**CONTENTS**

<table>
<thead>
<tr>
<th>I.</th>
<th>CHAPTERS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.</td>
<td>TABLES</td>
<td>(viii)</td>
</tr>
<tr>
<td>III.</td>
<td>MAPS AND DIAGRAMS</td>
<td>(xii)</td>
</tr>
<tr>
<td>IV.</td>
<td>PHOTOGRAPHS</td>
<td>(xiv)</td>
</tr>
<tr>
<td>V.</td>
<td>APPENDICES</td>
<td>(xvi)</td>
</tr>
<tr>
<td>VI.</td>
<td>LOCAL TERMINOLOGIES</td>
<td>(xvii)</td>
</tr>
<tr>
<td>VII.</td>
<td>BIBLIOGRAPHY</td>
<td>(xvii)</td>
</tr>
</tbody>
</table>

**CHAPTER 1**

**INTRODUCTION**

1.1 STATEMENT OF THE PROBLEM  
1.2 OBJECTIVES  
1.3 HYPOTHESIS  
1.4 SOURCE OF DATA  
1.5 SELECTION OF THE STUDY AREA  
1.6 DESIGN OF THE SAMPLE SURVEY  
1.7 STRUCTURE OF THE QUESTIONNAIRES  
1.8 METHODOLOGY AND CARTOGRAPHIC TECHNIQUES  
1.9 ORGANISATION OF CHAPTERS  
1.10 A SURVEY OF LITERATURE  
REFERENCES  
(i)
CHAPTER 2

PHYSICAL AND NATURAL LANDSCAPE

2.1 INTRODUCTION 58
2.2 GEOLOGY, TECTONICITY AND EVOLUTIONARY HISTORY 59
2.3 GEOMORPHIC CHARACTERISTICS 62
2.4 FLUVIAL CHARACTERISTICS 71
2.5 CLIMATIC CHARACTERISTICS 76
2.6 SOIL CHARACTERISTICS 79
2.7 FLORA AND FAUNA 83
2.8 GEO-ECOLOGICAL REGIONS 89
2.9 CONCLUSION 99
REFERENCES 99

CHAPTER 3

A PROFILE OF POPULATION

3.1 INTRODUCTION 102
3.2 SPATIAL DISTRIBUTION AND DENSITY OF POPULATION 1981-1991 104
3.2.1 Rural Urban Distribution 108
3.2.2 Density of Population 113
3.3 COMPOSITION OF POPULATION 1981-1991 118
3.3.1 Demographic Composition: Sex Ratio and Urban Rural Difference. 119
3.3.2 Social Composition: Spatial Perspective on literacy. 123
3.3.3 Social Composition: Regional Contrasts in the Distribution of Scheduled Castes and Tribes 137
3.3.4 Economic Characteristics of Population 149
3.3.5 Workers-Non-workers Ratio. 155
3.4 GROWTH OF POPULATION 1981-1991 160
3.4.1 Spatial Pattern of Population Change. 160
3.4.2 Rural-Urban Change and Urban-Rural Growth Differential. 163
3.4.3 Spatial Distribution of Changes in Population Density 163
3.5 CONCLUSION 165
REFERENCES 167

CHAPTER - 4
SETTLEMENT PATTERN

4.1 INTRODUCTION 169
4.2 EVOLUTION OF SETTLEMENTS 170
4.2.1 Rural Settlements 171
4.2.2 Urban Settlements 179
4.3 RURAL SETTLEMENTS 186
4.3.1 Site and Location of Rural Settlements 187

(iii)
CHAPTER 5

INTERREGIONAL PATTERN OF HUMAN SETTLEMENTS  
(BASED ON SURVEYED VILLAGES)

