etc. (Chowdhury, 2009). That is the designated use by the authority but when any other use of MPCS other than this designated use termed as non-designated use in this study.

The first MPCS was planned after the cyclones of 1960-61 in Bangladesh. These were two-storied buildings in areas close to coast. The upper floor was used as shelter during cyclones. During normal times (i.e. off-cyclone period) these were used as offices of the Union Council (the lowest level of local government) and community centers. A total of 132 of these buildings were built at that time, but lack of maintenance has resulted in rapid deterioration and many of these have been abandoned (Chowdhury, 2009). Those were basically developed for community development functions, like school, library, auditorium etc. which could also provide shelter space to cyclone affected people of those areas. But in most of the cases they failed to serve their purposes, due to their inappropriate location, use and design (Mahbub A.Q.M et al. 2012).

MPCS in coastal region of Bangladesh are designed and constructed to use as shelter during emergency period and to use as school, community center, Union Parishad office, clinic etc. during normal time. Some of the building have no normal time use and are essentially derelict reportedly used as gambling dens and for other illicit purpose (Mahbub A.Q.M et al. 2012). There are several studies on MPCS (for example BUET-BIDS, 1993; DFID, UNDP, MFDM, 2008; CEGIS, 2009) though they differ in content and scope but they recognize that there are other uses during cyclone and non-cyclone period other than this designated use. However none of these goes into detail regarding what are these non-designated uses and why these uses are occurring. At this background, present study attempts to investigate the actual scenario whether there is any variation of designated use or not of MPCSs and to find out the factors lying behind the existing scenario if/any non-designated use.

The total number of MPCS in greater Barisal District is 826 (CEGIS, 2009) of which 105 are located in the Kalapara Upazilla of Patuakhali Districts (Field survey, 2013). During reconnaissance survey, it was found that many of the MPCSs in Kalapara Upazilla are used for purposes for which it was not designed. Since there was no previous study and research about the non-designated use of MPCS and it was not conducted any study about the responsible factors for non-designated use so Kalapara Upazilla of Patuakhali District was selected for the present study (*Map 1.1*).

Map 1.1: Location of the Study Area (Kalapara Upazilla)



Source: Adopted and modified from LGED, August 2013

1.2 Objectives with specific aims

This study focuses on the following two objectives:

1. To identify the non-designated use of Multi-purpose Cyclone Shelter in Kalapara Upazilla of Patuakhali Districts.
2. To identify the factors responsible for non-designated use of Multi-purpose Cyclone Shelters in Kalapara Upazilla of Patuakhali Districts.

1.3 Scope and Limitation

The survey of the study was mainly depend upon direct interview and direct field visit of all MPCs in the study area which was great and challenging tasks due to large study area. From several focused group discussions, key informants interview and several case studies, it was tried to find out the non-designated use and responsible factors for non-designated use of MPCs. It was felt that due to political power structure within the village discouraged some of the respondent to provide about their real opinion on the responsible factors for non-designated use of MPCs. In spite of drawbacks, this study can be used as a guideline by the policy makers and constructing authority to set up new MPCs in coastal region of Bangladesh that will lead to successful use of it both cyclone and non-cyclone period.

1.4 Organization of the Thesis

The thesis has been divided into six chapters. Chapter one presents the background of the study, objectives with specific aims, scope and limitation of the study are also discussed in this chapter.

Chapter two outlines the details methodology how to conduct the study. This chapter also provides literature review like what types of study, projects or initiatives are conducted in the previous time related to the present study.

Chapter three presents the profile of the study area. In this chapter it is discussed the background, area and location of the study area. Socio-economic condition of the study areas people like their education, income, occupation and perception about MPCS and MPCS related information's is also discussed here.

Chapter four discusses the non-designated use of MPCS in cyclone and non-cyclone period of the study area. Chapter five presents the factors responsible for the non-designated use of MPCS in cyclone and non-cyclone period.

Chapter six has come up general findings of the present study with some recommendations for the successful use of MPCS both cyclone period and non-cyclone period and conclusion of the study.

CHAPTER 2
METHODOLOGY

2.1 Introduction

The term ‘methodology’ implies “*means and ways*” of achieving research objectives and goals (Asaduzzaman *et al*, 1997). A proper methodology is always necessary for the successful completion of any research work. It helps to organize the experiences, observations, examinations, analysis of found data and information’s and their logical interpretation in a systematic process to achieve the ultimate goal and objectives of the research. Data which are the raw materials of a research work determine, to an appropriate extent the nature, success and limitations of the thesis. The methodology used for the study is described in the following sections. For ease of description the methodology could be categorized in three phases but it should be mentioned that some of the steps were cyclic in nature and some were conducted in two or more phases though they were mentioned in the phase they were first conducted. The methodology could be described in three phases.

- Initial Phase
- Data Collection and Survey Phase
- Analysis Phase

2.2 Initial Phase

In this phase the preliminary tasks of the research was conducted. The study area was selected; the goal and objectives and preliminary methodology were set in this phase (*Figure 2.1*).

2.2.1 Initiation

Though many researches (BUET-BIDS, 1993; Rashid, 1997; DFID, UNDP and GoB, 2008; CEGIS, 2009; Chowdhury, 2009) identified the MPCs are not used by the citizens as designed by the architect, planner and engineer but there was no study of how much it is improperly used, what are the non-designated use and what are the causes for it.

MPCS is designed to use as shelter during emergency period that is designated use and normal time it is designed to use as school, community center, clinic etc. that is designated use during off-cyclone period. But when MPCs is used other purposes (i.e.

animal shed, store room, construction materials site, garbage site, residence etc.) except the designated use it is termed as non-designated use in this study.

The research has been initiated to identify the factors responsible for these non-designated uses for better use of the MPCs in coastal region of Bangladesh both cyclone and off-cyclone period. The preliminary objectives and criteria for selecting study area were set during this period through literature review and reconnaissance survey.

History of Cyclone Shelter in Bangladesh

After the devastating cyclone of 1970, Government and other agencies especially International Federation of Red Cross and Crescent undertook construction of MPCs along the coast of Bangladesh. During 1972-1979, 238 Multi-purpose Cyclone Shelters were constructed in coastal districts of Bangladesh. These shelters were primarily used as primary schools and high schools. These were three-storied structures. Each center was capable of accommodating about 2000 people during cyclone and tidal surge (Rashid, 1997).

Bangladesh Red Crescent Society (BRCS) constructed 62 shelters, CARITAS and other NGO's constructed 20 shelters after the cyclone of 1985. These shelters were two-storied frame building with free ground floor three meter heights on R.C.C columns, which can accommodate 800 people during cyclone and tidal surge (Rashid, 1997).

After the cyclones of 1991 (Known as Gorky), 2007 (SIDR) and 2009 (Aila), different agencies constructed MPCs in coastal region of Bangladesh. There were 449 cyclone shelters in 1990. In 1996 the figure stood in 1816. The majority number of shelters was located far from the cyclone prone areas, for that reason they were not adequate to provide shelter to the affected people during the hit of cyclone (Mahbub A.Q.M et al. 2012). In 2009, the total number of MPCs in the coastal area of Bangladesh was around 2,583 (CEGIS, 2009).

2.2.2 Literature Review

This is actually the first step of the research as well as last step as the process never ended during the research. Literatures in the form of texts, statistics, thesis, journals, web-sites have been collected, reviewed and consulted thoroughly. This literature has enriched the conceptual background to great extent so here discussed some of the previous study related the present study.

Bangladesh is known as country of disaster. After flood, cyclone is one of the most frequently researched disasters in Bangladesh. There have been numerous studies carried out on the Bay of Bengal cyclones (For example. Talukder.J. et al. 1992; Ohiduzzaman, 1993 etc).Islam (2008) provided a comprehensive and reliable dataset on the land falling tropical cyclones of Bangladesh with a climatologically analysis for a 127-year period (1877–2003). There are a number of research studies on cyclone of Bangladesh however most of the studies on Multi-purpose Cyclone Shelter (MPCS) of Bangladesh are consultancy reports. Most of these studies were done after the devastating cyclone of April, 1991. The Institution of Engineers, Bangladesh (IEB) decided to form a Task Force to investigate into the causes of huge damage by cyclone and storm surge, particularly from the engineering point of view and to suggest measures for mitigation of such damages in future cyclones. However they concluded giving more importance to storm resistant structure than other aspects, like; location, normal time use etc. At the same time BRAC (1991) undertook a research to identify the different types of shelter that the people used for saving their lives during the cyclone and storm surge. The study found that most of the shelters were used to their maximum potential at the time of cyclone and village power structure influenced PWD or the Red Crescent Society to build the shelter in a place of their own choice and convenience. They suggested that the planners must be considered other factors such as location and maintenance to construct cyclone shelter. UNCRD (1991) suggested that on the basis of detail survey of actual state of the shelter at the time of the disaster, location and distribution of the shelter network must be planned.

One of the most comprehensive studies on Multi-purpose Cyclone Shelter (MCPS) was conducted by BUET-BIDS in 1993. The broad objective of the study was to prepare a master plan for providing shelter to human beings and livestock during storm surges in the coastal area of Bangladesh. The master plan includes, among

others, repair and rehabilitation of the existing cyclone shelters and *Killas* and construction of a number of new shelters and *Killas* is based on the estimated size of the population and livestock over the next 25 years in the High Risk Area (HRA) of the coastal zone. The Master Plan recommended that 146 existing *Killas* to be repaired and rehabilitated. A total of 226 existing cyclone shelters are recommended for repair and rehabilitation. It also recommended that construction of 2,500 *Killas* of various heights and 2,500 cyclone shelters of which approximately 1,500 will be located on *Killas* and the rest will be on stilts (RCC columns) of various heights.

BUET and BIDS (1993) also made a comprehensive national level study on different aspects of cyclone disaster management in this country. As mentioned earlier though the primary objective of this task was to prepare a master plan of cyclone shelters it covered structural and non-structural measures of cyclone disaster management, such as; coastal afforestation, improvement of communication network in coastal regions, improvement of cyclone warning system and development of local level institution for cyclone disaster management purpose. The master plan has proposed certain design for different types of cyclone shelter, but actual site condition may not match with this type of design.

JICA (2005) conducted a study to verify the necessity and relevance of the construction of cyclone shelters which will contribute towards protecting human lives and property from natural calamities like cyclones, tidal surges, floods and function as primary schools in usual time in the project area. The project area was coastal islands and Upazilla of Chittagong, Cox'bazar and Noakhali district. From this study it was found that cyclone shelter should be used as shelter during flood and cyclone period and off-cyclone period this can be used additional uses like school, meeting place, polling stations, health center etc.

In 1994, Haque studied on the planning aspect of cyclone shelter in one union of Kutubdia Upazilla. He concluded that there is need for institutional setup to implement plan and operate cyclone shelter activities smoothly throughout the year. Islam (2007) studied on cyclone shelter in coastal area (Chalna Region) of Bangladesh. The study tried to identify resources (safe haven facilities) in selected coastal area. The study discusses the post cyclone maintenance and management system for ensuring life time use of the existing safe haven facilities and developed a

database for cyclone shelter management information system. In 2009, Tamima examined spatial variability in evacuation assistance needs during cyclone hazard in Barguna district and identified the optimum locations and non-engineered structural design of cyclone shelters. For this, composite vulnerability map of unions in Barguna district was developed based on the community demographics, resources, structures and geographical risk indicators. The difference between the cyclone shelters demand and existing shelters in the highest vulnerable areas were also analyzed in this study. Chowdhury (2009) found that most people are reluctant to walk more than around 1.5 km from their houses. People who move to the shelter carry their valuable assets (which can be hand-carried) to the shelter; some storage space for these must be provided in the shelter. From this study it was find out that people who own livestock do not like to take them to a *Killa* which is far away from a human shelter. Based on extensive discussions with the local people, it was seemed that the preferred solution is an integrated shelter-cum *Killa* which can be used by livestock as well as human beings. After the devastating cyclone SIDR in 2007 and AILA in 2009, Government of Bangladesh in association with JICA and Swiss Agency for Development and Co-operation respectively conducted studies respectively on mitigating damage incurred by residents during cyclone disasters through constructing Multi-Purpose Cyclone Shelters (MPCS) in the coastal districts. In 2009, CEGIS prepared a report for developing Upazilla wise spatial distribution map of cyclone shelters and also prepared attributes of cyclone shelters in a tabular form. Mahbub (2012) studied on location analysis of cyclone shelters in the coastal belt of Bangladesh. The study was determined the appropriate location of cyclone shelters along the coast. This study also evaluated the existing location of cyclone shelters in the coastal region and formulated a policy guideline for managing cyclone shelters and locating further shelters in future.

There are MPCS in India, Myanmar, in the Caribbean's and even Australia. In Andhra Pradesh of India, for better management of MPCS state government handed over the management to local communities in the form of Cyclone Shelter Management and Maintenance Welfare Committees (CSMMWC) (NDTV, 2013). In Orissa, they modified design of MPCS so that maximum people come to the MPCS during cyclone (GoI-UNDP, 2006). Shelter programmes of all Caribbean countries consist of the identification and use of public buildings for shelter purposes. Most often the

designed shelter is a school, although churches and health clinics are often brought into the overall shelter scheme in areas where the schools do not suffice. The storm shelter system in the Caribbean is managed by school headmasters. This responsibility is specified in their job description and written into their contract (Hoque, 1994).

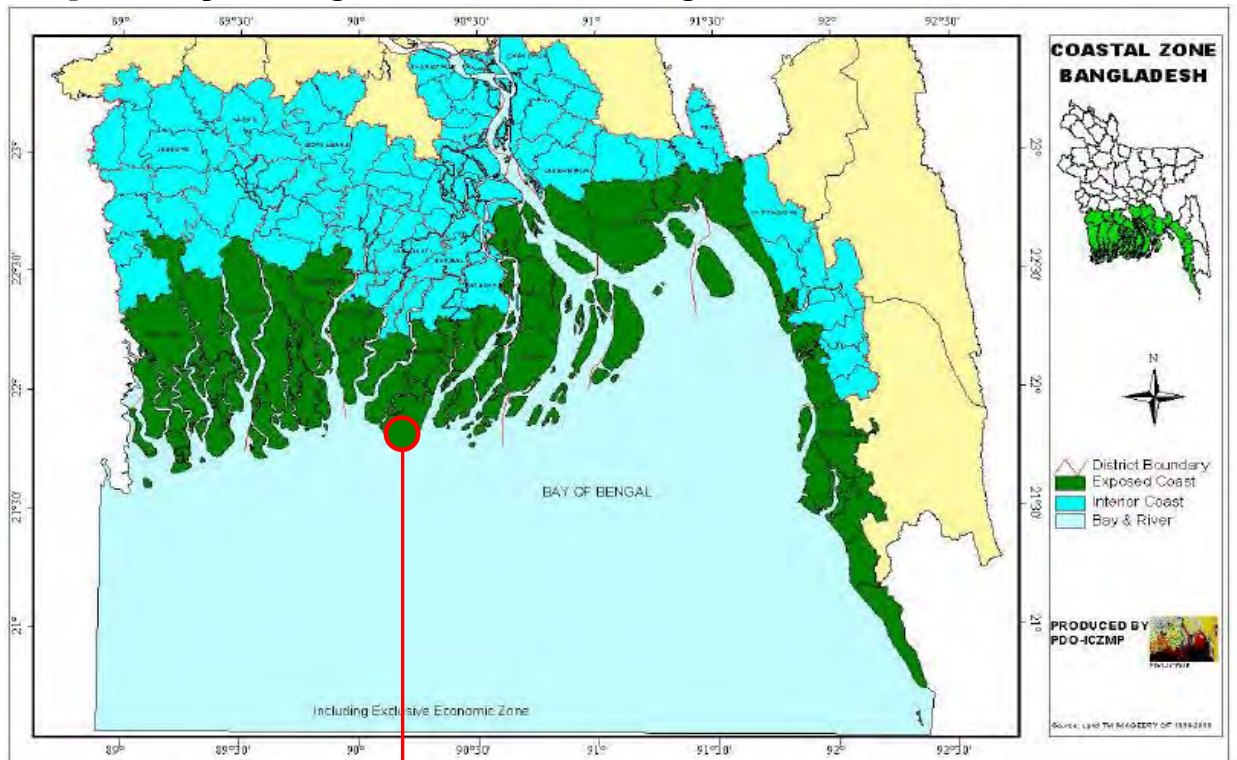
From the above discussion it is clear that, though there are many studies both home and abroad on MPCS, none focuses on non-designated use of MPCS. Though some studies (for example BUET-BIDS, 1993; Rashid, 1997; DFID, UNDP and GoB, 2008; CEGIS, 2009, Chowdhury, 2009; Mahabub AQM, 2012) mentioned about non-designated use of MPCS, they did not go into detail of these uses as well as the factors behind those uses.

Selection of the Study Area

As mentioned earlier there are more than 2000 MPCS in Bangladesh and it is not possible to study all of them due resource constraints. Bearing this in mind decision has been made to study the factors responsible for non-designated use of Multi-purpose Cyclone Shelters in one typical coastal Upazilla. It was consider that in selecting the Upazilla following factors was considered:

- It would be coastal area
- Frequency of cyclone is high
- There are enough number of MPCS

Map 2.1: Map Showing the Coastal Area of Bangladesh

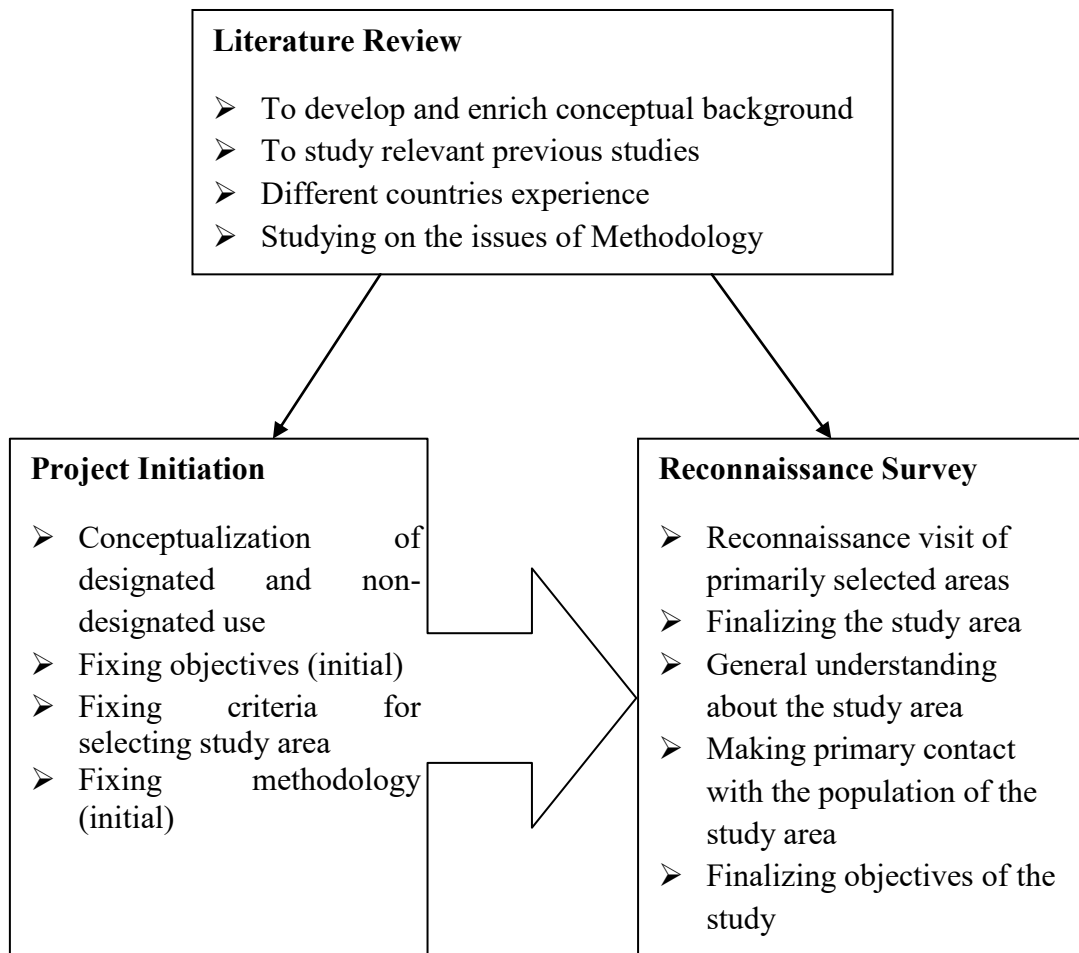


Source: Uddin et al (2003)

**Study Area
(Kalapara Upazilla)**

There are 48 coastal Upazilla in Bangladesh (*Map 2.1*) (Uddin et al 2003). Jahan et al (2010) identified that the frequency of cyclone landfall is highest in greater Barisal district of Bangladesh. So it was decided that one of the Upazilla of greater Barisal district which have higher number of MPCs would be chosen as study area. Kalapara Upazilla of Patuakhali Districts met the criteria set above during reconnaissance survey.

Figure 2.1: Initial Phase to Conduct the Study



2.2.3 Reconnaissance Survey

Once the study area was selected primarily a reconnaissance survey of MPCs has been conducted. The objectives of the reconnaissance survey were to know about use/misuse of the MPCs as well as people's perception about the use of MPCs in the study area. During reconnaissance survey; it was found that in all of the MPCs there are uses other than the designated one during off-cyclone period. People also complain about the location and designed of the MPCs.

2.3 Data Collection and Survey Phase

As mentioned earlier (*Section 1.1 and Section 2.2.2*) there are number of studies on cyclone and cyclone shelter in Bangladesh. However data regarding use of these shelters are almost non-existent. So it was necessary to conduct primary survey to collect data. Several techniques were used and followed to collect primary and secondary sources of data (*Figure 2.2*).

2.3.1 Primary Data Collection

To achieve both the objectives of this research it was necessary to collect primary data. The research used both traditional data collection method like direct field visit of all MPCs and qualitative like Key Informant Interview (KII), Focused Group Discussion (FGD), Case Study were also used to fulfill the research objectives.

2.3.1.1 Field Visit

In February 2013, the study area (Kalapara Upazilla) was visited by the researcher to get firsthand knowledge of the MPCs. This visit helped the researcher to formulate identify the research problem and formulate the research objective.

