



INTEGRATED PROTECTED AREA CO-MANAGEMENT (IPAC)

VOLUME II: SUPPORTING INFORMATION

A STUDY OF THE PRINCIPAL
MARKETED VALUE CHAINS
DERIVED FROM THE SUNDARBANS
RESERVED FOREST

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Preface

This study aims to investigate aspects related to economics of SRF resources extraction, more specifically, value chain analysis of marketed SRF products. This is the final report incorporating comments received from experts and from participants at the workshop held on 10 August at the Forest Department, Dhaka. The report is presented in two volumes : Volume I containing main report and the Volume II containing Annexes. The study was carried out by a large research team under my leadership, comprising members as follows:

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I express my gratitude to all of them. The FGDs, Problem Analysis and Case Studies were largely carried out by Tanveer Murshed Khan. Special mention must be made of Md Nazrul Islam who worked extremely hard in assisting me in, among others, the painstaking work of analysis. Mr Mowdudur Rahman of CCEC has provided much needed logistic and intellectual support at various stages of the study.

We have received full support from IPAC and IRG. I must express my gratitude to Drs Robert T. Winterbottom, Philip J. DeCosse, Ram Sharma and Reed Merrill for their intellectual support all through during the study, from the very conceptualization to implementation stage. The logistic and other support from Makhlukur Rahman, Monika Biswas and other personnel of IPAC has always been helpful. The valuable comments obtained from Dr. M Asaduzzaman, Research Director, BIDS are gratefully acknowledged. We have also received valuable support from the Forest Department, both at the headquarters and at local levels. We are grateful to all of them.

The research was financially supported by USAID, Dhaka. They deserve special thanks for their support on such an important area of research. Finally, I am indebted to the SRF actors and other stakeholders for their cooperation in responding to our queries during the field survey.

This brief study had some limitations. With 65 days-equivalent input of the Principal Investigator, the study was carried out in effectively five to six months time, which was utterly inadequate given the scope, coverage and challenges of investigations. Indeed, it was a difficult task to interview SRF product intermediaries (particularly Mahajans, Aratdars and money

lenders) who were often suspicious of our study aims and investigations and this was one of the major bottlenecks to conducting the fieldwork.

The study, first of its kind, has produced a wealth of data and information on various aspects relating to economics of SRF extractions and SIZ economy, as a whole, which, I believe, would enrich our knowledge-base and encourage our pursuit of follow-up studies in the future, apart from contributing to the revision of IRMP of the SRF, the preparation of which is in progress.

Dr. K. M. Nabiul Islam
Principal Investigator, and Senior Research Fellow, BIDS

List of Contents

Preface.....	ii
Acronyms and Abbreviations	vii
Glossary	ix
Annex A: SIZ Upazila Profile	1
A.1 Socio-economic Profile of SIZ Upazilas.....	1
A.1.1 Bagerhat Sadar Upazila.....	1
A.1.2 Mongla Upazila.....	6
A.1.3 Morrelganj Upazila	11
A.1.4 Sarankhola Upazila	16
A.1.5 Dacope Upazila	22
A.1.6 Koyra Upazila	28
A.1.7 Paikgacha Upazila.....	33
A.1.8 Shymnagar Upazila	39
A.1.9 Matbaria Upazila.....	45
A.1.10 Patharghata Upazila	51
Annex B: SRF Actors.....	57
Annex C: SRF Product chain.....	62
Flow chart C.1: Value chain for <u>timber</u> (<i>Sundri, Passur, Kankra, Gewa</i>).....	66
Flow chart C.2: Value chain for top-dying sundri timber and ceased wood.....	67
Flow chart C.3: Value chain for <u>illegal timber</u> (<i>Sundri, Passur, Kankra, Gewa</i>).....	68
Flow chart C.4: Value chain for <u>non-timber</u> (Golpata/Grass/Shon/Matting).....	69
Flow chart C.5: SRF products marketing system.....	70
Flow chart C.6: Value chain for <u>gura fish</u>	70
Flow chart C.7: Value chain for sada fish.....	71
Flow chart C.8: Value chain for <u>hilsha</u>	71
Flow chart C.9: A simplified and typical SRF marketing system and value chain of the actors (% of retail price)	72
Flow chart C.10 : Value chain for shrimp (galda and bagda)	72

Flow chart C.11: Value chain for <u>shrimp fry</u>	73
Flow chart C.12: Value chain for <u>crab</u>	73
Flow chart C.13: Value chain for <u>mollusc/shell/oyster</u>	74
Flow chart C.14: Value chain for <u>honey</u>	75
Flow chart C.15: Value chain for <u>medicinal plants</u>	76
Flow chart C.16: Value chain for <u>fuel wood</u>	77
Flow chart C.17: Value chain for bee wax.....	78
Flow chart C.18: Value chain for hantal.....	79
Flow chart C.19: Shrimp supply chain.....	80
Annex D: Annex Tables: Chapter 2	81
Annex D: Annex Tables: Chapter 3	83
Annex D: Annex Tables: Chapter 4	91
Annex E: SRF Concentration Centers	98
Annex F: Survey Instruments	113
Annex G: Problem and Objective Analysis from FGDs	135
G.1 Analysis of Problems in the SIZ Area.....	135
G.1.1 Direct Causes of the Core Problem.....	135
G.1.2 Conclusion.....	139
G.2 Analysis of Objectives.....	139
G.2.1. Increase income from the SRF product collection.....	141
Annex H: Persons Interviewed.....	144
Annex I: Selected Photographs.....	149

List of Tables

Table A.1: Population and demographic characteristics: Average upazila and Bagerhat Sadar Upazila	2
Table A.2: Type of main dwelling household	3
Table A.3: Basic information on average upazila and Bagerhat Sadar Upazila	4
Table A.4: Population and demographic characteristics: Average upazila and Mongla upazila....	8
Table A.5: Main dwelling household by structure.....	9
Table A.6: Basic information on average upazila and Mongla Upazila	10
Table A.7: Population and demographic characteristics: Average upazila and Morrelganj Upazila	13
Table A.8: Main dwelling household by structure.....	14
Table A.9: Basic information on average upazila and Morrelganj Upazila	15
Table A.10: Population and demographic characteristics : Average upazila and Sarankhola Upazila	19
Table A.11: Type of main dwelling household	20
Table A.12: Basic information on average upazila and Sarankhola upazila	21
Table A.13: Population and demographic characteristics: Average upazila and Dacope Upazila	24
Table A.14: Type of main dwelling household	25
Table A.15: Basic information on Dacope Upazila and Khulna District	26
Table A.16: Population and demographic characteristics : Average upazila and Koyra Upazila	30
Table A.17: Main Dwelling House by Type of Structure.....	31
Table A.18: Basic information on average upazila and Koyra Upazila	32
Table A.19: Population and demographic characteristics: Average upazila and Paikgacha Upazila	36
Table A.20: Main dwelling house by structure.....	37
Table A.21: Basic information on average upazila and Paikgacha Upazila	38
Table A.22: Population and demographic characteristics : Average upazila and Shymnagar Upazila	42
Table A.23: Main dwelling house by structure.....	43
Table A.24: Basic information on average upazila and Shymnagar Upazila	44
Table A.26 : Main dwelling house by structure.....	48
Table A.27: Basic information on average upazila and Matbaria Upazila	49

Table A.28: Population and demographic characteristics : Average upazila and Patharghata Upazila	53
Table A.29: Main dwelling house by structure.....	54
Table A.30: Basic information on average upazila and Patharghata Upazila.....	55
Table D2.1: Major NGOs operating in SIZ upazilas	81
Table D2.2: Beneficiaries and credit coverage of Grameen Bank, 2008.....	82
Table D3.1: Sample size by upazila.....	83
Table D3.2: Type of SRF products under investigation	83
Table D3.3: Type of business markets surveyed	84
Table D3.4: Sample size by concentration centers (landing places)	84
Table D3.5: Land ownership and operational holdings of respondents by Range	85
Table D3.6: Land ownership and operation by district.....	85
Table D3.7: Distance of harvest place from home village by district	86
Table D3.8: Capital structure by products	86
Table D3.9: Sample of saw mills/furniture units by District.....	86
Table D3.10: Sample of saw mills/furniture units by upazila	87
Table D3.11: Primary occupation of entrepreneurs.....	87
Table D3.12: Type of enterprises.....	87
Table D3.13: Number of workforce by type of enterprise.....	87
Table D3.14: Trend of local raw materials used in previous 5 years by Range	88
Table D.15: Trend of SRF timber products used in previous 5 years by Range	88
Table D.16: Trend of gross income earned in previous 5 years by Range	88
Table D3.17: Level of satisfaction on level of margins.....	88
Table D3.18: Major factors influencing price.....	89
Table D3.19: Major reasons of exploitation (for harvesters).....	89
Table D3.20: Most severe problem of SRF harvest/trade activities	89
Table D3.21: Recommendations towards improving the situation.....	90
Table D4.1: Per center no. of boats involved in collecting SRF products and involvement of persons	91
by <u>upazila</u>	91
Table D4.2: Per center no. of boats involved in collecting SRF products and involvement of persons	91
by <u>district</u>	91

Table D4.3: Per center no. of boats involved in collecting SRF products and involvement of persons by <u>Range</u>	91
Table D.4.4: Per center weekly average no. of actors in the current harvest season by <u>center</u>	92
Table D4.5: Average no of actors (per landing center) in the current harvest season by <u>upazila</u>	93
Table D4.6: Per center weekly average no. of actors in the current harvest season by <u>district</u>	93
Table D4.7: Per center weekly average no. of actors in the current harvest season by <u>product</u> ...	93
Table D4.8: Per center no. of jobs offered by actors in the sample business sites in this harvest season by <u>upazila</u>	94
Table D4.9: Per center no. of jobs offered by actors in the sample business sites in this harvest season by <u>district</u>	94
Table D4.10: Proportions of SRF products moved at the first stage in this harvest season from selected primary centers.....	95
Table D4.11: Proportions of SRF products moved at the first stage in this harvest season from selected primary centers by <u>upazila</u>	97
Map A.1: Map of Bagerhat Sadar Upazila.....	1
Map A.2: Map of Mongla Upazila.....	7
Map A.3: Map of Morrelganj Upazila	12
Map A.4: Map of Sarankhola Upazila	17
Map A.5: Map of Dacope Upazila.....	23
Map A.6: Map of Koyra Upazila	29
Map A.7: Map of Paikgacha Upazila.....	34
Map 2.8: Map of Shymnagar Upazila.....	40
Map 2.9: Map of Matbaria Upazila.....	46
Map A.10: Map of Patharghata Upazila	52

Acronyms and Abbreviations

ACF	=	Assistant Conservator of Forest
ADB	=	Asian Development Bank
BBS	=	Bangladesh Bureau of Statistics
BCAS	=	Bangladesh Centre for Advanced Studies
BDT	=	Bangladesh Taka
BFRI	=	Bangladesh Fisheries Research Institute
BIDS	=	Bangladesh Institute of Development Studies
BLC	=	Boat License Certificate
BOBP	=	Bay of Bengal Program
CBN	=	Cost of Basic Needs
CBO	=	Community Based Organization
CCEC	=	Centre for Coastal Environmental Conservation
CCF	=	Chief Conservator of Forest
CDMP	=	Comprehensive Disaster Management Program
CF	=	Conservator of Forest
CODEC	=	Community Development Centre, Chittagong
DAE	=	Department of Agricultural Extension
DANIDA	=	Danish International Development Agency
DCCF	=	Deputy Chief Conservator of Forest
DFID	=	Department for International Development, UK
DFO	=	Divisional Forest Officer
DoF	=	Department of Fisheries
ECOMAC	=	Environmental Conservation Management Consultants Ltd
EU	=	European Union
FAO	=	Food and Agriculture Organization
FD	=	Forest Department
FGD	=	Focus Group Discussion
FY	=	Financial Year
GDP	=	Gross Domestic Product
GM	=	Gross Margin
GoB	=	Government of Bangladesh
GMM	=	Gross Marketing Margin
GRWC	=	Gross Returns over Working Capital
ICLARM	=	International Centre for Living Aquatic Resources Management
ICZMP	=	Integrated Coastal Zone Management Project
IGAs	=	Income Generating Activities
IPAC	=	Integrated Protected Area Co-Management
IRG	=	International Resources Group
IRMP	=	Integrated Resource Management Plan
KCC	=	Khulna City Corporation
MARC	=	Multidisciplinary Action Research Center
MFI	=	Micro-Finance Institution
MoFL	=	Ministry of Fisheries and Livestock, GoB
NGOs	=	Non-Government Organization
NMM	=	Net Marketing Margin
NRI	=	Natural Resources Institute, University of Greenwich, UK
NRWC	=	Net Returns over Working Capital
NTFP	=	Non-Timber Forest Products
PF	=	People's Forum
PL	=	Post-Larvae
PHFRP	=	Post-Harvest Fisheries Research Program

PRA	=	Participatory Rural Appraisal
RMA	=	Rapid Market Assessment
SBCP	=	Sundarbans Biodiversity Conservation Project
SBMJMCS	=	Small & Medium Enterprises under the Cooperative Society
SEALS	=	Sundarbans Environmental and Livelihoods Security
SIZ	=	Sundarbans Impact Zone
SL	=	Sustainable Livelihoods
SMEs	=	Small and Medium Enterprise
SRF	=	Sundarbans Reserved Forest
SSC	=	Secondary School Certificate
SUFER	=	Support for University Fisheries Education and Research, DFID Funded Project
UNDP	=	United Nations Development Program
UNESCO	=	United Nations Educational, Scientific and Cultural Organization
USAID	=	United States Agency for International Development
VC	=	Value Chain
VCA	=	Value Chain Analysis
VCF	=	Village Conservation Forum
VO	=	Village Organization
WARPO	=	Water Resources Planning Organization

Glossary

Arat	Generally an office, a store, or a warehouse in a market place from which Aratdar conducts his business.
Aratdar	Main actor in SRF products (e.g. fish) distribution system; either acts as wholesaler or commission agent, or covers both functions at the same time; carries out public auctions, and is the main provider of credit in the marketing chain.
Bahaddar	Owner of fishing boats
Bazaar	Market
Bepari	Middleman in the marketing chain who transports the SRF products to other places; use of term depends on the location; sometimes also used synonymously with retailer.
Crore	Ten million
Dadon	Loan as part of interlocked credit-marketing transactions, whereby, traditionally, the loaner has to sell to/through the loan provider at a discounted price.
Dadondar	Provider of dadon loan; traditionally acts as moneylender cum trader.
Faria	Local trader/agent/intermediary
Lakh	One hundred thousand.
Hat	(Small) market place where market exchanges are carried out either once, twice, or thrice a week, however, not every day.
Jaal	Fishing net (note there is a large number of different types of nets, as described in the text)
Mahajan	Powerful intermediary in value chain - traditional moneylender
Majhi	Captain of boat. Boatman or <i>majhi</i> of boat responsible of the trip such as fishing, golpata collection. He leads the team in fishing or collection of SRF products
Mokam	Markets; important markets in often district capitals
Paikar	Middleman in the marketing chain; often covers the assembly function in the chain, acting as dadondar at the same time; depending on the location sometimes also referred to as wholesaler or retailer.
<i>Goons</i>	Peak time of a month related to moon, usually referred to fishing
<i>Bhara goons</i>	Most appropriate time when fish catch is most plentiful, around full moon
<i>Mara goons</i>	Appropriate time (next to <i>Bhara goons</i>) when fish catch is plentiful, around new moon
Bagda	Salt water shrimp
Fry	Baby shrimp and prawns
Gher	Ponds inside polders used for the cultivation of fish or shrimp
Galda	Fresh water prawn
Golpata measurement	1 Kahon = 16 pon (Approximately 16 maunds)
unit/conversion factors	1 Pon =20 gondas 1 gonda= 4 leaves

Annex A: SIZ Upazila Profile

A.I Socio-economic Profile of SIZ Upazilas

A.I.I Bagerhat Sadar Upazila

Area and Location: Bagerhat Sadar Upazila has an area of 317 sq km. It is bounded by Fakirhat and Chitalmari upazilas on the north, Morrelganj Upazila on the south, Kachua upazila on the east, and Rampal and Fakirhat upazila on the west. Main rivers are Bhairab, Chitra, Daudkhali, Poylahar and Putimari.

Bagerhat Sadar town, consisting of 9 wards and 31 mahallas, has an area of 7.5 sq km with population of 51,504. Bagerhat Sadar Upazila consists of 1 municipality, 9 union parishads, 3 wards, and 167 villages.

There are a number of important archaeological heritages in the upazila, which include Shatgumbuj Mosque, Sona Mosque, Pacha Dighi and Khan Jahan Ali's Tomb.

Map A.1: Map of Bagerhat Sadar Upazila



Population: The upazila has a population of 275,961 with male 51.9 percent and female 48.1 percent. According to the Population Census 2001, the total population of the upazila is 257,273, of which 133,514 are males and 123,759 are females. The sex ratio of the upazila is 108 males to 100 females in 2001 as against 105 males to 100 females in 1991.

Occupation: The major occupations of population are agriculture (29.64%), fishing (2.34), agricultural laborer (14.04%), wage laborer (8.02%), trade (15.95%), transport (5.61%), service (10.67%) and others (13.73%).

Land use: The total cultivable land is 20,804 hectares, of which fallow land comprises about 1 percent. Single, double and treble crop are 56, 38 and 6 percent respectively; land under irrigation is only 2.20 percent. Among the peasants, 11 percent are landless, 23 percent marginal, 33 percent small farmers, 24 percent medium and 9 percent rich farmers; arable land per capita estimates as 0.08 hectare.

Main crops are paddy, wheat, jute, potato, banana, papaya, garlic and onion. Industrial activities include fisheries, dairies, poultry, hatchery, shrimp cultivation (Chingri gher), rice mill, saw mill, furniture and ice factory.

Table A.1 shows a comparative position of Bagerhat Sadar Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.1: Population and demographic characteristics: Average upazila and Bagerhat Sadar Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Bagerhat District	Bagerhat Sadar UZ	Bagerhat Sadar UZ
Area	Sq. km.	291	440	316.97	316.97
Household	No.	50,278	35,945	54,465	63,018
Household size (dwelling)	No. of members	4.9	4.7	4.1	4.4
Population					
Both sexes	No.	2,45,277	1,72,115	2,57,273	2,75,961
Male	No.	1,26,413	89,349	1,33,514	1,43,218
Female	No.	1,18,863	82,765	1,23,759	1,32,743

Female-headed household	% of rural hh	3.5	2.0	3.7	3.7
Density of population	per sq. km	839	391	812	871
Sex ratio	Ratio (M/F)	106	108	108	108
Literacy rate	% of population (7 years & over)				
Both sexes	%	45.3	58.7	60.9	71.6
Male	%	49.7	60.8	63.3	70.6
Female	%	40.8	56.5	58.4	73.4
Urban population	%	23.1	13.3	18.1	18.0

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Bagerhat Zila & Upazila); http://www.banglapedia.org/httpdocs/HT/B_0033.HTM.

Administration: The upazila consists of 10 unions, 9 wards, 158 mouzas, 31 mahallas and 183 villages.

Household and Housing Characteristics: The number of households in the upazila is 63,018. The average household size (dwelling) is 4.4. As house structure implies socio-economic condition of a community, percentage distribution of main house of the dwelling households by type of structure is presented in Table A.2. Housing condition of Bagerhat Sadar upazila is predominantly kutcha. About 11.17 percent dwelling households live in jhupri, 66.34 percent in kutcha houses, 13.61 percent in semi-pucca houses and the remaining 8.88 percent households live in pucca houses.

Table A.2: Type of main dwelling household

Structure	%
Jhupri	11.17
Kutcha	66.34
Semi-pucca	13.61
Pucca	8.88
Total	100.00

Source: Community series, Bagerhat Zila & Upazila.

Water and Sanitation: In Bagerhat upazila, 47.7 percent dwelling households drink tube-well water, 13.94 percent drink tap water, 22.80 percent drink deep tube-well water, 13.73 percent drink pond water and the remaining 1.77 percent dwelling households drink water from other sources.

In the upazila, 49.90 percent of dwelling households have sanitary latrines with 45.37 percent in rural area and 71.45 percent in urban area. In this upazila, 4.16 percent of the households have no toilet facility.

Access to Electricity: All the 10 unions of the upazila have been brought under rural electrification program. However, 40.76 percent of the dwelling households reported to have electricity connection in the entire upazila.

Ownership of Agricultural Land: In Bagerhat upazila, 56.38 percent of the dwelling households own agricultural land while 43.72 percent owning no agricultural land. Percentage of ownership of agricultural land is 52.08 percent in urban area as against 57.29 percent in rural area.

Source of Household Income: In the upazila, 42.01 percent of the dwelling households depend on agriculture as the main source of their household income, with 25.41 percent on cropping, livestock, forestry and fishery and 16.5 percent on agricultural labor. Other sources of household income are non-agricultural labor (7.41%), business (21.31%), employment (10.61%), construction (1.78%), religious service (0.26), rent and remittances (0.54%), weaving (0.41%), transport and communication (4.55%), industry (0.86%) and others (10.26%).

Economic Activity: Main occupations of working people are agriculture (16.49 percent), industry (0.37 percent), business (7.33 percent), services (0.69 percent), construction (0.99 percent), transport and communication (1.73 percent) and others (9.71 percent).

Literacy: In Bagerhat Sadar upazila, about 71.6 percent population aged 7 years and over are literate, that of male being 70.6 and female 73.4 percent. School attendance at the age group 5 to 24 years is 46.0 percent for males and 40.9 percent for females.

Urbanization: Bagerhat Paurashava is the only urban area of the upazila. It consists of 9 wards and 31 mahallas and occupies an area of 7.56 sq. km.

Table A.3 shows a comparative position of Bagerhat Sadar Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.3: Basic information on average upazila and Bagerhat Sadar Upazila

Aspects		Unit	Average upazila (2001)		
			Bangladesh	Bagerhat District	Bagerhat Sadar UZ
Area/Administration	Area	Sq Km	291	440	317
	Union/Ward	No.	14	12	19

	Village	No.	173	115	183
Physical infrastructure	Houses with pucca wall	% of Total hh	42	44	50
	Houses with pucca roof	% of Total hh	54	27	36
	Houses with electricity	% of Total hh	31	27	40.8
	Primary school	No.	160.6	149.2	188.0
	High school	No.	30.2	32.0	47.0
	College	No.	6.3	3.2	5.0
Economy	Agri. labor	% of Total hh	36	36	29
	Agri. household	% of Total hh	51	76	77
	Non-agri. household	% of Total hh	49	24	23
	Cultivable land	Hectare	44,238	14,382	20,804
	Cultivable land	% of total area	61.3	98.7	NA
	One crop	% of agri. land	31	95	56
	Two crop	% of agri. land	42	3	38
	Three crop	% of agri. land	13	2	6
	Annual per capita income	Tk	18,269	16,839	NA
	Absolute poor	% of Total hh	49	69	NA
	Ultra poor	% of Total hh	23	37	NA
Education	Literacy rate	% 7+ years	46.2	58.7	60.9

	Enrolment in primary school	% 6-10 years	97	98	93
	Female enrolment	% 6-10 years	49	98	94
Health	Active tube-wells	No.	2216	1,847	3,172
	Active tube-wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	<u>62</u>	<u>48</u>
	HH with proper sanitation	% of Total hh	<u>37</u>	<u>56</u>	<u>50</u>
	Child mortality rate	Per 1000	43	56	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.2 Mongla Upazila

Area and Location: Mongla Upazila, the biggest upazila of Bagerhat District in respect of area, has an area of 1,461 sq km, of which 1,083 sq km (74%) is forest area. It is bounded by Rampal Upazila on the north, the Bay of Bengal on the south, Morrelganj and Sarankhola upazilas on the east, and Dacope Upazila on the west. Main rivers are Pashur and Mongla.