5.1 INTRODUCTION 234

5.2 AGE AND LOCATION PATTERN 235
5.2.1 Age
5.2.2 Site, Situation and Type
5.3 NATURAL RESOURCE BASE AND ENVIRONMENTAL CONSTRAINTS
5.4 HUMAN RESOURCE BASE
5.4.1 Distribution and Density of Population
5.4.2 Caste and Religion
5.4.3 Pattern of Migration
5.5 LAND USE
5.6 FUNCTIONAL CLASSIFICATION OF SETTLEMENTS
5.6.1 Agriculture
5.6.2 Fishing
5.6.3 Animal Husbandry
5.6.4 Tourism
5.7 HOUSING AND BASIC AMENITIES
5.8 RURAL INFRASTRUCTURE
5.8.1 Transport Services
5.8.2 Educational Institutions
5.8.3 Communication Facilities
5.8.4 Health Services
5.8.5 Credit Institutions
5.8.6 Marketing facilities
5.9 TRADE CONNECTION AND INTERACTION
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.10</td>
<td>VILLAGE ARTS AND CRAFTS</td>
<td>303</td>
</tr>
<tr>
<td>5.11</td>
<td>EXISTING PLANS AND PROPOSALS</td>
<td>304</td>
</tr>
<tr>
<td>5.12</td>
<td>QUALITY OF HUMAN SETTLEMENTS</td>
<td>306</td>
</tr>
<tr>
<td>5.13</td>
<td>CONCLUSION</td>
<td>310</td>
</tr>
<tr>
<td></td>
<td>REFERENCES</td>
<td>314</td>
</tr>
</tbody>
</table>

CHAPTER 6
POPULATION AND HUMAN SETTLEMENTS:
A MICRO LEVEL ANALYSIS

6.1   INTRODUCTION | 315

SECTION I: POPULATION

6.2 POPULATION CHARACTERISTICS | 318
6.2.1 Size of the Families | 318
6.2.2 Age-Sex Pattern of Population | 318
6.2.3 Marital Status | 319
6.2.4 Age at Marriage | 321
6.2.5 Migration Pattern | 325
6.3 ECONOMIC PROFILE OF HOUSEHOLDS | 330
6.3.1 Economic Activities | 330
6.3.2 Distance and Duration of Work | 335
6.3.3 Households Income | 336
6.4 SOCIAL PROFILE OF HOUSEHOLDS | 338
6.4.1 Religion | 338
6.4.2 Caste Composition | 338

(vi)
6.4.3 Language 339
6.4.4 Literacy and Education 340
6.5 FAMILY ASSETS 342
6.5.1 Stock Raised and Products Obtained 343
6.5.2 Land Under Cultivation and Crops Grown 344
6.5.3 Items of Possession 346
6.6 MORTALITY, MORBIDITY AND HEALTH CARE 347
6.6.1 Mortality and Its Causes 348
6.6.2 Morbidity 349
6.6.3 Family Planning and Health Care 352

SECTION II : HUMAN SETTLEMENTS

6.7 QUALITY OF HOUSING, BASIC AMENITIES AND PERSONAL HYGIENE 354
6.7.1 Housing Facilities 354
6.7.2 Basic Amenities and Personal Hygiene 357
6.8 IMPACT OF ENVIRONMENTAL HAZARDS ON HUMAN SETTLEMENTS 362
6.9 SOCIAL ENVIRONMENT 365
6.10 PATTERN OF INTERACTION, COMMUTATION, FREQUENCY AND PURPOSE 367
6.10.1 Interaction Pattern 367
6.10.2 Commutation 377
6.10.3 Frequency and Purpose of Movement for Goods and Services 379

(vii)
CHAPTER 2

2.1 Geo-Ecological Characteristics of Sand Dunes in the Sundarbans. 70

2.2 Temperature And Rainfall of South 24 Parganas 76

2.3 Frequency of Cyclonic Storms in The Bay of Bengal, 1831-1960 79

2.4 A Geo-Ecological Classification of South 24 Parganas 91


CHAPTER 3


3.2 Spatial Distribution of Rural Population, 1981-1991 109

3.5 Sex Ratio, 1981-1991 120
3.6 Literacy, 1981-1991. 125
3.7 Changes in Literacy, 1981-1991 136
3.9 Scheduled Tribes To Total Population, 1981-1991. 145
3.10 Work Participation Rate 1981-1991 151