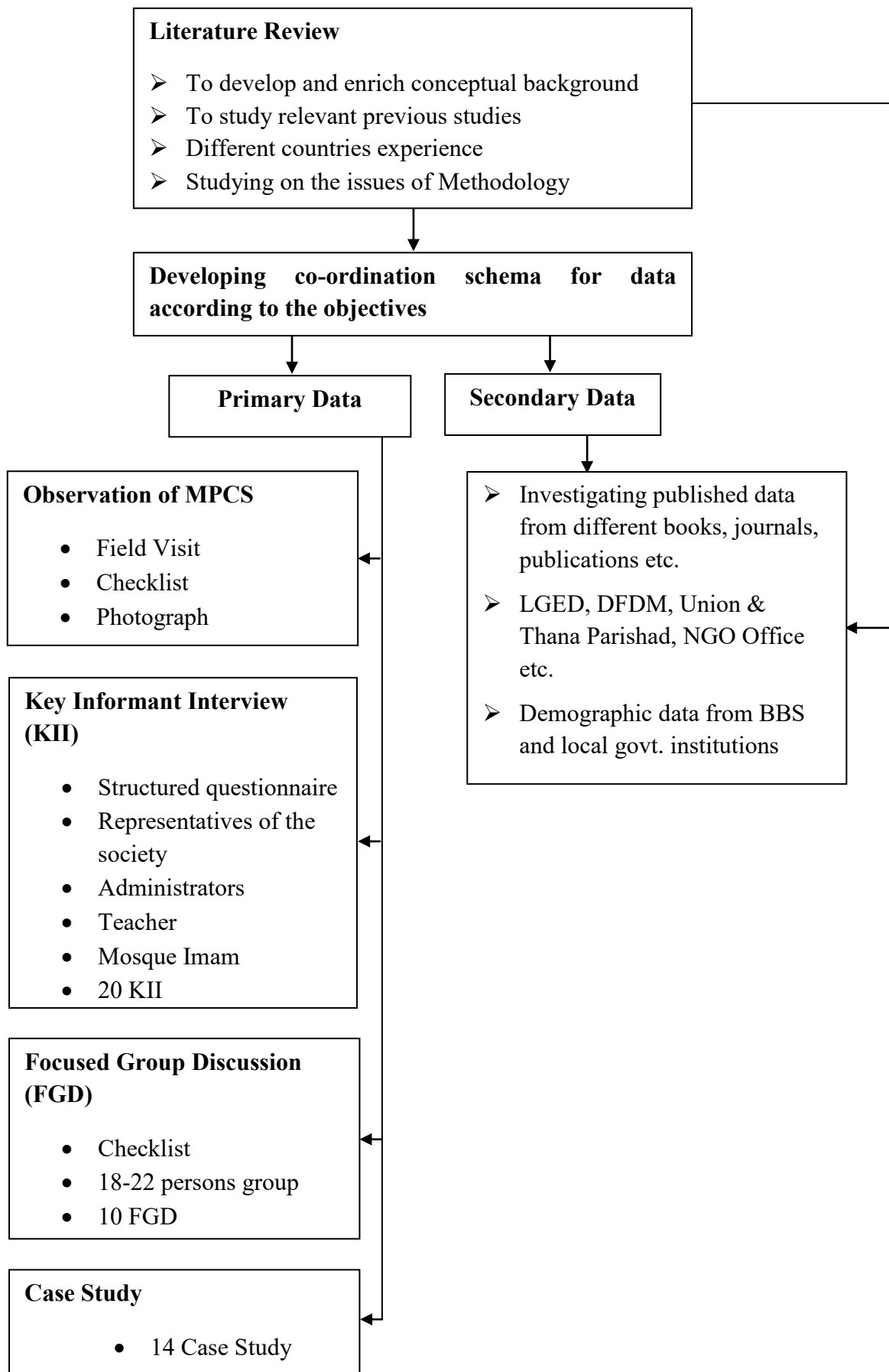
In November 2013, observation survey and physical survey of all the MPCs (105) in the study area were conducted. The existing use, designated use, non-designated use were observed and noted in a prepared checklist (*Appendix: A1*). The checklist contained space for writing down necessary data and information regarding the use of MPCs. The condition of MPCs regarding its toilets, stair, capacity, water facility, store room, connecting road, facilities for domestic animal, boundary wall, security guard and other necessary information's were also note down during field visit. Use of MPCs during off-cyclone period was also noted down in a prepared table (*Appendix: B*). Relevant photographs were also taken during field visit to keep record and cross check with the checklist.

In March 2016, another visit was conducted in the study area to crosscheck all collected data and information.

2.3.1.2 Key Informant Interview (KII)

To get in-depth and significant information's about the non-designated use of MPCS and the responsible factors for non-designated use, Interviews (KII) were conducted with the Upazilla Parishad Officials (Upazilla Nirbahi Officer and Upazilla Parishad Chairman), the Chairmen and Member of Union Parishads School and Madrasha teachers, Mosque Imams, NGOs representatives etc. (the complete list is in *Appendix: A2.3*) in the study area. It was conducted to get their views, perception and opinions on the use of Multi-purpose Cyclone Shelter in the study area. A structured questionnaire (*Appendix: A2.1*) were used to get the informant's views, perception and opinions. These interviews were conducted during November 2013 visit.

Figure 2.2: Data Collection and Survey Phase



2.3.1.3 Focused Group Discussion (FGD)

To obtain more in-depth insight in qualitative and descriptive terms of the collective perceptions about the use and responsible factors for non-designated use of MPCs in the study area, Focused Group Discussion (FGD) has been conducted too. To fulfill the second research objective, 10 (Ten) Focus Group Discussions (FGD) were conducted with 18-22 participants (*Appendix: A3.2*) in each Unions of Kalapara Upazilla. Two (02) Focused Group Discussions were conducted in Latachapali Union and other eight (08) Focused Group Discussions were conducted in other eight (08) Unions of Kalapara Upazilla. A checklist (*Appendix: A3.1*) was prepared before Focused Group Discussion.

The groups contained male and female, literate, illiterate, people of different occupations and aged people of the study area. The FGDs were aimed at to find out the people's view on non-designated use of MPCs and the responsible factors for the non-designated use like political influence in use of MPCs, The discussion were recorded and later transcribed in the writing with respect to the theoretical framework.

2.3.1.4 Case Study

During field survey of the study area, 9 (Nine) case studies have been conducted. Case studies were conducted to know the non-designated use of MPCs. During the talk individual respondent, they expressed their opinion why non-designated use taken place here. So this helped to find out the factors responsible for non-designated use of MPCs in the study area. Individual respondent gave their opinion freely and without any doubt and biasness that helped to carry out the research objectives successfully.

2.3.2 Secondary Data Collection

A wide range of books, articles, paper clippings, research document, historical records, government and related agency documents, various disaster related projects documents and internet web sites, seminar papers, concepts notes were reviewed to conduct the study. Some demographic data was also collected from local government institutions. Data like capacity, construction year and plans of the MPCs of the study were also collected. The sources of the secondary data are provided in *Table 2.1*.

Table 2.1: Sources of Secondary Data

Data	Data Source
Population Data	BBS
Plan of MPCs	LGED, BDRCS, GRAMEEN BANK, BRAC, CARITAS
Maps of the Study Area	CEGIS
Location, Area and Administrative Features	DC Office, Patuakhali
Distribution of MPCs, KILLA with Construction Year, Constructing Authority, Capacity and Ownership Scenario of MPCs	UNO Office, Kalapara
Income and Occupation	BBS, Banglapedia
Major Cyclone and Wind Speed	WIKIPEDIA & NEWS Asia
Satellite Image	www.googleearth.com
Literature Review	BUET-BIDS, CARITAS office, BRCS, CCC, CUS, BRRO, DFID, UNDP and MFDM

2.4 Analysis Phase

2.4.1 Data Analysis and Interpretation

A descriptive approach was used for data analysis in the study. Statistical tools were used where applicable and simple statements of fact remained essential ingredients in the analysis. As a descriptive approach was used for data analysis, it was tried in this research to keep the original detail field notes and maintained the data sets to cross check the tabulated data taken from the field visit. The data were aggregated at two levels from field observation, information from key informant, focused group discussion, case studies and secondary sources.

Firstly from the direct field visit of all MPCs in the study area, existing use, designated use and non-designated use of MPCs was aggregated to meet the first objective of the research. Relevant photographs were presented to know the non-

designated use of MPCs. Secondly, the information's which was collected from key informant interview, focused group discussions and case study analyzed in descriptive manner to find out the factors responsible for non-designated use. Finally, in case of analysis, both quantitative and qualitative perspectives were considered.

2.4.2 Preparation of Maps

One of the first tasks of this research was to collect available country, regional and local level maps on various important aspects from different sources like LGED, DC office, Upazila Parishad office etc. to know about the study area. Location of cyclone shelter map was prepared in AutoCAD software.

2.4.3 Report Preparation

The report has been prepared with MS Word software and calculation made by MS Excel. Table, figures and pie-chart has been prepared with the help of MS Excel. The photographs related the non-designated use and responsible factors for non-designated use of MPCs has also been attached to the report. After getting the study results and relevant findings, some recommendation has been made to effective use and eradicate responsible factors for non-designated use of MPCs in the study area both cyclone and of-cyclone period.

CHAPTER 3
PROFILE OF THE STUDY AREA

Chapter 3

Profile of the Study Area

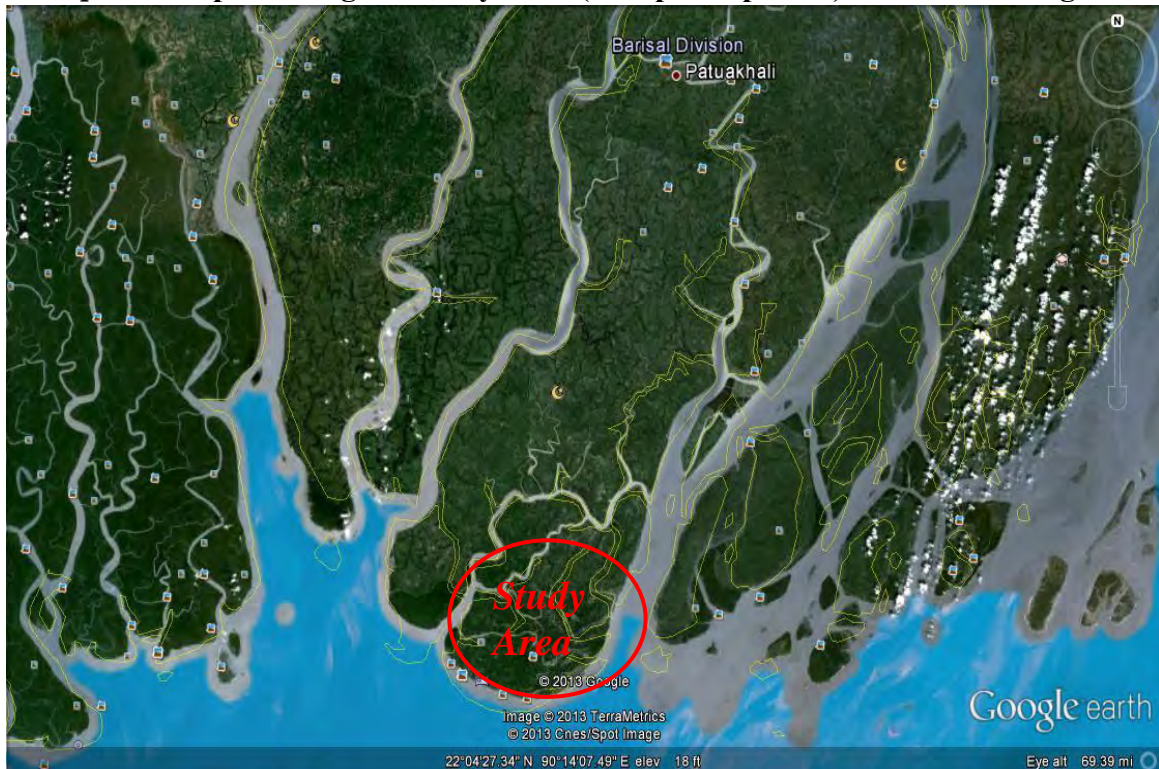
3.1 Introduction

Kalapara Upazilla under Patuakhali district is the study area for this research. It came to prominence in 1928 when it became a Thana. It was upgraded to an Upazilla in 1983. Nothing is definitely known about the origin of the Upazilla but there is a general belief that the name Kalapara has been originated from the name of an influential Magh Chieftain *Kalau* (GoB, 2012). The Upazilla is blessed with a sea resort, the Kuakatasea-beach.

3.2 Area and Location

The Upazilla occupies an area of 491.89 sq.km. It is located between 21°48' and 22°05' north latitudes and between 90°05' and 90°20' east longitudes shown in *Map 3.1*. The Upazilla is bounded on the north by Amtali Upazilla of Barguna Zilla, on the east by Galachipa Upazilla, on the south by the Bay of Bengal and on the west by Amtali Upazilla of Barguna Zila (GoB, 2012) shown in *Map 3.2*.

Map 3.1: Map Showing the Study Area (KalaparaUpazilla) in Satellite Image



Source: www.googleearth.com, retrieved on 10th April 2013

3.3 Administrative Features

Kalapara Upazilla consists of one (01) Paurashava named Kalapara, nine (09) union Parishads named Chakamaiya, Tiakhali, Lalua, Mithaganj, Nillganj, Mahipur (Khaprabhanga), Latachali, Dhankhali and Dhulasar. There are 58 Mauzas and 217 villages (GoB, 2012). Location of Kalapara Paurashava and other Unions are shown in Map 3.2.

Map 3.2: Map Showing the Study Area (Kalapara Upazilla) with Surrounding Region



Source: www.google.com, retrieved on 16th June 2014

3.4 Demographic Features

The total population of Kalapara Upazilla is 2, 37,831 out of which males are 1, 20,514 (50.67 %) and females 1, 17,317 (49.33 %). Among the total population of Kalapara Upazilla, Muslim 89.66%, Hindu 8.68 %, Buddhist 1.5%, Christian 0.14% and Others 0.02% (GoB,2012).

The literacy rate both sex is 52% where male is 52.6% and female is 51.5% of total population. School attendance (5 to 24 years) % both sex 51.7% where male 53.5% and female 49.8% (GoB, 2012).

3.5 Income and Occupation

Agriculture including fishing 57.23%, non-agricultural laborer 4.80%, industry 0.43%, commerce 13.50%, transport and communication 2.14%, service 4.56%, construction 1.36%, religious service 0.21%, rent and remittance 0.20% and others 15.57% (Banglapedia, 2012).

3.6 Cyclone in the Study Area

Kalapara Upazilla is situated in the cyclonic storm tracts region and Risk Zone/High Risk Area of Bangladesh (DFID, UNDP and MFDM, 2008). Cyclone hits in this region quite frequently. *Table 3.1* provides a list of major cyclone with associated wind speed and storm surge that hit the study area. All the major cyclones that struck Bangladesh coast struck this Upazilla.

Table 3.1: Major Cyclone in the Study Area with Wind Speed

Cyclone Year (Recent)	Wind speed (km/hr)	Storm Surge
1584	A five-hour hurricane and thunderstorm	-
9–10 October 1960	201 km/hour	3.05 m.
30–31 October 1960	210 km/h	4.5-6.1 m.
14–15 December 1965	210 km/h	4.7-6.1 m.
7 November-13 November 1970	222 km/h	10.6 m.
9–12 May 1977	112.63 km/h	-

5–9 November 1983	136 km/h	1.52 m.
8–9 November 1986	110 km/h	
24–30 November 1988	162 km/h	4.5 m.
29–30 April 1991	180 km/h	5 to 8 m.
31 May-2 June 1991	110 km/hr	1.9 m.
19-22 November 1998	90 km/hr	1.83 to 2.44 m.
November 15, 2007	215 km/hr	4 m.
16 th May 2013	100km/h	2 m.

Source: WIKIPEDIA, 2013 & NEWS Asia, 2013

3.7 Profile of Cyclone Shelter in the Study Area

3.7.1 Distribution of Cyclone Shelter

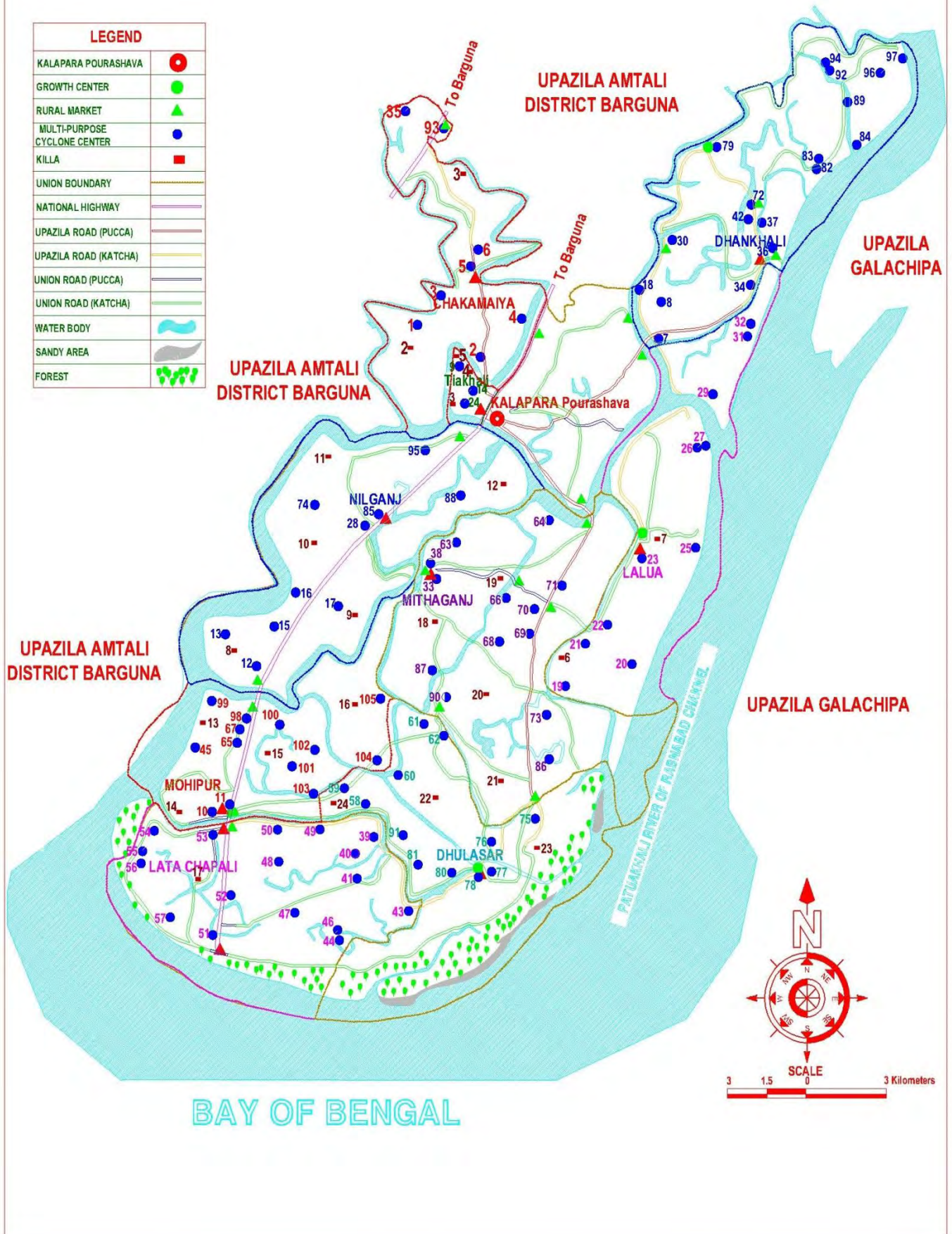
There are 105 MPCs in Kalapara Upazilla (*Map 3.3*). *Table-3.2* provides the union wise distribution of MPCs in the Upazilla. The table reveals that Dhankhali (18), LataChapali (17), Mithaganj and Mahipur (13) have the highest number of MPCs while Tiakhali (03) and Chakamaiya (08) have the lowest number of MPCs.

Table 3.2: Distribution of Multi-purpose Cyclone Shelter in the Study Area

Name of Union	Number of MPCs	Percentage (%)
Dhankhali	18	17.14
Latachapali	17	16.19
Mahipur (Khapravanga)	13	12.38
Mithaganj	13	12.38
Dhulashar	12	11.43
Lalua	11	10.48
Neelganj	10	9.52
Chakamaiya	08	7.62
Tiakhali	03	2.86
Total	105	100

Source: Upazila Parishad, Kalapara (2013)

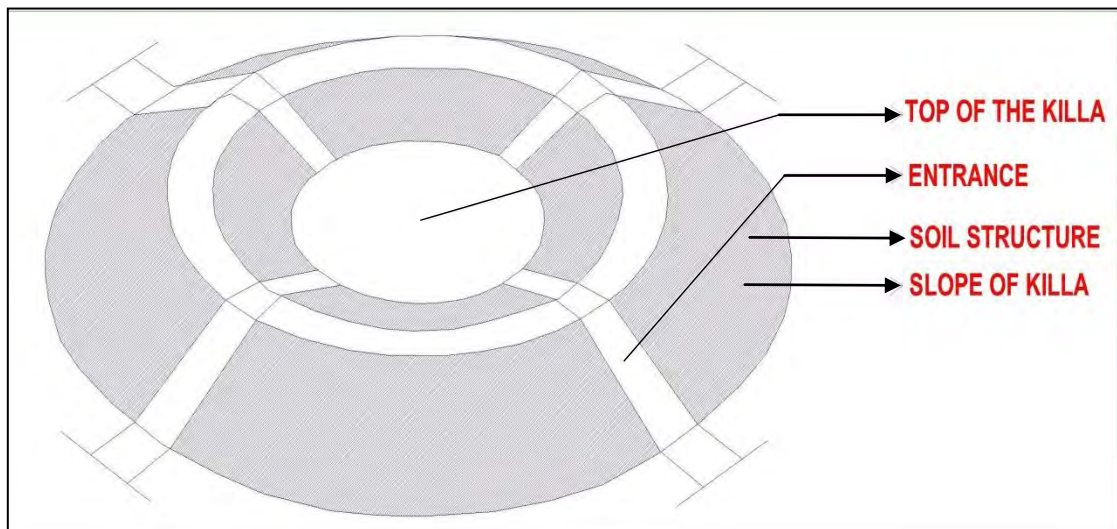
MAP-3.3 : LOCATION OF MULTI-PURPOSE CYCLONE SHELTER IN THE STUDY AREA



Source: Adopted and modified from LGED & Field Visit, 2013

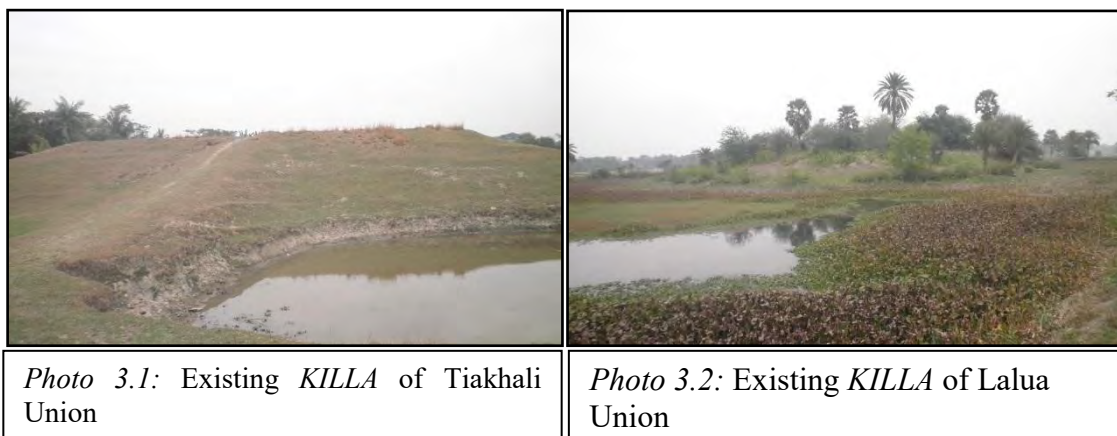
There are also cyclone shelters which are only used during cyclone. These are locally known as “KILLAH” (Figure 3.1). There are 24 KILLAHS in the Upazilla(Appendix : C1 for union wise distribution and year wise construction of the KILLAHS); however during field visit it was found that most of these are in dilapidated condition as most of them are built in the 1970s (Photo 3.1, Photo 3.2 and Photo 3.3).

Figure 3.1: Existing KILLA (round in shape)



Source: Sketched by Author based on Field Visit, May 2013

Of the 24 *KILLA*, five (05) *KILLAHS* are situated in Neelganj Union. Four (04) of are in Mithaganj and Mahipur Union. Maximum *KILLAS* of the study area is constructed in the year of 1972 and 1973 (*Appendix: F*).



Source: Photograph taken by the researcher during Field Visit, May 2013

3.7.2 Constructing Authority of Cyclone Shelter

Both government and non-government organization constructs the MPCs in the study area. Of the 105 MPCs, 61 are built by different government agencies (*Table 3.3*). LGED, Department of Relief and Rehabilitation, Education Engineering Department, Bangladesh Army, Facilities Department are the government agencies that built MPCs in KalaparaUpazilla.

Table 3.3: MPCS Constructed by Government Authority

Constructing Authority	Number of MPCS	% of Govt. Built MPCS	% of Total
LGED	44	75.74	41.84
Education Engineering Department	13	22.38	12.37
Facilities Department	02	3.44	1.90
Bangladesh Army	01	1.72	0.95
Department of Relief and Rehabilitation	01	1.72	0.95
Total	61	105	58

Source: UpazilaParishad, Kalapara (2013)

On the other hand NGOs and development partners constructed 44 MPCS (Table 3.4). A whopping 66.82% of these are built by CARITAS.