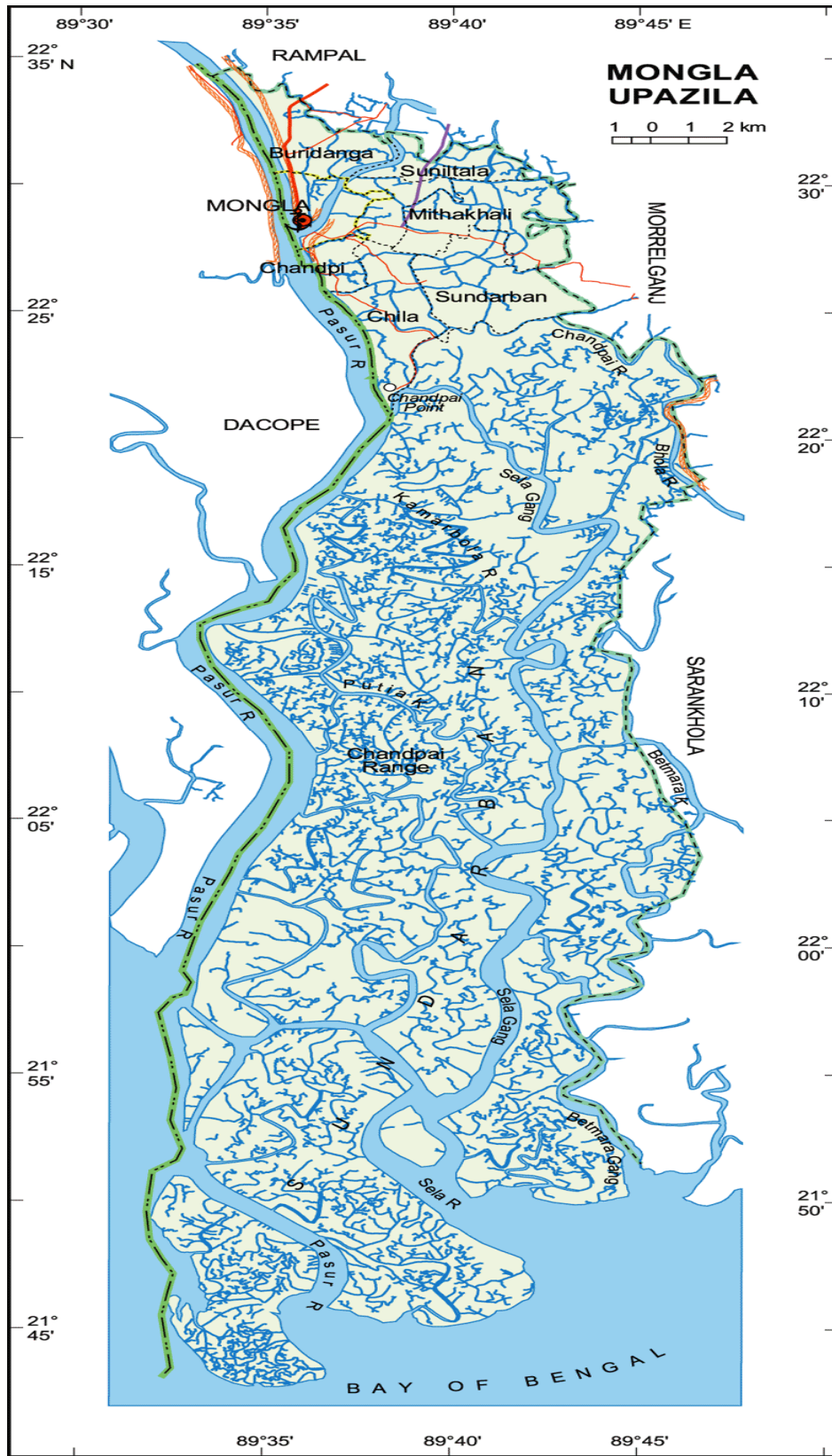
The Mongla Town is situated by the river Pashur. It is the second biggest seaport of the country. It consists of 9 wards and has an area of 19.4 sq km. The town has a population of 56,746; the density of population is 2,925 per sq km. The literacy rate among the town people is 62.1 percent.

Mongla Pauroshava is the only urban area of the upazila. It consists of 9 wards and 13 Mahallas.

Administration: Mongla Upazila consists of 1 municipality 7 union parishads, 37 mouzas and 77 villages.

Population Characteristics: According to the Population Census 2001, the total population of the upazila is 149,030, of which 80,819 are males and 68,211 are females. The sex ratio of the upazila is 118 males per 100 females as against 121 males per 100 females in 1991. The upazila has now a population of 158,604; male constitutes 53.8 percent and female constitutes 46.2 percent (2009).

Map A.2: Map of Mongla Upazila



Literacy and Educational Institutions: In Mongla Upazila, 56.1 percent of population aged 7 years and over are literate; male rate is 59.5 percent, followed by female rate as 52.1 percent (2001 Census). Average literacy rate is 70.0 percent: male 69.0 percent and female 73.9 percent (2009). Educational institutions include 4 colleges, 23 high schools, 1 junior school, 32 government primary schools, 29 non-government primary schools, 5 satellite schools and 18 madrasahs.

Occupation: Main occupations are agriculture (21.4 percent), fishing (6.2 percent), agricultural laborer (12.4 percent), wage laborer (13.4 percent), commerce (15.1 percent), transport (1.9 percent), service (16.3 percent) and others (13.3 percent).

Land Use: Cultivable land estimates as 12,566 hectares, of which fallow land constitutes 4.9 percent. Single crop, double crop and treble crop constitute only 99.0 percent, 0.86 and 0.11 percent respectively.

Non-agricultural Activities: Fishery (shrimp) is a major activity numbering 760, followed by poultry (60) and frozen fish processing (1).

Communication Facilities: Roads: pucca 17.50 km, semi pucca 23.50 km and mud road 211 km; waterways 70 nautical mile.

Manufacturing Activities: Manufacturing activities include two cement factories and one LP gas. Cottage industries include 10 ice factories, 6 rice mills, 15 blacksmiths and 100 wood works.

NGOs: Major NGOs in the locality include BRAC, ASA, CARITAS and World Vision.

Table A.4 shows a comparative position of Mongla Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.4: Population and demographic characteristics: Average upazila and Mongla upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Bagerhat District	Mongla UZ	Mongla UZ
Area	Sq. km.	291	440	1461	1461.2
Household	No.	50,278	35,945	31,015	34,504
Household size (dwelling)	No. of members	4.9	4.7	4.8	4.6
Population					
Both sexes	No.	245277	172115	149030	158,604
Male	No.	126413	89349	80819	85,377

Female	No.	118863	82765	68211	73,227
Female headed household	% of rural hh	3.5	2.0	3.0	3.0
Density of population	per sq. km	839	391	102	109
Sex ratio	Ratio (M/F)	106	108	118	117
Literacy rate	% of population(7 years & over)				
Both sexes	%	45.32	58.7	56.1	70.0
Male	%	49.56	60.8	59.5	69.0
Female	%	40.83	56.5	52.1	73.9
Urban population	%	23.1	13.33	38.1	38.2

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Bagerhat Zila & Upazila); http://www.banglapedia.org/httpdocs/HT/M_0312.HTM.

Household Characteristics: There are 34,504 households in the upazila. The distribution of households by type shows that there are 95.4 percent dwelling, 0.9 percent institutional and 3.7 percent other households. The average household size (dwelling) is 4.6.

Housing Characteristics: The housing condition of Mongla Upazila is predominantly kutcha. The kutcha housing structure is reported as 78.1 percent. The Jhupri, the lowest standard of housing structure, is observed as 12.1 percent (Table A.5).

Table A.5: Main dwelling household by structure

Structure	%
Jhupri	12.1
Kutcha	78.1
Semi-pucca	4.6
Pucca	5.2
Total	100.0

Water and Sanitation : In Mongla upazila, only 4.7 percent dwelling households drink tube well water, 15.1 percent drink tap water, 2.2 percent drink deep tube-well water, and overwhelming 78.0 percent drink water from ponds and other sources. Only 22.2 percent of dwelling households have sanitary latrines, 71.7 percent have non-sanitary latrines, with about 6.1 percent of the households having no toilet facility at all.

Access to Electricity: All the 6 unions of the upazila have been brought under rural electrification program. However, only 31.2 percent of the dwelling households are reported to have electricity connection in the entire upazila.

Ownership of Agricultural Land: In Mongla upazila, 41.1 percent of the dwelling households own land, while the remaining 58.9 percent do not own any agricultural land.

Source of Household Income: In the upazila, 36.3 percent of the dwelling households depend on agriculture as the main source of household income, with 23.44 percent on cropping, livestock, forestry and fishery and 12.87 percent on agricultural labor. Other sources of household income are non-agricultural labor (17.0%), business (18.9%), self-employment (10.7%), construction (1.4%), rent and remittances (0.27%), weaving (0.27%), transport and communication (2.5%), industry (0.53 percent) and others (12.0%).

Economic Activity: In the upazila, 23.1 percent of the population are below 10 years of age. Among the population of aged 10 years and over, 26.25 percent are not working, 2.45 percent are looking for work, 33.74 percent are engaged in household work and the remaining 37.56 percent are working in various occupations. Major occupation of the upazila population are as follows: agriculture (12.16 percent), industry (0.35 percent), business (7.77 percent), services (0.72 percent), construction (0.90 percent), transport and communication (1.10 percent) and others (14.56 percent).

In Mongla Upazila, 56.1 percent of population aged 7 years and over are literate, male rate 59.5 percent followed by female rate as 52.1 percent (2001 Census).

Urbanization: The main features are shown in table A.6:

Table A.6 shows a comparative position of Mongla Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.6: Basic information on average upazila and Mongla Upazila

Aspects		Unit	Average upazila (2001)		
			Bangladesh	Bagerhat district	Mongla UZ
Area/Administration	Area	Sq Km	291	440	1461
	Union/Ward	No.	14	12	15
	Village	No.	173	115	77
Physical infrastructure	Houses with pucca wall	% of Total hh	42	44	30
	Houses with pucca roof	% of Total hh	54	27	14
	Houses with electricity	% of Total hh	31	27	28.3
	Primary school	No.	160.6	149.2	93

	High school	No.	30.2	32.0	23
	College	No.	6.3	3.2	4
Economy	Agri. labor	% of Total hh	36	36	35
	Agri. household	% of Total hh	51	76	71
	Non-agri. household	% of Total hh	49	24	29
	Cultivable land	Hectare	44,238	14,382	12,566
	Cultivable land	% total area	61.3	98.7	NA
	One crop	% agri. land	31	95	99
	Two crop	% agri. land	42	3	0.86
	Three crop	% agri. land	13	2	0.11
	Annual per capita income	Tk	18269	16839	NA
	Absolute poor	% of Total hh	49	69	NA
	Ultra poor	% of Total hh	23	37	NA
Education	Literacy rate	% 7+ years	46.2	58.7	56.1
	Enrolment in primary school	% 6-10 years	97	98	89
	Female enrolment	% 6-10 years	49	98	89
Health	Active tube wells	No.	2,216	1,847	295
	Active tube wells	No. per 1000 hh	91	NA	NA
	HH with safe water provision	% of Total hh	91	62	18
	HH with proper sanitation	% of Total hh	37	56	11
	Child mortality rate	Per 1000	43	56	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.3 Morrelganj Upazila

Area and Location : Morrelganj Upazila, the second largest upazila of Bagerhat District, has an area of 461 sq km. It is bounded by Bagerhat Sadar and Kachua upazilas on the north, Sarankhola and Matbaria upazilas on the south, Pirojpur Sadar and Bhandaria upazilas on the

east, and Rampal and Mongla upazilas on the west. Main rivers are Baleshwar, Ghasiakhali, Panguchi and Bhola.

Morrelganj Town consists of 9 wards and 12 mahallas. The area of the town is 13.2 sq km. The town has a population of 27,352, with male 52.1 percent and female 47.9 percent. The density of population is 2,067 per sq km.

Map A.3: Map of Morrelganj Upazila



Administration : Morrelganj Upazila has 1 municipality, 16 union parishads, 121 mouzas and 181 villages.

Population : The upazila has a population of 374,271, with male 51.6 percent and female 48.4 percent.

According to the Population Census 2001, the total population of the upazila is 349,551, of which 178,676 are males and 170,875 are females. The sex ratio of the upazila is 104 males to 100 females in 2001 as against 102 males to 100 females in 1991.

Literacy and Educational Institutions : In Morrelganj upazila, 62.3 percent population aged 7 years and above are literate — male 63.8 percent and female 60.8 percent; overall, 37.7 percent of the population are illiterate (2001). Average literacy rate of the upazila population is 75.2 percent, with male 73.2 percent and female 77.9 percent. Educational institutions include 6 colleges, 76 high schools, and 291 madrasahs.

Occupations: Major occupations of the upazila population are agriculture (35.5%), fishing (3.7%), agricultural laborer (20.7%), wage laborer (6.9%), commerce (11.9%), transport (1.4%), service (5.6%) and others (14.4%).

Land use: The upazila has cultivable land of 31,778 hectares; single crop constitutes 43.0 percent, double crop 36.0 percent and treble crop 21.0 percent. Main crops are paddy, potato, brinjal, sugarcane. Main fruits are mango, blackberry, jackfruit, guava, banana, palm and coconut.

Non-farm activities: Non-farm activities include 960 fisheries, 13 poultry, 8 dairy and 1 hatchery.

Manufacturing activities : Among limited manufacturing activities, ice factory (4), rice mill (59), saw mill (46) and welding (30) are important. Cottage industries include bamboo and cane work (144) and embroidery work (10).

Communication facilities : Communication facilities include: pucca roads 59 km, semi pucca roads 82 km and mud road 765 km.

NGOs : NGOs that operate in the locality are BRAC, PROSHIKHA, ASA and Grameen Bank, Bima Prokalpo, Ranar Uddipan, Mashuk, Gono Shastho Kendra, Dak Deya Jai, CDC, etc.

Table A.7 shows a comparative position of Morrelganj Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.7: Population and demographic characteristics: Average upazila and Morrelganj Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Bagerhat District	Morrelgang UZ	Morrelgang UZ
Area	Sq. km.	291	440	460.9	460.9
Household	No.	50,278	35,945	75,472	89,540
Household size (dwelling)	No. of members	4.9	4.7	4.6	4.2

Population					
Both sexes	No.	245,277	172,115	349,551	374,271
Male	No.	126,413	89,349	178,676	193,270
Female	No.	118,863	82,765	170,875	181,001
Female headed household	% of rural hh	3.5	2.0	2.5	2.7
Density of population	per sq. km	839	391	758	812
Sex ratio	Ratio (M/F)	106	108	104	107
Literacy rate	% of population (7 years & over)				
Both sexes	%	45.32	58.7	62.3	75.2
Male	%	49.56	60.8	63.8	73.2
Female	%	40.83	56.5	60.8	77.9
Urban population	%	23.1	13.33	7.8	8.8

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Bagerhat Zila & Upazila); http://www.banglapedia.org/httpdocs/HT/M_0324.HTM.

Household and Housing Characteristics : In the upazila, there are 89,540 households; average size is 4.2. The housing condition of Morrelganj Upazila is predominantly kutcha. The kutcha housing structure is reported as 78.1 percent. The Jhupri, the lowest standard of housing structure, is observed as 12.1 percent (Table A.8).

Table A.8: Main dwelling household by structure

Structure	%
Jhupri	12.1
Kutcha	78.1
Semi-pucca	4.6
Pucca	5.2
Total	100.0

Water and Sanitation : In Morrelganj upazila, 29.1 percent dwelling households drink tube well water, 2.7 percent drink tap water, 2.0 percent drink deep tube well water, and an overwhelming 66.2 percent drink water from pond and other sources. Among the upazila households, 29.5 percent have sanitary latrines, 64.6 percent use non-sanitary latrines, and 5.9 percent of the households have no toilet facility at all.

Access to Electricity: All the 16 unions of the upazila have been brought under rural electrification program. However, only 13.9 percent of the dwelling households are reported to have electricity connection in the entire upazila.

Ownership of Agricultural Land: In Morrelganj upazila, 57.5 percent of the dwelling households own land, while the remaining 42.5 percent do not own any agricultural land.

Source of Household Income : In the upazila, 56.8 percent of the dwelling households depend on agriculture as the main source of their income, with 32.6 percent on cropping, livestock, forestry and fishery and 24.2 percent on agricultural labor. Other sources of household income are non-agricultural labor (5.8%), business (15.3%), self-employment (8.1%), construction (1.2%), rent and remittances (0.49%), weaving (0.36%), transport and communication (2.1%), industry (0.55%) and others (9.0%).

Economic Activity : In the upazila, 25.2 percent of the population are below 10 years of age. Among the population of age 10 years and above, 28.6 percent are not working, 2.5 percent are looking for work, 36.3 percent are engaged in household work and the remaining 32.65 percent are working in various occupations.

Table A.9 shows a comparative position of Morrelganj Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.9: Basic information on average upazila and Morrelganj Upazila

Item		Unit	Average upazila (2001)		
			Bangladesh	Bagerhat District	Morrelganj UZ
Area/ Administration	Area	Sq Km	291	440	461
	Union/Ward	No.	14	12	25
	Village	No.	173	115	181
Physical infrastructure	Houses with pucca wall	% of Total hh	42	44	51
	Houses with pucca roof	% of Total hh	54	27	21
	Houses with electricity	% of Total hh	31	27	13.9
	Primary school	No.	160.6	149.2	334
	High school	No.	30.2	32.0	60

	College	No.	6.3	3.2	5
Economy	Agri. labor	% of Total hh	36	36	31
	Agri. household	% of Total hh	51	76	76
	Non-agri. household	% of Total hh	49	24	24
	Cultivable land	Hectare	44,238	14,382	31,778
	Cultivable land	% of total area	61.3	98.7	n.a
	One crop	% of agri. land	31	95	43
	Two crop	% of agri. land	42	3	36
	Three crop	% of agri. land	13	2	21
	Annual per capita income	Tk	18,269	16,839	NA
	Absolute poor	% of Total hh	49	69	NA
	Ultra poor	% of Total hh	23	37	NA
Education	Literacy rate	% 7+ years	45	58	57
	Enrolment in primary school	% 6-10 years	97	98	99
	Female enrolment	% 6-10 years	49	98	98
Health	Active tube wells	No.	2216	1,847	1,760
	Active tube wells	No. per 1000 hh	91	NA	NA
	HH with safe water provision	% of Total hh	91	50	29
	HH with proper sanitation	% of Total hh	37	56	29.5
	Child mortality rate	Per 1000	43	56	NA

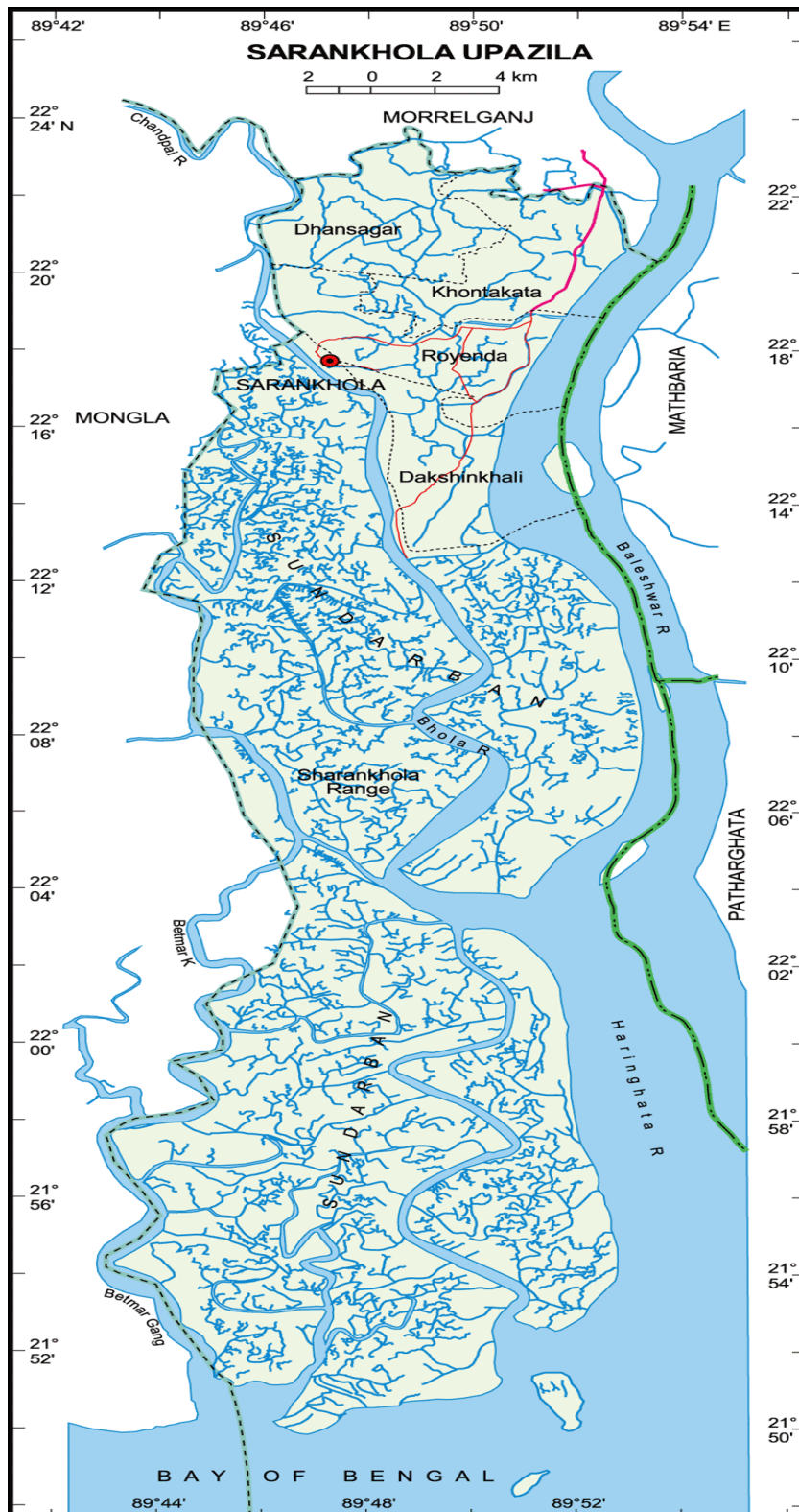
Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.4 Sarankhola Upazila

Area and Location: Sarankhola, the second smallest upazila of Bagerhat District, in respect of population, occupies a total area of 757 sq km., including as high as 595 (78.6 percent) sq. km of forest area. The upazila is bounded on the north by Morrelganj upazila, on the east by Matbaria

upazila of Pirojpur District and Patharghata upazila of Barguna District, on the south by the Bay of Bengal and on the west by Mongla upazila

Map A.4: Map of Sarankhola Upazila



Sarankhola Town consists of 2 mouzas. The area of the town is 29.1 sq km. It has a population of 23,547, with male 50.0 percent and female 50.0 percent. The density of population is 810 per sq km. The literacy rate among the town people is 58.9 percent.