CHAPTER 4

4.1 Class and Number of Towns in South 24 Parganas 1981-1991 184
4.2 Geo-Ecological Regions : Inter Settlement Pattern 191
4.3 Spatial Characteristics of Villages 209
4.4 Area and Population Concentration of Rural Settlements, 1981-1991 214
4.5 Size Classification of Villages 1991 217
4.7 Size Classification of Urban Settlements, 1991 225
CHAPTER 5

5.1 Age and Location Pattern of Villages 1992 236
5.2 Characteristics of Rural Settlements 243
5.3 Natural Resources Base and Environmental Constraints. 245
5.4 Population Characteristics of Surveyed Villages, 1992 249
5.5 Caste And Religion, 1992. 251
5.6.1 Migration Pattern of Villages - Inmigration, 1992. 253
5.6.2 Migration Pattern of Villages - Outmigration 1992. 255
5.7 Utilization of Land In Square Km. - 1992. 259
5.8 Functional Classification of The Villages - 1992 261
5.9 Cropping Pattern of The Villages - 1992. 265
5.10 Source And Type of Catch of Fish in The Villages - 1992. 267
5.11 Ice Factories Of South 24 Parganas. 269A
5.12 Connectivity And Mode of Conveyance 1992. 275
5.13 Educational Institutions 1992 . 283
5.14 Communication Facilities 1992 286
5.15 Medical Facilities - 1992 289

(x)
5.16 Traditional Health Workers - 1992. 293
5.17 Credit Facilities - 1992 296
5.18 Marketing Facility - 1992 298
5.19 Quality of Human Settlements 1992 308

CHAPTER 6

6.1 A Scheme of Household Survey of South 24 Parganas 1992 317
6.2 Age Sex Structure 1992 320
6.3 Marital Status 1992 322
6.4 Age At Marriage 1992 323
6.5 Proportion of Migrants To Total Population - 1992 326
6.6 Pattern of Migration - 1992 327
6.7 Work Pattern - 1992 331
6.8 Distance And Duration of Work And Family Income - 1992 337
6.9 Educational Attainment - 1992 341
6.10 Housing And Basic Amenities 1992 355
6.11 Interaction Pattern - 1992 378
6.12 Frequency And Purpose of Movement for Purchases - 1992. 380
6.13 Quality of Housing 1992 382

(xi)
III. MAPS AND DIAGRAMS

CHAPTER 1

1.1 Location of South 24 Parganas District In India 3
1.2 Location of South 24 Parganas District in West Bengal 4

CHAPTER 2

2.1 Location of Mud Flats And Sand Flats In the Sundarbans 66
2.2 Location of Sand Dunes And Sand Flats In Sagar Island 70
2.3 Drainage Map of South 24 Parganas 72
2.4 Bay of Bengal Cyclones 79
2.5 Soils : South 24 Parganas 80
2.6 Food Chain In The Mangrove Ecosystem 89
2.7 Geo-Ecological Regions of South 24 Parganas 91

CHAPTER 3

3.1 South 24 Parganas : Spatial Distribution of Population 1991 109
3.2 South 24 Parganas : Spatial Distribution of Rural Population 1991 111
3.3 South 24 Parganas : Density of Population 1991 117
3.4 South 24 Parganas : Sex Ratio 1991 124

(xii)
3.5 South 24 Parganas: Literacy 1991
3.6 South 24 Parganas: Male Literacy 1991
3.7 South 24 Parganas: Female Literacy 1991
3.8 South 24 Parganas: Scheduled Caste Population 1991
3.9 South 24 Parganas: Work Participation 1991

CHAPTER 4

4.1 Reclamation In Sundarban
4.2 South 24 Parganas: Urban Settlements
4.3 South 24 Parganas: Rural Settlements(I)
4.4 South 24 Parganas: Rural Settlements(II)
4.5 South 24 Parganas: Spacing of Rural Settlements.
4.6 South 24 Parganas: Nature of Dispersion of Rural Settlements
4.7 South 24 Parganas: Areal Size of Villages 1991