Table 3.4: MPCS constructed by Non-Government Authority

Constructing Authority	No. of MPCS	% of MPCS not Built by Govt.	% of Total
CARITAS	28	66.82	26.73
World Bank	04	9.55	3.82
BRAC	03	7.16	2.86
Christian Missionary	02	4.77	1.91
BDRCS	02	4.77	1.91
JICA	02	4.77	1.91
Grameen Bank	01	2.39	0.95
CARITAS & US Army	01	2.39	0.95
HEED Bangladesh	01	2.39	0.95
Total	44	105	42

Source: UpazilaParishad, Kalapara (2013)

3.7.3 Construction Year of Cyclone Shelter

The first MPCS of the Upazilla was constructed in Mahipur Union in 1966. The construction started in 1966 but data was not available when it was ready for use. The next two were built in Dhulasar and Latachapali Union in 1973. After the devastating cyclones of 1991 and 2007 large number of MPCS was constructed in the study area (Table 3.5).

Table 3.5: Construction Year of MPCS

Constructed Year	Number of MPCS	Percentage (%)
1966-1970	01	0.95
1971-1975	03	2.86
1976-1980	02	1.90
1981-1985	03	2.86
1986-1990	01	0.95
1991-1995	25	23.80
1996-2000	18	17.14
2001-2005	20	19.05
2006-2010	28	26.67
2011-2015	04	3.81
Total	105	100

Source: UpazilaParishad, Kalapara (2013)

3.7.4 Existing Capacity Scenario of Cyclone Shelter

According to collected data from Kalapara Upazilla Parishad, it is found that the capacity of all MPCS in the study area varies from 200 to 2000 people with the newer six (06) having higher capacity (Table 3.6). Most of these have capacity below 900 people though the modal capacity (25) is 1000 people.

Table 3.6: Capacity status of MPCS in the Study Area

Capacity Scenario of MPCS	Number of MPCS	Percentage (%)
Below 300	26	24.76
301-600	36	34.29
601-900	05	4.76
901-1200	27	25.71
1201-1500	05	4.76
More than 1500	06	5.71
Total	105	100

Source: Upazila Parishad, Kalapara (2013)

3.7.5 Existing Toilets Provision of Cyclone Shelter

During field visit, it has been found that 66 (62.86%) MPCSs in the study area do not have toilet in the building. Moreover most of the MPCS (71 out of 105) toilets are not defined for a particular sex. Toilets are constructed here in separate way at ground level (*Photo 3.4, Photo 3.5*). So when the area is struck by cyclone or any other natural disaster, the affected people cannot use it properly. Male, female, children and all types of people have to face great problem to use it.



Photo 3.4: Separate toilet of MPCS in Tiakhali Union



Photo 3.5: Separate toilet of MPCS in Dhulashar Union

Source: Photograph taken by the researcher during Field Visit, February 2013.

During cyclone period most often the roof of the building or side and balcony of room is used as toilet that's creates a dirty and unhygienic condition of the MPCS.

3.7.6 Existing Water Supply Provision of Cyclone Shelter

During field visit, it has been found that tube-well is the main water sources of water in MPCS in the study area. But most often this is set up in ground (*Photo 3.6 and Photo 3.7*). From field survey it is found that 81 (77.14 %) MPCSS tube-well is constructed in ground floor (*Table3.7*) so the people have to use it to get down from the MPCS.



Photo 3.6: Tube-well and Toilet is in Ground floor of MPCS in Neelganj Union



Photo 3.7: Tube-well and Toilet is in Ground floor of MPCS in Dhankhali Union

Source: Photograph taken by the researcher during Field Visit, February 2013

Some newly constructed MPCSS tube-well is constructed is first floor of this building but for the no provision of water this is unused by the people. Water supply provision is shown the following:

Table 3.7: Water supply Provision of MPCS

Tube-well	No. of cyclone shelter	Percentage (%)	Provision of water
Ground floor	81	77.14	Yes
1 st floor	13	12.38	No
	11	10.48	Yes
Total	105	100	

Source: Field Visit, 2013

3.7.7 Existing Stair Facilities of Cyclone Shelter

At the time of field survey it has been found that 98 (93.33%) MPCS in the study area has one stair to take shelter for both male and female (Photo 3.8). It is not sufficient for the people. Newly constructed multi-purpose cyclone shelter that is only 07 (6.67%) made by CARITAS introduced ramp provision but this is not enough against need in the study area. These are shown in Table 3.8.



Photo 3.8: One stair of MPCS without ramp made by LGED (Source: Field Visit, February 2013)

Table 3.8: Provision of Stair of MPCS

Stair of MPCS	No. of cyclone shelter	Percentage (%)
One stair	98	93.33
Two stairs with provision of ramp	07	6.67
Total	105	100

Source: Field Visit, 2013

3.7.8 Existing Design Aspect of Cyclone Shelter

Though there are three storied MPCS (Photo 3.9, Photo 3.10) most of them are two storied (Photo 3.11). The plinth is either rectangular (Photo 3.11) or triangular (Photo 3.13) though there are some “L” shaped MPCS (Photo 3.12).



Photo 3.9: Three Storied Building of MPCS Made by Grameen Bank in Nilganj Union



Photo 3.10: Three Storied Building of MPCS Made by Facilities Department in Dhulashar Union

Source: Photograph taken by the researcher during Field Visit, February 2013

The ground floor of MPCS is kept free to allow the surge water to pass. Union Parishad cum cyclone shelter is designed L-shaped where one part of this building is three storied building (*Photo 3.12*).



Photo3.11: Rectangular shape School cum Cyclone Shelter in Chakamaiya Union



Photo3.12: L- shape Union Parishad cum Cyclone Shelter in Lalua Union



Photo3.13: Triangular shape Community Centre cum Cyclone Shelter in Neelganj Union

Source: Photograph taken by the researcher during Field Visit, February 2013

School cum cyclone shelter which is constructed by LGED (*Photo 3.11*) and Facilities Department (*Photo 3.10*) in the study area is two and three storied building and rectangular in shape. Some NGO office and community center cum cyclone shelter which area constructed by CARITAS is triangular in shape and two storied building (*Photo 3.13*). Stair of this building is in front side (*Photo 3.13*). There is no bathroom or toilet in this shelter. The width of existing MPCS's stair is narrow (not more than five feet).

Newly constructed MPCS in the study area have facilities old and disable person (Photo 3.14) but toilet and tube-well are designed in ground floor(Photo 3.15) as a result these are not used properly.



Photo 3.14: MPCS made by CARITAS in Neelganj Union Introduced Ramp (Facilities for Old and Disable Person)



Photo 3.15: MPCS made by CARITAS in Dhankhali Union (Ground Floor Toilet and Tube-well)

Source: Photograph taken by the researcher during Field Visit, February 2013

Some newly constructed MPCS in the study area by LGED (Photo 3.16) is two storied building. One stair is in the middle point of the building. Ground floor is open and 1st floor is designed to use as cyclone shelter in cyclone period and school in off-cyclone period. This is the most modern building School cum cyclone shelter in the study area but it has no water facilities and electricity. Tube-well and toilets are designed in both side of 2nd floor of this building but this is not use properly for lack of water facilities (Photo 3.17). So people need to use water get down from the building.



Photo 3.16: MPCS in Mithaganj Union Constructed by LGED is Two Storied Building

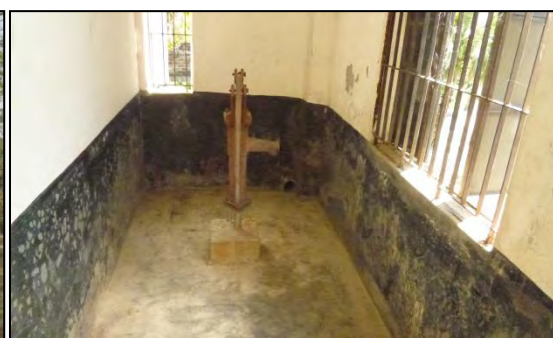


Photo 3.17: MPCS in Lalua Union Constructed by LGED with provision of Water Facilities

Source: Photograph taken by the researcher during Field Visit, February 2013

3.7.9 Separate Room both Male and Female of MPCS

During field visit in the study area it has been found that rooms are not designated for different gender though social decorum dictates that there should be separate room for woman. So woman suffers as they do not have any privacy when they need to stay in cyclone shelter at the time of cyclone period (*Photo 3.18, Photo 3.19*).



Photo 3.18: Both male and female live together in MPCS of Mohipur Union during cyclone period (*Source:* KalaparaUpazillaParishad, November 2013)



Photo 3.19: Both male and female live together in MPCS of Latachapali Union during cyclone period (*Source:* KalaparaUpazillaParishad, November 2013)

3.7.10 Provision for Domestic Animal in MPCS

People need to keep their domestic animal like goat, sheep, and cow in ground floor of the existing shelter during cyclone period. Pillar of the MPCS are used to knock the rope of domestic animal (*Photo 3.20*) (Field Visit, 2013).



Photo 3.20: Ground floor of MPCS in Dhankhali Union is used to keep domestic animal (*Source:* KalaparaUpazillaParishad, November 2013)

3.7.11 Store Room of MPCS

From the field visit in the study area, it has been found there is no provision of store room in the MPCS to keep table, chair, and benches etc. which are used in off-cyclone period in most of the MPCS. So in cyclone period people have to live in the room with this furniture (*Photo 3.21*).



Photo 3.21: Benches, tables and people live together in MPCS in Latachapali Union (Source: KalaparaUpazillaParishad, Novemver2013)

However in the newly constructed MPCSs there is store but space is not sufficient (*Photo 3.22*) to keep table, chair, and benches etc.



Photo 3.22: Small Store Room of MPCS in Mithaganj Union (Source: Field Visit, February 2013)

CHAPTER 4
IDENTIFICATION OF THE USE OF MPCs

4.1 Introduction

The first objective of the research was to identify the non-designated use of MPCs in the study area. Non-designated use means the use of the MPCs other than the use it was designated. To identify the non-designated use it is necessary to identify the present use and then compare the use it was designed. As the MPCs are cyclone shelter it is expected that they would be used as shelter during cyclone while depending upon the design these could be used as school, clinic, Union Parishad office or community center during non-cyclonic period.

4.2 Designated Use of MPCs during Cyclone and Off-Cyclone Period

The primary objective of the MPCs was to provide shelter and this is the designated use by the authority during cyclone period. From discussion with local people, FGD and KII, it has been found that all the MPCs were in used as shelter during cyclone. There was no mention of other use during cyclone period by the participants of FGD and KII.

From the discussion with construction/management authority, design documents, it was found that in off-cyclone period, the MPCs would be used as school, Madrasha, mosque or temple, community center, mass education center, evening education center, health center and clinic, government and NGO office etc. during off-cyclone period (*Table 4.1*).

Table 4.1 reveals that beside use as an education center, the other major use of MPCs is community center, health center/clinic and office.

Table 4.1: Designated Use of MPCS in Off-Cyclone Period

Designated Use	Number of Shelter	Percentage (%)
Education Centre	67	63.81
Community Centre	13	13.65
Health Centre and Clinic	10	9.52
Offices	11	10.48
Mosque	01	0.95
Temple	01	0.95
Others	02	1.90
Total	105	100

Source: Field Visit, 2013

4.3 Non-designated Use of MPCS

Field work and discussion in the locality revealed that only 14 MPCS (i.e. around 13% of MPCS) are in use in their designated use. It was found that other MPCS in the study area are used as animal shed, residential building, shop and even for agricultural purpose (Table 4.2).

Table 4.2: Non-designated Use of MPCS

Non-designated Use	Number of Cyclone Shelter	Percentage (%)
Agricultural Production	11	10.48
Garage of Rickshaw/Van	06	5.71
Residential use	16	15.24
Storage Facility	14	13.33
Construction Materials site	07	6.67
Animal Shed	17	16.19
Shop	04	3.80
Solid waste & Garbage site	07	7.62

Hostel	09	8.57
Use as per Designated Use	14	13.33
Total	105	100

Source: Field Visit, 2013

Appendix B, provide the present use of each of the cyclone shelter of the Upazilla against their designed use. On the other hand *Table 4.3* provides the cross table data of existing use against designated use.

Table 4.3: Survey Result of Designated and Non-designated Use of MPCS

Designated Use	Education Center (School)	Community Center	Health Center	Office	Mosque	Temple	Others (CS)	Total
Non-Designated Use								
Agricultural Production	07	02	00	00	00	00	02	11
Garage of rickshaw/Van	02	02	00	02	00	00	00	06
Residential use	08	01	02	03	01	01	00	16
Storage Facility	10	02	01	01	00	00	00	14
Construction Materials site	05	01	01	00	00	00	00	07
Animal Shed	11	03	01	02	00	00	00	17
Shop	02	01	00	01	00	00	00	04
Solid waste & Garbage site	03	01	01	02	00	00	00	07
Hostel	09	00	00	00	00	00	00	09
No Non-designated use (Use as	10	00	04	00	00	00	00	14

per Designated Use)								
Total	67	13	10	11	01	01	02	105

Source: Field Visit, 2013

From the above table it was found that fourteen (14) MPCs out of 105 is used for which it was designed. But other ninety one (91) is used for several non-designated use. Maximum MPCs in the study area is used as animal shed (17), residential purpose (16) and storeroom (14). Other non-designated use which is found from the above table is as agricultural production (11), student’s hostel and dormitory (09). Seven (7) MPCs out of 105 is used as construction and solid waste and garbage site. Other non-designated use which is used by the people of the study area is as garage and sometime business purpose like shop. The description of the non-designated use is provided in the following section.

4.3.1 Agricultural Production

During field visit in the study area it has been found that agriculture is the main activities here so for agricultural production people keeps and store their paddy, vegetables and different types of agricultural crops in the MPCs. Several MPCs in the study area are in use for agricultural production activity mainly vegetables by the local people. Front and stair of the MPCs (*Photo 4.1, Photo 4.2*) are occupied by different types of vegetables. This created problem as people could not use the shelter properly during cyclone and off-cyclone period.



Photo 4.1: MPCs in Neelganj Union used as to cultivate vegetables



Photo 4.2: MPCs in Mithaganj Union used as to cultivate vegetables

Source: Photograph taken by the researcher during Field Visit, February 2013

During field visit in the study area it has been also found that in front side, back side and surrounding area of the Multi-purpose Cyclone Shelters (*Photo 4.3, Photo 4.4*) are used as to cultivate paddy or vegetables(*Photo 4.5*) during in non-cyclone period. Local people use its front side, back side or adjacent land to cultivate vegetables and crops.



Photo 4.3: Agricultural productions are adjacent and surrounds the MPCS of Lalua Union



Photo 4.4: Agricultural productions are adjacent and surrounds the MPCS of Chakamaiya Union

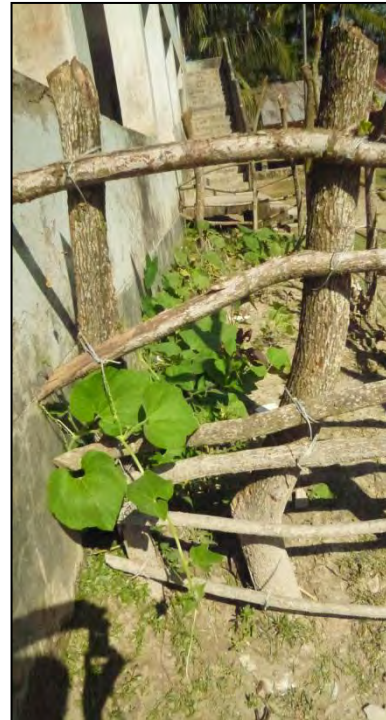


Photo 4.5: Vegetables Cultivations adjacent the MPCS of Neelganj Union

Source: Photograph taken by the researcher during Field Visit, November 2013

4.3.2 Garage

During field visit it has been found that ground floor of six (06) (5.71%) Multi-purpose Cyclone Shelter are in use as garage. People kept their rickshaw (*Photo 4.6*), van, and power tillers (*Photo 4.7*) in the ground floor of MPCs.



Photo 4.6: MPCs in Neelganj Union used as Ricksha Stand



Photo 4.7: MPCs in Lalua Union used as Garage

Source: Photograph taken by the researcher during Field Visit, February 2013

4.3.3 Residential use

Though residential use during off-cyclone period was never allowed in MPCs it was found that (16) (15.24%) MPCs are in use as quarter for head master of the school (*Photo 4.9*), quarter for school teachers (*Photo 4.11*) and local people (*Photo 4.8*), construction workers residence (*Photo 4.10*) etc.



Photo 4.8: MPCs in Tiakhali Union used as Residence by Local People



Photo 4.9: MPCs in Chakamaiya Union used as Quarter by School Teacher



Photo 4.10: MPCs in Mohipur Union used as Residence by Construction



Photo 4.11: MPCs in Chakamaiya Union used as Quarter by School Teacher

Source: Photograph taken by the researcher during Field Visit, November & February 2013

In addition, nine (09) (8.57%) have been found in use as student dormitory(*Photo 4.12, Photo 4.13*) or office staff residence(*Photo 4.14*) (Field Visit, 2013).



Photo 4.12: MPCs used as Students Dormitory in Lalua Union



Photo 4.13: MPCs used as Students Dormitory in Mithaganj Union



Photo 4.14: MPCs in Tiakhali Union used as Residence by Office Staff

Source: Photograph taken by the researcher during Field Visit, February 2013

4.3.4 Storage Facility

The MPCSSs are in use as storage facilities for crops (*Photo 4.15, Photo 4.16*) as well as construction materials (*Photo 4.17, Photo 4.18*). During field survey it was found that fourteen (13.33%) MPCSS are used as granary and additional seven (6.67%) of them are in use as storage area for construction material site (*Photo 4.17, Photo 4.18*).



Photo 4.15: MPCSS in Dhankhali Union used as Store Room for Crops



Photo 4.16: MPCSS in Latachapali Union used as Store Room for Crops



Photo 4.17: MPCSS in Dhulashar Union used as to keep Construction Materials



Photo 4.18: MPCSS in Lalua Union used as to keep Construction Materials

Source: Photograph taken by the researcher during Field Visit, February 2013

4.3.5 Animal Shed

MPCS in the study area are used to keep cattle (*Photo 4.19*), goat (*Photo 4.20*), sheep (*Photo 4.21*) or other domestic animal (*Photo 4.22*) in non-cyclone period but in cyclone period there is no provision to protect and keep this domestic animal (Field Visit, 2013). At the time of field visit, it has been also found that seventeen (17) of the MPCS (that is 16.19% of total) are in use as animal shed.



Photo 4.19: MPCS in Neelganj Union used as to keep Cattle



Photo 4.20: MPCS in Mithaganj Union used as to keep Goat



Photo 4.21: MPCS in Latachapali Union used as to keep Sheep



Photo 4.22: MPCS in Dhankhali Union used as to keep Animal

Source: Photograph taken by the researcher during Field Visit, February 2013

4.3.6 Miscellaneous Non-Designated Use of MPCS

4.3.6.1 Shop

During field visit, it has been found that shops were built in the ground floor of four MPCS (*Photo 4.23*).



Photo 4.23: Ground floor Shop of MPCS in Lalua Union (*Source:* Field Visit, February 2013)

4.3.6.2 Solid Waste and Garbage Disposal Site

All most all the MPCs were found in dirty condition. During field visit of Multi-purpose Cyclone Shelter, it is found that seven (07) (7.62%) cyclone shelters were used as dumping ground of local garbage. People dumped their waste both inside (*Photo 4.24*) and outside (*Photo 4.25*) of the cyclone shelter.



Photo 4.24: Inside of MPCS in Lalua Union Used as to Keep Waste and Garbage.



Photo 4.25: Outside of MPCS in Latachapali Union Used as to Keep Waste and Garbage.

Source: Photograph taken by the researcher during Field Visit, February 2013

4.3.6.3 Ground Floor Used as Prayer Room

During field visit in the study area it has been found that ground floor of one of the MPCs (*Photo 4.26*) has been converted into a prayer room.



Photo 4.26: MPCS's Ground Floor in Chakamaiya Union Used as Prayer Room (*Source:* Field Visit, February 2013)

4.4 Non-designated Use and Location

As mentioned earlier (*Section 4.3*) not all MPCs have non-designated use in off cyclone period. Out of 105, 91 MPCs is used for several non-designated use. *Table 4.4* provides a distribution of non-designated uses of MPCs in different Union of the study area. The following table reveals that Lalua union of Kalapara Upazilla has the highest number of non-designated use.

Table 4.4: Distribution of non-designated uses of MPCs in different Union

Non-designated Use Union Name	Agricultural Production	Garage of ricks- haw/ Van	Residential use	Storage Facilities	Construction Materials site	Animal Shed	Shop	Solid - waste & Gar- bage site	Host- el	Total
Dhankhali	01	01	02	02	01	02	-	-	02	11
Latachapali	02	01	01	03	02	03	-	02	02	16
Mahipur (Khapravanga)	02	01	01	02	01	02	01	02	01	13
Mithaganj	01	-	03	01	-	05	01	01	01	13
Dhulashar	02	01	03	03	-	-	01	01	01	12
Lalua	01	01	03	02	01	03	01	01	-	13
Neelganj	01	01	01	-	-	02	-	-	01	06
Chakamaiya	01	-	01	01	02	-	-	-	01	06
Tiakhali	-	-	01	-	-	-	-	-	-	01
Total	11	06	16	14	07	17	04	07	09	91

Source: Field Visit, 2013

4.5 Non-designated use and Year of Construction

First MPCS in the study area was constructed in the year of 1966 in Mahipur Union of Kalapara Upazilla. Maximum MPCS (26.67%) is constructed in the study area during 2006 to 2010 and 23.80% is constructed during 1991 to 1995 (*Section 3.7.3 in this research*). People misuse the MPCS from beginning to till date found during field visit. Recent time the condition of non-designated use is severe than previous time because sufficient number of MPCS is constructed in unplanned way with poor design.

To get the chronological picture of the non-designated use in the study area, the following timeline diagram has been developed through discussion in the FGD session of Mahipur Union of the study area.

Mahipur Union of KalaparaUpazilla

11 March 2016

- 1966 First MPCS constructed in Mahipur Union of the study area without connecting road and poor design
- 1975 Non-designated uses started severely due to constructed MPCS in open agricultural field without proper design.
- 1976 Non-designated use was stopped for some days by the School Authority but totally was not stopped
- 1980 to till date Non-designated use is continue by the local people (to use this building and its surroundings and adjacent area a agricultural production purpose, garbage site, construction materials site, animal shed or storage purpose)

Figure 4.1: Timeline of Non-designated use of MPCS within the study area

4.6 Non-designated use and Management Authority

There is not a single authority to manage MPCs in Bangladesh. Kalapara is not an exception. During field visit it was found that MPCs in the study area are managed by the authority who is responsible to use it in off-cyclone period. These authorities are only the owner of this MPCs not to manage properly both cyclone and off-cyclone period also found during field visit.

Data which is collected from the Kalapara Upazilla Parishad, it was found that there is some management committee who is only manage to use it as some designated purpose like school, mosque, temple, Union Parishad, Madrasha, college etc. but not to play any role for non-designated use. *Table 4.5* shows the management authority of MPCs in the study area and 74.29% MPCs are managed by the School Management Committee (SMC).

Table 4.5: Management Authority of MPCs in the Study Area

Management of MPCs	Number of MPCs	Percentage (%)
School Management Committee (SMC)	78	74.29
Mosque Management Committee (MMC)	01	0.95
Temple Management Committee (TMC)	01	0.95
Union Parishad Authority (UPA)	03	2.86
Madrasha Committee (MC)	04	3.80
LGED	08	7.62
CARITAS	06	5.71
Bangladesh Red Crescent Society (BDRCS)	01	0.95
College Authority (CA)	01	0.95
Rakhain& co.	01	0.95
Christian Missionary (CM)	01	0.95
Total	105	100

Source: Upazila Parishad, Kalapara (2013)

During field visit in the study area, it is also tried to find out the non-designated use of MPCs among the MPCs which is managed by the management authority. *Table 4.6* shows the distribution of non-designated uses of MPCs and the management authority.