Administration : Sarankhola Upazila consists of 5 union parishads, 12 mouzas and 45 villages. The average population of union, mouza and village is 28,521, 9,507 and 2,535 respectively.

Population Characteristics: According to the Population Census 2001, the total population of the upazila is 114,083, of which 61,799 are males and 52,284 are females. The sex ratio of the upazila is 118 males to 100 females in 2001 as against 105 males to 100 females in 1991. The upazila has now a population of 119,349, with male 56.6 percent and female 43.4 percent.

Literacy and educational institutions: In Sarankhola upazila about 56.0 percent population aged 7 years and over are literate. Average literacy rate is 71.0 percent: male 63.3 percent and female 81.5 percent. Educational institutions include college 3, high school 9, junior school 8, community school 7, madrasa 11, satellite school 14, government primary school 34 and non-government primary school 71.

Occupations: Agriculture 32.94 percent, forestry 8.65 percent, fishing 4.27 percent, agricultural laborer 11.96 percent, wage laborer 7.32 percent, commerce 14.14 percent, service 5.78 percent, and others 14.94 percent.

Land Use: Total cultivable land is 11,616 hectares, of which fallow land is 829 hectares; single crop constitutes 53.02 percent, double crop 26.67 percent and treble crop 20.31 percent. Main crops are paddy and pulse. Main fruits are banana, litchi, lemon and mango.

Land Control: Among the peasants, 35.03 percent are landless, 7.23 percent marginal farmers, 22.10 percent small farmers, 29.67 percent intermediate farmers, 5.97 percent rich farmers; cultivable land per head is 0.09 hectare.

Communication Facilities: Roads include 25 km pucca, 34 km semi pucca and 150 km. mud road.

Manufacturing Activities: Manufacturing activities include 5 welding and 3 ice factories. Cottage industries include 15 bamboo and cane works, 15 goldsmiths, 2 blacksmiths and 11 weaving units.

Hats and bazaars: Total number of hats and bazars are 4, of which most noted are Raienda Bazar and Talfalbari Bazar.

NGOs : NGOs operating in the locality are BRAC, GRAMEEN BANK and Agradut.

Table A.10 shows a comparative position of Sarankhola Upazila in respect to district and national average in terms of population and demographic characteristics.

Table A.10: Population and demographic characteristics : Average upazila and Sarankhola Upazila

Aspects	Unit	Average UZ (2001)			2009	
		Bangladesh	Bagerhat District	Sarankhola UZ	Sarankhola UZ	
Area	Sq. km.	291	440	756.6	756.6	
Household	No.	50278	35945	21960	24,887	
Household size (dwelling)	No. of members	4.9	4.7	4.8	4.8	
Population						
Both sexes	No.	245277	172115	114083	119,349	
Male	No.	126413	89349	61799	67,603	
Female	No.	118863	82765	52284	51,746	
Female headed household	% of rural hh	3.5	2.0	2.7	2.7	
Density of population	per sq. km	839	391	151	157	
Sex ratio	Ratio (M/F)	106	108	118	131	
Literacy rate	% of population (7 years & over)					
Both sexes	%		45.32	58.7	56.0	71.0
Male	%		49.56	60.8	54.0	63.3
Female	%		40.83	56.5	58.4	81.5

Urban population	%	23.1	13.33	20.6	18.9
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Source: Estimated for 2009, based on data from Population Census 2001 (Community Series, Zila: Bagerhat); http://www.banglapedia.org/httpdocs/HT/S_0095.HTM.

Household and Housing Characteristics : In the upazila, there are 24,887 households. There are 96.22 percent dwelling, 0.48 percent institutions and 3.30 percent other households. The average household size (dwelling) is 4.8; for rural and urban areas the average sizes is 4.8 and 4.9 respectively.

Housing condition of Sarankhola upazila is predominantly kutcha. About 24.7 percent dwelling households live in jhupri, 72.1 percent live in kutcha houses, 2.2 percent live in semi-pucca houses and the remaining only 0.89 percent households live in pucca houses (Table A.11).

Table A.11: Type of main dwelling household

Structure	%
Jhupri	24.7
Kutcha	72.1
Semi-pucca	2.2
Pucca	0.9
Total	100.0

Water and Sanitation: In Sarankhola upazila, 22.00 percent dwelling households drink tube-well water, 12.03 percent drink tap water, 4.79 percent drink deep tube-well water, 59.62 percent drink pond water and the remaining 1.56 percent dwelling households drink water from other sources. In the upazila, 38.0 percent of dwelling households have sanitary latrines. Fifty seven percent of the households have non-sanitary latrines while 5.02 percent have no toilet facility.

Access to Electricity: All the 4 unions of the upazila have been brought under Rural Electrification Program. However, 9.51 percent of the dwelling households reported to have electricity connection in the entire upazila.

Ownership of Agricultural Land: In Sarankhola upazila, 48.7 percent of the dwelling households own agricultural land while 51.3 percent do not own any agricultural land.

Main Source of Household Income: In the upazila, 51.85 percent of the dwelling households depend on agriculture as the main source of household income with 32.17 percent on cropping, livestock, forestry and fishery and 19.68 percent on agricultural labor. Other sources of household income are non-agricultural labor (9.59 percent), business (16.24 percent), employment (6.56 percent), construction (1.68 percent), rent and remittances (0.61 percent), weaving (0.13 percent), transport and communication (2.90 percent), industry (0.57 percent) and others (9.45 percent).

Economic Activity: In the upazila, 25.04 percent of the population are below 10 years of age. Among the population of aged 10 years and over, 26.97 percent are not working, 2.43 percent are looking for work, 32.12 percent are engaged in household work and the remaining 38.48 percent are working in various occupations. Major occupations of the upazila people are agriculture (15.89 percent), industry (0.20 percent), business (4.96 percent), services (0.65 percent), construction (0.65 percent), transport and communication (0.89 percent) and others (15.24 percent).

Table A.12 shows a comparative position of Sarankhola Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.12: Basic information on average upazila and Sarankhola upazila

Item		Unit	Average upazila (2001)		
			Bangladesh	Bagerhat District	Sarankhola UZ
Area/Adm inistration	Area	Sq Km	291	440	757
	Union/Ward	No.	14	12	5
	Village	No.	173	115	45
Physical infrastructure	Houses with pucca wall	% of Total hh	42	44	50
	Houses with pucca roof	% of Total hh	54	27	17
	Houses with electricity	% of Total hh	31	27	9.5
	Primary school	No.	160.6	149.2	140
	High school	No.	30.2	32.0	18
	College	No.	6.3	3.2	3
Economy	Agri. labor	% of Total hh	36	36	21
	Agri. household	% of Total hh	51	76	72
	Non-agri. household	% of Total hh	49	24	28
	Cultivable land	Hectare	44,238	14,382	11,616
	Cultivable land	% of total area	61.3	98.7	NA
	One crop	% of agri. land	31	95	53
	Two crop	% of agri. land	42	3	27
	Three crop	% of agri. land	13	2	20
	Annual per capita income	Tk	18,269	16,839	NA
	Absolute poor	% of Total hh	49	69	NA
	Ultra poor	% of Total hh	23	37	NA
Education	Literacy rate	% 7+ years	45	58	56.0

	Enrolment in primary school	% 6-10 years	97	98	103
	Female enrolment	% 6-10 years	49	98	103
Health	Active tube wells	No.	2216	1,847	1,033
	Active tube wells	No. per 1000 hh	91	NA	NA
	HH with safe water provision	% of Total hh	91	50	31
	HH with proper sanitation	% of Total hh	37	56	38
	Child mortality rate	Per 1000	43	56	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.5 Dacope Upazila

Area and Location : Dacope, the second largest upazila of Khulna District, in respect of area, has an area of 992 sq km. It is bounded by Batiaghata Upazila on the north, Pashur River on the south, Rampal and Mongla upazilas on the east, and Paikgacha and Koyra upazilas on the west. Main rivers are Pashur, Sibsa, Manki and Bhadra. The southern part of this upazila is surrounded by Sundarbans (11,790 hectares).

There is a general belief that in the past this area was full of huge jungles consisting of the Sundarbans. The people from neighboring areas settled over here after cutting the jungles with *Da* (Bengali word, meaning chopper). The upazila might have derived its name as Dacope from of the words as *Da* and *Cope* (Bengali word, meaning cutting).

Administration: The upazila consists of 10 unions, 26 mouzas and 107 villages.

Dacope Upazila town consists of one mouza with an area of 22 sq km. The town has a population of 19,804. The density of population is 900 per sq km. Literacy rate among the town people is 54.7 percent.

Literacy: In Dacope upazila, only 49.3 percent population aged 7 years and over are literate. Average literacy rate now in the upazila is 62.9 percent – male 62.7 percent and female 63.0 percent.

Occupations: The occupations of people in the upazila include agriculture (47.0%), fishing (2.4%), pisciculture (2.0%), agricultural laborer (17.3%), wage laborer (4.8%), trade (9.48%), service (3.4%) and others (13.7%). Total cultivable land estimates as 18,483 hectares; of this, the share of single crop is 92.92 percent, and double crop 7.08 percent. Among the peasants of the upazila 20, percent are landless, 30 percent small farmers, 35 percent medium farmers and 15 percent rich farmers; cultivable land per head estimates as 0.19 hectare.

Main crops are paddy, potato, onion and garlic.

Non-agricultural Activities: Non-agricultural activities include fisheries, dairies, fishery, galda prawn, bagda and poultry. There are nearly 1,600 prawn cultivators, most of which are bagda type. Manufacturing activities include fish processing factory, sugar mill, rice mill and salt production centre. Cottage industries include bamboo and cane work, iron mill and goldsmith. Total number of hats and bazaars is 8; most noted of which is Chalna Hat.

Local delicacy is honey of the Sundarbans.

Table A.13 shows a comparative position of Dacope Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.13: Population and demographic characteristics: Average upazila and Dacope Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Khulna District	Dacope UZ	Dacope UZ
Area	Sq. km.	291	314	991.6	991.6
Household	No.	50,278	35,666	30,130	34,645
Household size (dwelling)	No. of members	4.9	4.7	5.1	4.9
Population					
Both sexes	No.	245,277	169,927	157,489	170,126
Male	No.	126,413	88,873	83,193	90,688
Female	No.	118,863	81,053	74,296	79,446
Female headed household	% of rural hh	3.5	2.85	2.1	2.1
Density of population	per sq. km	839	541	159	172
Sex ratio	Ratio (M/F)	106	110	112	114

Literacy rate	% of population (7 years & over)				
Both sexes	%	45.32	57.8	49.34	62.9
Male	%	49.56	63.3	55.52	62.7
Female	%	40.83	51.8	42.40	63.0
Urban population	%	23.1	54.0	12.6	13.4

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Zila: Bagerhat); http://www.banglapedia.org/httpdocs/HT/D_0002.HTM.

Housing and Household Characteristics: The average dwelling household size for the upazila is 4.9 persons. For rural area the size is 5.1 and for urban area the size is lower, 4.8 persons. Among housing structures in the upazila, predominant is kutchha structure (89.8%) while pucca house comprises 2.4 percent (Table A.14).

Table A.14: Type of main dwelling household

Structure	Upazila
Jhupri	4.8
Kutchha	89.8
Semi-pucca	3.0
Pucca	2.4
Total	100.0

Water and Sanitation: Among sources of drinking water, the pond source is exceptionally predominant. Dwelling households reported drinking water from pond are 54.06 percent. On the other hand, dwelling households found drinking tube-well water are 38.03 percent, deep tube-well water 1.75 percent, tap water 3.15 percent and water from other sources 3.01 percent. In Dacope upazila, 38.83 percent of dwelling households have sanitary latrines with 48.7 percent of the households have non-sanitary latrines. All the 10 unions of the upazila have been brought under Rural Electrification Program. However, 6.35 percent of the dwelling households reported to have electricity connection in the entire upazila.

Main Source of Household Income: In the upazila 66.1 percent of the dwelling households depend on agriculture as the main source of household income with 44.98 percent on cropping, livestock, forestry and fishery and 21.09 percent on selling agricultural labor. Other sources of household incomes are non-agricultural labor (4.85 percent), business (12.86 percent), employment (4.10 percent), construction (0.93 percent), religious service (0.24 percent), rent and remittances (0.05 percent), transport and communication (1.72 percent), and others (9.18 percent). In urban area, dwelling households having main incomes are from employment 9.32 percent, construction 2.04 percent, rent and remittances 0.10 percent, religious service 0.07 percent, business 26.58 percent, nonagricultural labor 4.47 percent, transport and communication 6.06 percent, industry 1.42 percent and others 49.94 percent.

Population: The upazila has now a population of 170,126 of which 90,688 are males and 79,446 are females. The sex ratio of the upazila is 112 males to 100 females.

Economic Activity: In Dacope upazila, the share of population below 10 years of age is 48.08 percent. Among the population of age 10 years and above, those recorded do not work are 29.81 percent, looking for work 1.86 percent, doing household work 31.94 percent and employed 36.39 percent. Among the employed people, 19.55 percent are in agriculture, 0.25 percent in industry, 4.79 percent in business, 0.59 percent in services, 0.60 percent in construction, 0.58 percent in transport and communication and 10.03 percent in others.

Table A.15 shows a comparative position of Dacope Upazila with respect to district and national average in terms of various socio-economic aspects.

Table A.15: Basic information on Dacope Upazila and Khulna District

Aspects		Unit	2001		
			Bangladesh	Khulna District	Dacope UZ
Area/Administration	Area	Sq Km	291	314	992
	Union/Ward	No.	14	8.4	10
	Village	No.	173	80.0	107
Physical infrastructure	Houses with pucca wall	% of Total hh	42	62	56
	Houses with pucca roof	% of Total hh	54	44	9
	Houses with electricity	% of Total hh	31	42	6.35
	Primary school	No.	160.6	142	121
	High school	No.	30.2	26	31
	College	No.	6.3	4.1	4
Economy	Agri. labor	% of Total hh	36	40	28

	Agri. household	% of Total hh	51	69	68
	Non-agri. household	% of Total hh	49	31	32
	Cultivable land	Hectare	44,238	10,679	18,483
	Cultivable land	% of total area	61.3	NA	NA
	One crop	% of agri. land	31	NA	93
	Two crop	% of agri. land	42	NA	7
	Three crop	% of agri. land	13	NA	NA
	Annual per capita income	Tk	18,269	23,135	NA
	Absolute poor	% of Total hh	49	55	NA
	Ultra poor	% of Total hh	23	26	NA
Education	Literacy rate (7+ years)	%	45	57	49.34
	Enrolment in primary school	6-10 years (%)	97	96	98
	Female enrolment	6-10 years (%)	49	98	100
Health	Active tube wells	No.	2,216	1,129	775
	Active tube wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	87	46
	HH with proper sanitation	% of Total hh	<u>37</u>	59	39
	Child mortality rate	Per 1000	43	59	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.6 Koyra Upazila

Area and Location : Koyra, the largest upazila of Khulna District in respect of area, occupies an area of 1775 sq. km. including 952 sq km of forest area. In other words, the upazila has more than 53 percent as forest area. It is bounded by Paikgacha upazila on the north, the Bay of Bengal and the Sundarbans on the south, Dacope upazila on the east, and Assasuni and Shymnagar upazilas on the west. Main rivers are Shibsra, Pashur, Kobadak, Dharla, Malancha, Ball and Arpangachhia.

Administration : The upazila consists of 7 unions and 130 villages. Koyra Town consists of only one mouza. It has an area of 10.1 sq km. The town has a population of 11,342 - male 48.6 percent and female 51.4 percent. The density of town population is 1,127 per sq km. Literacy rate among the town people is 45.2 percent.

Population The upazila has a population of 217,717 of which 108,879 are males and 108,846 are females. The sex ratio of the upazila is 99 males to 100 females.

Literacy and Educational Institutions : In Koyra upazila, only 44.46 percent population aged 7 years and over are literate - 53.17 percent are male, and 35.99 percent are female (2001). Average literacy rate now (2009) is 57.7 percent - male 62.5 percent and female 55.6 percent. Educational institutions include 3 colleges, 22 secondary schools, 10 junior schools, 54 government primary schools, 57 non-government primary schools, 22 madrasahs, 11 community schools and 9 satellite schools.

Main occupations: Major occupations of Koyra population are agriculture (43.4 percent), forestry (3.2 percent), fishing (5.0 percent), agricultural laborer (20.4 percent), non agricultural laborer (4.6 percent), trade (9.5 percent), service (2.9 percent) and others (11.1 percent).

Main crops : Main crops are paddy, potato and vegetables.

Communication facilities : The upazila has pucca roads of 73 sq km. and mud roads of 466 sq km.

Manufacturing activities : Manufacturing activities include 2 Ice factories, 4 saw mills, 452 rice mills, 4 flour mills, 8 food industries, 3 textile mills, 12 forest industries, 2 engineering works and 4 other activities. Cottage industries include 200 goldsmiths, 30 iron workshops and 5 potteries.

NGOs: Important NGOs working in the locality are BRAC, PROSHIKA, Grameen Bank, Prodipan, Ahsania Mission, World Vision, Grameen Swanirvar, Setu and JSS.

Map A.6: Map of Koyra Upazila

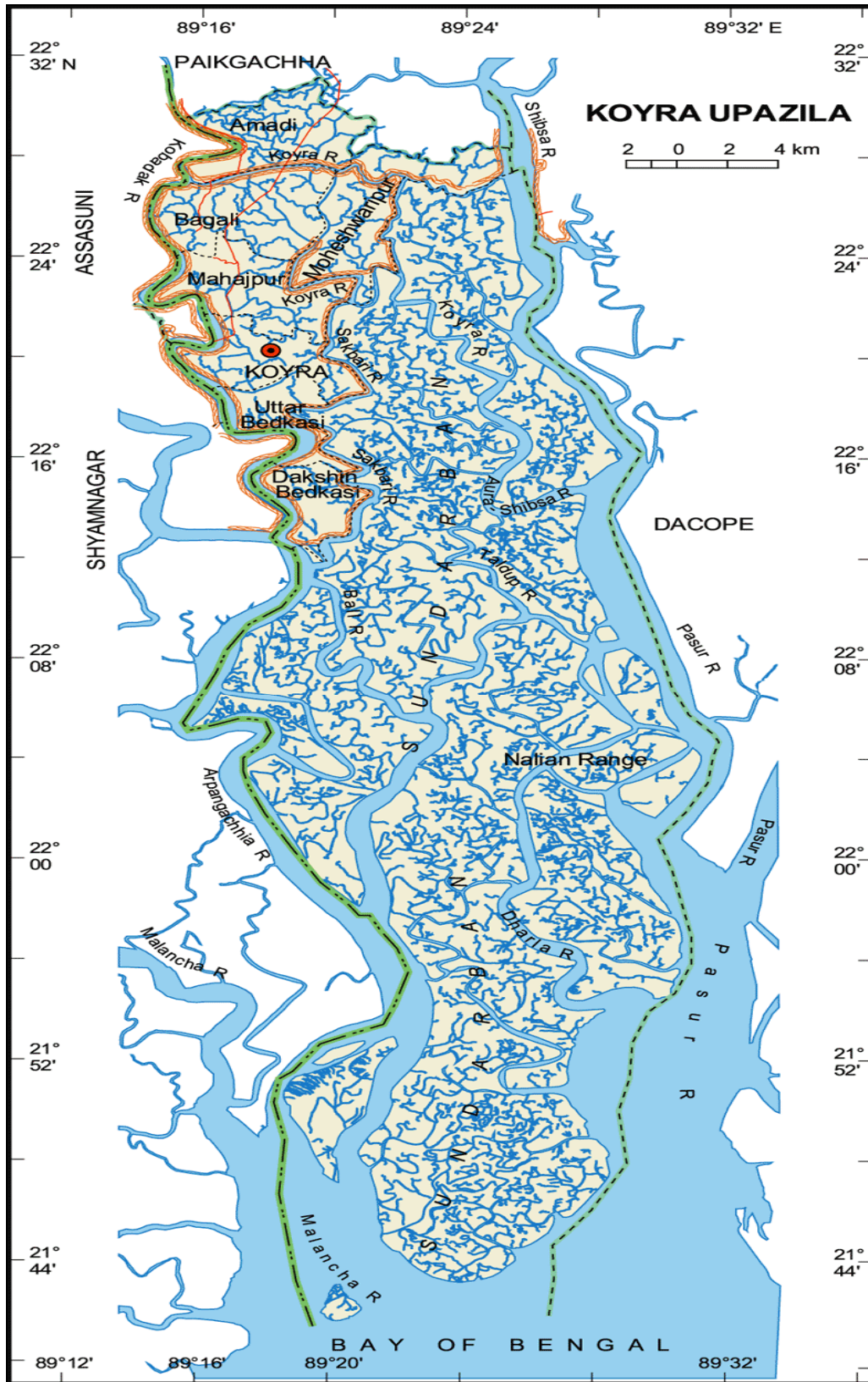


Table A.16 shows a comparative position of Koyra Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.16: Population and demographic characteristics : Average upazila and Koyra Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Khulna District	Koyra UZ	Koyra UZ
Area	Sq. km.	291	314	1775.4	1775.4
Household	No.	50278	35666	38394	49,703
Household size (dwelling)	No. of members	4.9	4.7	5.0	4.4
Population					
Both sexes	No.	245277	169927	192534	217,717
Male	No.	126413	88873	95993	108,879
Female	No.	118863	81053	96541	108,846
Female headed household	% of rural hh	3.5	2.9	1.2	NA
Density of population	per sq. km	839	541	108	123
Sex ratio	Ratio (M/F)	106	110	99	100
Literacy rate	% of population (7 years & over)				
Both sexes	%	45.32	57.8	44.5	57.7
Male	%	49.56	63.3	53.2	62.5

Female	%	40.83	51.8	36.0	55.6
Urban population	%	23.1	54.0	5.9	6.5

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Bagerhat Zila); http://www.banglapedia.org/httpdocs/HT/K_0291.HTM.

Housing and Household Characteristics: The upazila has an estimated household of 49,703. The average dwelling household size is 4.4 persons.

Among housing structures in the upazila, predominant is kutchha structure. Dwelling households having such structure are as many as 94.5 percent.

Table A.17: Main Dwelling House by Type of Structure

Structure	%
Jhupri	1.5
Kutchha	94.5
Semi-pucca	2.0
Pucca	2.0
Total	100.0

Water and Sanitation: Among sources of drinking water, the pond source is predominant. Dwelling households reported drinking water from pond are 55.0 percent. On the other hand, 35.0 percent dwelling households drink deep tube well water, tube well water 8.9 percent and tap water 1.1 percent. About 31.0 percent of dwelling households have sanitary latrines with 32.43 percent in rural area and 7.36 percent in urban area.. Sixty percent of the households have non-sanitary latrines, while 9.0 percent of the households have no toilet facility.