CHAPTER 5

5.1 South 24 Parganas: Case Study Areas 1992
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>South 24 Parganas : Proportion of Scheduled Castes And Tribes, 1992.</td>
<td>251</td>
</tr>
<tr>
<td>5.3</td>
<td>South 24 Parganas : Land Use</td>
<td>260</td>
</tr>
<tr>
<td>5.4</td>
<td>Fish Landing Centres And Ice Plants of South 24 Parganas.</td>
<td>270</td>
</tr>
<tr>
<td>6.1</td>
<td>South 24 Parganas : Age Sex Pyramid 1992</td>
<td>319</td>
</tr>
<tr>
<td>6.2</td>
<td>South 24 Parganas : Age Sex Pyramid of Stable and Active Delta 1992</td>
<td>320</td>
</tr>
<tr>
<td>6.3</td>
<td>South 24 Parganas : Marital Status 1992</td>
<td>321</td>
</tr>
<tr>
<td>6.4</td>
<td>South 24 Parganas : Reasons For Migration</td>
<td>330</td>
</tr>
</tbody>
</table>

**IV. PHOTOGRAPHS**

1. Kutcha House : Western Huglaside Flats (Diamond Harbour)
2. Pucca House : Western Huglaside Flats (Diamond Harbour)
3. Kutcha House : Middle Mature Delta (Mandir Bazar)
4. Semi-Kutcha House : Middle Mature Delta (Mandir Bazar)
5. Bathing Water : Middle Mature Delta (Mandir Bazar)
7. Kutcha House : Western Sundarbans (Gangasagar)
8. Bird's Eye View of Sagar Island from Beguakhali Lighthouse
9. Isolated Homestead Surrounded by Agricultural fields in Middle Sundarbans (Mathurapur)
10. Kutcha House : Middle Sundarban (Mathurapur)
11. Pucca and Semi Pucca House : Eastern Sundarbans (Gosaba)
12. Kutcha House : Eastern Sundarban (Basanti)
13. Kitchen Type : Gosaba
14. Grain Storage : Piyali Bidyadhari Plain (Bhangar)
15. Betel Vine : Western Sundarbans (Sagar)
16. Fishing by Women : Eastern Sundarbans (Gosaba)
17. Fishing in the Khals : Gosaba
18. Fish Larva Preservation at Low Tides : Gosaba
19. Inside a village potter's home : Diamond Harbour
20. Local Train : Diamond Harbour to Calcutta
21. Village School : Beguakhali, Sagar
22. Solar Reactors : Gangasagar
23. Adult Education, Literacy Mission, (Sagar)

(xv)
24. Local Ferry Ghat in Sagar
25. Footpaths on Embarkments : Sagar
26. Dinghy's as means of communication
27. Gosaba Ghat : Eastern Interior Sundarbans
28. Launches as means of Communication (Kachuberia, Sagar).

V. APPENDICES

I. Appendix to Chapter I
   I.1 Village Level Questionnaire 397
   I.2 Household Level Questionaires 405

II. Appendix to Chapter II
   II.1 Natural Calamities 413
   II.2 Sundarban 414
   II.3 Origin of the Ganga 415
   II.4 Local Soil Types 416
   II.5 Physio-Chemical Characteristics of Coastal Soils 416
   II.6 Origin of The Mangroves 417
   II.7 Tiger Project 418

III. Appendix to Chapter III
   III.1 Table on Proportion of Literates to Total Literate Population, 1981-1991 420
(xvi)

III.3 Table On Proportion of Scheduled Tribes To Total Scheduled Tribe Population, 1981-1991

III.4 Table On Proportion of Total Workers To Total Working Population 1981-1991

IV. Appendix to Chapter IV

IV.1 Mahals Of Todarmall as in Ain-i-Akbari and Parganas as in 24 Parganas Dstt. Gazetteer

V. Appendix to Chapter V

V.1 Villages/Blocks/Regions Of The Stable Delta and The Active Delta

V.2 List of Villages And Quality Of Human Settlements- 1992

VI. Appendix to Chapter VI

VI.1 Interaction Pattern Of Stable Delta S.24 Parganas-1992 (A Case Study of 400 Households)

VI.2 Interaction Pattern Of Active Delta S.24 Parganas 1992 (A Case Study of 400 Households)

VI. LOCAL TERMINOLOGIES

VII. BIBLIOGRAPHY