Table 4.6: Distribution of Non-designated uses of MPCs and Management Authority

Non-designated Use Management Authority	Non-designated Use									
	Agricul-tural Production	Garage	Reside-ntial use	Storage	Construct. material site	Animal shed	Shop	Solid Wastage /Garbage site	Hostel	Total
SMC	08	05	14	12	07	11	02	06	05	70
MMC	-	-	-	-	-	-	-	-	-	-
TMC	-	-	-	-	-	-	-	-	-	-
UPA	-	01	-	-	-	-	02	-	-	03
MC	02	-	-	-	-	-	-	01	01	04
LGED	01	-	-	-	-	04	-	-	03	08
CARITAS	-	-	02	02	-	02	-	-	-	06
BDRCS	-	-	-	-	-	-	-	-	-	-
CA	-	-	-	-	-	-	-	-	-	-
Rakhain & Co.	-	-	-	-	-	-	-	-	-	-
CM	-	-	-	-	-	-	-	-	-	-
Total	11	06	16	14	07	17	04	07	09	91

Source: Field Visit, 2013

SMC= School Management Committee

MC= Madrasha Committee

MMC= Mosque Management Committee

BDRCS=Bangladesh Red Crescent Society

TMC= Temple Management Committee

CA=College Authority

UPA=Union Parishad Authority

CM=Christian Missionary

There are 14 MPCS in the study area which is used for designated purpose (*Table 4.3*). From *Table 4.6*, out of 78 MPCS, 70 is used for several non-designated purpose which is managed by School Management Committee (SMC). From which 8 MPCS is used as designated use. 1 MPCS which is used for designated purpose owner by Mosque Management Committee (MMC), Temple Management Committee (TMC), Bangladesh Red Crescent Society (BDRCS), College Authority (CA), Rakhain & co. and Christian Missionary (CM). From the above table it has been also found that non-designated use of MPCS in the study area is existed which MPCS owner by School Management Committee, Union Parishad Authority (UPA), Madrasha Committee (MC), LGED and local NGO CARITAS found during field visit. MPCS is used as designated purpose which is owned and managed by Mosque Management Committee (MMC), Temple Management Committee (TMC), Bangladesh Red Crescent Society (BDRCS), College Authority (CA), Rakhain & Co. and Christian Missionary (CM).

CHAPTER 5
FACTORS RESPONSIBLE FOR NON-DESIGNATED
USE

5.1 Introduction

MPCS plays an important role to save lives and properties during cyclone and supposed to serve community during non-cyclone period but it has been found that most of the MPCS at Kalapara Upazilla are not serving the purposes as designed as mentioned in *Chapter 4*. This chapter tried to identify the reasons for non-designated use of the MPCS of the study area.

5.2 Responsible Factors for Non-Designated Use

As mentioned earlier (*Chapter 2*) to understand the responsible factors of non-designated use of Multi-purpose Cyclone Shelter in the study area different survey techniques were used. PRA tools have been used during FGD to find out and analyzed the responsible factors of non-designated use of MPCS. Based on these, it could be said that there are geographical, design, social, economical, institutional and political factors for non designated use of MPCS.

5.2.1 Geographical Factors

Locations of shelter, access road to shelter have profound impact on non designated use of MPCS during cyclone. Though Chowdhury (2009) concludes that most people are reluctant to walk more than 1.5 km from their house to cyclone shelter, considering weather condition, condition of roads and economic condition of population during cyclone period, it is understandable that it would be very difficult to move with valuables for more than 0.5 km during cyclone. So it is logical to expect a cyclone shelter within half a kilometer of a settlement. However it was found that cyclone shelters cover not more than 50% of the locality (*Map-5.1*). It was supported by multiple FGDs that were conducted in the unions of study Upazila. People specially the vulnerable one (children, senior citizen, women, physically challenged) are reluctant to move into cyclone shelter during cyclone (BOX: 5.1).

BOX: 5.1

Appendix A3.3 (FGD no. 01, 03, 05, 07, 08, 09 and 10) revealed that due to improper location, people are reluctant to use MPCs during cyclone period and they could not use it properly in off-cyclone period as well. People also agree that people living close to the MPCs use it at their own will during off-cyclone period. So it becomes difficult to use it as cyclone shelter during cyclone. Local people also use its tube-well, bathroom; toilet regularly and its ground floor used as garage, garbage site or other non-designated purposes. This view is also supported by Union Parishad Chairmen (KII-04, 07 for detailed in Appendix A2.2). They said for saving cost, construction authority often built cyclone shelter with better transport link but in areas with less population; so it is difficult to monitor.

From field visit, it has been found that only 22 (20.95%) Multi-purpose Cyclone Shelter which has been constructed in school field and other 83 (79.05%) Multi-purpose Cyclone Shelter in the study area are constructed in open agricultural field, vacant land, river side or village local road side without connecting or access road (*Photo 5.1, Photo 5.2*). People faces problem to use it during cyclone period (when it is often rain) and off-cyclone period it is misused (BOX:5.2).

BOX: 5.2

Appendix A2.2 (KII 01, 03 and 11) reveals that MPCs are constructed in open agricultural field, and side of river, canal or village road. Local people to use these buildings and its surroundings for agricultural production purpose, as site for garbage disposal, site for storing construction materials, animal shed. Peoples (farmer, day labor) who work in the agricultural field or live near MPCs use its tube-well, bathroom and toilet daily said the informants.



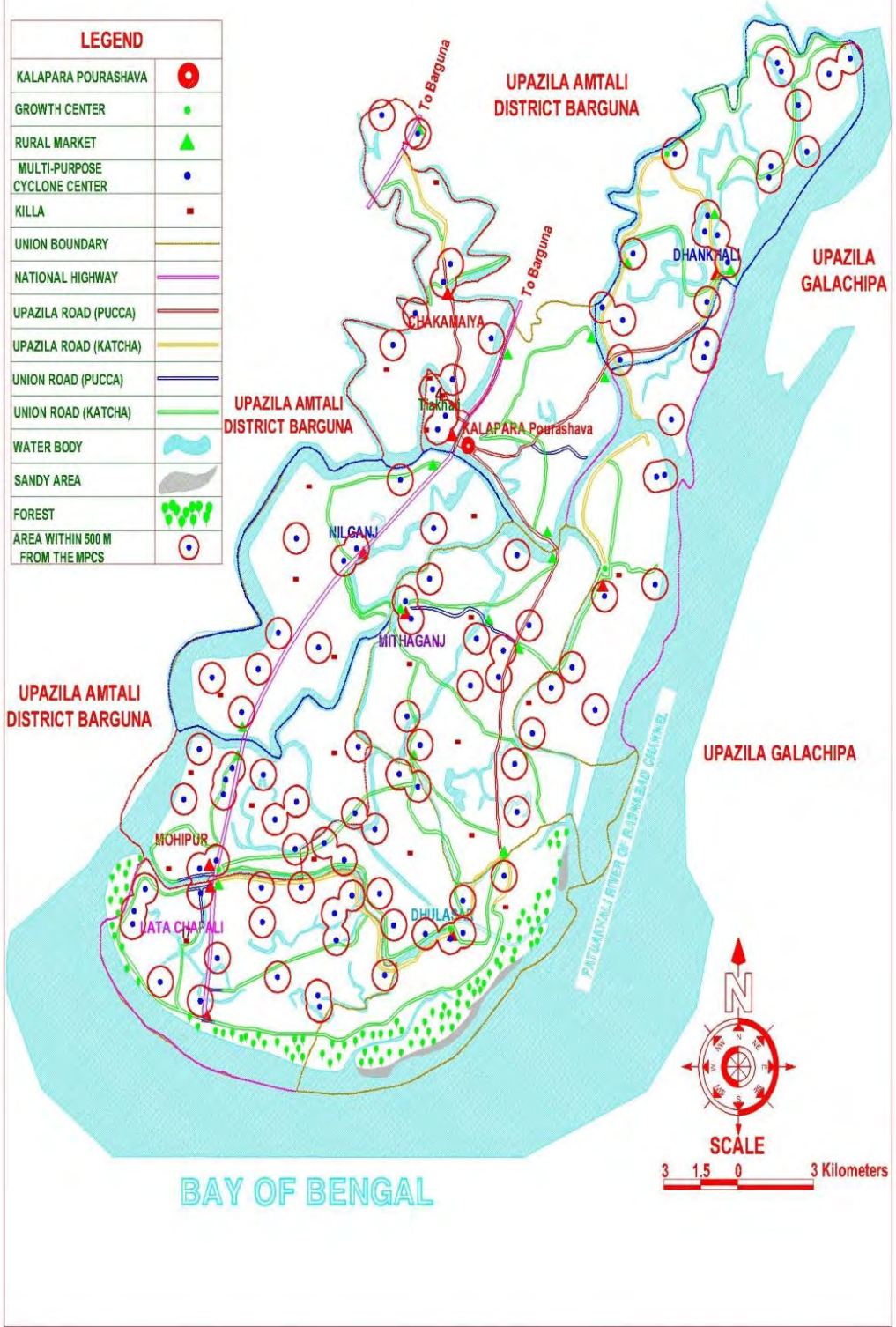
Photo 5.1: MPCS without connecting road used as agricultural activity in its adjacent, surrounds in Neelganj Union.



Photo 5.2: MPCS constructed in open agricultural field without connecting road used as garbage site in Lalua Union.

Source: Photograph taken by the researcher during Field Visit, November & February 2013

FIGURE-5.1: SERVICE AREA OF MULTI-PURPOSE CYCLONE SHELTER IN THE STUDY AREA



Source: Adopted and modified from LGED & Field Visit, 2013

5.2.2 Design Factors

During field visit in the study area, it has been found that people are reluctant to use MPCs due to lack of facilities for different age group, physically challenged people, gender separation as well as design of service facilities. However one of the major problems is the capacity of the MPCs itself.

5.2.2.1 Capacity

Most of the MPCs capacity in the study area is limited to 301 to 600 people (*as shown in Table 3.6*) with average capacity of 600 people. However, it is estimated that to accommodate the present population, either the average capacity of the existing one should be at least 2328 or there should be more cyclone shelter. During all of the Focused Group Discussion (FGD) (*Appendix A3*) in the study area, people expressed their opinion that due to low capacity of all of the MPCs creates overcrowding. It made people reluctant to take shelter in MPCs. Key Informant Interviews (KII 05, 17) also supported this (BOX: 5.3).

BOX: 5.3

Appendix A2.2 (KII 05 and 17) reveal that due to poor capacity of MPCs creates overcrowding. It made people reluctant to take shelter during emergency period. The number of MPCs in Kalapara Upazilla is very low against present demand so it has been seen great pressure to use it for designated purpose. Poor capacity also creates non-designated use by the local people said both Union Parishad member and chairman.

5.2.2.2 Facilities for Different Groups

From the field visit, it has been found that all of the MPCS in the study area has been designed with two big rooms in first floor. These rooms are used as shelter during cyclone. Conservative village people both male and female have to live together in this room. In designing MPCS, the needs of different groups were not considered that indirectly responsible for non-designated use of it (BOX: 5.4).

BOX: 5.4

Appendix A3.3 (FGD no. 06) revealed that in most often MPCS's two big rooms are not locked (remain open) properly so according to the participants of FGD, it is very easy for local people to misuse these two big rooms (*use as residence or storage area*). If there is separate room for different gender and age group with bath room and toilet, and the rooms are locked and properly take care of the local people were not able to non-designated uses like residence, storage, student's dormitory etc. they claim.

5.2.2.3 Facilities for Physically Challenged

The newly constructed MPCS (seven in number) by CARITAS introduced ramp for old and disable person but the rest (98) (93.33%) do not have the facilities (Field Visit, 2013). This discouraged physically challenged people to use MPCS both during cyclone and non-cyclone period that indirectly lead to non-designated use (FGD in *Appendix A3.3* and BOX: 5.5).

BOX: 5.5

Appendix A2.2 (KII 02) reveal that all of the MPCS in Kalapara Upazilla should be introduced both ramp and stair so that physically challenged people, senior citizen and children can easily use MPCS both cyclone and off-cyclone period. He also said that if MPCS were designed properly with introducing ramp then it will be used properly by the people and indirectly non-designated use can be stopped.

5.2.2.4 Condition of Utilities

One of the main issues during cyclone period is the toilet – both its location with respect to cyclone shelter and number. It has been found during field visit that in 66 (62.86%) MPCSSs toilet is located outside the main building (*Photo 5.3, Photo 5.4 and Photo 5.5*). In all the FGDs and KIIs; people complained that there are not enough toilets. So people (*especially women, old, physically challenged*) have to suffer during cyclone period (*Appendix A2 and Appendix A3*). On the other hand during non-cyclone period due to separation from main building, toilets became public toilet and it is used by the local people all the year round (*Photo 5.5*) (*Case Study 5.1*).



Photo 5.3: A newly constructed MPCSS by LGED in Chakamaiya Union which has no attached toilet



Photo-5.4: MPCSS constructed by CARITAS Mithaganj Union which toilets are outside the main building



Photo 5.5: MPCSSs outside toilet is used by local people in Dhankhali Union

Source: Photograph taken by the researcher during Field Visit, November& February2013

Case Study 5.1: Non-designated use due to Design of Toilet

Md. Akbor, is a 34 years old, businessman, live in Dhankhali Union of Kalapara Upazilla. During field visit it was found that he was using the toilet of Morichbunia MPCs. When Md. Akbor was asked for his reasoning behind using the toilet, he answered that he lived near this MPCs and it was very easy for him to use this toilet because this toilet was not constructed the attached of main building of MPCs and it was not locked and maintain properly by the MPCs authority. He also said that not only he uses this toilet but also other people (*especially day labor, farmer, construction worker etc.*) of the village uses it always.

It has been also found that tube-well is the main sources of water in the MPCs and 81 (77.14 %) MPCs tube-well is constructed in ground floor. During field visit, it has been also found that the ground floor tube-well is used by the local people all the year round. Male and female of the study area use this water supply (Tube-well) to finish their daily activities like bathing, washing or cooking during off-cyclone period (*Photo 5.6 and Photo 5.7*) (*Case Study 5.2*)(BOX:5.6).

BOX: 5.6

Appendix A2.2 (KII 08) reveals that an unhygienic situation is created during cyclone period because boys and men some time finish their toilet in open place but women, aged and disable person have to face severe problem to use ground floor water facility. People need to use it got down from the main building but it is not suitable to use in emergency period. So people are discouraged to take shelter during cyclone period due to insufficient and poor water facility of MPCs. Day labor, farmer or other people who live adjacent of MPCs use its tube-well, bathroom, toilets randomly in every moment all the year round as result during non-cyclone period designated user cannot use it properly. People also use this water supply (Tube-well) to finish their daily activities like bathing, washing or cooking during off-cyclone period.



Photo 5.6: Ground floor tube-well of MPCs use by local people for washing in Tiakhali Union



Photo 5.7: Ground floor tube-well of MPCs use by local people for bathing in Dhulashar Union

Source: Photograph taken by the researcher during Field Visit, February 2013

Case Study 5.2: Non-designated use due to poor Water Facility

Md. Haider Ali 26 year's old day labor lives in Dhulashar Union of Kalapara Upazilla. During field visit it was found that he was bathing the tube-well of Pochim Dhulashar MPCs. When Md. Haider Ali was asked for his reasoning behind using the tube-well, he answered that he lived near this MPCs and he was working the adjacent agricultural land. It has easy access because this tube-well was not attached the main building of MPCs. This MPCs was constructed by LGED and a tube-well was designed the first floor of this building but it was unused (*not good condition*) due to lack of maintenance. Haider Ali said that when this tube-well was good condition it was also used by the local people because it was not locked and maintain properly by the MPCs authority (*school authority*). He also said that not only he uses this tube-well but also other people of this village uses it for bathing, washing and all other purpose.

During field visit and discussion with local people, it has been found that the stairs of MPCs are not suitable for mass gathering. Though for physically challenged, ramp is introduced in some newly constructed MPCs made by CARITAS but these are not wide enough (*Photo 5.8, Photo 5.9*) (BOX: 5.7). Some newly constructed MPCs made by LGED in the study area, has only one stair which is not enough and sufficient for the people.



Photo 5.8 MPCs in Mithaganj Union made by LGED



Photo 5.9: Narrow and dirty of MPCs in Latachapali Union made by CARITAS



Photo 5.10: Damaged plastering of stair of MPCs in Lalua Union

Source: Photograph taken by the researcher during Field Visit, February 2013

BOX: 5.7

Appendix A3.3 (FGD no. 03, 04, 06 and 07) revealed that only one stair of MPCs which is not enough for the people to get into or get out to/from MPCs during emergency. In FGD also revealed that people stay and live in the stair of shelter and they also keep their cattle and domestic animal during cyclone period as a result people have to face difficulties to enter the shelter. People also said that stairs also become a place for living during cyclone period. They also said that it was not maintain properly that lead the people keep their animal, agricultural products etc. in the stair so off-cyclone period designated uses are greatly held back.

During field visit it has been also found that due to lack of regular maintenance of the shelter, plastering of stair are damaged (*Photo 5.10*) and in most often local people use it as toilet that creates unhygienic situation (*Photo 5.9*). During field visit it has been also found that gate has been enacted in the stairs of the MPCS (*Photo 5.11*). Off-cyclone period, designated use is greatly affected due to these cases.

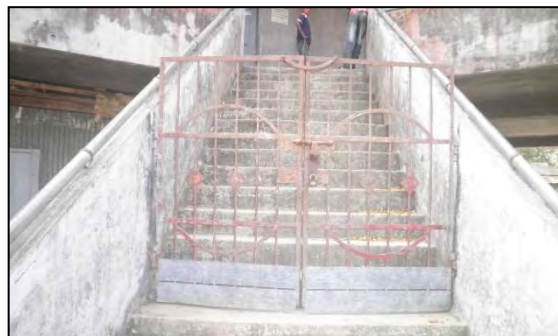


Photo 5.11: MPCS's gate of stair is locked by the people who use it as residence in Mohipur Union (Source: Field Visit, February 2013)

5.2.2.5 Facilities for Livestock

During field visit in the study area, it has been found that people depends on livestock for their livelihood. So provision to save their livestock is an important consideration to take shelter in MPCSs during cyclone. On the other hand during off-cyclone period people keep their domestic animal in ground floor of MPCS.

5.2.2.6 Facilities for Valuable Assets

During field visit it has been also found that there is no provision to keep ornaments and money in safe place in the MPCS. So during cyclone period people are not willingly to take shelter in the MPCS. They want to live their own house with their valuable assets.

(BOX: 5.8)

Appendix A3.3 (FGD no. 01-10) revealed that people here are poor and they love their properties than their own life so they do not want to take shelter in MPCS during any emergencies due to lack of provision for their domestic animals and valuable assets. According to the participants of FGD, if proper space is designed in the shelter to keep their livestock and domestic bird, proper use should be ensured both cyclone period and non-cyclone period. They will not use it as animal shed if proper design is ensure to keep their animal said by the participants of FGD.

5.2.2.7 Store Room of MPCS

During off-cyclone period different types of furniture and stationary are used by the designated user authority in the MPCS. People take shelter in this Multi-purpose Cyclone Shelter during emergency period but there is no provision to store the furniture's. So people faces difficulty as space is cramped. This discourages the people to take shelter (BOX: 5.9).

BOX: 5.9

Appendix A2.2 (KII 12) reveals that room of MPCS is not suitable to use it as store room because room space is not sufficient to store all furniture of this building. Md. Rahmat Ali lived in the store room of this building and he used it as residence because emergency period this room cannot be used as store room for its little space and off-cyclone period if he doesn't use it, other people will be misuse this room so he lived here.

During field visit it has been also found in the study area that some newly constructed MPCS (constructed by LGED) there is, store room but space is not sufficient to store all furniture that is in use during off-cyclone period (BOX: 5.10).

BOX: 5.10

Appendix A2.2 (KII 12 and 14) revealed that during emergency period people have to live in this shelter with this furniture so male and female has to face problem. This room should be design in such way so that all furniture and stationary can be stored during emergency period and off-cyclone period this room can be used to store their crops that will stop to misuse the other room which is used as store room said during KII.

During field visit, it has been also found that during off-cyclone period, store room is used as residence or living place by the local people especially school staff and employee of the Unoin Parishad, NGOs s etc. (*Photo 5.12, Photo 5.13*).

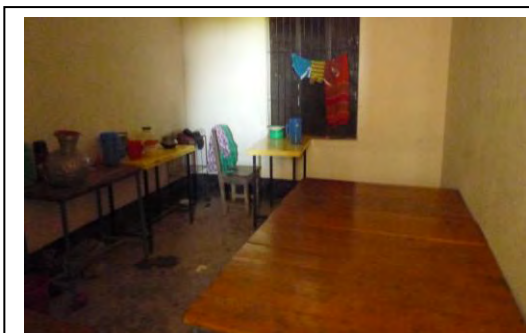


Photo 5.12: Store room of MPCs in Dhulashar Union used as residence by office employee

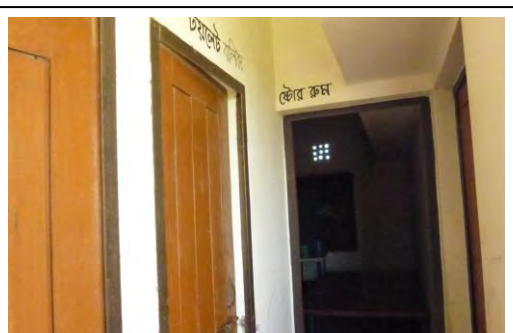


Photo 5.13: Store room of MPCs in Mithaganj Union used as residence by school staff

Source: Photograph taken by the researcher during Field Visit, February 2013

5.2.2.8 Issues of Privacy in MPCs

The issue of separation of gender was not considered during design of MPCs in the study area (*Section-3.7.9*). During Focused Group Discussion (FGD) in the study area people said that both male and female has to use same corridor, stair and even same wash rooms of MPCs so this is one of the social causes for not taking shelter during cyclone and emergency period (*Photo 5.14, Photo 5.15*). During Key Informant Interview (KII), respondents expressed their opinion in such way that they did not take shelter willingly due to this factor (BOX: 5.11).

BOX: 5.11

Appendix A2.2 (KII 06) revealed that male and female of the study area has to use same corridor, stair and even wash rooms, bath room, toilets of MPCs so the people especially women not taking shelter during cyclone and emergency period willingly. Due to lack of clear mark bathroom, toilets and not locked or properly maintained, local people misuse this randomly. Local people use its toilet as public toilets and its corridor; stair is misused by the people during off-cyclone period. If the constructing authority designed the MPCs considered these issues seriously for their conservative society then its better use can be ensured.



Photo 5.14: Toilets are not marked to use both male and female in MPCS of Dhankhali Union



Photo 5.15: Living rooms are not marked to use both male and female in MPCS of Dhulashar Union

5.2.3 Social Factors

5.2.3.1 Awareness

In FGD (2013) in the study area revealed that the respondents have no clear idea and they are not aware about the designated use/proper use of MPCS in the study area during cyclone and off-cyclone period (*Case Study 5.3*). Sometime this unawareness gives opportunity to the powerful and influential of the locality to use MPCS in non-designated use.

Case Study 5.3: Non-designated use due to Lack of Awareness

Md. Abdur Razzak works in Lalua Union Parishad cum Cyclone Shelter. During field visit, it was found that Md. Abdur Razzak lives in one room of Union Parishad as residence. He expressed his views in such way that nobody forbid him to live here so he lived. He informed that other people also live in this way of other union of Kalapara Upazilla. He also said that he has no clear idea about the MPCS and if somebody would aware him about the use of MPCS properly then he would not use this building.