Access to Electricity: All the 7 unions of the upazila have been brought under Rural Electrification Program. However, a total of 5.5 percent of the dwelling households are reported to have electricity connection in the entire upazila.

Ownership of Agricultural Land: In Koyra upazila 62.8 percent of the households own land while the remaining 37.2 percent do not own any agricultural land.

Source of Household Income : In the upazila 66.64 percent of the dwelling households depend on agriculture as the main source of household income with 44.30 percent on livestock, forestry and fishery.

Economic Activity : In Koyra upazila, the share of population below 10 years of age is 28.38 percent. Among the population of age 10 years and above, of those recorded 27.72 percent do not work, 2.07 percent looking for work, 36.06 percent doing household work and the remaining 34.15 percent are employed.

Table A.18 shows a comparative position of Koyra Upazila with respect to district and national average in terms of various socio-economic aspects.

Table A.18: Basic information on average upazila and Koyra Upazila

Item		Unit	Average upazila (2001)		
			Bangladesh	Khulna District	Koyra UZ
Area/Administration	Area	Sq Km	291	314	1775
	Union/Ward	No.	14	8.4	7
	Village	No.	173	80.0	131
Physical infrastructure	Houses with pucca wall	% of Total hh	42	62	81
	Houses with pucca roof	% of Total hh	54	44	5
	Houses with electricity	% of Total hh	31	33	5.5
	Primary school	No.	160.6	142	165
	High school	No.	30.2	26	35
	College	No.	6.3	4.1	2
Economy	Agri. labor	% of Total hh	36	40	41
	Agri. household	% of Total hh	51	69	70
	Non-agri. household	% of Total hh	49	31	30
	Cultivable land	Hectare	44,238	10,679	14,890
	Cultivable land	% of total area	61.3	NA	NA
	One crop	% of agri. land	31	NA	NA
	Two crop	% of agri. land	42	NA	NA

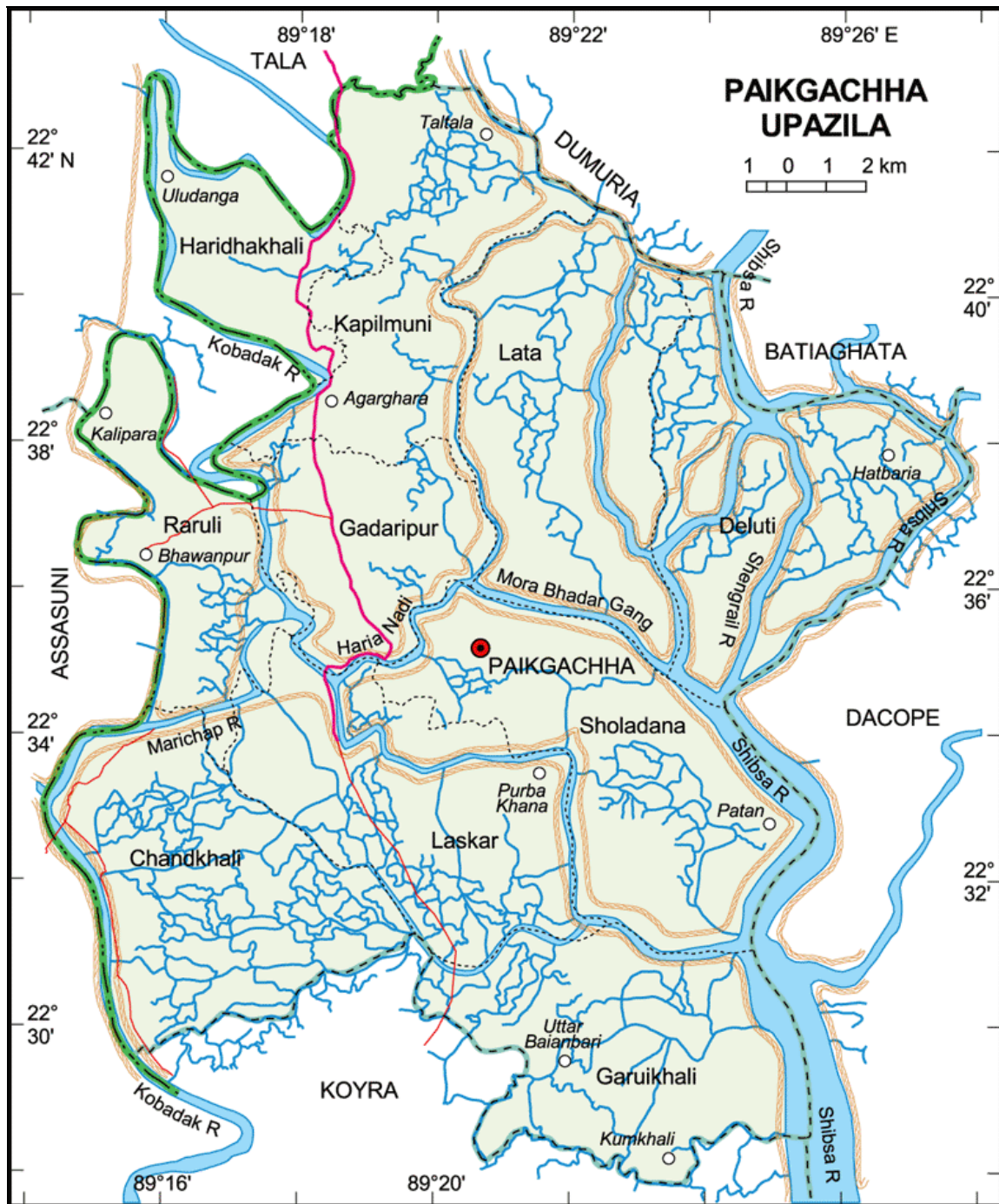
	Three crop	% of agri. land	13	NA	NA
	Annual per capita income	Tk	18,269	23,135	NA
	Absolute poor	% of Total hh	49	55	NA
	Ultra poor	% of Total hh	23	26	NA
Education	Literacy rate	% 7+ years	45	57	38
	Enrolment in primary school	% 6-10 years	97	96	94
	Female enrolment	% 6-10 years	49	98	94
Health	Active tube wells	No.	2,216	1,129	964
	Active tube wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	87	31
	HH with proper sanitation	% of Total hh	<u>37</u>	59.0	31.0
	Child mortality rate	Per 1000	43	59	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.7 Paikgacha Upazila

Area and Location : Paikgacha is the fourth largest upazila of Khulna District in respect of area and third largest in respect of population. It has an area of 411 sq km. The upazila is bounded by Dumuria and Tala upazilas on the north, Batiaghata and Dacope upazilas on the east, Koyra upazila on the south and Tala and Assasuni upazilas of Satkhira District on the west. Main rivers are Kobada and Shibsa, Vadra, Haria, Deluchi, Harrakhali, Narai, Gangkhali, Katakhai and Karulia.

Map A.7: Map of Paikgacha Upazila



Administration : The upazila consists of 10 unions, 9 wards, 159 mouzas, 11 mahallas and 209 villages.

With an area of 2.1 sq km., the Paikgacha Town consists of 9 wards and 5 mahallas. The town has a population of 14,213 - male 53.7 percent and female 46.3 percent. The density of population is 5,640 per sq km.

Population: The upazila has a population of 268,417, of which 127,579 are males and 120,533 are females. The average dwelling household size for rural area is slightly higher i.e. 4.8 and for

urban area the size is a little lower i.e. 4.6 persons. The upazila has a population (2001) of 248,112. The sex ratio of the upazila is 106 males to 100 females.

Literacy and Educational Institutions : In Paikgacha upazila, only 45.84 (2001) percent population aged 7 years and over is literate. Average literacy rate is 60.7 percent with male 64.9 percent and female 59.1 percent. Educational institutions include 6 colleges, 35 secondary schools, 13 lower secondary schools, 58 madrasahs, 74 government primary schools, 84 non-government primary schools, 11 satellite schools and 6 women training institutes.

Occupations : Major occupations include agriculture (35.48 percent), forestry (1.49 percent), fishing and livestock (4.03 percent), agricultural laborer (19.33 percent), wage laborer (7.4 percent), service (3.41 percent), commerce (15.58 percent), transport (1.97 percent), industry (1.3 percent) and others (10.01 percent).

Land use: Total cultivable land is 20,571 hectares, of which fallow land is 485.22 hectares. Single crop constitutes 75.72 percent, double crop 18.82 percent and treble crop land 5.46 percent. Main crops are paddy, jute, potato, eggplant, wheat, pulses, betel leaf, turmeric and sesame. Main fruits are Mango, blackberry, jackfruit, sofeda, lemon, coconut, betel nut, banana, papaya, litchi.

Land control : Among the peasants, 34.78 percent are landless, 20.71 percent marginal farmers, 23.51 percent intermediate farmers and 21 percent rich farmers.

Non-farm activities : There include hatchery 1, fishery 972, poultry 44, dairy 50, artificial breeding centre 1 and crab nursery 4.

Communication facilities Roads: pucca 30 km., semi pucca 100 km and mud road 465 km; waterways 15 nautical mile.

Manufacturing activities: These include handloom (2), jute and related industry (1), forest manufactory (6), tannery (1), engineering (4), oil mill (76), rice mill (37), fishing net (29), bakery (2). Cottage industries mat and reeds (622), tailoring (163), wood work (102), dry fish (86), goldsmith (30), ironsmith (19), metal and handicraft (20), *biri* factory (6), *gur* (molasses) making (2) and terracotta (10).

Hats, bazars : Total number of hats and bazars are 19; Among these, Kopilmunir Hat, Agarghatar Hat, Paikgacha Bazar are most noted.

NGOs : NGOs operating in the locality include Satkhira Unnayan Sangstha (SUS), Uttoron, CSS, BRAC, ASA, GRAMEEN BANK, Mukulito Khulna etc.

Table A.19 shows a comparative position of Paikgacha Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.19: Population and demographic characteristics: Average upazila and Paikgacha Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Khulna District	Paikgacha UZ	Paikgacha UZ
Area	Sq. km.	291	314	411.2	411.2
Household	No.	50278	35666	51757	62,373
Household size (dwelling)	No. of members	4.9	4.7	4.8	4.3
Population					
Both sexes	No.	245277	169927	248112	268,417
Male	No.	126413	88873	127579	138,643
Female	No.	118863	81053	120533	129,774
Female headed household	% of rural hh	3.5	2.85	1.8	1.8
Density of population	per sq. km	839	541	603	653
Sex ratio	Ratio (M/F)	106	110	106	107
Literacy rate	% of population (7 years & over)				
Both sexes	%	45.32	57.8	45.8	60.7
Male	%	49.56	63.3	53.9	64.9
Female	%	40.83	51.8	37.3	59.1
Urban population	%	23.1	54.0	5.7	14.6

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Zila : Bagerhat); http://www.banglapedia.org/httpdocs/HT/P_0024.HTM.

Housing and Household Characteristics: The number of households enumerated in the census for the upazila is 62,373, the overwhelming 99.07 percent is dwelling households.

Housing condition of Sarankhola upazila is predominantly kutcha. About 3.6 percent dwelling households live in jhupri, 80.4 percent households live in kutcha houses, 8.0 percent households live in semi-pucca houses and the remaining only 8.0 percent households live in pucca houses upazila (Table A.20).

Table A2.20: Main dwelling house by structure

Structure	%
Jhupri	3.6
Kutcha	80.4
Semi-pucca	8.0
Pucca	8.0
Total	100.0

Water and Sanitation : Among sources of drinking water, the tube-well source is predominant. Dwelling households reported drinking water from tube-well are 75.66 percent. On the other hand, dwelling households found drinking deep tube-well water are 0.84 percent, pond water 19.42 percent, tap water 1.31 percent and water from other sources 2.77 percent.

In Paikgacha upazila 43.38 percent of dwelling households have sanitary latrines while 43.3 percent of the households have non-sanitary latrines In this upazila 13.4 percent of the households have no toilet facility at all.

Access to Electricity: All the 10 unions of the upazila have been brought under Rural Electrification Program. However, a total of 12.70 percent of the dwelling households reported to have electricity connection in the entire upazila.

Ownership of Agricultural Land: In Paikgacha upazila, 54.3 percent of the dwelling households own agricultural land and 45.72 percent do not own any agricultural land. Percentage of households owning agricultural land is 39.71 percent in urban area as against 55.13 percent in rural area.

Source of Household Income: In the upazila 53.14 percent of the dwelling households depend on agriculture as the main source of household income with 29.58 percent on cropping, livestock, forestry and fishery and 23.56 percent on selling agricultural labor. Other dwelling households reported earning main incomes are from non-agricultural labor (5.48 percent), business (22.93 percent), employment (4.11 percent), industry (1.50 percent) construction (1.16 percent), rent and remittance (0.12 percent), transport and communication (2.82 percent) and others (8.53 percent).

Economic Activity: In Paikgacha upazila, the share of population below 10 years of age is 23.84 percent. Among the population of age 10 years and above, those recorded do not work are 29.48 percent, looking for work 2.20 percent, doing household work 32.84 percent and employed the remaining 35.48 percent. The employed people working are in agriculture (18.30 percent),

industry (0.61 percent), business (8.00 percent), services (0.51 percent), construction (0.56 percent), transport and communication (1.11 percent) and others (6.39 percent).

Table A.21 shows a comparative position of Paikgacha Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.21: Basic information on average upazila and Paikgacha Upazila

Item		Unit	Average upazila (2001)		
			Bangladesh	Khulna District	Paikgacha UZ
Area/Administration	Area	Sq Km	291	314	411
	Union/Ward	No.	14	8.4	19
	Village	No.	173	80.0	212
Physical infrastructure	Houses with pucca wall	% of Total hh	42	62	79
	Houses with pucca roof	% of Total hh	54	44	26
	Houses with electricity	% of Total hh	31	33	12.7
	Primary school	No.	160.6	142	182
	High school	No.	30.2	26	50
	College	No.	6.3	4.1	6
Economy	Agri. labor	% of Total hh	36	40	25
	Agri. household	% of Total hh	51	69	61
	Non-agri. household	% of Total hh	49	31	39
	Cultivable land	Hectare	44,238	10,679	20,571
	Cultivable land	% of total area	61.3	NA	NA
	One crop	% of agri. land	31	NA	76

	Two crop	% of agri. land	42	NA	19
	Three crop	% of agri. land	13	NA	5
	Annual per capita income	Tk	18,269	23,135	NA
	Absolute poor	% of Total hh	49	55	NA
	Ultra poor	% of Total hh	23	26	NA
Education	Literacy rate	% 7+ years	45	57	44
	Enrolment in primary school	% 6-10 years	97	96	97
	Female enrolment	% 6-10 years	49	98	100
Health	Active tube wells	No.	2,216	1,129	2,599
	Active tube wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	87	84
	HH with proper sanitation	% of Total hh	<u>37</u>	30	43
	Child mortality rate	Per 1000	43	59	NA

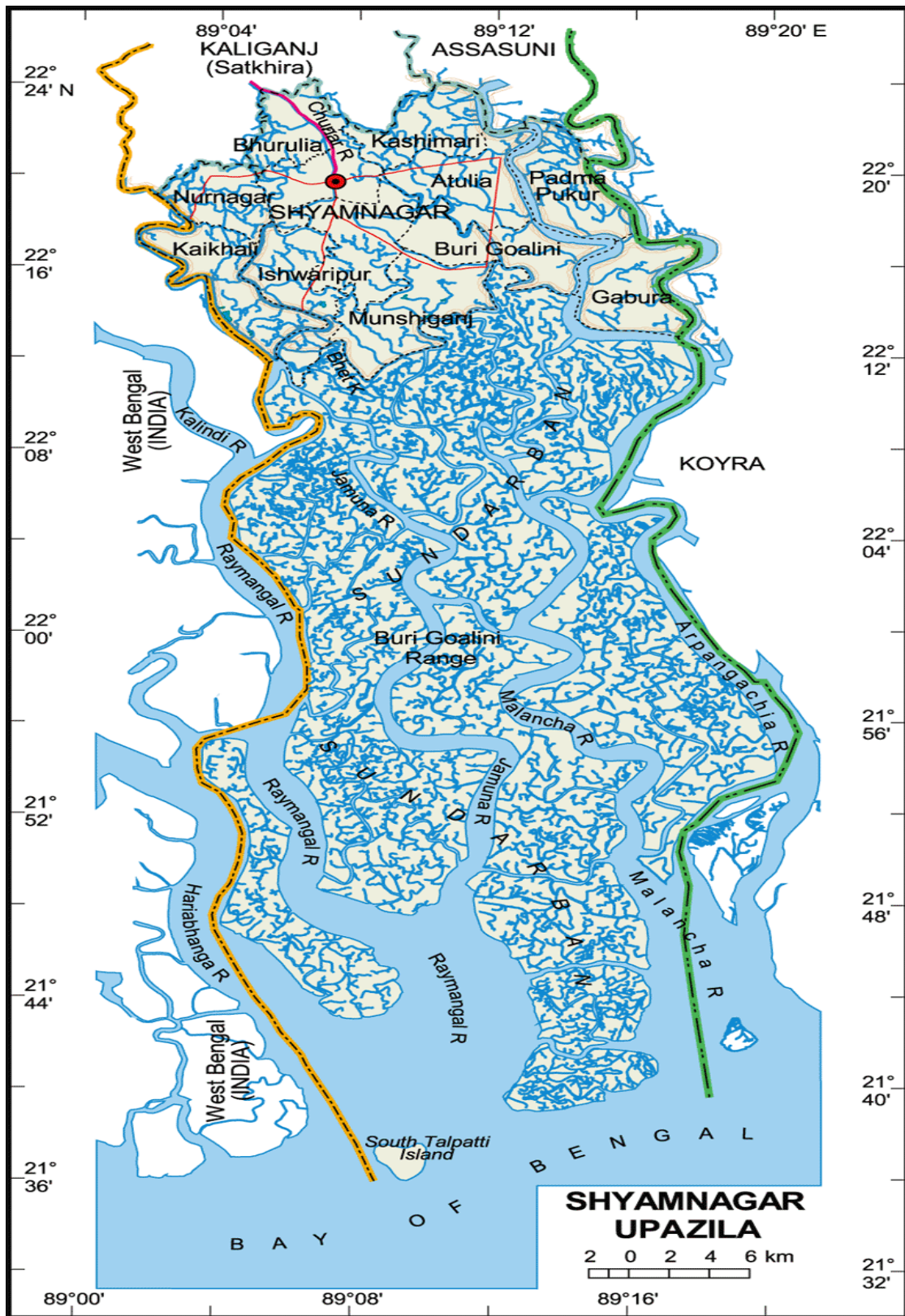
Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.8 Shymnagar Upazila

Area and Location : Shymnagar is the largest upazila of Satkhira District in respect of area and the second largest in respect of population. The upazila is bounded on the north by Kaliganj and Assasuni upazilas, on the east by Koyra upazila of Khulna District, on the south by Bay of Bengal and on the west by India. The upazila has an area of 1,968 sq. km. including as high as 1,623 sq. km.(82.5 percent) of forest area.

Administration : The upazila consists of 13 unions, 123 mouzas and 216 villages. Main rivers are Raymangal, Kalindi, Kobadak, Kholpetua, Arpangachia, Malancha Hariabhanga and Chuna. South Talpatti Island is located at the estuary of the Hariabhanga River.

Map 2.8: Map of Shyamnagar Upazila



Shymnagar Town consists of 5 mouzas and 13 villages. The area of the town is 10.8 sq km. The town has a population of 14,487 - male 52.2 percent and female 47.8 percent. The density of population is 1346 per sq km. Literacy rate among the town people is 54.6 percent.

Population Characteristics: The upazila has a population (2001) of 313,781, of which 160,294 are males and 153,487 are females. The sex ratio of the upazila is 104 males to 100 females as against 103 males to 100 females in 1991. The upazila has now an estimated population of 359,995 - male 51.6 percent and female 48.4 percent (2009). The average dwelling household size for the upazila is 4.9 persons, for rural area the size is 5.2 and for urban area the size is 5.1

Literacy and Educational Institutions In Shymnagar upazila, only 39.7 (2001) percent population aged 7 years and over is literate.

Average literacy rate is 55.0 percent; male 56.6 percent and female 53.9 percent. Educational institutions: college 5, high school 28, madrasa 98, government primary school 96, non-government primary school 56, kindergarten 2, orphanage 4. Noted educational institutions are Nakipur Haricharan High School (1899), Nurnagar Ashalata High School (1955) and Shymnagar Mohsin College (1972).

Occupations : Major occupations include agriculture (32.9%), agricultural labor (25.8%), wage laborer (6.2%), forestry (2.3%), fishing (5.5%), transport (1.6%), commerce (10.1%), service (3.4%) and transport (12.1%).

Land Use : Total cultivable land is 20,127 hectares; single crop constitutes 23.8 percent, double crop 55.06 percent and treble crop land 21.14 percent. *Main crops* are paddy, jute, potato, linseed, sesame, pumpkin, mustard seed, *kanchu* and vegetables.

Land Control: Among the peasants, 19 percent are landless, 30 percent small farmers, 28 percent marginal farmers, 16.5 percent intermediate farmers and 6.5 percent rich farmers; cultivable land per head estimates as 0.13 hectare.

Non-farm Activities: *Fisheries, dairies, poultries* Poultry 81, dairy 52 and hatchery (poultry) 29.

Communication Facilities : Roads include 67 km pucca, 35 km semi pucca and 811 km mud road and waterways of 73 nautical mile.

Manufacturing Activities : Limited manufacturing activities include 2 Printing press, 4 ice factories, 11 saw mills and 4 lathe machines. Cottage industries include weaving (51), goldsmith (18), blacksmith (39), potteries (4), wood work (200), bamboo work (70), fishing (300), Bawalis (400) and Mawalis (250).

Hats and bazaars : Total number of hats and bazaars are 42, most noted of which are Shymnagar, Nawabeki, Bhetkhali, Harinagar, Munshiganj, Gabura and Nurnagar Bazar.

NGOs : Operationally important NGOs are BRAC, CARITAS, ASA, Sushilan, Nakshi Kantha Mohila Unnayan Sangstha, Shymnagar Mohila Karma Sangsthan, Setu and Bharasa.

Table A.22 shows a comparative position of Shymnagar Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.22: Population and demographic characteristics : Average upazila and Shymnagar Upazila

Aspects	Unit	Average UZ (2001)			2009	
		Bangladesh	Satkhira District	Shymnagar UZ	Shymnagar UZ	
Area	Sq. km.	291	551	1968	1968.2	
Household	No.	50,278	55,821	59,885	73,553	
Household size (dwelling)	No. of members	4.9	4.7	5.2	4.9	
Population						
Both sexes	No.	245,277	266,386	313,781	359,995	
Male	No.	126,413	136,457	160,294	185,774	
Female	No.	118,863	129,929	153,487	174,221	
Female headed household	% of rural hh	3.5	4.7	1.4	1.4	
Density of population	per sq. km	839	483	159	183	
Sex ratio	Ration (M/F)	106	105	104	107	
Literacy rate	% of population (7 years & over)					
Both sexes	%	45.32	45.5	39.7	55.0	
Male	%	49.56	51.8	47.7	56.6	
Female	%	40.83	38.9	31.3	53.9	

Urban population	%	23.1	9.2	4.6	5.0
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Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Zila: Bagerhat); http://www.banglapedia.org/httpdocs/HT/S_0367.HTM.

