LISTS OF TABLES AND ILLUSTRATED MATERIALS

List of Tables

2.1 Environmental Hazards and their Impacts on the Inhabited Islands of the Hugli Estuary
2.2 Principal Species of Natural Vegetation found in the Hugli Estuarine Islands:
   (a).Tidal Vegetation (Mangroves), (b).Supratidal Vegetation (Non-Mangroves)
3.1 Maps and Images used in the Study
3.2 Changes in Island Areas (km$^2$): 1904-05 to 2009
3.3 Classification of Landforms of the Hugli Estuarine Islands, 2013
4.1 Reclamation of Sagar and Ghoramara Islands: Chronology of Major Events (1808-2011)
4.2 Mouza-wise Changes in Population Figure of Sagar C.D. Block: 1951-61 to 2001-2011
4.3 Changes in Area of the Sagar C.D. Block: 1922-23 to 2001
4.4 Rank Correlation Co-efficient between Area and Population of Sagar C.D. Block, 2001
4.5 Test of Significance (‘t’ test) of Correlation co-efficient
4.6 Demographic Hierarchy of Settlements in Sagar C.D. Block, 2001
4.7 Primacy and Settlement System in Sagar C.D. Block, 2001
4.8 Percentage shares of Main Workers in Agriculture and Non-Agriculture Sectors of Sagar C.D. Block, 2001
4.10 Changes in Fisheries for the year 2000-2001 to 2008-2009 of Sagar C.D. Block
4.11 Progress of NREGA in Sagar C.D. Block between April 2007 and January 2008
4.12 Physical Progress of SGSY in Sagar C.D. Block up to January 2008 since April 1999
4.13 Literacy rate of West Bengal, South 24 Parganas and Sagar C.D. Block—a Comparison: 1991-2001
4.14 Enrolment of Children between 5-14 Age group in Sagar C.D. Block, 2006-07
4.15 Report on Cohort Study of Primary and Upper Primary School Students in Sagar C.D. Block (2004-05)
4.16 Provision of Primary and Upper Primary School level infrastructure in Sagar C.D. Block, 2006-07
4.17 Spearman’s Rank Correlation coefficient of Total Literates and Total Workers of Sagar C.D. Block, 2001
4.18 Test of Significance (‘t’ test) of Correlation coefficient
4.20 Development Status of Sagar C.D. Block, 2009
4.21 Gender Gap in Literacy, Sagar C.D. Block, 2001  
4.22 Gender Gap in Employment of Sagar C.D. Block, 2001  
4.23 Variables of Principal Component Analysis (PCA), Sagar C.D. Block, 2001  
4.29 Villages Electrified in Sagar C.D. Block up to 2009  
5.1 Reclamation of Nayachar island: Chronology of Major Events (1897-98 to 2012)  
5.2 Altitude Zones of Nayachar Island  
6.1 Reclamation of Jambu Island: Chronology of Major Events (1817 to 2011)  
7.1 Reclamation of Chukasar Island: Chronology of Major Events (1968-69 to 2011)  
8.1 Brief Account of Entry Point Activities with Community in Sagar Island, 2012  
8.2 Resettlement Colonies at Sagar, 2011-12  
8.3 Concentration of People of Different Categories in the Colonies, Sagar, 2011-12  
8.4 Available Amenities at Relocated Colonies, Sagar, 2011-12  
8.5 Management of the Environmental Hazards Affecting Sagar and Ghoramara Islands  