5.2.3.2 Social behavior

During field visit, it has been found that due to social behavior MPCSs are not used properly which resulted in non-designated uses. During cyclone period, one of the reasons for not going to MPCS has been found that strong social bond and community

feelings. Although the people of the study area are poor but socially they are united, help to each other and also follow to each other's behavior. In FGDs (2013), people revealed that during cyclone period, they want to take shelter together with their neighbor. So often, some family does not take shelter following other family because their neighbor does not take shelter during any emergency period (*Case Study 5.4*).

Case Study 5.4: MPCCS is not used due to Social Relation

Mrs. Rahima Begum lives in Tiakhali Union of Kalapara Upazilla. During field visit Mrs. Begum has expressed that her family and neighbors took decision of taking shelter together during cyclone. She said that socially they are united and help to each other and also follow to each other's behavior in her village. Mrs. Begum also said that she did not take shelter in MPCCS because her neighbors did not take shelter during SIDR period. She with her neighbors lived together in their own houses although they have suffered due to this.

During time of distress, the rich and powerful tries to accommodate the poor and vulnerable in their place. On the other hand, the poor remain silent and in some cases support the powerful when the influential people use the MPCCS other than their designated use. During field visit, it has been also found that people misuse the shelter (*use its tube-well, toilets, bathroom*) because everybody misuse this so social attitude and behavior influences this non-designated use of MPCCS (*Case Study 5.5*).

Case Study 5.5: Non-designated use due to Social Behavior

Mrs. Nazma Akhter lives in Tiakhali Union of Kalapara Upazilla. She was washing her cloth and bathing in the Nachnapara CARITAS Cyclone Shelter while the researcher found her. It was asked to Mrs. Akhter that why she used its tube-well and bathroom answered from her that everyone in the village use this tube-well and bathroom to wash their cloth, to bath and also use its toilets for their own will so she and with her other neighbors use this. She said that in this locality everybody follows other behaviors so she misuses this because everybody of this locality misuses this.

5.2.3.3 Security Conditions

Field visit revealed that people are concerned that their belongings in the house would be stolen if everyone moves to cyclone shelter during cyclone period. It was also found that the relatively higher income group people hesitate to vacate their own house completely. Comparatively higher income group people of the study area think that they feel secured in their own house then taking shelter in MPCS. The structural security is also responsible for non-designated use of MPCS in the study area (KII 13 in Appendix A2.2).

5.2.4 Institutional Factor

5.2.4.1 Management Authority

During field visit of the study area, it has been found that there is no separate authority to manage and maintenance of MPCS. Most cases the designated users during non-cyclone period manage and maintain the MPCS (*Section-4.6*). Due to absence of any national or local level authority non-designated uses are rampant. The lack of authority also led that there is no accountability for non-designated user.

During field visit it has been also found that after completion construction work, construction authority (if it is public) left it to community to manage but rarely inform the designated use during non-cyclone period to the community (BOX:12) (*Case Study 5.5*).

BOX: 12

Appendix A2.2 (KII 16) revealed that there is no community organization or other authority to manage it so local influential decides its use. Constructing authority should ensure it's designated used and also properly maintain so that local leader or powerful person as well as public representative may not misuse it for their own will. If a care taker or security guard was appointed to take over it for twenty four hours then it was not misused by the local people said the informant.

Case Study 5.6: Non-designated Use due to Security Guard

Md. Jabber is a 52 years old, farmer living in Latachapali Union. He used Forchipara School cum Cyclone Shelter as animal shed. Md. Jabber lives near this MPCs and keeps his cattle, goat in this MPCs. Md. Jabber said that there is no care taker or security guard who will care of it and nobody in this locality forbid to keep this animal. So he and his other neighbors of this village use this building as animal shed. Md. Jabber claim that he only keeps his cattle but his neighbor not only uses MPCs as animal shed but also store their crops and vegetables etc. According to Md. Jabber that he could not use it as animal shed if it was look after.

5.2.4.2 Peoples Participation

Local people are the user of the facilities of MPCs. But FGD and KII in all Unions of the study area revealed that rarely their opinion was sought in choosing the location, size, facilities and uses in off- cyclone period. In FGDs, local people both male and female expressed their opinion in such way that the MPCs are not constructed in their locality to take their opinion, views and choice that leads for non-designated use during off-cyclone period. During cyclone period people of the study area did not use it due to non-designated use.

5.2.5 Political Factors

5.2.5.1 Power

Power structure of the society can be considered as one of the most important factors for non-designated use of MPCs (KII, 2013) in the study area. Due to socio-economic and cultural reasons most of the people follow the people representatives, local political and religious leaders and teachers. But when they use the MPCs in its non-designated use due to out of respect or fear of reparations then ordinary people do not any protest (KII, 2013). This lead that MPCs are in use as residence, hostel, shop, animal shed and its surrounding areas are in use as area for cropping and vegetable production.

During field visit of the study area, it has been also found that local power is greatly responsible for non-designated use of MPCS. During Focused Group Discussion (FGD), local people felt hesitate to say of these cases but when to talk individually then individual person expressed their opinion without any fear and told freely about this issues (*Case Study 5.7*).

Case Study 5.7: Non-designated use due to Power

Md. Keramat Ali, is a farmer lives in Latachapali Union near Latachapali Union Parishad complex. He said that a shop is constructed in the ground floor of Latachapali Union Parishad complex and it is used by Md. Hannan (who is a relative of this Union Parishad chairman) and he was continued his business as grocery shop. Md. Keramat Ali said that most of the people of the locality is very poor and they cannot protest because they have little power. Hence people like Mr. Hannan who has powerful relative could use it in a way a deemed fit, irrespective of its designated use.

5.2.5.2 Power Relation

During field visit and to talk with the local people of the study area, it has been found that village politics and political relation is also responsible for non-designated use of MPCS as well as choosing location of MPCS in the study area. It became a norm that ruling party leaders (mainly local leaders) decide who could or could not use the MPCs during off-cyclone period (BOX: 13). Using their power of the ruling party, the user decides the best use of the MPCS for his interest (*Case Study 5.8*).

BOX: 13

Appendix A2.2 (KII 15 and 20) reveal that both government and non-government agencies prioritize the opinion of political leaders and local powerful person in choosing the location of MPCS irrespective of whether the location is suitable or not. During cyclone, people cannot use it properly and local people use it for several non-designated purposes during off-cyclone period because it was not constructed proper location. Some time local leader decides who could or could not use the MPCS during off-cyclone period said the informants.

Case Study 5.8: Non-Designated Use due to Power Relation

Mr. Bellal Hossain 26 years old shop keeper lived in Lalua Union. A shop is constructed in the ground floor of Union Parishad by local leader and Mr. Bellal Hossain has rented this shop from this leader. The shop keeper Mr. Bellal Hossain said that his relative managed this shop because his relative has good relation with local leaders. He also said that nobody of this locality protested to make this shop in the ground floor of Union Parishad. As relative of Mr. Bellal Hossain has good relation with local leaders so he still continues to do business. Mr. Bellal Hossain said that if this MPCs is properly managed by the authority then he could not continue his business here and it was not possible to make shop in the ground floor of MPCs.

5.2.6 Other Factors

5.2.6.1 Economic Status

Income and occupation status is also responsible for non-designated use of MPCs in the study area found during field visit (BOX: 14). Maximum people here are farmer and they are poor that is responsible to misuse MPCs. Local people use MPCs as for agricultural production in its adjacent and surroundings land. They also use it as animal shed (*Case Study 5.9*).

BOX: 14

Appendix A3.3 (FGD no. 01-10) revealed that due to economic and occupation status of the people responsible for non-designated use of MPCs in the study area. People of the study area use MPCs as shop, animal shed, storage their crops and vegetables and other non-designated purposes due to poor economic condition. People also expressed their opinion in such way that poor people of the study use MPCs as storage of crops, animal shed etc. because maximum people here are farmer, day labor, fisherman and small businessman. For agricultural activities people need to live and stay in this area all the year round so poor people misuse this shelter.

Case Study 5.9: Misuse of MPCS due to Economic Status

Md. Eakub Ali lived Sharifpur village in Latachapali Union. He keeps his cattle in the Sharifpur MPCS. The designated uses of Sharifpur MPCS is as for school but Mr. Eakub Ali live near this building and use this building as animal shed. Md. Eakub Ali also keeps agricultural products and also grows vegetables in its adjacent land. It was asked Md. Eakub Ali why he used it as animal shed answered that his living home is very poor condition so how he will made cattle shed? He expressed his opinion in such way that if his financial condition was good then he could not use MPCS as animal shed or not used to grow vegetables.

5.2.6.2 Lack of Study and Research

During field visit it was found that all of the MPCSs are either located within premises of existing school or on donated land. Different government organization like LGED, Facilities Department, Ministry of Relief and Rehabilitation, Education Engineering Department are constructed MPCS on the land of existing Union Parishad, primary school, secondary school, college, Madrasha or the land donated by local people (Field Visit, 2013). Non-government organization like CARITAS, BRAC, BDRCS, JICA etc. and also government organizations are also constructed Multi-purpose Cyclone Shelter randomly in this area without any proper study (BOX:15).

BOX: 15

Appendix A2.2 (KII 09) revealed that proper utilization of MPCS cannot be ensured during cyclone and non-cyclone period without proper research and study. Non-designated uses like store room, agricultural production activities, construction material site, garbage site etc. cannot be stopped if proper site or location cannot be chosen and for this proper study and research should be made before construction of MPCS said that informant.

5.2.6.3 Boundary Wall

During field visit of the study area it was found that the area of the MPCSSs are not demarcated by wall or fence (Photo 5.16). This led that any body could use it anytime irrespective of its designed use. They also may make it dirty and unusable during cyclone as there are no mechanism to control entry/exit (BOX:17 and BOX:18).



Photo 5.16: No boundary wall of MPCSS in Mithaganj Union made by CARITAS (Source: Field Visit, February 2013)

BOX: 16

Appendix A3.3 (FGD no. 04, 06 and 09) revealed that due to absence of any boundary wall or fence people use it always as there is exit/entry control by physical or human mechanism. Absence of any entry/exit mechanism give opportunity to common people for using facilities of MPCSS including but not limited to its tube-well, bathroom, toilet.

BOX: 17

Appendix A2.2 (KII 10, 18 and 19) revealed that informant's believe non-designated use of MPCSS takes place as there is no physical barrier to get entry in MPCSS. MPCSSs are mostly constructed in open agricultural field, vacant open land and without connecting road or boundary wall so the people who works the agricultural field or the people who live adjacent the MPCSS misuse MPCSS.

5.3 Responsible Factors for Non-designated Use: *Findings from Focused Group Discussion (FGD)*

An attempt was made to identify the most important factors community felt for non-designated use for the MPCs. In the FGDs participants were asked to perform pair-wise ranking of the factors they identified as reasons for non-designated use (Appendix A3.4). *Table 5.1* shows the summary of pair-wise ranking done by the participants in the FGDs (Appendix A3.4 for provides the pair wise ranking in each of the FGD).

Table 5.1: Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCs

Problem	1.Geographical	2.Design	3.Social	4.Economic	5.Institutional	6.Political	7.Structure of MPCs	8.Occupation	9.Study & Research	10.Boundary Wall	Priority frequency
1.Geographical	X	1	3	1	1	1	1	1	1	1	1
2.Design	X	X	2	2	5	2	2	2	2	2	2
3.Social	X	X	X	3	3	3	3	3	3	10	3
4.Economic	X	X	X	X	5	6	4	4	4	4	4
5.Institutional	X	X	X	X	X	6	5	8	5	5	5
6.Political	X	X	X	X	X	X	6	6	6	10	6
7.Structure of MPCs	X	X	X	X	X	X	X	8	9	10	10
8.Occupation	X	X	X	X	X	X	X	X	9	10	10
9.Study & Research	X	X	X	X	X	X	X	X	X	10	1
10.Boundary Wall	X	X	X	X	X	X	X	X	X	X	2

Source: Field Survey, 2013

This pair-wise ranking approach shows that the geographical and design aspect is the leading responsible factors for non-designated use of MPCs in Kalapara Upazilla. From discussion it was revealed that MPCs was not constructed in proper location in

most cases. Political factors influenced not only for site selection in the study area but also non-designated use like used as shop in ground floor or residential use. Institutional and social factor is also responsible for non-designated use of it because it was not properly manage and maintain and it was not constructed considering people choice and views found during FGD. After construction of MPCs in the study area by the constructing authority, it was not look after to ensure its designated use said by the participants of FGD. It is also misused by the local people because no boundary wall of it.

From discussion it was also revealed that there is no action or initiatives from the Upazilla Parishad Disaster Management Committee or Union Parishad Disaster Management Committee against the non-designated use of MPCs. So, institutional factor is directly responsible for non-designated use of MPCs in the study area.

5.4 Summary of Findings

This chapter focused on the responsible factors for non-designated use of MPCs in Kalapara Upazilla. From the field survey, it is found that there was no appropriate authority who will undertake and ensure the designated use of MPCs in the study area. Constructing authority i.e. government and non-government organization just only construct multi-purpose cyclone shelter but it does not play any role to stop non-designated use. Lack of appropriate authority to manage and maintain the use of MPCs is also responsible for non-designated use found during field visit. Proper site selection is prime consideration to ensure designated use but proper site was not chosen to construct MPCs. Political factors is greatly responsible for site selection so in most case non-designated use by the political leaders and their relatives or their influenced reason. Lack of proper design considering people's choice and their demand is also responsible for non-designed use found during field visit. Social factor is responsible in most case due to proper design of MPCs. Sufficient number of MPCs with proper design should be constructed in proper location to ensure designated use.

CHAPTER 6
FINDINGS AND RECOMMENDATIONS

6.1 Introduction

MPCS supposed to serve twin purposes of saving life during cyclone period and providing facilities to the citizens during off-cyclone period. However the present study found that it is not performing as expected. The problem is prominent during off-cyclone period than cyclone period. Out of 105 MPCS, only 14 MPCS are in use as its designated use during off-cyclone period; the rest have other uses beside designated use (*Chapter 4*). On the other hand due to this non-designated use during off-cyclone period hampers the use during cyclone period. The study also find that there are various geographic, social, political and even design reasons which encourage people to use in the MPCS in the use which were not prescribed during the construction of the MPCS (*Chapter 5*). Major findings of the research and some recommendations are given in the following sections.

6.2 Major Findings of the Research

The primary objective of MPCS is to provide shelter to the citizen during cyclone. The study found that all the MPCS of Kalapara were in use as shelter during cyclone. During cyclone period, these are not use for other purpose. On the other hand in the off-cyclone period, close to 87% of MPCS are utilized in purposes other than the designated use. In off-cyclone period, these were designed to be used as school, Madrasha, mosque or temple, community center, mass education center, evening education center, health center and clinic, Government and NGO office etc. (*Table-4.1*). However it was also found that the MPCS were used as animal shed, storage, residence, student's dormitory, shop and even for agriculture (*Table 4.2, Table 4.3*).

There are many reasons for non-designated use which vary from geographic, social, political, institutional and even design aspects of MPCS (*Chapter 5*). It has been found that existing MPCS of Kalapara Upazilla could not accommodate all the people of the Upazilla. The coverage area of the MPCSs is also less than 50% of the Upazilla (*Section 5.2.1*). There are problem of access to MPCS both physically and socio-culturally. There were also questions about the mechanism of selecting site of MPCS.

Though the MPCs are situated near all-weather road, very few have connecting road from the all-weather road. The existing design feature lack privacy aspect of the society, lack facilities for old, children and physically challenged. The amenities within the MPCs are not sufficient or properly located. This discourages people to use the MPC in its designated use both during cyclone and off-cyclone period. The political culture of the land help unauthorized user to use the MPC in non-designated way. There is no management authority to operate and manage the MPCs. This aggravated the non-designated use of MPC during off-cyclone period.

6.3 Recommendations for Non-designated use

Geographical, design, social, economic, institutional, political etc. are responsible factors for non-designated use of MPC in the study area so recommendations are given based on this factors so that MPC can be used properly and non-designated use can be stopped both cyclone and off-cyclone period.

6.3.1 Recommendations for Geographical Aspect

During field visit in the study area it was found that most cases the chosen site was not appropriate in terms of the population the serve local people were not consulted on the location they chose. In informal conversation the construction authority acknowledge that there is no proper criterion for selecting a site for MPC. Depending upon the availability of land the site for MPC is mostly chosen. So the constructing authority should develop some criterion for selecting site in consultation with the target population. Similarly though all most all MPCs are located beside all weather roads, few of them have connected road from all-weather road. It is important to have connecting all weather roads not to improve communication during cyclone period but also better supervision by local people during off-cyclone period.

6.3.2 Recommendations for Design Aspect

The research identified various design issue for non-designated use during cyclone period. Principal design issues which needed to be addressed are issues of privacy, gender, age and physically challenged. Discussion with the people revealed that

separate rooms and toilets should be designed for male and female. Similarly with the exception of one MPCs nobody considered how physically challenged people would use while designing MPCs. Facilities of young children, old people, pregnant woman and mother of young children were also neglected during design. These issues should be addressed immediately and should be ingrained in future construction of MPCs. On the other hand, it was found during field visit that people are sometime reluctant to come in MPCs during cyclone as it became too congested. A simple analysis found that average capacity of the MPCs should be 2328 instead of 600 for all the population of Kalapara has to take refuge in a cyclone shelter. On the other hand, with the existing capacity 301 to 600 people so sufficient number of MPCs needed to be built in the study area to ensure designated use properly. The other issue which raised considerable misuses both cyclone and off-cyclone period is the location of the source of water supply and toilet. Provisions of these two inside the building instead of present outside the building would considerable lessen misuses. Moreover socio-cultural situation does not permit common use of toilet. So this practice should not be allowed and there should be clear sign of 'male' and 'female'. Similarly provision should be made for animal shed. One of the problem which rises during cyclone is the space for furniture which are in use during off-cyclone period. At present there is no provision to keep furniture so provision for keeping furniture should be provided.

6.3.3 Recommendations for Social Aspect

The research found that lack of awareness on the use of MPCs, social behavior, issues of social safety play important role on the use and misuse of MPCs. It is necessary to let the community aware the designated use of MPCs during non-cyclone period. They should be made aware the expected behavior from them regarding the use of the facility. Also there should be all the year round awareness program for the use of MPCs. Union Disaster Management Committee could use CPP volunteers for the purpose. On the other hand, during cyclone period many people do not leave their houses for lack of security of their property. So there needed to be greater security facility during cyclone period.

6.3.4 Recommendations for Institutional and Political Aspect

One of the major factors identified in this research for the non-designated use of MPCS is absence of any institution for operation and maintenance of the MPCS. In the Kalapara Upazilla alone 14 different organizations both from public and private sector constructed MPCS but once the MPCS were built it were left to the management of the designated user of MPCS during non-cyclone period. There was no consideration whether the designated management authority is capable for it or no supervision whether the designated management authority is doing its job properly. There should be some institutional facility to supervise the operation and maintenance of the MPCS. One way could be the empowering the Union Disaster Management Committee to operation and maintenance aspect of MPCS and Upazilla Disaster Management Committee to supervise the works. The Union Disaster Management Committee may incorporate a member from the management of the designated user from management and operation of each of the MPCS. Designating the two standing local committees for management and operation of MPCS would also eradicate the problem of political influence in non-designated use of MPCS. Fixing site selection criteria for MPCS would also assist greatly in reducing distributing political favor by allowing non-designated use of MPCS.

6.3.5 Others

As poor income, education and occupation level of the coastal areas people lead to misuse and non-designated use of MPCS which is discussed earlier chapter and for this reason they use MPCS as to grow vegetables, store room, living residence and quarter or to keep their domestic animal, cattle or to keep their crops so government and non-government organization should take several initiatives to increase their income, education and occupation that will directly or indirectly ensure the effective use of MPCS both cyclone and off-cyclone period.

On the basis of design guidelines and budget approved from national level, size, location and normal time use of MPCS have to be selected at local level on the basis of present demand, local choice and suitable site. Local level committee like Union Disaster Management Committee (UDMC) will take all these decisions by collecting

people's opinion, choice and then ultimate plan has to be approved by experts nominated from national level.

Alone MPCS in the study area will not be able to satisfy all of the people to provide total protection against cyclone and tidal surge. So along with MPCS construction project equal emphasis should be given on construction of embankment, coastal afforestation, improvement of the housing condition, improvement of living condition and communication network in the area that will lead the people to effectively use of MPCS and will discourage the people to misuse of MPCS. Government could encourage high and middle income people to make their house cyclone proof by providing technical support so that they do not need to take shelter in MPCS during cyclone but still remain safe.

6.4 Conclusion

The people of the coastal area is mostly vulnerable than any other region of Bangladesh because they have to face frequently natural disaster. They have to live with fighting against nature. Every year several natural calamities hit in the coastal region of Bangladesh and due to this disaster huge loss of lives and properties. The Multi-purpose Cyclone Shelter which is constructed by the government and non-government organization in coastal region should be used properly by the local people. To ensure effective use of MPCS it is needed to construct proper location with proper design and should be used properly which are assigned by the constructing authority in normal time with considering the present demand upon people's choice.

It should be ensured close relationships to all of the activities of national and local level committee to impede the non-designated use of MPCS in coastal region. Government should give proper emphasis to set up new MPCS in the coastal area on its appropriate site, size and internal design. Public participation should be incorporate to ensure optimum utilization of MPCS both normal and emergency time. The responsible factors which create non-designated use of MPCS should be clearly identified and possible solution which is given in this research should be implemented successfully.

As previously there is no such study in the present topic in this research so findings of this study can be used by policy maker to construct new MPCs in the coastal region of Bangladesh that helps to use it properly by the vulnerable people of coastal region. The present research can be helped to use the existing MPCs in the coastal region properly both cyclone and off-cyclone period and can be helped to take necessary steps to ensure its optimum use.

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APPENDIX

APPENDIX: A
FIELD VISIT

APPENDIX: A1
FIELD VISIT CHECKLISTS

Appendix: A1 Field Visit Checklists

Serial No..... Date.....
 Name of MPCs.....
 Location of MPCs.....

Identifying the Non-designated use of MPCs in Kalapara Upazilla

Designed Use of MPCs	Existing Use of MPCs	Non-designated use of MPCs
Education Center-01	Education Center-01	Residence-01
Community Center-02	Community Center-02	Students Dormitory/Hostel-02
Health Center and Clinic-03	Health Center and Clinic-03	Animal shade-03
Office-04	Office-04	Store room-04
Mosque-05	Mosque-05	Solid Waste & Garbage site-05
Temple-06	Temple-06	Construction Material site-06
Others-07	Residence-07	Crops cultivation-07
	Students Dormitory/Hostel-08	Crops harvesting-08
	Animal shade-09	Shop-09
	Store room-10	Garage-10
	Solid Waste & Garbage site-11	Prayer Hall-11
	Construction Material site-12	Others-12
	Crops cultivation-13	
	Crops harvesting-14	
	Shop-15	
	Garage-16	
	Prayer Hall-17	
	Others-18	

MPCS related other information:

01. Where this building is constructed?

- 01 School field 02 Agricultural land 03 Beside road 04 Others

02. Capacity.....

03. Toilets.....

04. Water supply.....

05. Stair.....

06. Provision of Ramp.....

07. Provision of connecting road.....

08. Store room.....

09. Privacy.....

10. Facilities for animal.....

11. Facilities for ornaments/valuable assets.....

12. Door/Window.....

13. Boundary Wall.....

14. Security guard.....

APPENDIX: A2
KEY INFORMANT'S INTERVIEW

APPENDIX: A2.1
CHECKLIST FOR KEY INFORMANT'S INTERVIEW

Appendix: A2.1

Checklist for Key Informant's Interview

1. Do you know about the Multi-purpose Cyclone Shelter (MPCS)?
2. Do you know for which purposes Multi-purpose Cyclone Shelter is constructed here?
3. What is the use of it during cyclone or emergency period?
4. What is the use of it during non-cyclone/off-cyclone period?
5. What's problem are faces by the people during cyclone or emergency period to take shelter in Multi-purpose Cyclone Shelter?
6. What's problem are faces by the people during non-cyclone to use Multi-purpose Cyclone Shelter?
7. If there is any non-designated use during non-cyclone period, what are the main factors behind it and who are responsible for this non-designated use?
8. Have you taken any actions against this kind of non-designated use during non-cyclone period?
9. If there is any non-designated use during cyclone period, what are the main factors behind it and who are responsible for this non-designated use?
10. Who is the responsible authority to mitigate non-designated use?