Among housing structures in the upazila, predominant is kutcha structure. Dwelling households having such structure are as many as 91.3 percent.

Table A.23: Main dwelling house by structure

Structure	%
Jhupri	2.4
Kutcha	91.3
Semi-pucca	2.9
Pucca	3.4
Total	100.0

Water and Sanitation : Among sources of drinking water, pond is largely used by households. Dwelling households using pond water are 50.7 percent. On the other hand, dwelling households drink tube-well water to the extent of 30.8 percent, tap water 6.5 percent, deep tube-well water 5.1 percent and water of other sources 6.9 percent. In Shymnagar upazila, 44.8 percent of dwelling households have sanitary latrines with 43.10 percent in rural area and 80.71 percent in urban area. About 47.5 percent of the households have non-sanitary latrines while 7.7 percent of the households have no toilet facility at all.

Access to Electricity: All the thirteen unions of the upazila have been brought under rural electrification program. However, 7.40 percent of the dwelling households reported to have electricity connection in the entire upazila.

Land Use. In Shymnagar Upazila, 56.69 percent of the dwelling households own agricultural land and 43.31 percent do not own any agricultural land.

Source of Household Income : In the upazila 65.0 percent of the dwelling households depend on agriculture as the main source of household income with 38.16 percent on cropping, livestock, forestry and fishery and 26.82 percent on selling agricultural labor. Other dwelling households reported earning main incomes are from non-agricultural labor (6.02 percent), business (14.60 percent), employment (3.53 percent), construction (0.94 percent), industry (0.61 percent), rent and remittance (0.20 percent), transport and communication (1.58 percent), and others (7.54 percent).

Economic Activity : In the upazila the share population below 10 years of age is 27.8 percent. Among the population of age 10 years and above, those unemployed are 28.0 percent, looking for work 1.42 percent, household work 34.8 percent and the remaining 35.8 percent are employed. The employed people identified working are in agriculture 20.79 percent, industry 0.23 percent, business 5.28 percent, services 0.48 percent, construction 0.52 percent, transport and communication 0.56 percent and others 7.89 percent.

Table A.24 shows a comparative position of Morrelganj Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.24: Basic information on average upazila and Shymnagar Upazila

Aspects		Unit	Average upazila (2001)		
			Bangladesh	Satkhira District	Shymnagar UZ
Area/Admini stration	Area	Sq Km	291	551	1968
	Union/Ward	No.	14	97	13
	Village	No.	173	1436	216
Physical infrastructure	Houses with pucca wall	% of Total hh	42	89	84
	Houses with pucca roof	% of Total hh	54	37	5
	Houses with electricity	% of Total hh	31	18	7.4
	Primary school	No.	160.6	187.3	217
	High school	No.	30.2	34.7	27
	College	No.	6.3	40	5
Economy	Agri. labor	% of Total hh	36	46	43
	Agri. household	% of Total hh	51	60	61
	Non-agri. household	% of Total hh	49	40	39
	Cultivable land	Hectare	44,238	17,071	20,127
	Cultivable land	% of total area	61.3		NA
	One crop	% of agri. land	31	47	24
	Two crop	% of agri. land	42	42	55

	Three crop	% of agri. land	13	11	21
	Annual per capita income	Tk	18,269	16,077	NA
	Absolute poor	% of Total hh	49	55	NA
	Ultra poor	% of Total hh	23	14	NA
Education	Literacy rate	% 7 + years	45	47	41
	Enrolment in primary school	% 6-10 years	97	42	92
	Female enrolment	% 6-10 years	49	11	99
Health	Active tube wells	No.	2,216	2,404	956
	Active tube wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	81	24
	HH with proper sanitation	% of Total hh	<u>37</u>	36	45
	Child mortality rate	Per 1000	43	57	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005.

A.1.9 Matbaria Upazila

Area and Location: Matbaria, the largest upazila in respect of both area and population of Pirojpur District, has an area of 353 sq km, including forest area of 8.7 sq km (2.4%). It is bounded by Pirojpur Sadar and Bhandaria upazilas on the north, Patharghata Upazila on the south, Bamna and Kathalia upazilas on the east, and Sarankhola and Morrelganj upazilas on the west. Main rivers are Baleshwar and Pona.

Matbaria Town consists of 9 wards and 15 mahallas. The area of the town is 15.9 sq km. It has a population of 16573, density of town population is 1,041 per sq km.

Map 2.9: Map of Matbaria Upazila



Administration : Matbaria, turned into an upazila in 1983, consists of 11 union parishads, 67 mouzas and 94 villages.

Population : The upazila has a population of about 271,517, of which male constitutes 50.1 percent and female constitutes 49.9 percent.

According to the Population Census 2001 the upazila population is 263,527 of which 131,940 are males and 131,587 are females. The sex ratio of the upazila is 100 males to 100 females as against national figure of 105 and 100 respectively.

Literacy and Educational Institutions: In Matbaria upazila about 62.8 percent population of aged 7 years and over are literate, as against 64.3 in the Pirojpur District and 45.3 at the national level. Average literacy rate is 81.3 percent - male 76.7 percent and female 86.4 percent. Educational institutions include 5 colleges, 47 high schools, 115 government primary schools, 80 non-government primary schools, 7 satellite schools.

Occupations : Main occupations are agriculture (43.0%), agricultural laborer (21.1%), wage laborer (4.1%), commerce (11.0%), service (5.4%), fishing (2.6%), construction (1.1%), transport (1.4%) and others (10.5%).

Land Use : Total cultivable land is 20804 hectares. Single crop constitutes 56.0 percent, followed by double crop (38 percent) and treble crop land (only 6 percent). Among the farm households, 31 percent are landless, 33 percent small, 30 percent medium and 6 percent large. Main crops are paddy, wheat, sugarcane, chili and pulses.

Communication Facilities : Roads include 39 km pucca, 12 km semi pucca, 420 km mud road and 8 nautical mile waterways.

Manufacturing Activities : Manufacturing activities include 10 rice mill, 8 saw mills and 2 ice factories. Cottage industries include 5 weaving 5, 127 bamboo work, 40 goldsmiths, 55 blacksmith, 158 potteries, 110 tailoring, 102 wood work and 12 welding.

NGOs : Operationally important NGOs are BRAC, PROSHIKHA, ASA, Dak Diye Jai and Jubak.

Table A.25 shows a comparative position of Matbaria Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.25: Population and demographic characteristics : Average upazila and Matbaria Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Pirojpur District	Matbaria UZ	Matbaria UZ
Area	Sq. km.	291	218	353.3	353.3
Household	No.	50278	38827	55617	62,549
Household size (dwelling)	No. of members	4.9	4.8	4.7	4.3
Population					
Both sexes	No.	245277	185178	263527	271,517
Male	No.	126413	93662	131940	135,803

Female	No.	118863	91516	131587	135,714
Female headed household	% of rural hh	3.5	1.14	3.7	2.8
Density of population	per sq. km	839		746	768
Sex ratio	Ratio (M/F)	106	102	100	100
Literacy rate	% of population (7 years & over)				
Both sexes	%	45.32	64.3	62.8	81.3
Male	%	49.56	65.6	62.8	76.7
Female	%	40.83	63.0	62.8	86.4
Urban population	%	23.1	15.0	9.79	11.2

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, District : Bagerhat); http://www.banglapedia.org/httpdocs/HT/M_0177.HTM.

Housing and Household Characteristics: In the upazila, there are 62,549 households. Distribution of households by type shows that there are 99 percent dwelling units, 0.45 percent institutional and 0.56 percent other units. The average dwelling household size for the upazila is 4.3 percent.

The housing condition of Matbaria upazila is predominantly kutcha. The kutcha housing structure is reported as 79.7 percent. The Jhupri, the lowest standard of housing structure, is observed as 14.2 percent (Table A.26).

TableA.26 : Main dwelling house by structure

Structure	%
Jhupri	14.2
Kutcha	79.7
Semi-pucca	4.7
Pucca	1.5
Total	100.0

Water and Sanitation : In Matbaria upazila, 23.1 percent of the dwelling households drink tube-well water, 6.0 percent collect drinking water from tap, 4.6 percent drink deep tube-well water, 63.7 percent drink pond water and the remaining 2.7 percent collect drinking water from other sources.

About 35.5 percent of the dwelling households have sanitary latrines with 56.6 percent use non-sanitary latrines and 7.9 percent of the households have no toilet facility.

Access to Electricity: All the eleven unions of the upazila have been brought under Rural Electrification Program. However, only 10.5 percent of the dwelling households are reported to have electricity connection in the entire upazila.

Ownership of Agriculture Land : In Matbaria upazila, 65.2 percent of the dwelling households own agricultural land and 34.84 percent do not own any agricultural land.

Source of Household Income : In the upazila, about 59.9 percent of the dwelling households depend on agriculture as the main source of income with 40.2 percent cropping, livestock, forestry & fishery and 19.7 percent as agriculture labor. Other sources of household income are non-agriculture labor (4.5%), business (12.8%), self-employment (7.1%), construction (1.4%), rent and remittances (2.1%), transport and communication (1.9%) and others (10.1%).

Economic Activity : In the upazila, 25.13 percent of total populations are below 10 years of age. Among the population of age 10 years and over, of the population recorded are 29.1 percent not working, 2.04 percent looking for work, 36.7 percent engaged in household work and the remaining 32.20 percent are working. Major occupations of working people are agriculture (20.18 percent), industry (0.19 percent), business (4.44 percent), services (0.48 percent), construction (0.70 percent), hotel & restaurant (0.10 percent) transport and communication (0.81 percent) and others (5.30 percent).

Table A.27 shows a comparative position of Matbaria Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.27: Basic information on average upazila and Matbaria Upazila

Item		Unit	Average upazila (2001)		
			Bangladesh	Pirojpur District	Matbaria UZ
Area/Administration	Area	Sq Km	291	1308	273
	Union/Ward	No.	14	78	19
	Village	No.	173	647	94
Physical infrastructure	Houses with pucca wall	% of Total hh	42	62	50

	Houses with pucca roof	% of Total hh	54	42	36
	Houses with electricity	% of Total hh	31	20.3	10.5
	Primary school	No.	161	175	188
	High school	No.	30.2	249	47
	College	No.	6.3	29	5
Economy	Agri. labor	% of Total hh	36	32	29
	Agri. household	% of Total hh	51	18	77
	Non-agri. household	% of Total hh	49	82	23
	Cultivable land	Hectare	44,238	12,002	20,804
	Cultivable land	% of total area	61.3	NA	NA
	One crop	% of agri. land	31	36	56
	Two crop	% of agri. land	42	57	38
	Three crop	% of agri. land	13	7	6
	Annual per capita income	Tk	18,269	13,638	NA
	Absolute poor	% of Total hh	49	44	NA
Ultra poor	% of Total hh	23	21	NA	
Education	Literacy rate	% 7+ years	45	63	60
	Enrolment in primary school	% 6-10 years	97	97	93

	Female enrolment	% 6-10 years	49	98	94
Health	Active tube wells	No.	2,216	13,466	3,172
	Active tube wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	54	69
	HH with proper sanitation	% of Total hh	<u>37</u>	39.4	35.5
	Child mortality rate	Per 1000	43	63	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005

A.1.10 Patharghata Upazila

Area and Location : Patharghata Upazila under Barguna District has an area of 387 sq km, of which 37.3 sq km (i.e., 9.6%) is forest area. It is bounded by Matbaria and Bamna upazilas on the north, the Bay of Bengal on the south, Barguna Sadar and the river Bishkhali on the east, and Sarankhola Upazila and the river Haringhata on the west. Main rivers are Bishkhali and Haringhata.

The Patharghata Town consists of 9 wards and 9 mahallas. The area of the town is 27.1 sq km. The town has a population of 24,488 with male 53.0 percent and female 47.0 percent. The density of town population is 905 per sq km. Literacy rate among the town people is 67.4 percent.

Administration : The upazila consists of 1 Paurashava, 7 unions, 9 wards, 42 mouzas and 67 villages.

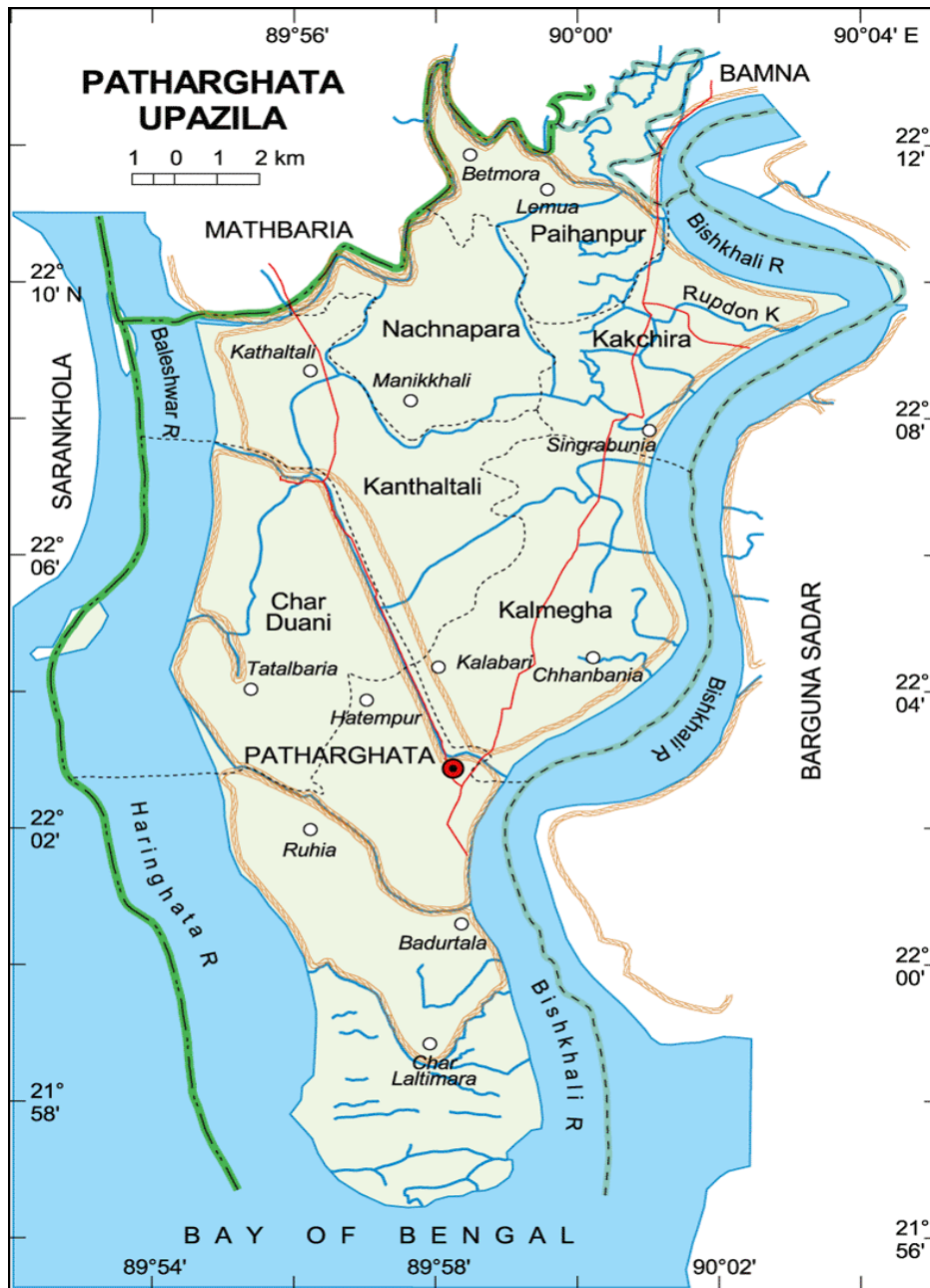
Population : The upazila has a population of 188,590 male 51.4 percent and female 48.6 percent. The upazila population (2001) is 1,62,025, out of which males are 82,687 and females are 79,338. The sex ratio is 104: 100.

Occupation : Major occupations are agriculture (39.6%), fishing (7.9%), agricultural laborer (18.0%), wage laborer (4.1%), commerce (11.1%), construction (1.5%), service (4.8%) and others (13.1%).

Literacy and Educational Institutions: Among population aged 7 years and over in the upazila, the literacy rate is 63.2 (2001) percent.

Average literacy rate is now 81.5 percent with male 78.5 percent and female 84.9 percent. (2009) Educational institutions in the upazila include 2 colleges, 15 secondary schools, 61 government primary schools, 69 private primary schools and 95 madrasahs.

Map A.10: Map of Patharghata Upazila



Land use: Cultivable land in the upazila estimates as 15,275 hectares, with fallow land of 100 hectares (0.5%). Single crop constitutes 60 percent, double crop 30 percent and treble crop land only 10 percent. Main crops are paddy, pulse and vegetables. Major fruits are banana, jackfruit, pineapple, lemon and papaya.

Land control : Among the farm households, 16 percent are landless, 46.7 percent small farmers, 32 percent medium farmers and 5.3 percent large farmers.

Non-farm activities : Non-farm activities include 6 Poultrys, 59 fisheries, 1 hatchery and 4 dairy units.

Communication facilities : As regards communication facilities, the upazila has 18 km. of pucca roads, 369 km mud road and 32 nautical mile of waterways.

Manufacturing activities: Limited manufacturing activities include 9 ice factories and 5 saw mills. Small and cottage industries in the upazila include 7 bamboo and cane works, 25 wood works, 15 blacksmiths, 12 goldsmiths, 8 welding and 50 tailoring units.

NGOs : Operationally important NGOs in the upazila include BRAC, ASA, CARITAS, PROSHIKA, GRAMEEN BANK, Sankalpa and Sangram.

Table A.28 shows a comparative position of Patharghata Upazila with respect to a district and national average in terms of population and demographic characteristics.

Table A.28: Population and demographic characteristics : Average upazila and Patharghata Upazila

Aspects	Unit	Average UZ (2001)			2009
		Bangladesh	Barguna District	Patharghata UZ	Patharghata UZ
Area	Sq. km.	291	366	387.4	387.4
Household	No.	50,278	35,994	34,477	44,025
Household size (dwelling)	No. of members	4.9	4.7	4.7	4.3
Population					
Both sexes	No.	245,277	169,711	162,025	188,590
Male	No.	126,413	86,064	82,687	96,896
Female	No.	118,863	83,646	79,338	91,494
Female headed household	% of rural hh	3.5	1.3	2.0	2.0
Density of population	per sq. km	839	463	418	486
Sex ratio	Ratio (M/F)	106	103	104	106

Literacy rate	% of population (7 years & over)				
Both sexes	%	45.32	55.3	63.2	81.5
Male	%	49.56	57.7	63.9	78.5
Female	%	40.83	52.8	62.4	84.9
Urban population	%	23.1	10.3	15.1	18.4

Source: Estimated for 2009, based on data from *Population Census 2001* (Community Series, Zila: Bagerhat); http://www.banglapedia.org/httpdocs/HT/P_0112.HTM.

Household and Housing Characteristics : The total number of households is 44,025. The average dwelling household size in the upazila is 4.3. Housing structures observed for dwelling households are jhupri , kutchha, semi-pucca and pucca (A.29).

Table A.29: Main dwelling house by structure

Structure	%
Jhupri	28.8
Kutchha	68.4
Semi-pucca	2.2
Pucca	0.6
Total	100.0

Of these housing structures, predominant is the kutchha structure (68.4%), followed by Jhupri, semi-pucca and pucca reported to be 28.8, 2.2 and 0.6 percent respectively.

Water and Sanitation : Among sources of drinking water, pond water is predominant. The households drinking pond water is 51.3 percent. About 30.1 percent of households drink tube-well water, followed by deep tube-well water (15.8%), tap water (1.8%) and water from other sources (1.2%). Access to sanitary latrines in the upazila is reported to be 47.6 percent while about 46.7 of the households use non-sanitary latrines and more than 5.7 percent use open spaces for the purpose.

Access to Electricity: Dwelling households connected to the power network are found to be only 5.4 percent although a large number of unions in the upazila have been brought under Rural Electrification Board.

Ownership of Agricultural Land: In Patharghata Upazila, 64.5 percent of the households own land while the remaining 35.5 percent do not own any agricultural land or own lands not used for agriculture. Households having agriculture as the main source of income are 60.3 percent. Of them, those earning main income from crop and non-crop (livestock, forestry & fishery) farming are 42.2 percent and the rest 18.1 percent are agriculture labor. Households reported earning main income from non-agriculture labor are 3.9 percent, business 15.9 percent, regular employment 6.4 percent, construction 1.5 percent, rent and remittances 0.25 percent, transport and communication 2.2 percent, industry 0.55 percent and others 8.87 percent.

In the upazila population 10 years of age is 23.97 percent. Among population of age 10 years and above, recorded unemployed are 27.2 percent, looking for work 1.7 percent, household work 36.4 percent and the remaining 34.7 percent are reported to be employed.

Table A.30 shows a comparative position of Patharghata Upazila with respect to a district and national average in terms of various socio-economic aspects.

Table A.30: Basic information on average upazila and Patharghata Upazila

Aspects		Unit	Average upazila (2001)		
			Bangladesh	Barguna District	Patharghata UZ
rea/Administration	Area	Sq Km	291	366	387
	Union/Ward	No.	14	15	16
	Village	No.	173	113	66
Physical infrastructure	Houses with pucca wall	% of Total hh	42	39	47
	Houses with pucca roof	% of Total hh	54	31	22
	Houses with electricity	% of Total hh	31	9	5.4
	Primary school	No.	160.6	196	169
	High school	No.	30.2	78	24
	College	No.	6.3	3.8	2
Economy	Agri. labor	% of Total hh	36	32	36
	Agri. household	% of Total hh	51	79	84
	Non-agri. household	% of Total hh	49	21	16
	Cultivable land	Hectare	44,238	16,897	15,273

	Cultivable land	% of total area	61.3	NA	NA
	One crop	% of agri. land	31	56	60
	Two crop	% of agri. land	42	37	30
	Three crop	% of agri. land	13	7	10
	Annual per capita income	Tk	18,269	16,901	NA
	Absolute poor	% of Total hh	49	52	NA
	Ultra poor	% of Total hh	23	22	NA
Education	Literacy rate	% 7+ years	45	54	60
	Enrolment in primary school	% 6-10 years	97	107	100
	Female enrolment	% 6-10 years	49	109	101
Health	Active tube wells	No.	2,216	2,298	4140
	Active tube wells	No. per 1000 hh	<u>91</u>	NA	NA
	HH with safe water provision	% of Total hh	<u>91</u>	73	35
	HH with proper sanitation	% of Total hh	<u>37</u>	36.7	47.6
	Child mortality rate	Per 1000	43	52	NA

Source: District Series, Program Development Office, Integrated Coastal Zone Plan (ICZMP) Project, Dhaka, 2005

Annex B: SRF Actors

Identification of the SRF Actors and their Functions/Roles in the Value Chain

GENERAL ACTORS

Collectors

They collect or produce SRF products and thus constitute the primary link to the marketing chain. Collectors, largely work for wages, usually do not and cannot sell their products directly to the market. Largely illiterate and disadvantaged, they do not own any productive resources, and they are the most exploited groups; socially and economically they appear to belong to the bottom stratum in the value chains. In most cases, collectors work for Mahajans (Choto or Boro) and/or Aratdars, and even, in a few cases, wholesalers. Occasionally, Farias and Beparis also buy products from collectors at the local market, especially in the case of honey and medicinal plants.