List of Figures  
1.1 Location of the Studied Islands, Hugli Estuary  
1.2 Research Materials and Methods  
2.1 Tidal and Climatic Parameters of Sagar Island  
2.2 Cyclones at 100 km of Sagar Island: 1891-2010  
2.3 Track of Severe Cyclonic Storm AILA during 23-26 May, 2009  
2.4 Sea Level Changes at Hugli Estuary: 1936-2008  
3.1 Schematic Diagram showing Mangrove Succession over a Developing Tidal Island  
3.2 Evolution of Sagar Island: Early Representations-I (1687-1690)  
3.3 Evolution of Sagar Island: Early Representations-II (1720-1785)  
3.4 Evolution of Sagar Island: 1770 to 1908-10  
3.5 Evolution of Sagar Island: 1851-55 to 2009  
3.6 Evolution of Ghoramara and Nayachar Islands: 1967-2009  
3.7 Evolution of Nayachar Island: 1967-2009  
3.8 Accretion of Nayachar Island: 1948-2009  
3.9 Evolution of Jambu Island: 1904-05 to 2001  
3.10 Evolution of Chukasar Island: 1967-2012  
3.11 Schematic Diagram showing Consequences of Reclaiming a Macro Tidal Estuary  
3.12 Dynamic Thalweg surrounding Nayachar Island: 1768-2009  
3.13 Landuse Land Cover Classification Map of Hugli Estuarine Islands, 2008  
4.1 Major Roads and Settlements of Sagar island  
4.2 Mouza-wise Population Distribution of Sagar C.D. Block, 2001  
4.3 Men-Women Population Distribution of Sagar C.D. Block, 2001  
4.4 Mouza-wise Population Density of Sagar C.D. Block, 2001  
4.5 Mouza-wise SC Population Concentration of Sagar C.D. Block, 2001  
4.6 Mouza-wise ST Population Concentration of Sagar C.D. Block, 2001  
4.7 Population growth of Sagar C.D. Block: 1872-2011  
4.8 Growth rate of Population in Sagar C.D. Block: 1872-2011
4.9 Growth rate of Population, Ghoramara Island: 1951-2011
4.10 Decadal Changes in Population of Sagar and Ghoramara Islands: 1951-2011
4.11 Changes in Population Density of Sagar and Ghoramara Islands: 1951-2011
4.12 Rank-Size relationship of Mouzas, Sagar C.D. Block, 2001
4.13 Drainage Condition of Sagar Island
4.14 Carrying Capacity of Land of Sagar C.D. Block, 2001
4.16 Occupational Diversity and Distinct Functions of Sagar C.D. Block, 2001
4.17 Mouza-wise Literacy status of Sagar C.D. Block, 2001
4.18 Levels of Literacy of Sagar C.D. Block, 2001 and 2011
4.20 Mouza-wise Level of Backwardness Estimates of Sagar C.D. Block, 2001
4.21 Mouza-wise Status of Women Estimates of Sagar C.D. Block, 2001
4.22 Mouza-wise Level of Social Deprivation Estimates of Sagar C.D. Block, 2001
4.23 PCA: Variable based Analysis, Sagar C.D. Block, 2001
4.24 PCA: Space based Analysis (observations), Sagar C.D. Block, 2001
4.25 Perception of Hazard types in Sagar Island, 2011-12
4.26 Perception of Hazard types in Gharamara Island, 2011-12
5.1 Immigration profile of Nayachar Island, 2011
5.2 Perception of Hazard types of Nayachar Island, 2011
5.3 Perception on Environment of Nayachar Island, 2011
6.1 Immigration profile of Jambu Island, 2002
6.2 Schematic diagram of Submerged Island (Duba Char and Khari)
6.3 Schematic diagram of Lunar Days in relation to fishing operation in Jambu Island
6.4 Reclaimed area for Fishing in Jambu Island (LISS-III & PAN image), 2009
6.5 Perception of Hazards of Jambu Island, 2002
7.1 Immigration profile of Chuksar Island, 2002
7.2 Perception of Hazards of Chuksar Island, 2002
8.1 Location of Resettled Colonies, Sagar
8.2 Status of Literacy in Colonies, Sagar, 2011-12
8.3 Average Monthly Income in Colonies, Sagar, 2011-12
8.4 Occupation types in Colonies, Sagar, 2011-12
8.5 Changes in Livelihoods among Colony Dwellers, Sagar Island: 2011-12
8.6 Suggestive Measures for the Improvement of the Colonies, Sagar Island, 2011-12
8.7 Variables for assessing Social Vulnerability of the Colonies, Sagar Island, 2011-12
8.8 Weighted Score to assess vulnerability of the colony dwellers, Sagar island: 2011-12
8.9 Perception on Environment: Resettled Colonies and Ghoramara, 2011-12
8.10 Perception on Management of Hazards in the Hugli Estuarine Islands: Sagar and Ghoramara, 2011-2012
List of Plates

3.1 Beach Forms in Sagar and Chuksar Islands: Ripples and Dwelling Structures of Ghost Shrimps (Polychaetes). 34
4.1 Ghoramara Island, 2011: Communication 97
4.2 Ghoramara Island, 2010: Settlement 98
4.3 Ghoramara Island, 2010: Landuse 99
4.4 Glimpse of Erosion in Ghoramara Island, 2010 100
4.5 Coastal Erosion at the vicinity of Sagar Tidal Station: 1988-1993 101
5.1 Nayachar Island, 2008: Inundation of Embankment 109
5.2 Nayachar Island, 2004: Settlement 110
6.1 Jambu Island, 2002: Fish Drying Under the Sun 126
6.2 Jambu Island, 2002: Fishing Camp 127
6.3 Jambu Island, 2010: Mangrove Regeneration in the Island 128
7.1 Chuksar Island, 2002: Fishing Camps 135
7.2 Chuksar Island, 2010 136
8.1 Bankimnagar Colony, Sagar Island: 2009 145
8.2 Jibantala-Kamalpur Colony, Sagar Island: 1983 146
8.3 Jibantala-Kamalpur Colony, Sagar Island: 2011-12 157
8.4 Coastal Erosion and its Management in Beguakhali, Sagar Island: 2010-11 165
8.5 Environment Management in the Studied Islands 166

List of Appendices

Appendix-1 Population Density of Sagar C.D. Block, 2001 169
Appendix-2 Concentration of SC and ST population, Sagar C.D. Block, 2001 171
Appendix-3 Relationship between Rank of settlement and Population size of mouzas, Sagar C.D. Block, 2001 173
Appendix-4 Carrying Capacity of land, Sagar C.D. Block, 2001 176
Appendix-5 Working population status of Sagar C.D. Block, 2001 178
Appendix-6 Percentage of workers of Sagar C.D. Block, 2001 179
Appendix-7 Functional category of workers in Sagar C.D. Block, 2001 181
Appendix-8 Functional distinctiveness and calculation for Pie diagram, Sagar C.D. Block, 2001 182
Appendix-9 Level of Development estimates, Sagar C.D. Block, 2001 184
Appendix-10 Backwardness level estimates of Sagar C.D. Block, 2001 185
Appendix-11 Status of Women estimates of Sagar C.D. Block, 2001 188
Appendix-12 Social Deprivation level estimates of Sagar C.D. Block, 2001 190
Appendix-13 (i) Correlation matrix of selected variables, Sagar C.D. Block; (ii) Eigen vectors; (iii) Factor loading; (iv) Contribution of factors; (v) Factor score 192
Appendix-14 Social vulnerability assessment of the colonies, Sagar Island: 2011-12 194
Appendix-15 Data for surveyed islands 195

GLOSSARY OF LOCAL TERMINOLOGY 202

REFERENCES 205