11. Have you taken any actions against this kind of non-designated use during cyclone period?

12. What is your opinion to mitigate non-designated use of Multi-purpose Cyclone Shelters in cyclone period?

13. What is your opinion to mitigate non-designated use of Multi-purpose Cyclone Shelters in non-cyclone period?

14. What's initiatives should be taken by the constructing authority to mitigate non-designated use both cyclone and off-cyclone period?

15. How Multi-purpose Cyclone Shelter can be used properly both cyclone and off-cyclone period?

APPENDIX: A2.2
DESCRIPTION OF KEY INFORMANT'S INTERVIEW

Appendix: A2.2

Description of Key Informant's Interview

KII no. -01	Date and Place-12.11.2013 & Chakamaiya Union
Name- Md. Saiful Islam	Age-31
Designation-Manager of CARITAS	Literacy Level-MA
<p>During Key Informant Interview, Md. Saiful Islam said that MPCSSs are constructed here in open agricultural field, vacant land, river side or village road, local people to use this building and its surroundings and adjacent area as agricultural production purpose, garbage site, construction materials site, animal shed or storage purpose. Mr. Islam also said that peoples (<i>farmer, day labor</i>) who work in the agricultural field or live near MPCSS use its tube-well, bathroom and toilet daily.</p>	

KII no. -02	Date and Place-12.11.2013 & Dhankhali Union
Name- Md. Jahurul Haq	Age-41
Designation-Teacher	Literacy Level-BA
<p>Md. Haq said that all of the MPCSS in KalaparaUpazilla should be introduced both ramp and stair so that physically challenged people, old male or female, children can easily use MPCSS both cyclone and off-cyclone period that will ensure proper use of it. He also said that if MPCSS were designed properly with introducing ramp then it will be used properly by the people and indirectly non-designated use can be stopped.</p>	

KII no. -03	Date and Place-12.11.2013 & Chakamaiya Union
Name- Md. Makbul Ahmad	Age-42
Designation-Imam (Mosque)	Literacy Level-Aleem
<p>Md. Makbul Ahmad said that MPCSSs are constructed here in open agricultural field, vacant land, river side or village road, local people to use this building and its surroundings and adjacent area as agricultural production purpose, garbage site, construction materials site, animal shed or storage purpose. Mr. Ahmad also said that peoples (<i>farmer, day labor</i>) who work in the agricultural field or live near MPCSS use its tube-well, bathroom and toilet daily.</p>	

KII no. -04	Date and Place-12.11.2013 & Neelganj Union
Name- Md. Mostafijur Rahman	Age-49
Designation- UP Chairman	Literacy Level-BA
<p>Mr. Rahman discussed on location issues of MPCSS. He said that MPCSSs are constructed here in remote region so adjacent people use it their own will and it is used as construction material site, garbage site, garage, animal shed, storage or residential purpose. He also said that to minimize construction and transport cost, constructing authorities constructed cyclone shelter in areas where transportation link is comparatively better so proper use cannot be ensured and misuse by the people.</p>	

KII no. -05	Date and Place-12.11.2013 & Chakamaiya Union
Name- Md. Keramat Mia	Age-52
Designation- UP Chairman	Literacy Level-HSC
<p>Md. Keramat Mia agree that due to poor capacity of MPCs creates overcrowding which made people reluctant to take shelter during emergency period. He also said that the number of MPCs in Kalapara Upazilla is very poor against present demand so it has been seen great pressure to use it for designated purpose. Poor capacity also creates non-designated use by the local people said Md. Mia.</p>	

KII no. -06	Date and Place-12.11.2013 & Neelganj Union
Name- Mrs. Kahinur Begum	Age-29
Designation- Computer Operator (BRAC)	Literacy Level- SSC
<p>Mrs. Kahinur Begum said that as both male and female has to use same corridor, stair and even wash rooms, bath room, toilets of MPCs so the people especially women not taking shelter during cyclone and emergency period willingly. She said that due to lack of clear mark bathroom, toilets and not locked or properly maintained, local people misuse this randomly. She also said that local people use its toilet as public toilets and its corridor; stair is misused by the people during off-cyclone period. Mrs. Begum said that the constructing authority should design the MPCs considered this issues seriously for their conservative society to ensure its better use.</p>	

KII no. -07	Date and Place-12.11.2013 & Lalua Union
Name- Md. Tara Mia	Age-48
Designation- UP Chairman	Literacy Level-BA
<p>Mr. Tara Mia discussed on location issues of MPCs. He said that proper location is important to ensure proper use of MPCs. During site selection the opinion of local public representative should be given priorities by the constructing authorities said Mr. Tara Mia. Regular maintenance by the authorities should be ensured for its proper use.</p>	

KII no. -08	Date and Place-12.11.2013 & Tiakhali Union
Name- Md. Rakibul Haq	Age-45
Designation- Mayor	Literacy Level-MA
<p>Md. Rakibul Haq, Mayor of Kalapara Upazilla lived in adjacent Union of Kalapara Upazilla Parishad at Tiakhali Union said during KII that people are discouraged to take shelter during cyclone period due to insufficient and poor water facility of MPCS in the study area. He also said that day labor, farmer or other people who live adjacent of MPCS use its tube-well, bathroom, toilets randomly in every moment all the year round as result during non-cyclone period designated user cannot use it properly. People also use this water supply (Tube-well) to finish their daily activities like bathing, washing or cooking during off-cyclone period said Mr. Haq.</p>	

KII no. -09	Date and Place-12.11.2013 & Tiakhali Union
Name- Md. Zahangir Hossain	Age-34
Designation- UNO	Literacy Level-Post Graduate
<p>Md. Md. Zahangir Hossain, UNO of Kalapara Upazilla thinks that MPCS should be constructed in coastal region of Bangladesh on the basis of proper research and study. Otherwise proper utilization of Multi-purpose Cyclone Shelter cannot be ensured during cyclone period and non-cyclone period. He also give his views that non-designated uses like store room, agricultural production activities, construction material site, garbage site etc. cannot be stopped if proper site or location cannot be chosen and for this proper study and research should be made before construction of MPCS.</p>	

KII no. -10	Date and Place-14.11.2013 & Mithaganj Union
Name- Md. Sujan Malla	Age-25
Designation- UP Chairman	Literacy Level-SSC
<p>Md. Sujan Malla discussed on the boundary wall issues of MPCs and agreed that non-designated use can be stopped if MPCs are demarcated by wall or fence. Mr. Malla thinks that not only this Union but also other Union of Kalapara Upazilla, people misuse MPCs due to this factor. He said that it is very easy for the local people to misuse this building because no boundary wall of MPCs and most often it was constructed in open field.</p>	

KII no. -11	Date and Place-12.11.2013 & Dhulashar Union
Name- Abdul Khaleq	Age-38
Designation-Imam (Mosque)	Literacy Graduate
<p>Abdul Khaleq said that MPCs are constructed here in open agricultural field, vacant land, river side or village road, local people to use this building and its surroundings and adjacent area as agricultural production purpose, garbage site, construction materials site, animal shed or storage purpose.</p>	

KII no. -12	Date and Place-12.11.2013 & Mithaganj Union
Name- Md. Rahmat Ali	Age-51
Designation- School Teacher	Literacy Level-Degree
<p>Md. Rahmat Ali discussed on the issues that room of the MPCs is not suitable to use as store room because space is not sufficient to store all furniture of this building. He lived in the store room of this building. He said that he used it as residence because emergency period this room cannot be used as store room for its little space and off-cyclone period if he doesn't use it, other people will be misuse this room so he lived here said Md. Ali.</p>	

KII no. -13	Date and Place-12.11.2013 & Neelganj Union
Name- Md. Delowar Hossain	Age-38
Designation- Teacher	Literacy Level- Kamel
<p>Md. Delowar Hossain is used the MPCS (which is designed as school) as residence. He said that he felt more secure living in the MPCS than living in his ancestral house in the locality. He also said that not only he lived MPCS but also other people of his surrounding union also live MPCS due to this factor. According to Md. Hossain taht this MPCS remain vacant maximum time (without school hour) so if he stay and live here then he can maintain and take care of this building.</p>	

KII no. -14	Date and Place-12.11.2013 & Mithaganj Union
Name- Md. Kamruzzaman	Age-32
Designation- Field Supervisor (Grameen Bank)	Literacy Level-HSC
<p>Md. Kamruzzaman said that during emergency period people have to live in this shelter with the furniture's of MPCS so male and female have to face problem. Room of MPCS should be design in such way so that all furniture and stationary can be stored during emergency period and off-cyclone period this room can be used to store their crops that will stop to misuse the other room which is used as store room said Md. Kamruzzaman.</p>	

KII no. -15	Date and Place-12.11.2013 & Tiakhali Union
Name- Md. Rakibul Islam	Age-51
Designation- Thana Juvo Unnayan Officer	Literacy Level- Post-Graduate
<p>Md. Rakibul Islam lived in Tiakhali Union adjacent union of Kalapara Upazilla said that both government and non-government agencies prioritize the opinion of political leaders and local powerful person in choosing the location of MPCS irrespective of whether the location is suitable or not. He said that during cyclone, people cannot use it properly and local people use it for several non-designated purposes during off-cyclone period because it was not constructed proper location. Some time local leader decides who could or could not use the MPCS during off-cyclone period said Mr. Islam.</p>	

KII no. -16	Date and Place-12.11.2013 & Latachapali Union
Name- Mawlana Shamsul Alam	Age-40
Designation- Madrasha Teacher (Mosque Imam)	Literacy Level-Kamel
<p>Mawlana Shamsul Alam expressed his opinion about MPCS that there is no community organization or other authority to manage it so local influential decides its use. He said that constructing authority should ensure its designated used and also properly maintain so that local leader or powerful person as well as public representative may not misuse it for their own will. He also said that if a care taker or security guard was appointed to take over it for twenty four hours then it was not misused by the local people.</p>	

KII no. -17	Date and Place-12.11.2013 & Latachapali Union
Name- Md. Touib Ali	Age-48
Designation- UP Member	Literacy Level-VIII
Md. Touib Ali agree that due to poor capacity of MPCS creates overcrowding which made people reluctant to take shelter during emergency period. Md. Ali also said that the number of MPCS in Kalapara Upazilla is very poor against present demand so it has been seen great pressure to use it for designated purpose. Poor capacity also creates non-designated use by the local people said Md. Ali. .	

KII no. -18	Date and Place-14.11.2013 & Chakamaiya Union
Name- Md. Riaz Hussain	Age-28
Designation- Staff Reporter of the Daily Jugantor	Literacy Level-Graduate
Md. Riaz Hossain agreed that non-designated use cannot be stopped without construction of boundary wall of MPCS. Mr. Hossain said that it is easy for the local people to misuse this building every time due to this factor. This should be constructed during the construction work of MPCS by the constructing authority to ensure its proper use said Mr. Hossain.	

KII no. -19	Date and Place-15.11.2013 & Mithaganj Union
Name- Mrs. Razia Khanam	Age-32
Designation- 2 no. World Reserved Women Seat (Women Member)	Literacy Level-SSC
<p>Mrs Razia Khanam said that not only Mithaganj Union other Union of Kalapara Upazilla, MPCSSs are misuse by the local people due to no wall or fence of MPCSS. She said that MPCSSs are constructed here in open agricultural field, vacant open land and without connecting road or boundary wall. So the people who work the agricultural field or the people who live adjacent the MPCSS misuse MPCSS mostly.</p>	

KII no. -20	Date and Place-15.11.2013 & Tiakhali Union
Name- Md. Enaet Hossain	Age-43
Designation- Assistant Director (LGED)	Literacy Level-Graduate
<p>Md. Enaet Hossain said that the constructing authorities of MPCSS give prioritize the opinion of political leaders in choosing the location of MPCSS irrespective of whether the location is suitable or not in Kalapara Upazilla. Local leader and powerful person sometime influenced the use of MPCSS said Mr. Hossain.</p>	

APPENDIX: A2.3
IMPORTANT INFORMATION OF KEY
INFORMANT

Appendix: A2.3
Important Information of Key Informant

SL No:01	Personal Information of Respondent	
Name:	Md. Saiful Islam	
Age:	31	Educational Qualification: MA
Ward:	01	
Union:	Chakamaiya	Occupation: Manager of CARITAS
Upazila:	Kalapara	

SL No:02	Personal Information of Respondent	
Name:	Md. Jahurul Haq	
Age:	41	Educational Qualification: BA
Ward:	03	
Union:	Dhankhali	Occupation: Teacher
Upazila:	Kalapara	

SL No:03	Personal Information of Respondent	
Name:	Md. Makbul Ahmad	
Age:	42	Educational Qualification: ALEEM
Ward:	02	
Union:	Tiakhali	Occupation: Imam (Mosque)
Upazila:	Kalapara	

SL No:04	Personal Information of Respondent	
Name:	Md. Mostafijur Rahman	
Age:	49	Educational Qualification: BA
Ward:	01	
Union:	Neelganj	Occupation: UP Chairman
Upazila:	Kalapara	

SL No:05	Personal Information of Respondent	
Name:	Md. Keramat Mia	
Age:	52	Educational Qualification: HSC
Ward:	01	
Union:	Chakamaiya	Occupation: UP Chairman
Upazila:	Kalapara	

SL No:06	Personal Information of Respondent	
Name:	Mrs. Kahinur Begum	
Age:	29	Educational Qualification: SSC
Ward:	03	
Union:	Neelganj	Occupation: Computer Operator (BRAC)
Upazila:	Kalapara	

SL No:07	Personal Information of Respondent	
Name:	Md. Tara Mia	
Age:	48	Educational Qualification: BA
Ward:	01	
Union:	Lalua	Occupation: UP Chairman
Upazila:	Kalapara	

SL No:08	Personal Information of Respondent	
Name:	Md. Rakibul Haq	
Age:	45	Educational Qualification: MA
Ward:	01	
Union:	Tiakhali	Occupation: Mayor
Upazila:	Kalapara	

SL No:09	Personal Information of Respondent	
Name:	Md. Zahangir Hossain	
Age:	34	Educational Qualification: Post Graduated
Ward:	01	
Union:	Tiakhali	Occupation: UNO
Upazila:	Kalapara	

SL No:10	Personal Information of Respondent	
Name:	Md. Sujan Malla	
Age:	25	Educational Qualification: SSC
Ward:	01	
Union:	Mithaganj	Occupation: UP Chairman
Upazila:	Kalapara	

SL No:11	Personal Information of Respondent	
Name:	Md. Khaleq	
Age:	38	Educational Qualification: Graduate
Ward:	01	
Union:	Dhulashar	Occupation: Teacher
Upazila:	Kalapara	

SL No:12	Personal Information of Respondent	
Name:	Md. Rahmat Ali	
Age:	51	Educational Qualification: Degree
Ward:	01	
Union:	Mithaganj	Occupation: Teacher
Upazila:	Kalapara	

SL No:13	Personal Information of Respondent	
Name:	Md. Delowar Hossain	
Age:	38	Educational Qualification: Kamel
Ward:	01	
Union:	Neelganj	Occupation: Teacher
Upazila:	Kalapara	

SL No:14	Personal Information of Respondent	
Name:	Md. Kamruzzaman	
Age:	32	Educational Qualification: HSC
Ward:	04	
Union:	Lalua	Occupation: NGO Representative
Upazila:	Kalapara	

SL No:15	Personal Information of Respondent	
Name:	Md. Rakibul Islam	
Age:	51	Educational Qualification: Post-Graduate
Ward:	01	
Union:	Tiakhali	Occupation: Thana Juvo Unnayan Officer
Upazila:	Kalapara	

SL No:16	Personal Information of Respondent	
Name:	Mawlana Shamsul Alam	
Age:	40	Educational Qualification: Kamel
Ward:	07	
Union:	07 no. Latachapoli	Occupation: Madrasha Teacher (Mosque Imam)
Upazila:	Kalapara	

SL No:17	Personal Information of Respondent	
Name:	Md. Touib Ali	
Age:	48	Educational Qualification: Class viii
Ward:	01	
Union:	Latachapali	Occupation: Union Parishad Member
Upazila:	Kalapara	

SL No:18	Personal Information of Respondent	
Name:	Md. Riaz Hussain	
Age:	28	Educational Qualification: Graduate
Ward:	04	
Union:	Chakamaiya	Occupation: Staff Reporter of the Daily Jugantor
Upazila:	Kalapara	

SL No:19	Personal Information of Respondent	
Name:	Mrs. Razia Khanam	
Age:	32	Educational Qualification: SSC
Ward:	02	
Union:	Mithaganj	Occupation: 02 no. Word Women Member
Upazila:	Kalapara	

SL No:20	Personal Information of Respondent	
Name:	Md. Enaet Hossain	
Age:	43	Educational Qualification: Graduate
Ward:	01	
Union:	Tiakhali	Designation- Assistant Director (LGED)
Upazila:	Kalapara	

Source: Field Survey, 2013

APPENDIX: A3
FOCUSED GROUP DISCUSSION (FGD)

APPENDIX: A3.1
CHECKLIST FOR FOCUSED GROUP DISCUSSION
(FGD)

Appendix: A3.1

Checklist for Focused Group Discussion (FGD)

Assalamualikum, Today we have come here to share our information on Multipurpose Cyclone Shelter for a research purpose conducted by Bangladesh University of Engineering and Technology (BUET).

1. Does everyone know what a Multipurpose Cyclone Shelter is? It has two kind of time variant use: cyclone period and non-cyclone period use.
2. Do you know what are use of these cyclone shelter is in cyclone and non-cyclone period? How many of you know that?
3. There may be some non-designated use both in cyclone period and non-cyclone period. Do you know that?
4. Can you please say the non-designated uses during non-cyclone period?
5. Do you know what are reasons or factors responsible for this non-designated use?
6. In cyclone period is it use properly?
7. Can you please say some of the non-designated uses during cyclone period?
8. Do you know what are reasons or factors responsible for this designated use?
9. Do you offer any suggestion for the use of cyclone shelter properly during cyclone period?
10. Do you offer any suggestion for the use of cyclone shelter properly during non-cyclone period?

APPENDIX: A3.2
PARTICIPANTS LIST OF FOCUSED GROUP
DISCUSSION (FGD)

Appendix: A3.2

Participants List of Focused Group Discussion (FGD)

FGD No.	No. of Attendance	Place (Union)	Name of Attendance people	Sex	Age	Literacy Level	Occupation
01	19	Chakamaiya (Neshanbaria School Ground)	Mrs. Sheuli Begum	F	43	Non-literate	Day labor
			Mrs. Kohinur	F	38	Literate (can sign name)	Housewife
			Abdul Majed	M	29	Class V	Farmer
			Md. Edrish	M	48	Illiterate	Farmer
			Humaun Kabir	M	32	Class I	Fisherman
			Rasheda Begam	F	30	HSC	Teacher
			Abul Kashem	M	40	Dakhil	Mosque Imam
			Rehana Begam	F	36	Class II	Homemaking
			Taher Ali	M	51	Illiterate	Farmer
			Abdul Malek	M	39	Literate (can sign name)	Farmer
			Rahmat Ali	M	37	Graduate	Service
			Md. Anis	M	45	Literate	Businessman
			Rashida Khanam	F	30	Class V	Housewife
			Bilkis Akter	F	32	Degree	Teacher
			Md. Hannan	M	17	HSC	Student
			Md. Rafiq	M	29	Literate	Farmer
			Abdur Rajjak	M	35	Illiterate	Fisherman
Imran Hussain	M	23	SSC	Service			
Mrs. Nargis Akter	F	41	Illiterate	Housewife			
02	21	Tiakhali (Nachnapara Shelter Center Ground)	Md. Hasem	M	31	Literate	Fisherman
			Majeed ali	M	45	Illiterate	Farmer
			Mrs. Kohinur	F	33	Degree	Teacher
			Mrs. Bilkes	F	30	Class V	Homemaking
			Md. Nejam	M	40	Illiterate	Farmer
			Rahima Khatun	F	40	Illiterate	Day labor
			Mrs. Fatema	F	22	SSC	Service
			Md. Mannan	M	29	Class V	Business
			Md. Rustam	M	45	Illiterate	Farmer
			Md. Forkan	M	17	Literate	Fisherman
			Md. Eakub	M	61	Illiterate	Farmer
			Mrs. Tesha	F	21	Class IV	Homemaking
			Abdul Khalek	M	55	Illiterate	Farmer
Khorshed Alam	M	40	SSC	Business			

			Md. Rustom	M	55	Illiterate	Farmer
			Mrs. Rahima	F	31	Literate	Homemaking
			Mrs. Asma	F	21	Literate	Service
			Md. Geus Uddin	M	28	Class VI	Farmer
			Md. Nur Hussain	M	30	Illiterate	Fisherman
			Nazimuddin	M	47	Illiterate	Day labor
			Keramat Ali	M	62	Illiterate	Farmer
03	20	Lalua (Nayapara Shelter Center Ground)	Md. Babul Hussain	M	36	Degree	Teacher
			Md. Rafiq	M	38	Class VIII	Farmer
			Md. Keramat Ali	M	61	Illiterate	Farmer
			Mrs. Rajea Begum	F	30	Literate	Homemaking
			Mrs. Husneara	F	25	Illiterate	Homemaking
			Rajjak Ali	M	55	Illiterate	Business
			Md. Jafor	M	44	Illiterate	Day Labor
			Md. Rajob ali	M	28	Illiterate	Ricksha Puller
			Md. Najibur	M	50	Literate	Fisherman
			Karim Uddin	M	41	Illiterate	Farmer
			Mrs. Jannati	F	23	HSC	Teacher
			Mrs. Rokea Begum	F	43	Illiterate	Business
			Md. Mannan	M	78	Illiterate	Day labor
			Shah Alam	M	52	Class III	Farmer
			Md. Alauddin	M	55	Illiterate	Boatman
			Jobbar Mollah	M	60	Illiterate	Farmer
			Kohinur Begam	F	32	Illiterate	Homemaking
			Abdul Hannan	M	38	Graduate	Service
			Mrs. Tohfa	F	40	Illiterate	Homemaking
			Mrs. Asma	F	19	Degree	Student
04	20	Mithaganj (Tegachia School Ground)	Jonab Ali	M	42	Literate	Fisherman
			Abu Jafor	M	45	SSC	Farmer
			Md. Hashan	M	29	Class iii	Farmer
			Md. NasuGazi	M	50	Illiterate	Boatman
			Mrs. Zolekha	F	33	Illiterate	Day labor
			Mrs. Hazera	F	44	Illiterate	Homemaking
			Mrs. Fatema	F	55	Illiterate	Homemaking
			Md. Shib Naran	M	70	Class V	Fisherman
			Hasina Begum	F	34	Literate	Homemaking
			Rahima Khatun	F	40	Illiterate	Homemaking
			Md. Rahim	M	32	Literate	Farmer