Farias

In the value chain of SRF products, this agent is not found to be common other than in the case of honey and fish in a few cases. Generally, Farias are petty traders operating with small capital and small volume of business compared to other intermediaries. They generally sell products to the Beparis/Aratdars. Sometimes they work as the agent of Aratdars/Mahajans to buy from the collectors on a commission basis. Sometimes they act as retailers to vend their products in villages.

Beparis

Beparis are relatively more professional traders who buy a large quantity of the production from collectors or Farias, and sell directly or through Aratdars to wholesalers. They operate in both primary and secondary markets. Sometimes Beparis also sell to Aratdars on commission basis (in the case of golpata, for example, in Shailmari, Khulna).

Majhi (Boatman)

In a few cases (e.g., fishers or golpata collectors), the group of collectors is led by one boatman, known as Majhi, who is contracted for the harvest by Mahajans or Aratdars or Bahaddars. Sometimes they themselves act as Choto Mahajans; sometimes they organize the whole trip and take care of collection. Majhis (Boatmen), however, get double the share of the workers. In a few cases, Majhis (boatmen) act as Choto Mahajan (Shailmari, Khulna for Golpata, for example).

Choto Mahajan

They collect forest products commercially by engaging collectors, with investment from their own. They organize, operate and finance resource collections with workers, wages, nets, gears, ropes and boats, and often control trips, and in return, buy products at fixed but usually reduced prices. Sometimes the price is fixed jointly by Majhi, Mahajans and Aratdars after the collection is unloaded. A portion of the margins out of this (usually one third) goes to Majhi (boatman) as he remains responsible for the trip and money (sort of dadon) received from Choto Mahajan. At the end, they sell products to Boro Mahajans or Aratdars. In a few cases, Choto Mahajans get involved in collection process.

Boro Mahajan

Boro Mahajans are also sometimes moneylenders, implicitly or explicitly. They undertake commercial collection of SRF resources with higher investment (relative to *Choto Mahajan*) from their own. They make business out of managing/investing in resource collection in SRF areas. They organize collectors, boats and boatmen, and control trips in overall resource collection but usually do not get involved in trips. They are responsible for arranging permits for the workers in their own names from the FD. Some are also involved in illegal collection in collusion with various departments. Some of the Boro Mahajans can be termed as *Choto Mahajans* in the context of scale in broader regions.

In a few cases of fishing, Mahajans lend money to Aratdars (and vice versa) at a monthly interest rate (usually 10%) and Aratdars lend money to boatmen (team leaders of collectors) for 15 days at a specific interest rate (usually at 5%).

Bahaddar

Usually referred to fish processing (*Shutki*), they are some of the main entrepreneurs who invest and manage the whole processing of fish. A bulk investment is required to procure nets and boats for fishing. The Bahaddars usually belonging to outside SIZ (Chittagong, for example), own a large number of boats, nets and gears. They are responsible for arranging permits from the FD. In some cases, they even sell primary products, in part or full, at the collection points, but they largely conduct fish processing.

Aratdars

Aratdars are generally self-financed, but they require relatively small capital for operating the business as they usually serve as the commission agents. They have their own fixed establishment in their market and operate among Mahajans, Farias, Beparis, Paikers and wholesalers. Aratdars are few in numbers but powerful and apparently highly beneficial group in the value chain. Some big Aratdars maintain liaison with various departments, bureaucrats and politicians and influence to protect their interests often at the costs of SRF. Some Aratdars are also moneylenders, implicitly or explicitly and some take part in auctions of SRF products, especially timbers, golpata and fish. In a few cases, Aratdars directly get involved in the collection process.

Paikers

Paikers, some are small and some are large, usually operate in fish markets. Small Paikers operate in local markets while the large ones participate in fish auction process at the Arats in landing places. Only registered Paikers or traders can participate in auction before they are sold to wholesalers. They need to pay commission to the Aratdars. In some cases, they bypass the Aratdars to earn higher profits.

Wholesalers

Wholesalers are licensed traders, having fixed business premises in the wholesale market. Their performances vary according to the volume of transactions. They usually buy from Aratdars or Mahajans, and generally sell to the retailers.

Retailers

Retailers, the last marketing channel, buy products from Beparis or wholesalers, and sell to the consumers in open market places. Their volume of business is relatively small and they possess relatively small capital.

PRODUCT SPECIFIC ACTORS

Golpata collectors

Golpata collectors are involved in collection of golpata (*Nypa fruticans*) and other non-timber products such as goran, hantal and such other minor plants during the permit period, usually a few months (At the time of this survey, Golpata collection is made open for three months, from Poush to Falgun). In other periods of the year, they often become involved in fishing or honey collection but some times become involved in illegal felling under the leadership of big Aratdars or urban elites in collusion with various departments. Often collecting more than officially allowed, they tend to exploit than conserve. They often cut timber trees (mostly Sundri) illegally and get it to landing place under the cover of golpata. Sometimes, they take some extra trees in the name of balancing of boats. However, as in other collections, at times, the golpata collectors become prey to tigers or dacoits.

Under the leadership of Majhi, they move from one Kup to another in the forests in groups of 8-10 people to collect golpata under one permit for one month. The sales proceeds (normally sold at fixed price) minus the fuel and wage costs are divided into three when Majhis get one share and the Mahajans get two shares (one for investment in boats and one for working capital – what is called Chalan). The collectors get only wages plus living expenses for the period of about one month.

Sada (large) fishers

Large fish species such as Rupchanda, Pangas, Poa, Bhetki, Koral and Kawon living in areas next to SRF are known as Sada (White) fish.; some Sada fishers become involved also in fish drying in the dry season and some switch over to hilsha fishing in the monsoon. Many fish inside the SRF with country boats year round and often go inside sanctuary areas for illegal fishing. Some get involved in illegal felling of young Sundri trees in the pretext of fixing nets in waters. Most of the fishermen do not bother about forest conservation.

Hilsha fishers

Hilsha fishers are relatively more professional, conducting fishing inside and adjacent water bodies of SRF, in both dry season and monsoon. They are not used to undertake any other resource collection during Hilsha season. Often involved in Jatka collection even when there is ban, reportedly, on the ground that they have little livelihood support during off seasons.

Like in other fish species, with perhaps no exception, Hilsha fishermen are all fishing workers. It takes roughly 10 to 15 days to get a harvest by the Hilsha collectors comprising about 10 people. The group is led by one boatman, known as Majhi, who is contracted for the harvest by Mahajans or Aratdars or Bahaddars. In lean season, collectors often take dadons from them creating bondage to sell the total catch at some reduced rates. In the case of Hilsha fishing, boat and net owners vis-à-vis the Mahajans get 10 out of 16 shares after deduction of depreciation costs (e.g., net and gears repairing). In other words, 10 fishing workers together get 6 out of 16 shares. Majhi (Boatman), however, gets double that of the fishing workers.

Shrimp fishers

Shrimp fishers constitute those involving large (galda and bagda) and small (*gura chingri*) shrimps. In many cases, the collectors also get a small share of profit in this case. Collection of *gura chingri* takes place in SRF canals/khals and also in local rivers and water bodies. The collectors are largely involved in harvesting multiple products (along with *gura chingri*): Sada fish, crab, mollusc, and other small fish. Shrimp fishers usually constitute not a separate fisher

category but normally the sada (large) fishers do the shrimp fishing as well.

Shrimp fry collectors

Shrimp fry is collected on a daily or weekly basis. Those who catch through official pass usually harvest in SRF canals and khals — it takes about a week in that case and those who catch in local rivers and water bodies harvest on a daily basis. Men, women and children mostly from poor households catch shrimp fry; even in some cases, female members of affluent households are also involved in the fry collection. During the collection, reportedly, they destroy around 100 other types of aquatic species, resulting in the loss of biodiversity in the region. Economically, again, they are the exploited group in the chain in terms of marketing and values obtained. Nevertheless, the shrimp fry collectors need little capital but they have few options but to sell their products to intermediary agents (e.g., Mahajans or Aratdars or Depots).

Fry Farias or Mahajans lend money (dadons) to collectors in the lean season through an informal contract entered to selling the fry to the lenders at a price determined by the lenders. Many spend years, locked in a cycle of debts and it appears that they are vulnerable more than any other SRF collectors. Some Aratdars also provide loans to Farias and collectors so that they are committed to exclusively sell their catch. In some cases, fries are passed through nurseries before being sold to other intermediaries. However, the whole cycle is never ending centered around dadons. The shrimp fry is a sector that provides substantial economic opportunities to particularly middle and lower level participants in the value chain.

Crab collectors

Mostly from poor fishing communities, they collect crabs, mollusc and shells from SRF; there is usual ban on crab collection in specific months of the year but often not followed. At times, the collectors do not bother catching very young crabs, which bring little monetary benefits to them. Such grades of crabs are eventually transferred to crabs nursery for a few months before they fetch any value. In the off-season, the poor crab collectors have few livelihood opportunities. Some crab collectors, however, manage to switch to fishing profession or shrimp fry collection or agricultural wage earning.

Crab Mahajans or Aratdars give loans or dadons to collectors on the condition that they sell the whole harvests at existing market price. Aratdars, however, charge 5 percent commission on the total sales. Besides, collectors get reduced weights of their catch at the rate 100 gram per kg. BLC (Boat License Certificate) is granted against boat owner for one year and permit given to collector for one week.

Bawalis

They are the groups involved in the collection of timber or non-timber forest products, especially *golpata*, *goran*, *hantal* and other minor plants through permits during seasons. Many get involved in illegal collection during off-season but some also switch over to other profession in lean seasons (e.g., fishing). At times, they become prey to tigers or pirates.

Mawalis

They are the groups involved in the collection of honey and bee wax through permits during official season. Harvest procedure is almost similar to *golpata*. BLC (Boat License Certificate) is granted from FD against boat owner for one year and permit given to individual collectors for one month. Groups of 6 to 7 Mawalis enter into forests and it takes about a week to get a harvest, which is usually sold to concerned Mahajans or Beparis against dadons taken.

This is again a poor group in the value chain. Some pursue apiculture during off-season. Some get involved in illegal collection through the indulgence of the authority. They again often fell victim to tigers or pirates.

Fish Aratdars

Large fish traders and investors, many have their own boats and gears and organize trips in SRF through Choto and Boro Mahajans. They are also moneylenders in the sense that they offer loans/dadons to agents such as Beparis, Mahajans or collectors. This is the most powerful group of actors who control collection and marketing of fish from SRF. They often maintain liaison with FD, various departments, bureaucrats and politicians, and influence to protect their interests often at the costs of SRF.

Timber Aratdars

They used to be most powerful business group of SRF non-fish resources before the moratorium to harvest timbers. Some still continue harvests illegally. Investments are also large — many have their own boats, trawlers and organize trips in SRF through Mahajans. They can exert control over FD, bureaucrats and policy makers for their own business. After the moratorium, they tend to have diversified their business.

Millers

Millers, referring mostly to timbers, are involved in processing activities such as log production. By taking a service charge per unit of products, they process timbers for final consumers. In a few cases, millers also perform the functions of wholesalers. Besides, some also get involved in furniture making. In the context of mollusc/shell/oyster, millers constitute major actors who manufacture fishmeal or poultry feed.

Remark on Value Chain Analysis

In the context of value chain analysis, as can be evident from the above discussion, and as also explained in Chapter 1, the marketing chains for the SRF products are complex and multi-dimensional, involving, again, innumerable combinations. In consequence, the calculation of value additions, and costs and returns is fraught with the problem in that the resource collectors are engaged in harvesting multi-products. In particular, it posed problem to estimate returns of some actors (Mahajans and Aratdars, for example) as they also have multiple roles. Over and above, some of the intermediaries are themselves involved with the collection related activities.

Note : The above discussion is drawn on the Reconnaissance Survey. Some of the information are also supplemented from Rahman (2007).

Annex C: SRF Product chain

Major SRF products chains commonly observed (in order of most common and so on)

Timber:

1. Sundri

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Miller ⇒ Retailer

For top-dying Sundri and ceased wood

Chain 4: Collector ⇒ Mahajan /FD Depot (1) ⇒ FD Depot (2) ⇒ Auctioneer ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

For Illegal wood

Chain 5: Collector ⇒ Black marketer ⇒ Aratdar ⇒ Retailer

Chain 6: Collector ⇒ Black marketer ⇒ Aratdar ⇒ Miller ⇒ Retailer

Chain 7: Collector ⇒ Black marketer ⇒ FD ⇒ Auctioneer ⇒ Aratdar ⇒ Miller ⇒ Retailer

Chain 8: Collector ⇒ Black marketer ⇒ (Thana / FD) ⇒ Auctioneer ⇒ Aratdar ⇒ Miller ⇒ Retailer

2. Passur

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Miller ⇒ Retailer

3. Kankra

Chain 1: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Miller ⇒ Retailer

4. Gewa

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Miller ⇒ Retailer

Chain 4: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Miller ⇒ Retailer

Non-timber

1. Goran

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Miller ⇒ Retailer

Chain 4: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Retailer

2. Golpata/Grass (Shon, Matting)

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan/Majhi (Boatman) ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Choto Aratdar ⇒ Boro Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 4: Collector ⇒ Choto Mahajan/Boatman ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 5: Collector ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Fish

1. Gura fish

Chain 1: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Fisher ⇒ Faria ⇒ Mahajan /Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 4: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Company/Exporter

2. Sada fish

Chain 1: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Fisher ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 4: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Paikar ⇒ Retailer

Chain 5: Fisher ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 6: Fisher ⇒ Mahajan ⇒ Company ⇒ Exporter

Chain 7: Fisher ⇒ Paikar ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 8: Fisher ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Auctioneer ⇒ Exporter

Shutki

Chain 1: Fisher ⇒ Bahaddar ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Bahaddar ⇒ Mahajan /Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Fisher ⇒ Bahaddar ⇒ Mahajan /Aratdar ⇒ LC Party (exporter)

2. Hilsha

Chain 1: Fisher ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 3: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ LC party /Exporter

Chain 4: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Paikar ⇒ Retailer

Chain 5: Fisher ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

3. Shrimp (galda and bagda)

Chain 1: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Faria ⇒ Mahajan/Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 3: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Commission Agent ⇒ Company/LC party ⇒ Exporter

4. Shrimp fry

Chain 1: Fry collector ⇒ Faria/Bepari ⇒ Mahajan ⇒ Aratdar ⇒ Nursery ⇒ Retailer

Chain 2: Fry collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Nursery ⇒ Retailer

Chain 3: Fry collector ⇒ Faria/Bepari ⇒ Aratdar ⇒ Retailer ⇒ Gher

Chain 4: Fry collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Fish culture

Chain 5: Fry collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Gher

Aquatic Resources

1. Crab

Chain 1: Collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Nursery ⇒ Auctioneer ⇒ Wholesaler ⇒ Company (Exporter)

Chain 2: Collector ⇒ Mahajan ⇒ Depot ⇒ Exporter (Dhaka/Uttara)

Chain 3: Collector ⇒ Faria ⇒ Auctioneer ⇒ Depot ⇒ Exporter

Chain 4: Collector ⇒ Faria ⇒ Auctioneer ⇒ Depot/Commission Agents ⇒ Exporter

Chain 5: Collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Nursery ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

2. Mollusc/Shell/Oyster

Chain 1: Collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Auctioneer ⇒ Exporter

Chain 2: Collector ⇒ Faria/Bepari ⇒ Mahajan/Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Mahajan ⇒ Miller ⇒ Fishmeal/Poultry Wholesaler ⇒ Retailer

Non-Aquatic Resources

1. Honey

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Mahajan ⇒ Wholesaler ⇒ Retailer

Chain 3: Collector ⇒ Faria/Bepari ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 4: Collector ⇒ Mahajan ⇒ Medicine Company

Other Products

Medicinal plants

Chain 1: Collector ⇒ Faria/Bepari ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Faria/Bepari ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Fuel wood

Chain 1: Collector ⇒ Faria/Bepari ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Bee wax

Chain 1: Collector ⇒ Faria/Bepari ⇒ Wholesaler ⇒ Retailer

Hantal

Chain 1: Collector ⇒ Faria/Bepari ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

While it is not feasible to study all the chains, the basic and dominant chains for selected SRF items are identified for investigations, which are as follows:

Timber

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Non-timber

Golpata/Grass (Shon, Matting)

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Chain 2: Collector ⇒ Choto Mahajan ⇒ Boro Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

Fish

1. Sada (large) fish

Chain 1: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Company/Exporter

2. Hilsha

Chain 1: Fisher ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ LC party /Exporter

3. Shrimp (galda and bagda)

Chain 1: Fisher ⇒ Mahajan ⇒ Aratdar ⇒ Auctioneer ⇒ Wholesaler ⇒ Retailer

Chain 2: Fisher ⇒ Faria ⇒ Mahajan/Aratdar ⇒ Wholesaler ⇒ Retailer

4. Shrimp fry

Chain 1: Fry collector ⇒ Faria/Bepari ⇒ Mahajan ⇒ Aratdar ⇒ Nursery ⇒ Retailer

Aquatic Resources

1. Crab

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar/Depot ⇒ Exporter

2. Mollusc/Shell/Oyster

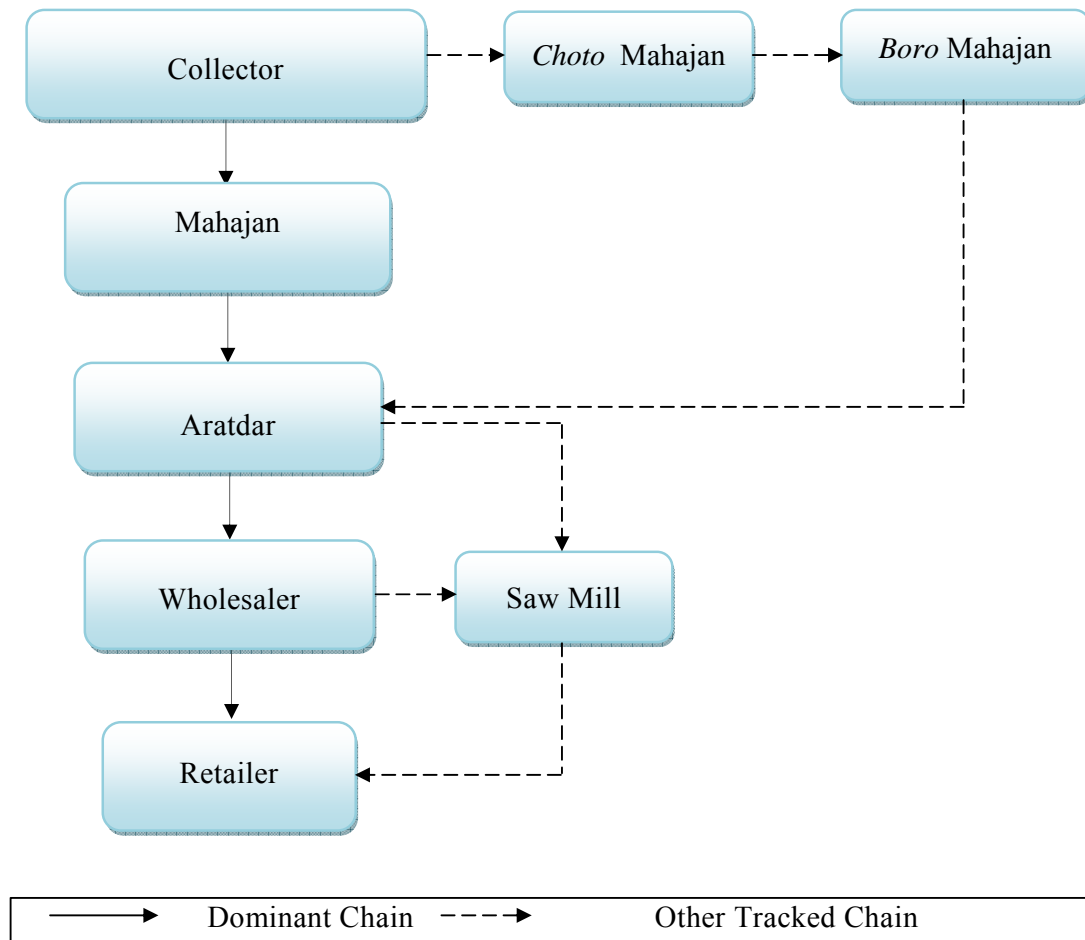
Chain 1: Collector ⇒ Mahajan ⇒ Miller ⇒ Fishmeal/Poultry Wholesaler ⇒ Retailer