			Md. Elias Hussain	M	27	Literate	Business
			Md. Hasmat	M	47	Class VIII	Farmer
			Keratmat Ali	M	31	HSC	Service
			Eakub Jamaddar	M	51	Class V	Farmer
			Md. Sabuj	M	35	SSC	Driver
			Sapan Hauladar	M	23	Illiterate	Fisherman
			Mrs. Bilkis	F	27	Literate	Homemaking
			Mrs. Laila Banu	F	44	Illiterate	Shopkeeper
			Md. Liakat	M	39	Literate	Farmer
05	20	Neelganj (Pakhimara School Ground)	Abdul Baker	M	55	Illiterate	Farmer
			Hasmat Ali	M	40	Class II	Day labor
			Md. Nasir	M	29	SSC	Fisherman
			Md. Anoar	M	38	Class VIII	Farmer
			Md. Kamir Uddin	M	60	Illiterate	Day labor
			Mrs. Rokea Begum	F	48	Illiterate	Homemaking
			Md. Nur Muhammad	M	50	Illiterate	Fisherman
			Md. Motahar Ali	M	55	Class VIII	Farmer
			Nur Alam	M	30	Illiterate	Day labor
			Piara Begum	F	40	Literate	Homemaking
			Gias Uddin	M	30	Illiterate	Business
			Jahanara Begum	F	45	Illiterate	Housewife
			Abdul Baker	M	49	Literate	Farmer
			Rajjak Ali	M	38	HSC	Teacher
			Hazi Eusuf	M	66	Literate	Farmer
			Humaun Kabir	M	32	SSC	Service
			Kohinur Beegum	F	52	Illiterate	Homemaking
			Bilkis Akter	F	29	SSC	Service
			Mrs. Laili	F	39	Illiterate	Homemaking
			Keramat Ali	M	61	Illiterate	Farmer
06	22	Mohipur (Latifpur School Ground)	Nazrul Munshi	M	71	Dakhil	Emam
			Md. Aslam	M	28	SSC	Teacher
			Edris Hauloder	M	45	Illiterate	Farmer
			Mrs. Maina	F	40	Illiterate	Day labor
			Azhar Fakir	M	66	Illiterate	Fisherman
			Aual Khalifa	M	32	Class VI	Business
			Md. Harun	M	60	Class IV	Farmer
			Mansur Napti	M	39	Illiterate	Boatman
			Aiub Ali	M	55	Class V	Farmer

			Eakub Ali	M	48	Illiterate	Farmer
			Md. Forkan	M	29	Class VIII	Business
			Mrs. Fatema	F	44	Illiterate	Homemaking
			Hasan Ali	M	49	SSC	Member
			Md. Sobuj	M	22	Degree	Student
			Mrs. Tahera	F	29	Class VII	Service
			Mrs. Khadiza	F	43	Illiterate	Shopkeeper
			Abdul Hai	M	38	Illiterate	Fisherman
			Md. Ibrahim	M	72	Literate	Farmer
			Enaet Hussain	M	62	Illiterate	Farmer
			Abdul Halim	M	46	Literate	Farmer
			Md. Siraj	M	34	Illiterate	Day Labor
			Kohinur Akter	F	30	Illiterate	Homemaking
07	21	Latachapali (Naya Para Madrasha ground)	Md. Hanif	M	35	Class v	Fisherman
			Nupur Akter	F	25	Class VIII	Housewife
			Kamrul Islam	M	29	Class VII	Business
			Abdur Rahim	M	40	Illiterate	Farmer
			Mahir Uddin	M	44	Illiterate	Farmer
			Tahmina Khanam	F	50	Degree	Teacher
			Hasmat Ali	M	35	PSC	Business
			Rustum Faraji	M	39	Class VIII	Motor Puller
			Md. Waliullah	M	43	Dakhil	Emam
			Ali Akbar	M	55	Literate	Farmer
			Karimunnesa	F	45	Illiterate	Homemaking
			Abdur Rab	M	67	SSC	Teacher
			Nasir Pada	M	38	Class V	Farmer
			Md. Kasem	M	51	Illiterate	Day labor
			Hazi Alauddin	M	70	Illiterate	Farmer
			Husneara Begum	F	39	Illiterate	Homemaking
			Fatema Begum	F	44	Illiterate	Homemaking
			Mrs. Maoyna	F	29	SSC	Service
			Mansur Ali	M	74	Illiterate	Farmer
			Md. Nur Hussin	M	38	PSC	Farmer
			Md. Eusuf	M	57	Illiterate	Farmer
08	19	Dhankhali (Neshanbaria Madrasha Ground)	Md. Keramat	M	65	Illiterate	Boatman
			Md. Eshak	M	39	Class V	Farmer
			Rajab ALi	M	67	Literate	Farmer
			Mrs. Toufa	F	59	Illiterate	Housewife
			Julekha Begum	F	44	Illiterate	Day Labor
			Jannatunnesa	F	34	Literate	Homemaking
			Abdul Haq	M	55	Illiterate	Farmer

			Md. Mizarur Rahman	M	26	Kamil	Teacher
			Imran Hussain	M	17	HSC	Student
			Abul Kalam	M	21	SSC	Service
			Mansur Ali	M	45	Illiterate	Farmer
			Abdul Eshak	M	71	Literate	Farmer
			Gias Uddin	M	59	Illiterate	Fisherman
			Md. Barek	M	37	Literate	Business
			Mobarek Hossain	M	29	Illiterate	Rickshapuller
			Rahmat Ali	M	67	Illiterate	Boatman
			Md. Akbar	F	33	Illiterate	Day labor
			Fajilatunnesa	F	38	litertae	Service
			Mrs. Taramon	F	49	Illiterate	Homemaking
			Md. Suruj	M	70	Illiterate	Farmer
			Eakub Ali	M	34	Literate	Farmer
09	20	Dhulashar (Charchapali High School ground)	Md. Mizan	M	18	HSC	Student
			Masumbillah	M	28	Kamil	Mosqueimam
			Rajab Fakir	M	41	Illiterate	Farmer
			Setara Akter	F	34	Literate	Homemaking
			Rahima Khatun	F	44	Illiterate	Homemaking
			Haji Eusuf	M	51	SSC	Business
			Kobir Ali	M	39	Literate	Farmer
			Abdul Haq	M	67	Illiterate	Farmer
			Liakat Hossain	M	71	Illiterate	Moazzin
			Md. Hamid	M	31	Literate	Farmer
			Md. Shafi	M	56	Illiterate	Farmer
			Maulona Shamsul Alam	M	41	Kamil	Teacher
			Hasan Master	M	41	Degree	Teacher
			Hafiz Uddin	M	48	SSC	Member
			Rajab Uddin	M	72	Illiterate	Farmer
			Afsar Uddin	M	46	Illiterate	Farmer
			Md. Eusuf	M	42	Illiterate	Farmer
			Afzal Hossain	M	56	Illiterate	Farmer
			Feroz Ali	M	39	Literate	Boatman
			Abdul Latif	M	65	Illiterate	Fisherman
			Md. Nijam	M	29	Illiterate	Day labor
			Hajera Begum	F	49	Illiterate	Homemaking
10	19	Lata chapali (Shoreefpur School Ground)	Abdur Rajjak	M	51	Illiterate	Farmer
			Samim Sikder	M	34	Class VI	Business
			Salauddin Munshi	M	51	HSC	Service
			Karim Uddin	M	48	Illiterate	Farmer
			Eshaq Ali	M	67	Illiterate	Labor
			Hasan Uddin	M	42	Literate	Farmer

			Rajab Fakir	M	81	Literate	Mosque Emam
			Fatema Begum	F	36	Illiterate	Homemaking
			Mrs. Naznin	F	17	HSC	Student
			Mrs. Zannati	F	21	Degree	Student
			Khabor Uddin	M	57	Illiterate	Fisherman
			Rajab Mollah	M	47	Literate	Farmer
			Md. Halim	M	39	Literate	Farmer
			Liara Majumder	F	50	HSC	Teacher
			Md. Kabir Hossin	M	28	SSC	Service
			Rokea Begum	F	45	Illiterate	Homemaking
			Farjana Easmin	F	36	Illiterate	Homemaking
			Abdul Barek	M	41	Dakhil	Teacher
			Majid Ali	M	67	Illiterate	Farmer

Source: Field Survey, 2013

APPENDIX: A3.3
DESCRIPTION OF FOCUSED GROUP DISCUSSION
(FGD)

Appendix: A3.3

Description of Focused Group Discussion (FGD)

FGD No.	01				
No. of Participants in FGD	19	Male	12	Female	07
Date and Place of FGD	18.11.13 and Chakamaiya (Neshanbaria School Ground)				
<p>Mrs. Sheuli Begum said that she is illiterate so she does not know about the use of Multi-purpose Cyclone Shelter. She said that the people of this area are very poor so they use this building as animal shed. They store their crops here.</p> <p>Mrs. Kohinur said that they live near this building so they use its toilet, tube-well.</p> <p>Abdul Majed said that this building is constructed in open agricultural field so they misuse this building. Abdul Majed and Md. Edrish said that they use to store their crops when they work in agricultural field.</p> <p>Humaun Kabir said that MPCS should be constructed in proper location to ensure it better use both cyclone and off-cyclone period.</p> <p>Rasheda Begam said that this building should be properly manage and maintain so that it can be used properly.</p> <p>Taher Ali said that he does not know its designated use so he keeps his crops here.</p> <p>Abdul Malek said that maximum people here are farmer and they works in the agricultural field and this shelter is constructed in agricultural field so they use it as animal shed, storage of crops. They also use it for agricultural production.</p> <p>Rahmat Ali said that MPCS should be constructed in proper location to ensure its proper use.</p> <p>Md. anis said that due to more distance from his native house, it is not use properly.</p> <p>Rashida Khanam said that MPCS should be design properly to consider women, old, physically challenged or disable person, especially children.</p> <p>Bilkis Akter said that MPCS should be constructed in proper location with proper design.</p> <p>Md. Hannan said that people should be conscious about the proper use of it.</p> <p>Md. Rafiq said that maximum people here are poor and works as day labor so they misuse it.</p> <p>Abdur Rajjak said that it is not sufficient due to present demand.</p> <p>Imran Hussain said that maximum people here are poor and they have no knowledge how to use it properly so they misuse MPCS.</p> <p>Mrs Nargis Akter said that during cyclone period women do not take shelter due to more distance from their house.</p>					

FGD No.	02				
No. of Participants in FGD	21	Male	14	Female	07
Date and Place of FGD	18.11.13 and Tiakhali (Nachnapara Shelter Center Ground)				
<p>Md. Hasem said that people are reluctant to take shelter due to poor facilities here.</p> <p>Majeed Ali said that they do not know about designated and non-designated use.</p> <p>Mrs. Kohinur said that here people are illiterate and they are not conscious about proper use of it.</p> <p>Mrs. Bilkes said that they do not take shelter during cyclone period due to more distance.</p> <p>Md. Nejam said that one person use it as residence so he misuse this.</p> <p>Rahima Khatun said that toilet is not marked properly.</p> <p>Mrs. Fatema said that facilities are not design properly so people do not take shelter.</p> <p>Md. Mannan said that powerful person use it for their own will so general people do use it properly.</p> <p>Md. Rustam said that it is not properly managed so people misuse this.</p> <p>Md. Forkan said due to missing public involvement it is not properly used.</p> <p>Md. Eakub said that it is constructed more distance from his own house so he cannot use it.</p> <p>Mrs. Tesha said that facilities of this building like toilet, tube-well etc. are not design properly so they cannot use it in proper way.</p> <p>Abdul Khalek said that people of this area are not aware about the use of it properly.</p> <p>Khorshed Alam said that local powerful person use it for their own will so poor villagers do not use properly.</p> <p>Mr. Rustom said that people use it as animal shed, storage because they do not know how to use it properly.</p> <p>Mrs. Rahima said that it has not sufficient facilities for woman so they do not use it.</p> <p>Mrs. Asma said that capacity of MPCs is not sufficient for present demand so people are reluctant to use it.</p> <p>Md. Geus Uddin misuses it because he is poor farmer and it is easy to use it as storage of crops and animal shed during to work in agricultural field.</p> <p>Md. Nur Hussain said that he do not know its proper use.</p> <p>Nazimuddin said it is constructed in open agricultural field so people misuse it when they work in agricultural field.</p> <p>Keramat Ali said that powerful person of this area use it as residence and use it for business purpose so poor people do not show any pretest misuse it.</p>					

FGD No.	03				
No. of Participants in FGD	20	Male	13	Female	07
Date and Place of FGD	19.11.13 and Lalua (Nayapara Shelter Center Ground)				
<p>Md. Babul Hussain said that MPCCS should be constructed in proper location.</p> <p>Md. Rafiq said that it has no attached toilet so people misuse this both cyclone and off-cyclone period.</p> <p>Md. Keramat said that during cyclone period he faces problem for more distance of MPCCS.</p> <p>Mrs. Rajea Begum said that toilet and water facilities of it are not good. So many people do not use it properly.</p> <p>Mrs. Husneara said that people do not use it properly because it has no privacy to use toilet.</p> <p>Rajjak Ali said that due to more distance from his house he did not take shelter during emergency period.</p> <p>Md. Jafor said that toilet and tube-well is constructed outside the main building so he and other people of this village use every moment</p> <p>Md. Rajob Ali said that he keeps his Ricksha in this shelter because nobody stops to keep this.</p> <p>Md. Najibur said that people misuse this because it is not designed properly.</p> <p>Karim Uddin said that it is constructed in open field so people use it as animal shed, storage etc.</p> <p>Mrs. Jannati said that MPCCS should be constructed with proper designed to ensure it better use.</p> <p>Mrs. Rokea Begum said that it has one stair so people especially women, old person faces problem.</p> <p>Md. Mannan said that he did not know its designated use so misuse.</p> <p>Shah Alam said that it is constructed in open field and it has no connecting road so people misuse this.</p> <p>Md. Alauddin said that it is not constructed in proper location.</p> <p>Jobber Mollah also said that it has no boundary wall so people use its toilet, bathroom, tube-well every moment.</p> <p>Kohinur Begam said that male and female have so use same toilet so people do not take shelter during emergency period.</p> <p>Abdul Hannan said that proper location was not selected to construct MPCCS so misuse it.</p> <p>Mrs. Tohfa said that he did not know its designated use so misuse.</p> <p>Mrs. Asma said that it is not properly managed so people misuse it.</p>					

FGD No.	04				
No. of Participants in FGD	20	Male	12	Female	08
Date and Place of FGD	19.11.13 and Mithaganj (Tegachia School Ground)				
<p>Md. Jonab Ali said that people misuse this because it is constructed in open agricultural field.</p> <p>Abu Jafor said that female did not use it properly because toilet is not attached in its main building.</p> <p>Md. Hashan said that it is constructed far away from his own house so he cannot use it properly.</p> <p>Md. Nashu Gazi said that female and disable person cannot use it because it has one stair.</p> <p>Mrs. Zolekha said that tube-well is constructed outside the main building so they use it for bathing, washing, cooking every moment.</p> <p>Mrs. Hazera said that she doesn't know its use properly.</p> <p>Mrs. Fatema said that everybody keeps cattle so she keeps cattle in the ground floor of its.</p> <p>Md. Shib Naran said that maximum people here illiterate so they do not use it properly.</p> <p>Hasina Begum said that female do not take shelter willing because it has no privacy.</p> <p>Rahima Khatun said that it is more distance from her house so she does not take shelter during emergency period.</p> <p>Md. Rahim said that nobody take care of it so misuse by the people.</p> <p>Md. Elias Hussain said that it is not properly maintain so misuse by the people.</p> <p>Md. Hasmat said that it has not boundary wall so people of this area use its bathroom, toilet, tube-well every moment.</p> <p>Keratmat Ali said that MPCS is constructed here without any previous survey so it is not use by the people properly.</p> <p>Eakub Jamaddar said that he use it as store room because nobody take care of it.</p> <p>Md. Sabuj said that maximum people here are poor and illiterate so they misuse of it.</p> <p>Sapan Hauladar said that people are not aware to use it properly so it is misused by the people.</p> <p>Mrs. Bilkis said that during emergency period, it is too congested because of its poor capacity.</p> <p>Mrs. Laila Banu said that everybody uses its toilet and tube-well so she uses it.</p> <p>Md. Liakat said that it is not constructed in proper location so people misuse it.</p>					

FGD No.	05				
No. of Participants in FGD	20	Male	13	Female	07
Date and Place of FGD	20.11.13 and Neelganj (Pakhimara School Ground)				
<p>Abdul Baker said that due to more distance from his house he could not take shelter during emergency period.</p> <p>Hasmat Ali said that people keeps cattle and storage their crops because it is constructed open agricultural field.</p> <p>Md. Nasir said that it is constructed without any previous survey.</p> <p>Md. Anoar said that people use its tube-well because it is constructed outside the main building.</p> <p>Md. Kamir Uddin said that people cultivate vegetables and crops because it is not constructed proper location.</p> <p>Mrs. Rokea Begum said that she use its tube-well, toilet because nobody take care of it and nobody forbid and every people use it so she use it.</p> <p>Md. Nur Muhammad said that due to more distance from their locality everybody could not use it properly.</p> <p>Md. Motahar Ali said that he works agricultural field near this building so he use it as animal shed. Sometime he keeps his crops in this building.</p> <p>Nur Alam said that it is not designed properly so people cannot use it properly.</p> <p>Piara Begum said that she do not use it properly because it has no privacy to use toilet.</p> <p>Gias Uddin said it is used as garbage site because nobody takes care of it.</p> <p>Jahanara Begum said that female does not use it properly because of it more distances from their own house.</p> <p>Abdul Baker said that said that it has no boundary wall so people use its toilet, bathroom, tube-well every moment and misuse this building.</p> <p>Rajjak Ali said that MPCS should be constructed in proper location to ensure it better use. Otherwise people cols not use it properly by the people.</p> <p>Hazi Eusuf said that illiterate people both male and female do not know its proper use.</p> <p>Humaun Kabir said that no authority to manage it properly so people misuse it.</p> <p>Kohinur Beegum said that proper location should be chosen to use it properly.</p> <p>Bilkis Akter said that MPCS is not sufficient here so it is not used properly by the people.</p> <p>Mrs. Laili said that she does not know its proper use.</p> <p>Keramat Ali said that it is constructed far away from his own house so he cannot use it properly.</p>					

FGD No.	06				
No. of Participants in FGD	22	Male	17	Female	03
Date and Place of FGD	20.11.13 and Mohipur (Latifpur School Ground)				
<p>Nazrul Munshi said that toilet of this building is outside from this main building so people misuse this.</p> <p>Md. Aslam said that MPCs should be designed properly to ensure its better use.</p> <p>Edris Hauloder said that he use its toilet, tube-well because toilet, tube-well of its building constructed outside the building.</p> <p>Mrs. Maina said that during emergency period she could not take shelter due to its poor capacity.</p> <p>Azhar Fakir said that he feels problem to take shelter due to one stair of this building. He also said old people do not take shelter due to this problem.</p> <p>Aual Khalifa said that it is not designed with considering different age group people like old people, women and physically challenged people so it is not use properly.</p> <p>Md. Harun said that people use it as animal shed because it has no boundary wall.</p> <p>Monsur Napti said that it is not constructed in proper location so people not take shelter during emergency period.</p> <p>Aiub Ali said that maximum people here are farmer so they use it as store room, animal shed etc.</p> <p>Eakub Ali said that he does not know its designated use so misuse this building.</p> <p>Md. Forkan said that sometime it is misused by the local people due to political reason.</p> <p>Mrs. Fatema said that it has no separate room so she does not take shelter during emergency period.</p> <p>Hasan Ali said that local powerful people also influence its misuse.</p> <p>Md. Sobuj said that people use its tube-well because it is constructed outside the main building.</p> <p>Mrs. Tahera said that it is more distance from her house so she does not take shelter during emergency period.</p> <p>Mrs. Khadiza said that they live near this building so they use its toilet, tube-well.</p> <p>Abdul Halim said that people use it as garbage site because illiterate people do not know its proper use.</p> <p>Md. Siraj said that people use it as store room and animal shed because it has no boundary wall.</p> <p>Kohinur Akter said that she uses its tube-well, toilet because other people this village uses it.</p>					

FGD No.	07				
No. of Participants in FGD	21	Male	15	Female	06
Date and Place of FGD	21.11.13 and Latachapali (Naya Para Madrasha Ground)				
<p>Md. Hanif said that it is very difficult for him to take shelter during emergency period due to its more distance from his house so he does not take shelter.</p> <p>Nupur Akter said that it is over congested during emergency period so she and other people do not willingly take shelter.</p> <p>Kamrul Islam said that location of this MPCS is not proper so people use it for agricultural production.</p> <p>Abdur Rahim said that it is near their agricultural field so they use it as animal shed, store room.</p> <p>Mahir Uddin said that he uses it tube-well for bathing purpose because it is outside from the main building.</p> <p>Tahmina Khanam said that people cannot use it properly because it is not better designed.</p> <p>Hasmat Ali said that it is not properly managed and maintained so people misuse this building.</p> <p>Rustum Faragi said that due to poor transportation system people cannot use it properly.</p> <p>Md. Waliullah said that people have to use same room, same toilet, tube-well, bathroom so due to social reason is also responsible for misuse.</p> <p>Ali Akbar said that maximum people here are illiterate so they do not know its designated use so they misuse.</p> <p>Karimunnesa said that it is too congested and they have to use one stair so people willingly do not take shelter during emergency period.</p> <p>Abdur Rab said that it has no boundary wall so people misuse it.</p> <p>Nasir Pada said that maximum people here are poor so they use it as agricultural production.</p> <p>Md. Kasem said that it is constructed open field so people use it as animal shed.</p> <p>Hazi Alauddin said that they do not know its designated use.</p> <p>Husneara Begum said that everybody misuse it so she misuse its tube-well, toilet.</p> <p>Fatema Begum said that due to more distance from her house so she faces problem to use it.</p> <p>Mrs. Maoyna said that people here are not conscious about its proper use so they misuse it.</p> <p>Md. Nur Hussain said that MPCS is not sufficient here so it is not used properly by the people.</p> <p>Md. Eusuf said that he use it as store room because nobody take care of it.</p>					

FGD No.	08				
No. of Participants in FGD	19	Male	15	Female	04
Date and Place of FGD	21.11.13 and Dhankhali (Neshanbaria Madrasha Ground)				
<p>Md. Keramat said that it is far away from his house so he did not take shelter during emergency period.</p> <p>Md. Eshak said that it is constructed in open agricultural field so they misuse it.</p> <p>Rajab Ali said that nobody forbade him when he uses it for agricultural production.</p> <p>Mrs. Toufa said that everybody use its toilet, bathroom, tube-well because it is outside from the main building.</p> <p>Julekha Begum said that she does not know its designated use. She only knows that it is cyclone shelter.</p> <p>Jannatunnesa said that it is misused because it is not designed properly.</p> <p>Abdul Haq said that people use it as storeroom because it is constructed in open field.</p> <p>Md. Mizarur Rahman said that it is not managed properly so people misuse this building.</p> <p>Imran Hussain said that it is used as student dormitory because nobody takes care of it.</p> <p>Abul Kalam said that it is constructed in proper location to ensure it better use.</p> <p>Mansur Ali said that they misuse this building because there is no authority to manage it.</p> <p>Abdul Eshak said that maximum people here are poor so they misuse this building.</p> <p>Gias Uddin said that communication is not good from his own house so he cannot take shelter in emergency period.</p> <p>Md. Barek said that people use its toilet and tube-well because it is not attached from the main building. It is constructed outside from the main building so people use it every moment.</p> <p>Mobarek Hossain said that it is used as Ricksha stand because it has no boundary wall.</p> <p>Rahmat Ali said that it is more distance from his house so it is very difficult to take shelter during emergency period.</p> <p>Md. Akbar said that when he works in agricultural field then he uses it toilet and tube-well because it is near his working place.</p> <p>Fajilatnnesa said that due to capacity and privacy problem he did not take shelter during emergency period.</p> <p>Mrs. Taramon said that during emergency period she can use its toilet and tube-well because these buildings were too congested.</p> <p>Md. Suruj said that one people use it as garbage site then other people follow so people misuse this building.</p> <p>Eakub Ali said that it is not constructed in proper location so local people misuse this building.</p>					

FGD No.	09				
No. of Participants in FGD	21	Male	19	Female	02
Date and Place of FGD	22.11.13 and Dhulashar (Charchapali High School Ground)				
<p>Md. Mizan said that proper location is not selected to construct MPCs here so people cannot use it properly.</p> <p>Masumbillah said that local powerful person sometime use it for his own will.</p> <p>Rajab Fakir said that it is easy for farmer to use it as store room, animal shed because it is constructed in agricultural field.</p> <p>Setara Akter said that during emergency period she cannot take shelter due to more distance from her own house.</p> <p>Rahima Khatun said that communication is not good so she cannot take shelter in emergency period.</p> <p>Haji Eusuf said that it is constructed without any previous survey so proper site is not selected so people cannot use it properly.</p> <p>Kobir Ali said that it is misused by the people because it is not properly managed and maintained.</p> <p>Abdul Haq said that it has no connecting road and is constructed in open field so local people use it for several purpose.</p> <p>Liakat Hossain said that people do not know its designated use properly.</p> <p>Md. Hamid said that it has no boundary wall and room is not well designed so people can misuse it every moment.</p> <p>Md. Shafi said that he used it as residence because he works near this building and nobody forbade him.</p> <p>Maulona Shamsul Alam said that some people use it as residence because it is better building from their own house.</p> <p>Hasan Master said that communication mode is not good so he cannot take shelter during emergency period.</p> <p>Hafiz Uddin said that number of MPCs here is poor than need so sufficient number of MPCs should be constructed in this Upazilla.</p> <p>Rajab Uddin said that people cannot use it properly due to is one stair and it has no store room to store valuable asset and furniture of it.</p> <p>Afsar Uddin said that people cultivate vegetable here because it is constructed in open field.</p> <p>Md. Eusuf said that there is no tube-well and attached toilet, people doesn't want to take shelter during emergency period..</p> <p>Afzal Hossain said that facilities of this building like water, tube-well etc are outside of this building so farmer use this every moment.</p> <p>Feroz Ali said that it has no boundary wall so people use its toilet, bathroom, tube-well every moment and misuse this building. He also said that it is not properly designed so people misuse it.</p> <p>Abdul Latif said that it is far away from his own house so people cannot use it.</p>					

FGD No.	10				
No. of Participants in FGD	18	Male	13	Female	05
Date and Place of FGD	22.11.13 and Lata chapali (Shoreefpur School Ground)				
<p>Abdur Rajjak said that he is poor and he has no any shed which is used as animal shed so he misuse this building.</p> <p>Samim Sikder said that it has no any facilities to store valuable assets so people some time do not take shelter.</p> <p>Salauddin Munshi said that MPCS are not constructed here with proper study or research.</p> <p>Karim Uddin said that their economic status is very poor so misuse this building.</p> <p>Eshaq Ali said that it has no boundary wall so people misuse this building.</p> <p>Hasan Uddin said that it is not properly managed and maintained so misuse by the villagers.</p> <p>Rajab Fakir said that old and physically challenged people have to face problem so it is not use properly by the people.</p> <p>Fatema Begum said that it has no facilities for woman so it is misuse by the people.</p> <p>Mrs. Naznin said that it far away from their house so have to face problem.</p> <p>Mrs. Zannati said that it has no facilities to store valuable asset.</p> <p>Khabor Uddin said that communication is not good so it is misused by the people.</p> <p>Rajab Mollah said that due to construct in agricultural field people use it for agricultural production purpose.</p> <p>Md. Halim said that it has no appropriate authority to ensure its better use.</p> <p>Liara Majumder said that nobody manage this building except him so use it for his own will.</p> <p>Md. Kabir Hossain said that people are reluctant to take shelter due to security problem.</p> <p>Rokeya Begum said male and female have to use same room so she does not take shelter during emergency period.</p> <p>Farjana Easmin said that it is constructed far away from her house so it is very difficult to take shelter.</p> <p>Abdul Barek said that it should be constructed in proper location to ensure its better use both cyclone and off-cyclone period.</p> <p>Majid Ali said that it has not boundary wall so people of this area use its bathroom, toilet, tube-well every moment.</p>					
Md. Nijam said that it is very easy to use its tube-well, bathroom, and toilet because it is in open field.					