Non-Aquatic Resources

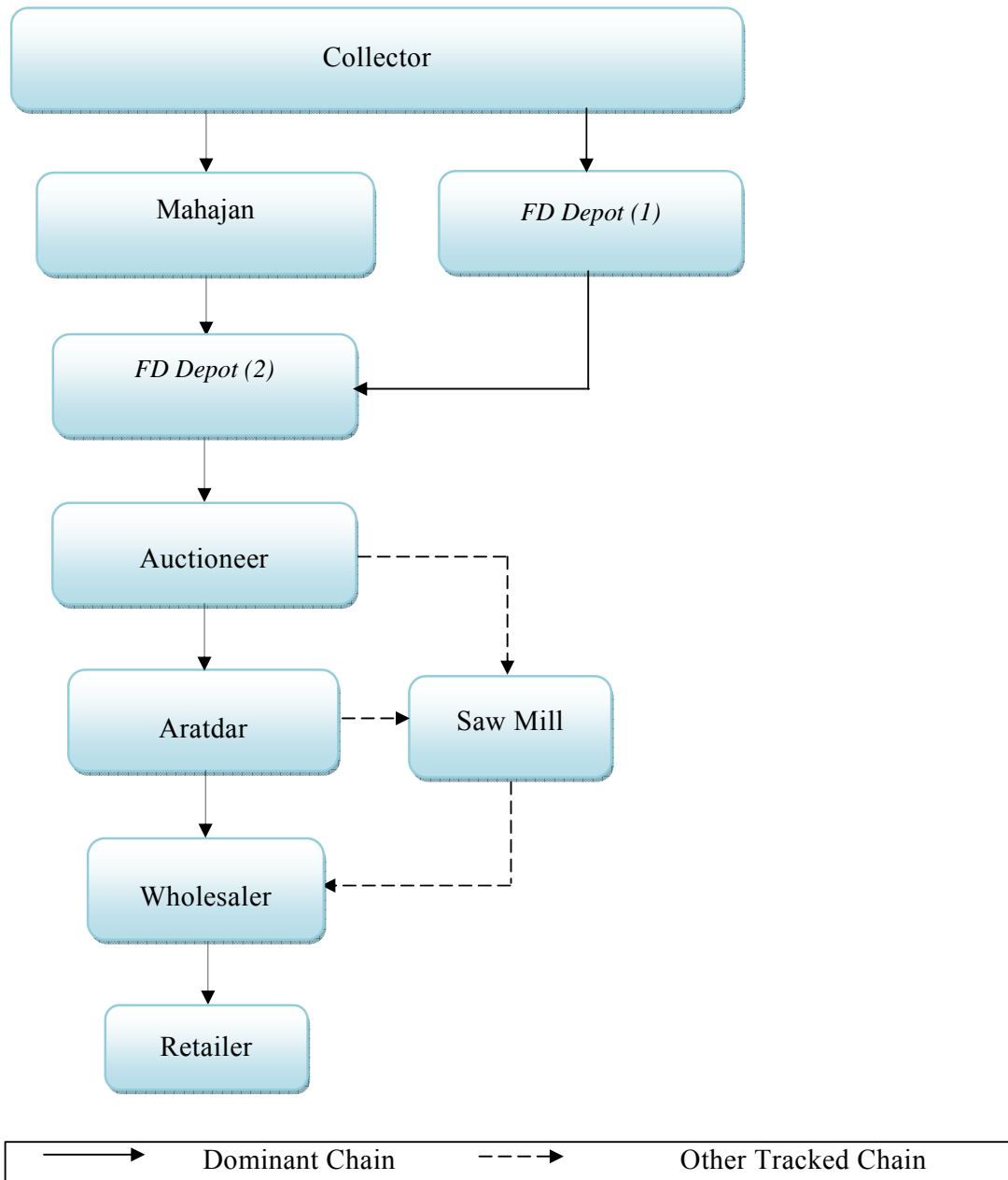
1. Honey

Chain 1: Collector ⇒ Mahajan ⇒ Aratdar ⇒ Wholesaler ⇒ Retailer

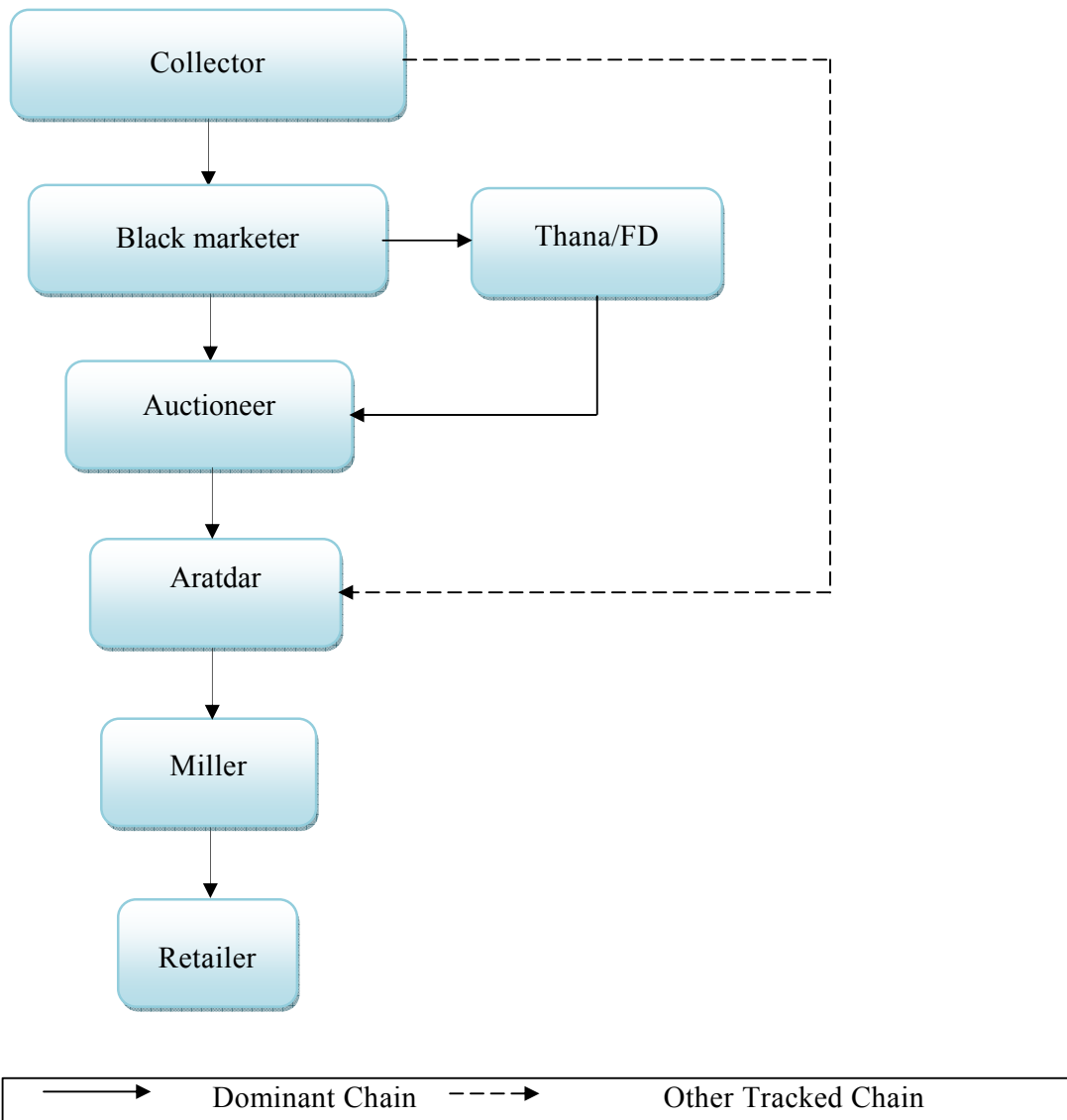
Flow chart C.I: Value chain for timber (*Sundri, Passur, Kankra, Gewa*)



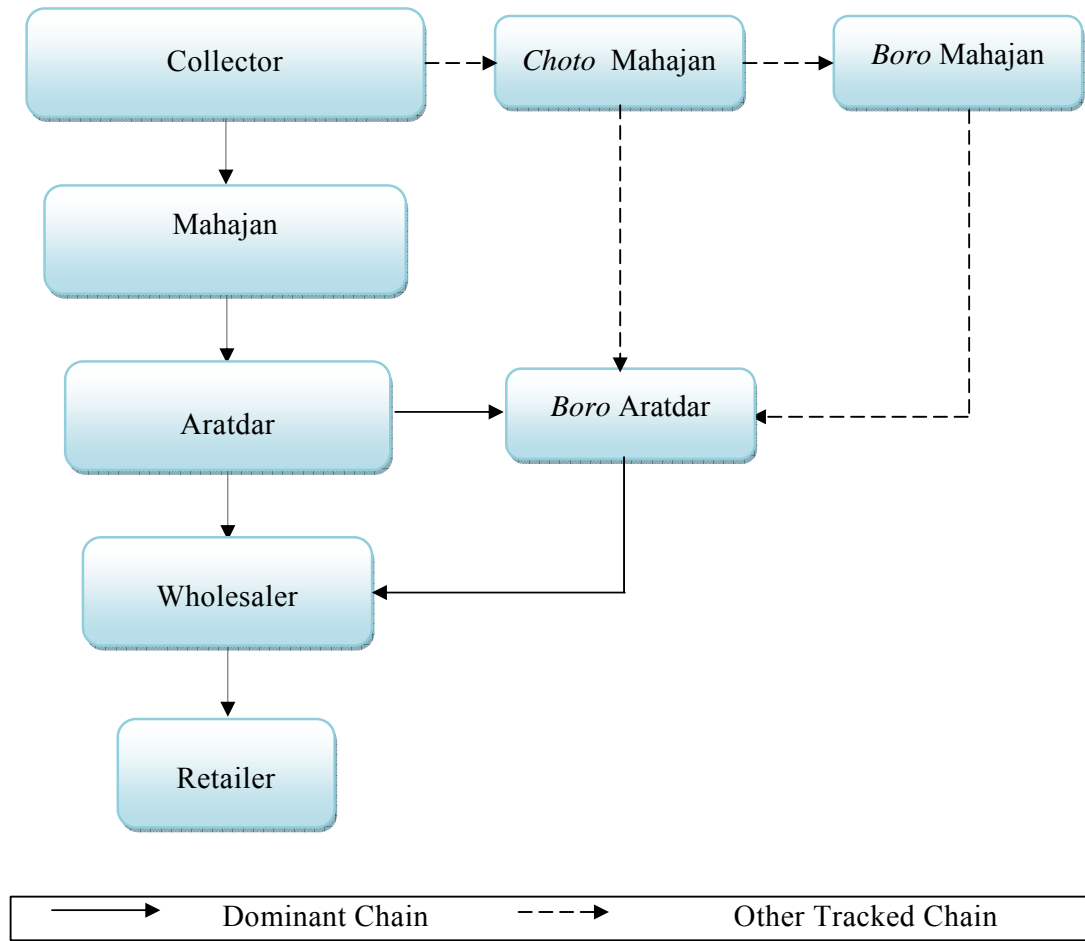
Flow chart C.2: Value chain for top-dying sundri timber and ceased wood



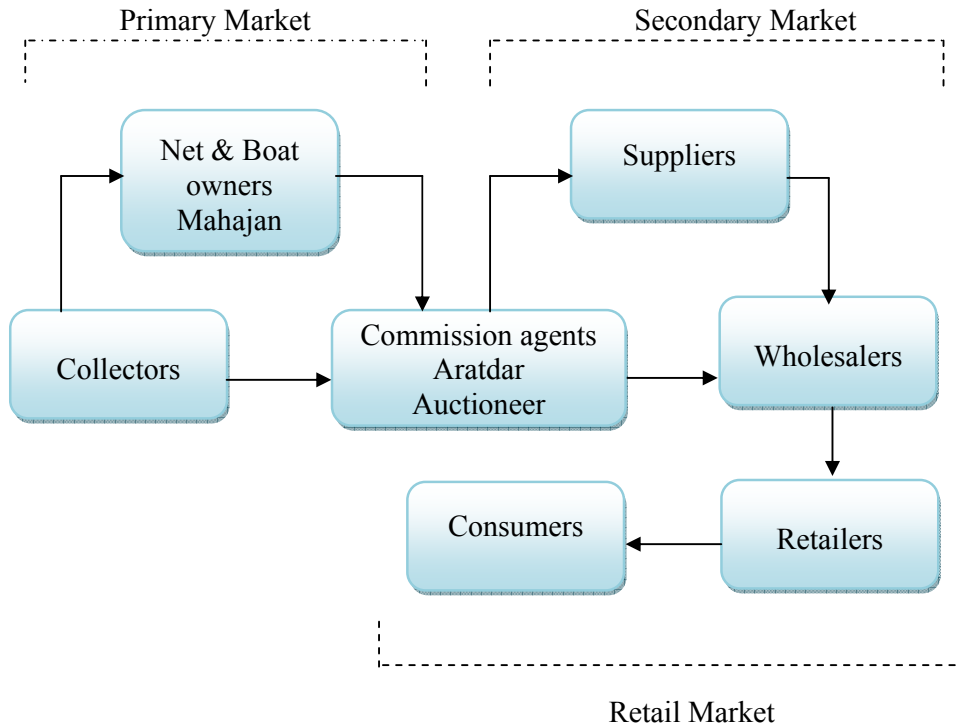
Flow chart C.3: Value chain for illegal timber (Sundri, Passur, Kankra, Gewa)



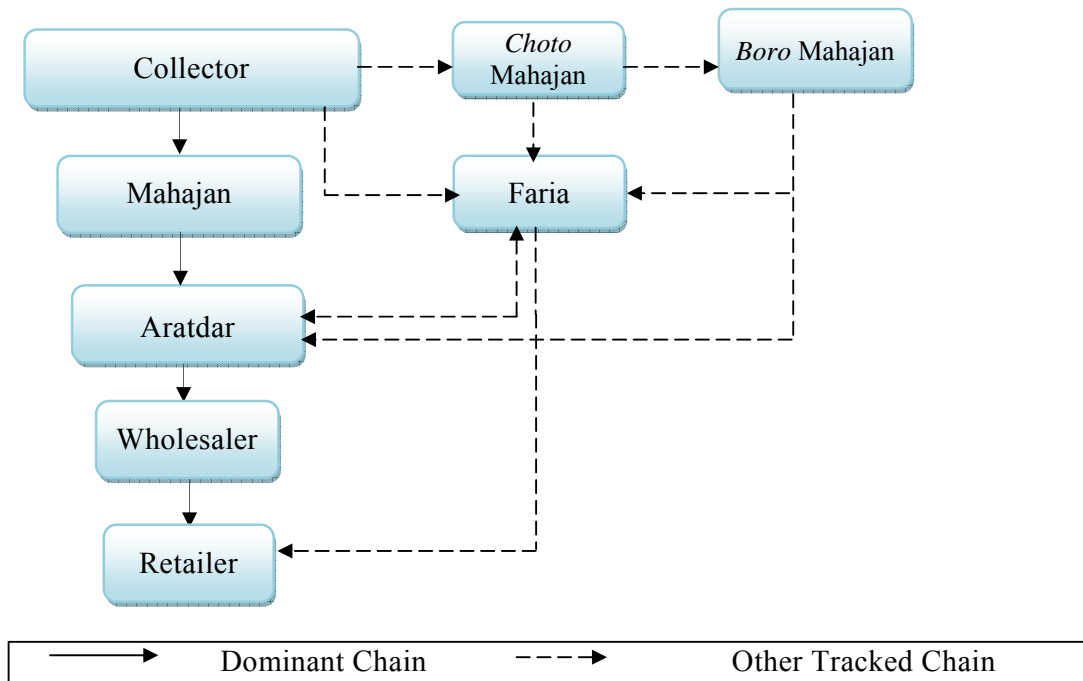
Flow chart C.4: Value chain for non-timber (Golpata/Grass/Shon/Matting)



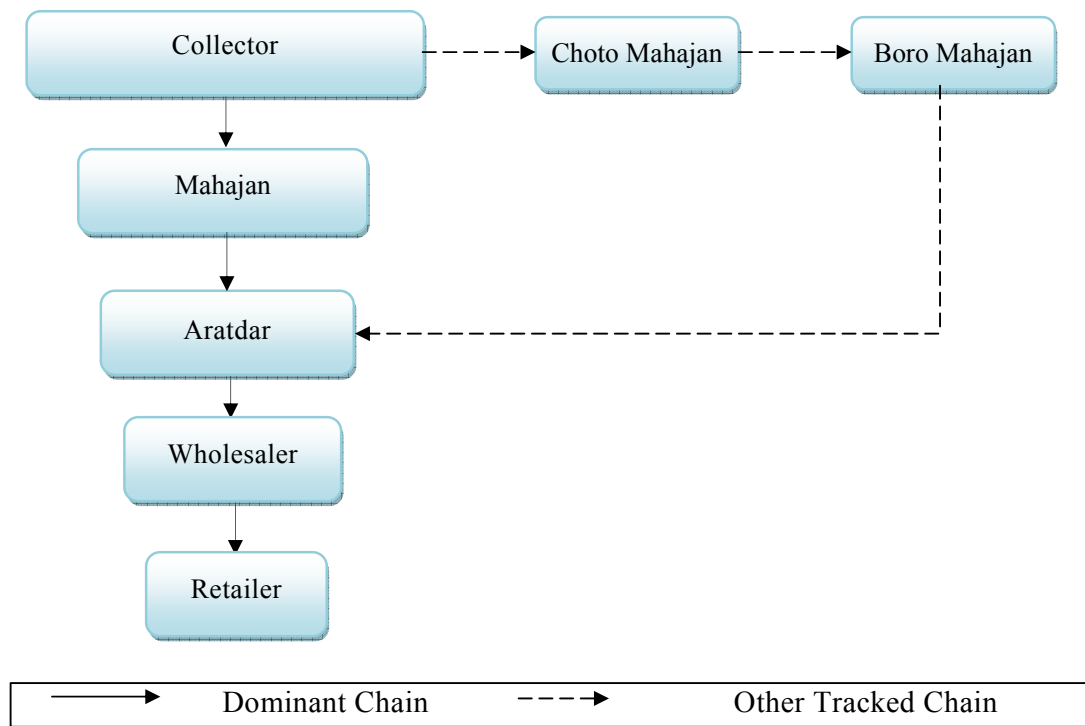
Flow chart C.5: SRF products marketing system



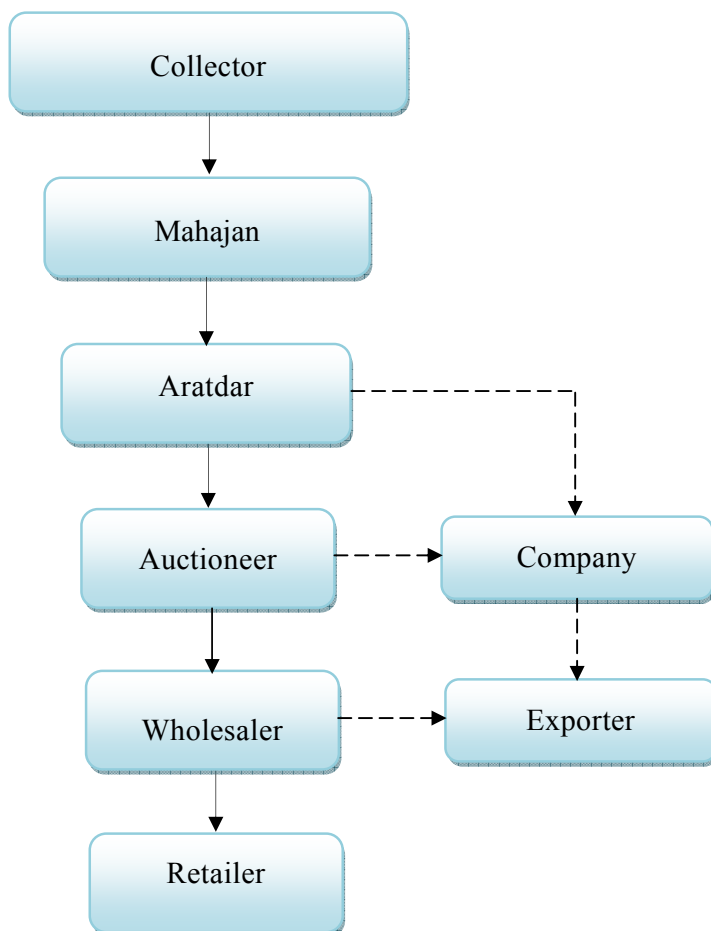
Flow chart C.6: Value chain for *gura* fish

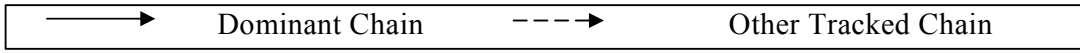


Flow chart C.7: Value chain for sada fish

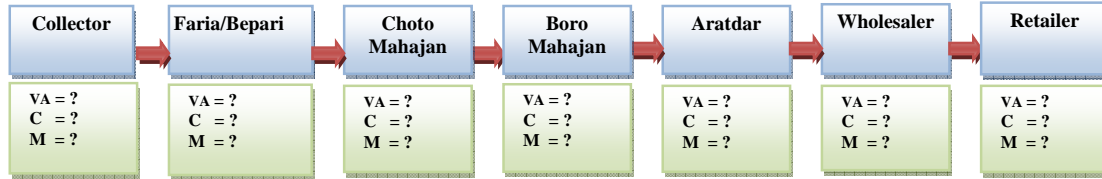


Flow chart C.8: Value chain for hilsha



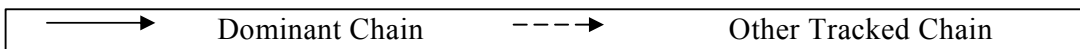
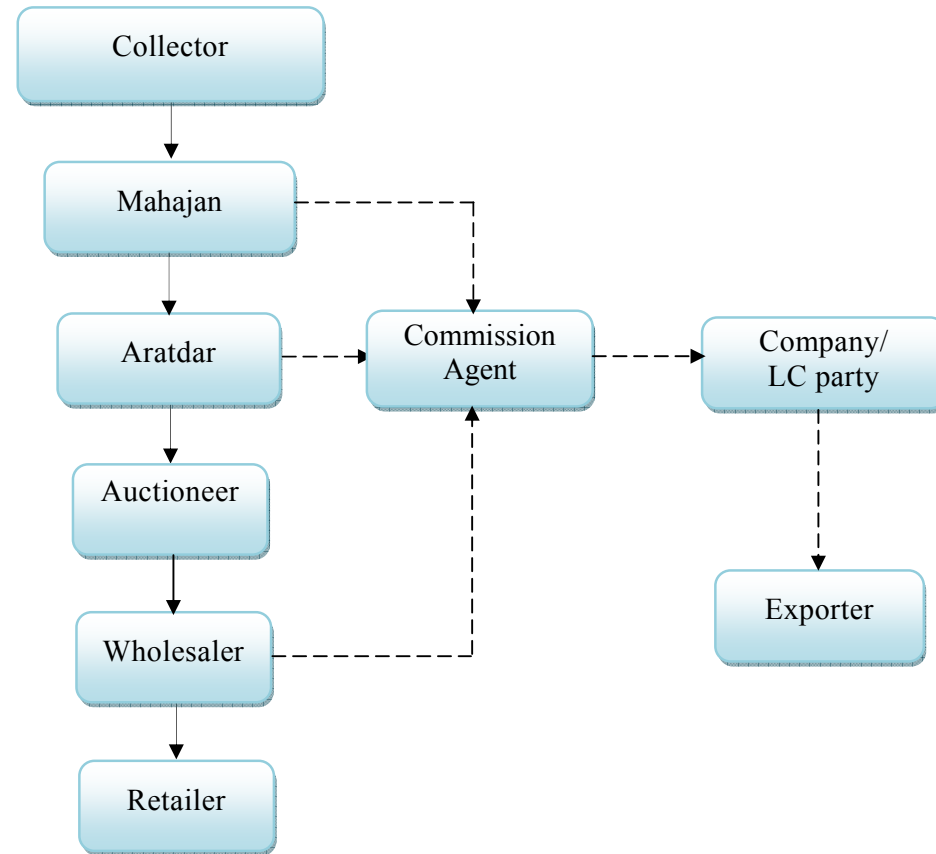


Flow chart C.9: A simplified and typical SRF marketing system and value chain of the actors (% of retail price)