Source: Field Visit, 2013

APPENDIX: A3.4
PAIR-WISE RANKING OF THE FACTORS DURING
FOCUSED GROUP DISCUSSION (FGD)

Appendix: A3.4

**Pair-wise Ranking of the Factors during Focused Group Discussion
(FGD)**

Date: 18.11.2013

Neshanbaria School Ground

Chakamaiya Union, Kalapara Upazilla

Name of the Participants:

- | | | | |
|----------------------|------------------|--------------------|-----------------------|
| 1. Mrs. Sheuli Begum | 6. Rasheda Begam | 11. Rahmat Ali | 16. Md. Rafiq |
| 2. Mrs. Kohinur | 7. Abul Kashem | 12. Md. Anis | 17. Abdur Rajjak |
| 3. Abdul Majed | 8. Rehana Begam | 13. Rashida Khanam | 18. Imran Hussain |
| 4. Md. Edrish | 9. Taher Ali | 14. Bilkis Akter | 19. Mrs. Nargis Akter |
| 5. Humaun Kabir | 10. Abdul Malek | 15. Md. Hannan | |

Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCS (Chakamaiya Union)

Problem	1. Geographical	2. Design	3. Social	4. Economic	5. Institutional	6. Political	7. Structure of MPCS	8. Occupation	9. Study & Research	10. Boundary Wall	Priority frequency
1. Geographical	X	1	1	1	5	1	1	8	9	1	1
2. Design	X	X	2	2	2	6	2	2	2	10	2
3. Social	X	X	X	3	3	3	7	8	3	10	3
4. Economic	X	X	X	X	5	4	7	8	9	4	4
5. Institutional	X	X	X	X	X	6	5	8	5	5	5
6. Political	X	X	X	X	X	X	6	6	6	10	6
7. Structure of MPCS	X	X	X	X	X	X	X	8	9	10	10
8. Occupation	X	X	X	X	X	X	X	X	9	8	8
9. Study & Research	X	X	X	X	X	X	X	X	X	10	10
10. Boundary Wall	X	X	X	X	X	X	X	X	X	X	1

Source: Field Survey, 2013

Date: 18.11.2013

Nachnapara School Ground

Tiakhali Union, Kalapara Upazilla

Name of the Participants:

- | | | | |
|------------------|----------------|-------------------|---------------------|
| 1. Md. Hasem | 7. Mrs. Fatema | 13. Abdul Khalek | 19. Mrs. Rahima |
| 2. Majeed ali | 8. Md. Mannan | 14. Khorshed Alam | 20. Mrs. Asma |
| 3. Mrs. Kohinur | 9. Md. Rustam | 15. Md. Rustom | 21. Md. Geus Uddin |
| 4. Mrs. Bilkes | 10. Md. Forkan | 16. Md. Rafiq | 22. Md. Nur Hussain |
| 5. Md. Nejam | 11. Md. Eakub | 17. Abdur Rajjak | 23. Nazimuddin |
| 6. Rahima Khatun | 12. Mrs. Tesha | 18. Imran Hussain | 24. Keramat Ali |

Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCS (Tiakhali Union)

Problem	1.Geogra- -phical	2.Design	3.Social	4.Econo- mic	5.Institu- tional	6.Politi- cal	7.Struct- ure of MPCS	8.Occu- pation	9.Study & Research	10.Boun- dary Wall	Priority frequency
1.Geographical	X	2	1	1	5	1	1	1	1	10	1
2.Design	X	X	2	2	2	2	2	8	9	2	2
3.Social	X	X	X	4	3	6	3	3	9	10	3
4.Economic	X	X	X	X	5	6	4	4	4	10	4
5.Institutional	X	X	X	X	X	5	5	8	5	5	5
6.Political	X	X	X	X	X	X	6	8	9	10	10
7.Structure of MPCS	X	X	X	X	X	X	X	8	9	7	9
8.Occupation	X	X	X	X	X	X	X	X	9	8	8
9.Study & Research	X	X	X	X	X	X	X	X	X	10	1
10.Boundary Wall	X	X	X	X	X	X	X	X	X	X	2

Source: Field Survey, 2013

Date: 19.11.2013

Tegachiya School Ground

Mithaganj Union, Kalapara Upazilla

Name of the Participants:

- | | | | |
|-----------------|-----------------------|--------------------|---------------------|
| 1. Jonab Ali | 7. Mrs. Fatema | 13. Md. Hasmat | 19. Mrs. Laila Banu |
| 2. Abu Jafor | 8. Md. Shib Naran | 14. Keratmat Ali | 20. Md. Liakat |
| 3. Md. Hashan | 9. Hasina Begum | 15. Eakub Jamaddar | |
| 4. Md. NasuGazi | 10. Rahima Khatun | 16. Md. Sabuj | |
| 5. Mrs. Zolekha | 11. Md. Rahim | 17. Sapan Hauladar | |
| 6. Mrs. Hazera | 12. Md. Elias Hussain | 18. Mrs. Bilkis | |

Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCS (Mithaganj Union)

Problem	1.Geographical	2.Design	3.Social	4.Economic	5.Institutional	6.Political	7.Structure of MPCS	8.Occupation	9.Study & Research	10.Boundary Wall	Priority frequency
1.Geographical	X	1	1	1	5	1	1	8	9	1	1
2.Design	X	X	2	2	2	2	7	2	2	10	2
3.Social	X	X	X	3	3	3	3	8	9	3	3
4.Economic	X	X	X	X	4	6	4	8	9	10	4
5.Institutional	X	X	X	X	X	5	7	5	5	5	5
6.Political	X	X	X	X	X	X	6	8	8	10	8
7.Structure of MPCS	X	X	X	X	X	X	X	8	9	10	10
8.Occupation	X	X	X	X	X	X	X	X	9	10	9
9.Study & Research	X	X	X	X	X	X	X	X	X	9	2
10.Boundary Wall	X	X	X	X	X	X	X	X	X	X	1

Source: Field Survey, 2013

Date: 19.11.2013

Nayapara MPCS Ground

Lalua Union, Kalapara Upazilla

Name of the Participants:

1. Md. Babul Hussain	7. Md. Jafor	13. Md. Mannan	19. Mrs. Tohfa
2. Md. Rafiq	8. Md. Rajob ali	14. Shah Alam	20. Mrs. Asma
3. Md. Keramat Ali	9. Md. Najibur	15. Md. Alauddin	
4. Mrs. Rajea Begum	10. Karim Uddin	16. Jobbar Mollah	
5. Mrs. Husneara	11. Mrs. Jannati	17. Kohinur Begam	
6. Rajjak Ali	12. Mrs.Rokea Begum	18. Abdul Hannan	

Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCS (Lalua Union)

Problem	1.Geographical	2.Design	3.Social	4.Economic	5.Institutional	6.Political	7.Structure of MPCS	8.Occupation	9.Study & Research	10.Boundary Wall	Priority frequency
1.Geographical	X	1	3	1	5	1	1	1	1	1	1
2.Design	X	X	2	2	2	6	2	2	9	2	2
3.Social	X	X	X	3	5	3	3	8	9	10	3
4.Economic	X	X	X	X	5	4	7	4	4	10	4
5.Institutional	X	X	X	X	X	6	7	5	5	5	5
6.Political	X	X	X	X	X	X	6	6	9	10	6
7.Structure of MPCS	X	X	X	X	X	X	X	8	9	7	7
8.Occupation	X	X	X	X	X	X	X	X	8	10	8
9.Study & Research	X	X	X	X	X	X	X	X	X	10	10
10.Boundary Wall	X	X	X	X	X	X	X	X	X	X	2

Source: Field Survey, 2013

Date: 21.11.2013

Nishan baria Madrasha Ground

Dhankhali Union, Kalapara Upazilla

Name of the Participants:

1. Md. Keramat	7. Abdul Haq	13. Gias Uddin	19. Mrs. Taramon
2. Md. Eshak	8. Md. Mizarur Rahman	14. Md. Barek	20. Md. Suruj
3. Rajab ALi	9. Imran Hussain	15. Mobarek Hossain	21. Eakub Ali
4. Mrs. Toufa	10. Abul Kalam	16. Rahmat Ali	
5. Julekha Begum	11. Mansur Ali	17. Md. Akbar	
6. Jannatunnesa	12. Abdul Eshak	18. Fajilatunnesa	

Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCs (Dhankhali Union)

Problem	1.Geogra- -phical	2.Design	3.Social	4.Econo- mic	5.Institu- tional	6.Politi- cal	7.Struct- ure of MPCS	8.Occu- pation	9.Study & Research	10.Boun- dary Wall	Priority frequency
1.Geographical	X	1	3	1	5	1	1	1	1	1	1
2.Design	X	X	2	4	2	2	2	2	2	2	2
3.Social	X	X	X	3	5	3	3	8	3	3	3
4.Economic	X	X	X	X	4	6	4	8	9	10	4
5.Institutional	X	X	X	X	X	5	5	8	5	10	5
6.Political	X	X	X	X	X	X	7	6	6	6	6
7.Structure of MPCS	X	X	X	X	X	X	X	8	7	7	7
8.Occupation	X	X	X	X	X	X	X	X	9	10	10
9.Study & Research	X	X	X	X	X	X	X	X	X	10	10
10.Boundary Wall	X	X	X	X	X	X	X	X	X	X	1

Source: Field Survey, 2013

Date: 22.11.2013

Shoreefpur School Ground

Latachapali Union, Kalapara Upazilla

Name of the Participants:

- | | | | |
|---------------------|------------------|----------------------|--------------------|
| 1. Abdur Rajjak | 6. Hasan Uddin | 11. Khabor Uddin | 16. Rokea Begum |
| 2. Samim Sikder | 7. Rajab Fakir | 12. Rajab Mollah | 17. Farjana Easmin |
| 3. Salauddin Munshi | 8. Fatema Begum | 13. Md. Halim | 18. Abdul Barek |
| 4. Karim Uddin | 9. Mrs. Naznin | 14. Liara Majumder | 19. Majid Ali |
| 5. Eshaq Ali | 10. Mrs. Zannati | 15. Md. Kabir Hossin | |

Pair-wise ranking method: Problem prioritization of responsible factors of non-designated use of MPCS (Latachapali Union)

Problem	1.Geographical	2.Design	3.Social	4.Economic	5.Institutional	6.Political	7.Structure of MPCS	8.Occupation	9.Study & Research	10.Boundary Wall	Priority frequency
1.Geographical	X	2	1	1	1	1	1	8	1	10	1
2.Design	X	X	2	2	5	6	2	2	9	2	2
3.Social	X	X	X	3	5	6	3	3	3	3	3
4.Economic	X	X	X	X	4	6	4	4	4	4	4
5.Institutional	X	X	X	X	X	6	5	8	5	5	4
6.Political	X	X	X	X	X	X	6	6	6	6	6
7.Structure of MPCS	X	X	X	X	X	X	X	8	9	7	6
8.Occupation	X	X	X	X	X	X	X	X	9	10	10
9.Study & Research	X	X	X	X	X	X	X	X	X	9	9
10.Boundary Wall	X	X	X	X	X	X	X	X	X	X	2

Source: Field Survey, 2013

APPENDIX: B
USE OF MPCs DURING OFF-CYCLONE PERIOD

Appendix: B
Use of MPCS during Off-cyclone Period

Use of Multi-purpose Cyclone Shelter (MPCS) during Off-Cyclone Period

Serial No.	Location (Union)	Existing Use	Designated Use	Non-designated Use
01	<i>Chakamaiya</i>	School Store room	School	Store room
02	<i>Chakamaiya</i>	School Construction Material Site	School, Clinic, Community Center	Construction Material Site
03	<i>Chakamaiya</i>	School Construction Material Site	School	Construction Material Site
04	<i>Chakamaiya</i>	School Hostel Prayer Place	School	Hostel Prayer Place
05	<i>Chakamaiya</i>	School Crops Cultivation Crops harvesting	School	Crops Cultivation Crops harvesting
06	<i>Chakamaiya</i>	Office Residence	Office	Residence
07	Dhankhali	School Residence	School Health Center	Residence
08	Dhankhali	School Animal shade Store room	School	Animal shade Store room
09	Tiakhali	School Residence	School	Residence
10	Mohipur	School	School	School

11	Mohipur	School Store room Construction Material Site	School	Construction Material Site
12	Neelganj	Govt. Office Residence Garriage	Govt. Office	Residence Garage
13	Neelganj	Community Center, Health Center	Community Center, Health Center	Community Center, Health Center
14	Tiakhali	School	School	School
15	Neelganj	School Animal shade	School	Animal Shed
16	Neelganj	School Construction Material Site	School	Construction Material Site
17	Neelganj	Crops cultivation Crops harvesting	Community center	Crops cultivation Crops harvesting
18	Dhankhali	School Hostel	School	Hostel
19	Lalua	Prayer Place	Office	Solid Waste & Garbage Site
20	Lalua	Mosque Residence	Mosque	Residence
21	Lalua	School Residence	School	Residence
22	Lalua	Crops cultivation Crops harvesting	Others (Cyclone Shelter))	Crops cultivation Crops harvesting
23	Lalua	Solid Waste & Garbage Site	Others (Cyclone Shelter)	Solid Waste & Garbage Site Construction

				Material Site
24	Tiakhali	School	School	School
25	Lalua	Residence	School	Residence
26	Lalua	Govt. Office Store room Garriage	Govt. Office	Store room Garriage
27	Lalua	Store room	Community Center Health Center	Store room Animal Shed
28	Neelganj	Crops Cultivation Crops Harvesting	Others (Cyclone Shelter)	Crops Cultivation Crops Harvesting
29	Lalua	Animal Shade	Community Center	Animal Shade
30	Dhankhali	Residence	Health center	Residence
31	Lalua	School Shop	School	Shop
32	Lalua	School Animal Shade	School	Animal Shade
33	Mithaganj	NGO Office Animal Shade	NGO Office	Animal Shade
34	Dhankhali	Hostel Madrasha	Madrasha	Hostel Madrasha
35	<i>Chakamaiya</i>	Residence	Community Center	Residence
36	Dhankhali	School Health Center	School Health Center	School Health Center
37	Dhankhali	School Animal Shade	School	Animal Shade
38	Mithaganj	Govt. Office Shop	Govt. Office	Shop

39	Latachapali	Crops Cultivation Crops Harvesting	Others (Cyclone Shelter)	Crops Cultivation Crops Harvesting
40	Latachapali	Office	Office	Office
41	Latachapali	Crops Cultivation Garriage	School Community Center	Crops Cultivation Garriage
42	Dhankhali	Office	Office	Office
43	Latachapali	Temple Residence	Temple	Residence
44	Latachapali	School Solid Waste & Garbage Site	School	Solid Waste & Garbage Site
45	Mohipur	School Animal Shade	School	Animal Shade
46	Latachapali	School Store room	School	Store room
47	Latachapali	School	School	School
48	Latachapali	Solid Waste & Garbage Site	Others (Cyclone Shelter)	Solid Waste & Garbage Site
49	Latachapali	School Animal Shade	School	Animal Shade
50	Latachapali	Hostel Garriage	Office	Hostel Garriage
51	Latachapali	School Store room	School	Store room
52	Latachapali	Madrasha Construction Material Site	Madrasha	Construction Material Site
53	Latachapali	Govt. Office Store room	Govt. Office	Store room

54	Latachapali	School Construction Material Site	School	Construction Material Site
55	Latachapali	School Animal Shade	School	Animal Shade
56	Latachapali	School Hostel	School	Hostel
57	Latachapali	School Animal Shade	School	Animal Shade
58	Dhulasar	School Hostel	School	Hostel
59	Dhulasar	Shop Health Center Community center	Health Center Community center	Shop
60	Dhulasar	School Solid Waste & Garbage Site	School	School Solid Waste & Garbage Site
61	Dhulasar	School Hostel	School	Hostel
62	Dhulasar	School Store room	School	Store room
63	Mithaganj	School Residence	School	Residence
64	Mithaganj	Animal Shade	School	Animal Shade
65	Mohipur	School Residence	School	Residence
66	Mithaganj	NGO Office Animal Shade	NGO Office	Animal Shade
67	Mohipur	Hostel	School	Hostel

68	Mithaganj	Animal Shade	Community Center	Animal Shade
69	Mithaganj	Solid Waste & Garbage Site	Community Center Health Center	Solid Waste & Garbage Site
70	Mithaganj	School Store room	School	Store room
71	Mithaganj	Residence	School	Residence
72	Dhankhali	School Animal Shade	School	Animal Shade
73	Mithaganj	Hostel	School	Hostel
74	Neelganj	Community Center Animal Shade	Community Center	Animal Shade
75	Dhularsar	Health Center Residence	Office Health Center	Residence
76	Dhularsar	School Residence	School	Residence
77	Dhularsar	Store Room	Community Center	Store room
78	Dhularsar	School Residence	School Health Center	Residence
79	Dhankhali	School	School	School
80	Dhularsar	School Gariage	School	Gariage
81	Dhularsar	School Store room	School	Store room
82	Dhankhali	School	School	School
83	Dhankhali	Community Center Clinic	Community Center Clinic	Community Center Clinic

84	Dhankhali	NGO Office	Health Center	NGO Office
85	Neelganj	School Hostel	School	Hostel
86	Mithaganj	Crops Harvesting	School	Crops Harvesting
87	Mithaganj	School Animal shade	School	Animal shade
88	Neelganj	School Hostel	School	Hostel
89	Dhankhali	School	School	Store room
90	Mithaganj	School Hostel	School	Hostel
91	Dhulasar	Residence	Cyclone Shelter	Residence
92	Dhankhali	School Garriage	School, Community Center	Garriage
93	<i>Chakamaiya</i>	School	School	School
94	Dhankhali	School Health Center	School Health Center	School Health Center
95	Neelganj	School Crops cultivation	School	Crops cultivation Animal Shed
96	Dhankhali	Office	School	Office
97	Dhankhali	School Crops Harvesting	School	Crops harvesting Construction Material Site
98	Mohipur	School Crops cultivation	School	Crops cultivation
99	Mohipur	School Store room	School	Store room
100	Mohipur	School Construction	School	Construction Materials Site

		Materials Site		
101	Mohipur	School Crops cultivation	School	Crops cultivation
102	Mohipur	School Shop	School	Shop
103	Mohipur	School	School	School
104	Mohipur	School Solid Waste & Garbage Site	School	Solid Waste & Garbage Site
105	Mohipur	School Store room	School	Store room Animal Shed

Source: Field Visit, 2013

APPENDIX: C
***KILLAHS* IN KALAPARAUPAZILLA**

APPENDIX: C1
UNION WISE DISTRIBUTION AND YEAR WISE
CONSTRUCTION OF *KILLAHS*

Appendix: C1

Union Wise Distribution and Year Wise Construction of *Killahs*

Union Wise Distribution and Year Wise Construction of the *Killas* in KalaparaUpazilla

Name of Union	No. of MPCS	Location (Village)	Constructing Year
Ckakamaiya	02	NewaparaMatirKilla	1972
		KasimkhaliMatirKilla	1973
Tiakhali	03	PoschimBadurtaliDarogaBadhSonl agnoMatirKilla (Rajopara)	1972
		PurbaBadurtaliLamioparaHaziEasi nSorakSonlagnoMatirKilla	1973
		PurbaTiakhaliAltafPader Bari SonlagnoMatirKilla	1972
Lalua	02	ChanduparaMatirKilla	1973
		NawaparaMatirKilla	1973
Neelganj	05	TaherpurMatirKilla (Doulatpur)	1973
		NabipurMatirKilla	1973
		PoschimSonatalaMatirKilla	1973
		KumirmaraMatirKilla	1983
		GoiatalaMatirKilla	1973
Mahipur (Khpravanga)	04	EusufpurMatirKilla	1973
		SerajpurMatirKilla	1973
		KhpravangaMatirKilla (Surdugi)	1973
		Mirpur MatirKilla	1973
Latachapali	01	KhajuraKanchan Ali Hawlader Bari SonlagnoMatirKilla	1972
Mithaganj	04	ChotoBaliataliMatirKilla	1973
		BoiddhaparaMatirKilla	1973
		SonaparaMatirKilla	1973

		NolbuniaMatirKilla	1973
Dhulashar	03	PurbaDulasharMatirKilla	1974
		AnantaparaMatirKilla	1974
		NutanparaMatirKilla	1974
Total	24		

Source: Upazila Parishad, Kalapara (2013)

APPENDIX: C.2
LOCATION MAP OF *KILLAHS* IN
KALAPARAUPAZILLA

Appendix: C.2

Location Map of *Killahs* in Kalapara Upazilla