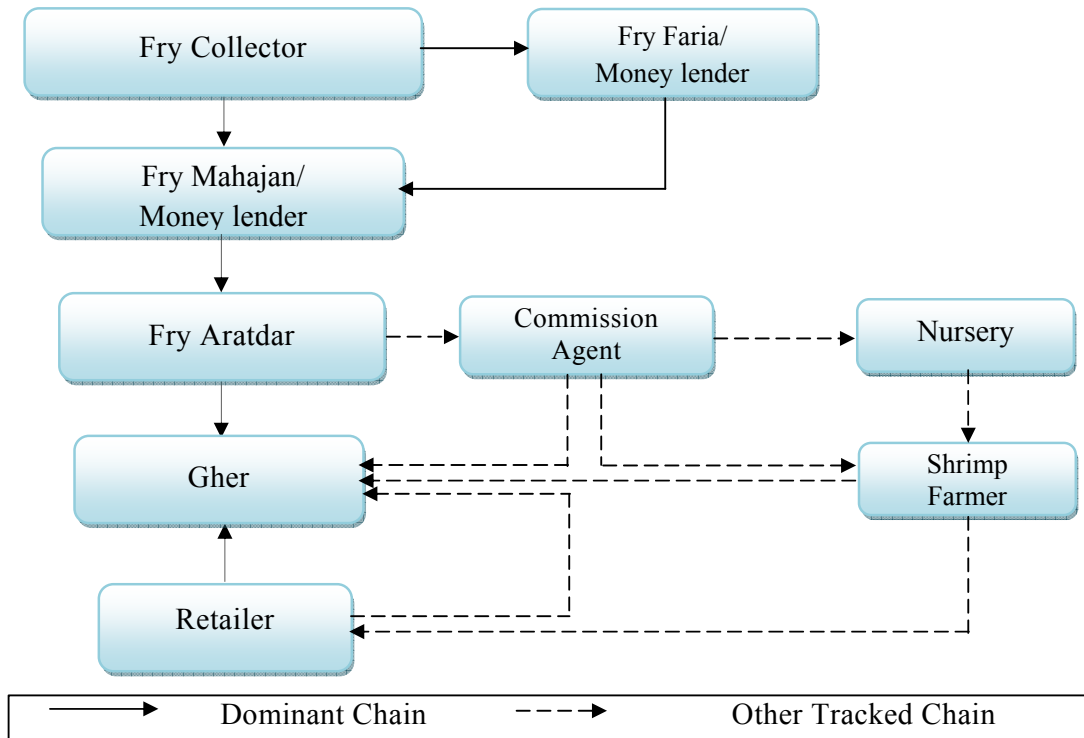


VA = Value addition; C = costs; M = Margin = VA - C

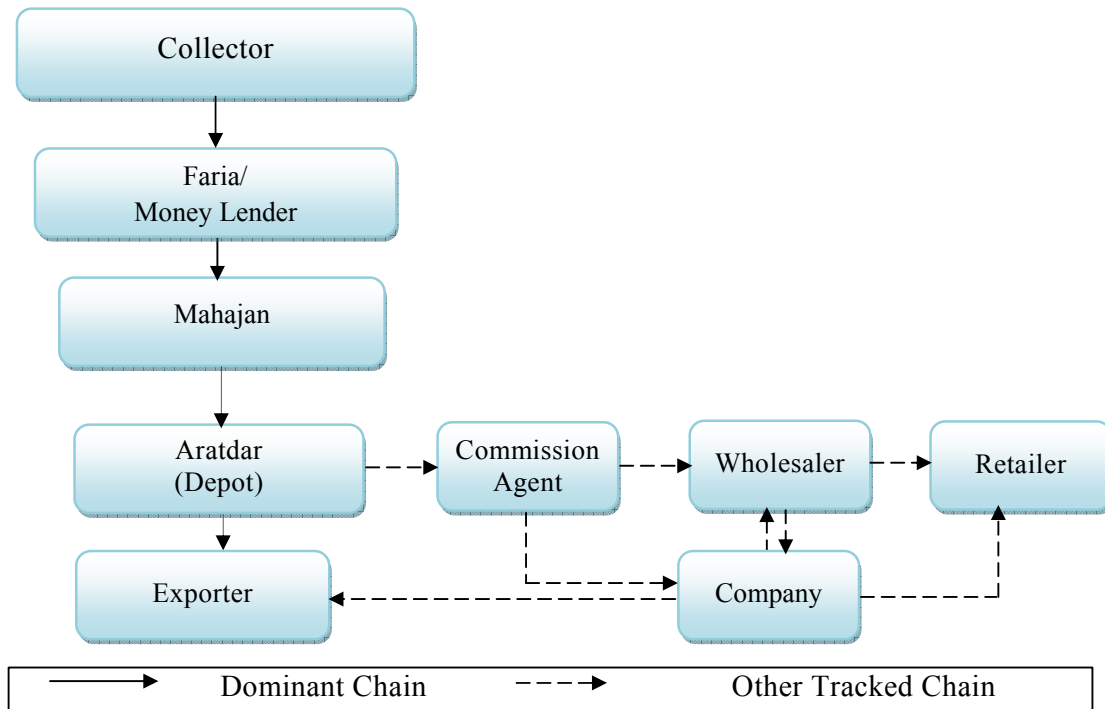
Flow chart C.10 : Value chain for shrimp (galda and bagda)



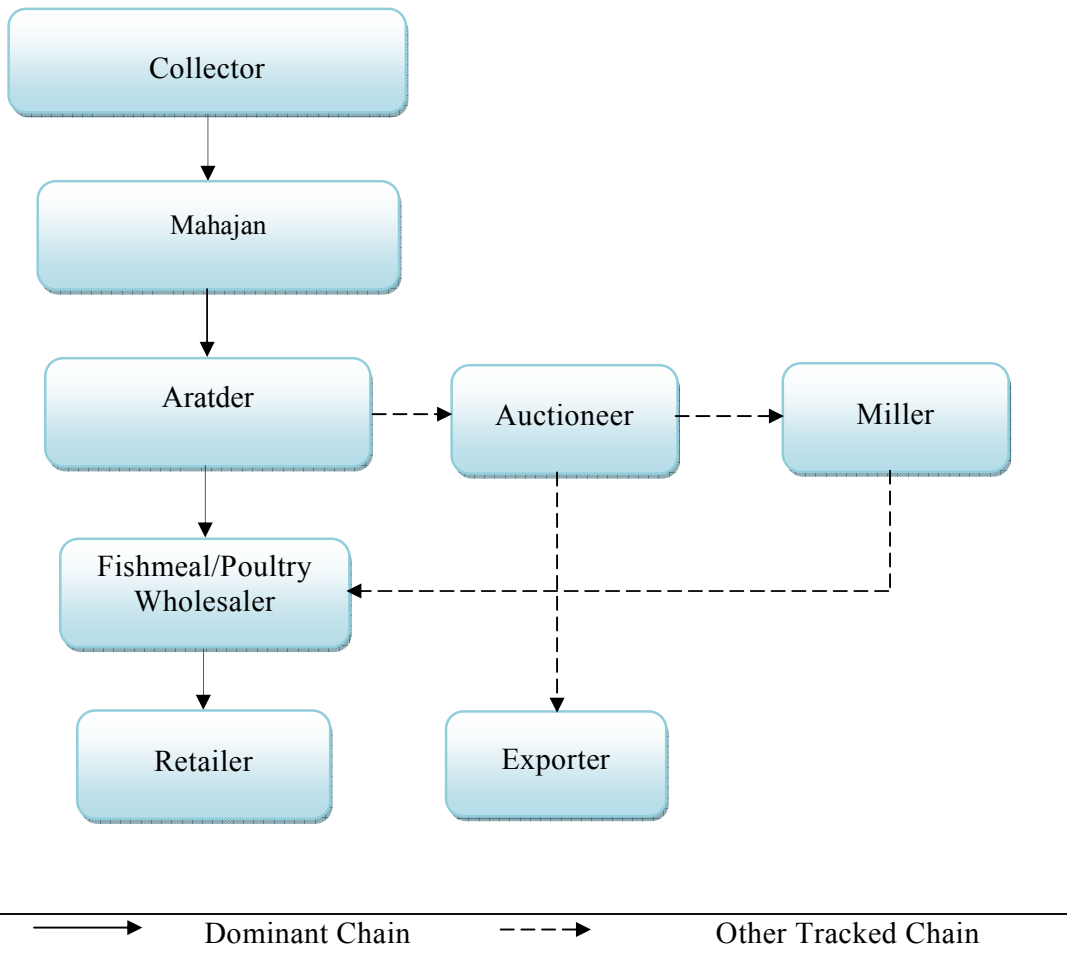
Flow chart C.11: Value chain for shrimp fry



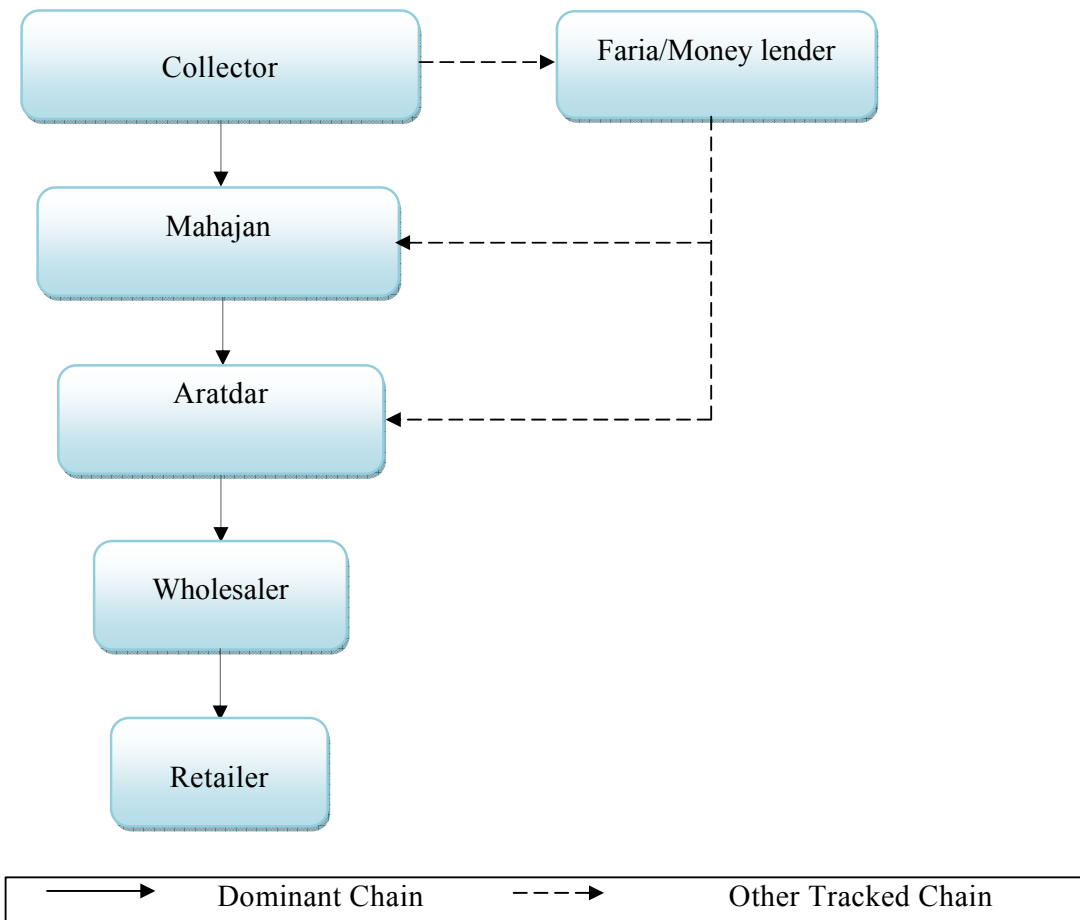
Flow chart C.12: Value chain for crab



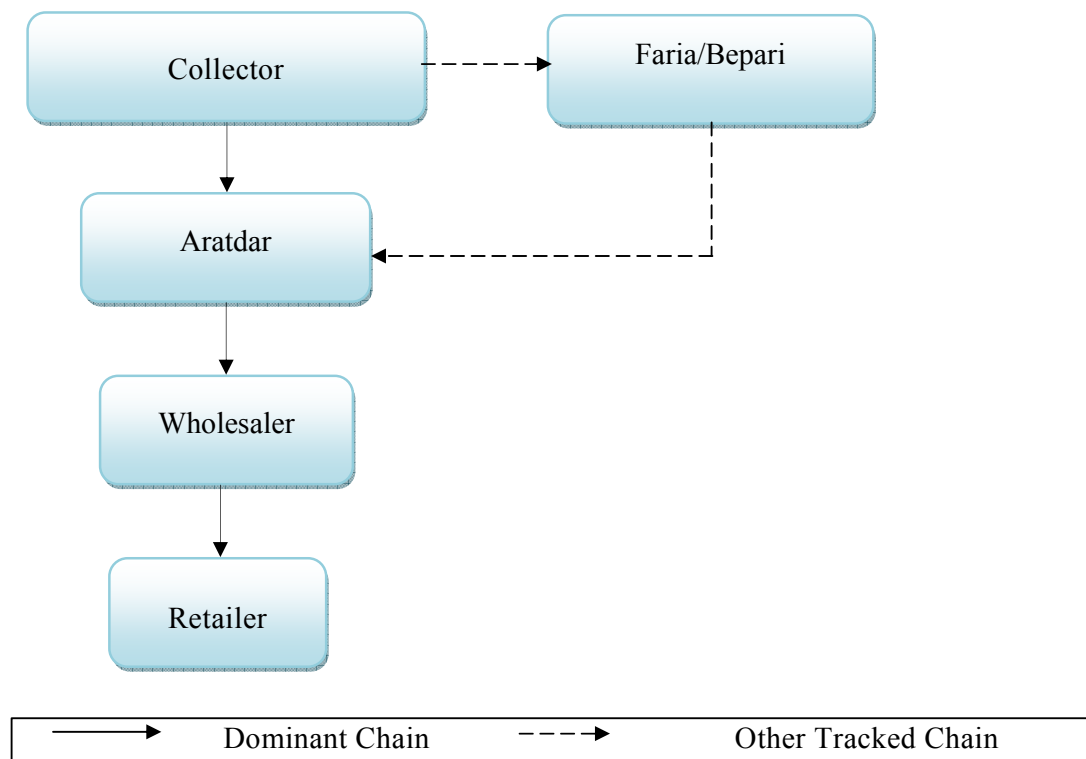
Flow chart C.13: Value chain for mollusc/shell/oyster



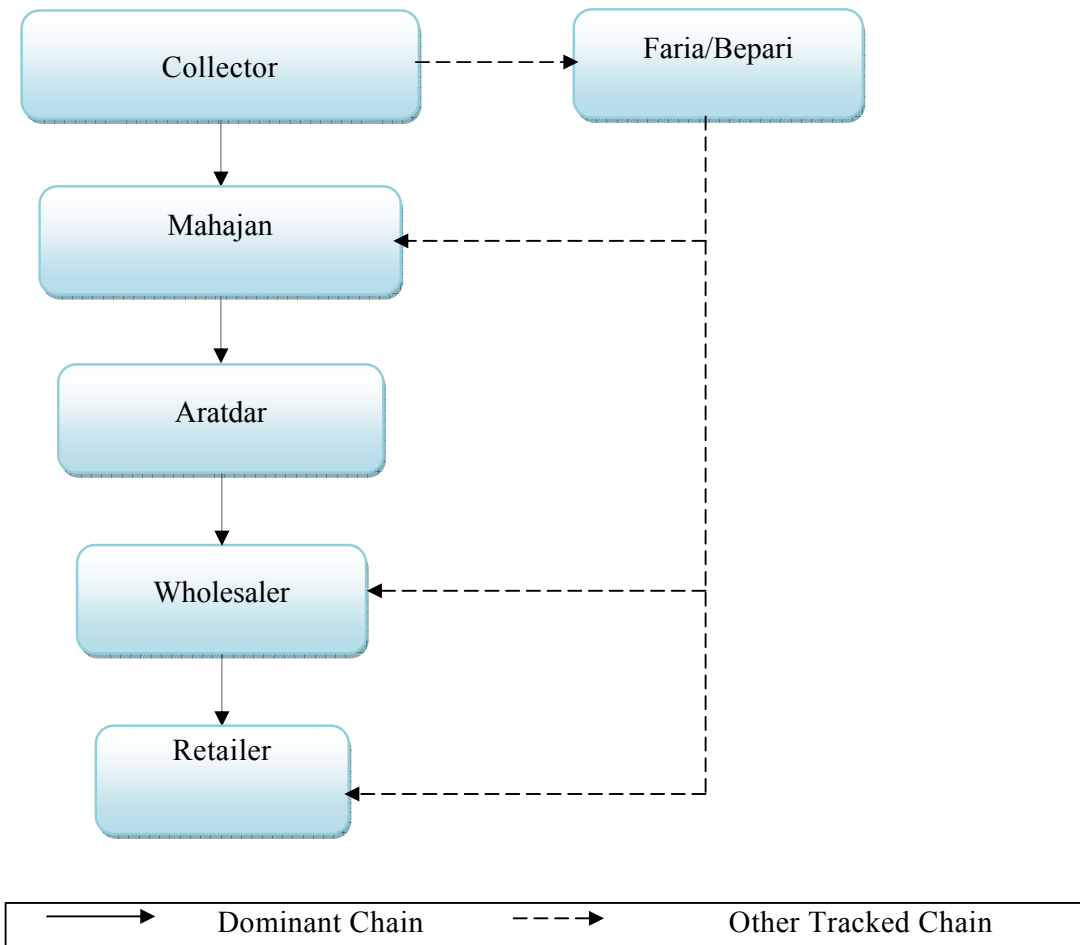
Flow chart C.14: Value chain for honey



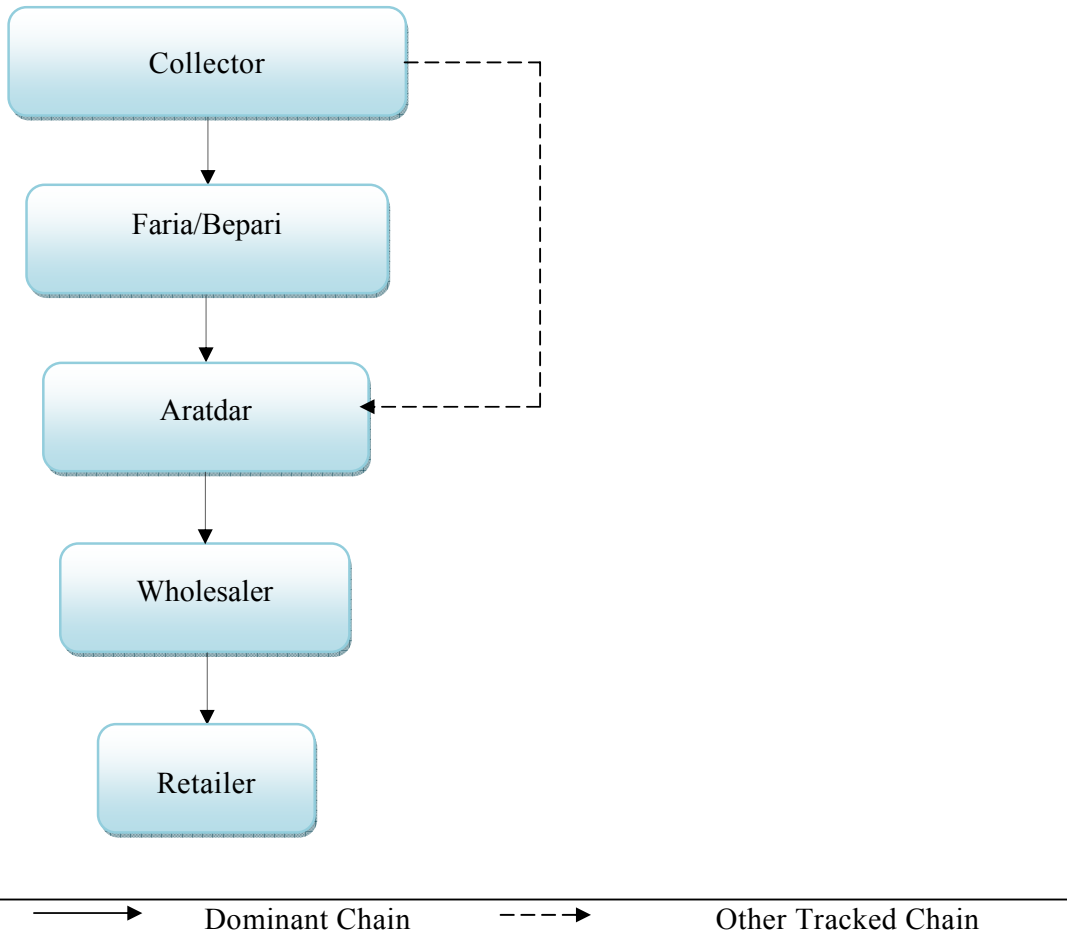
Flow chart C.15: Value chain for medicinal plants



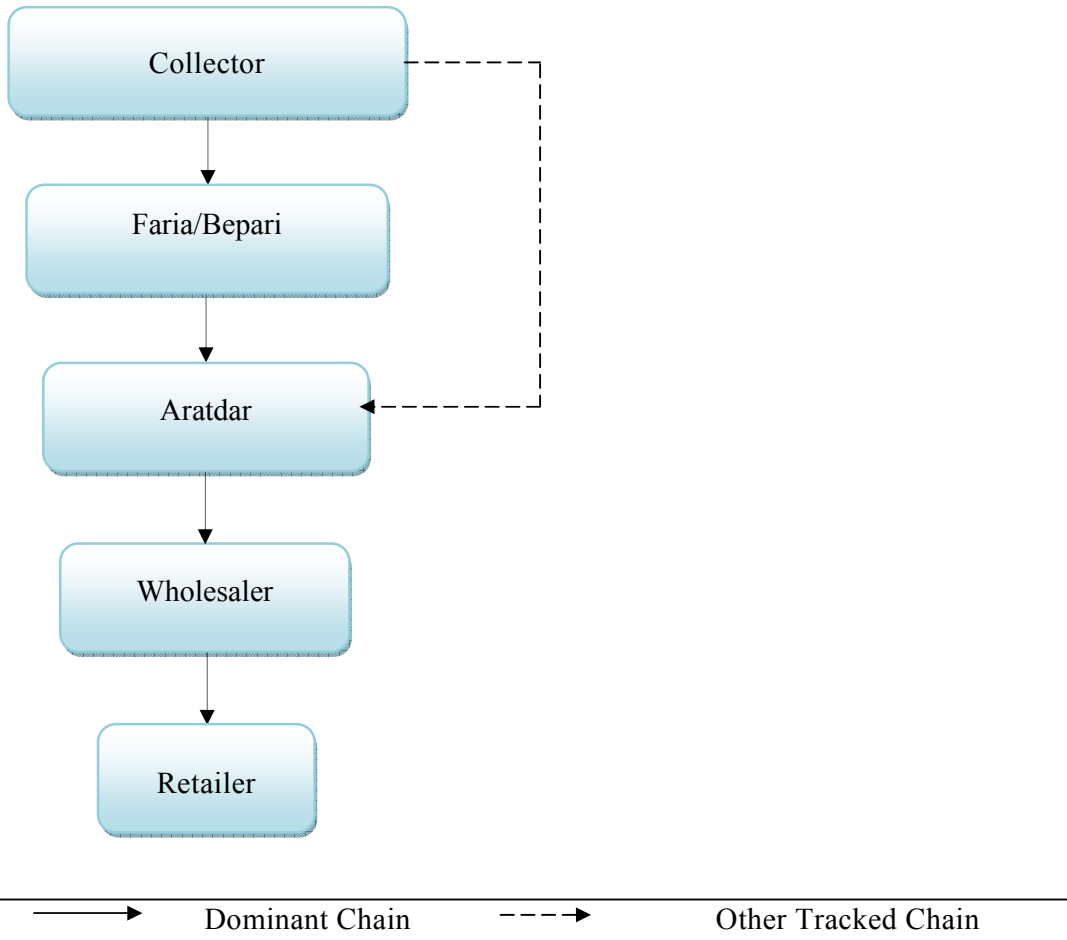
Flow chart C.16: Value chain for fuel wood



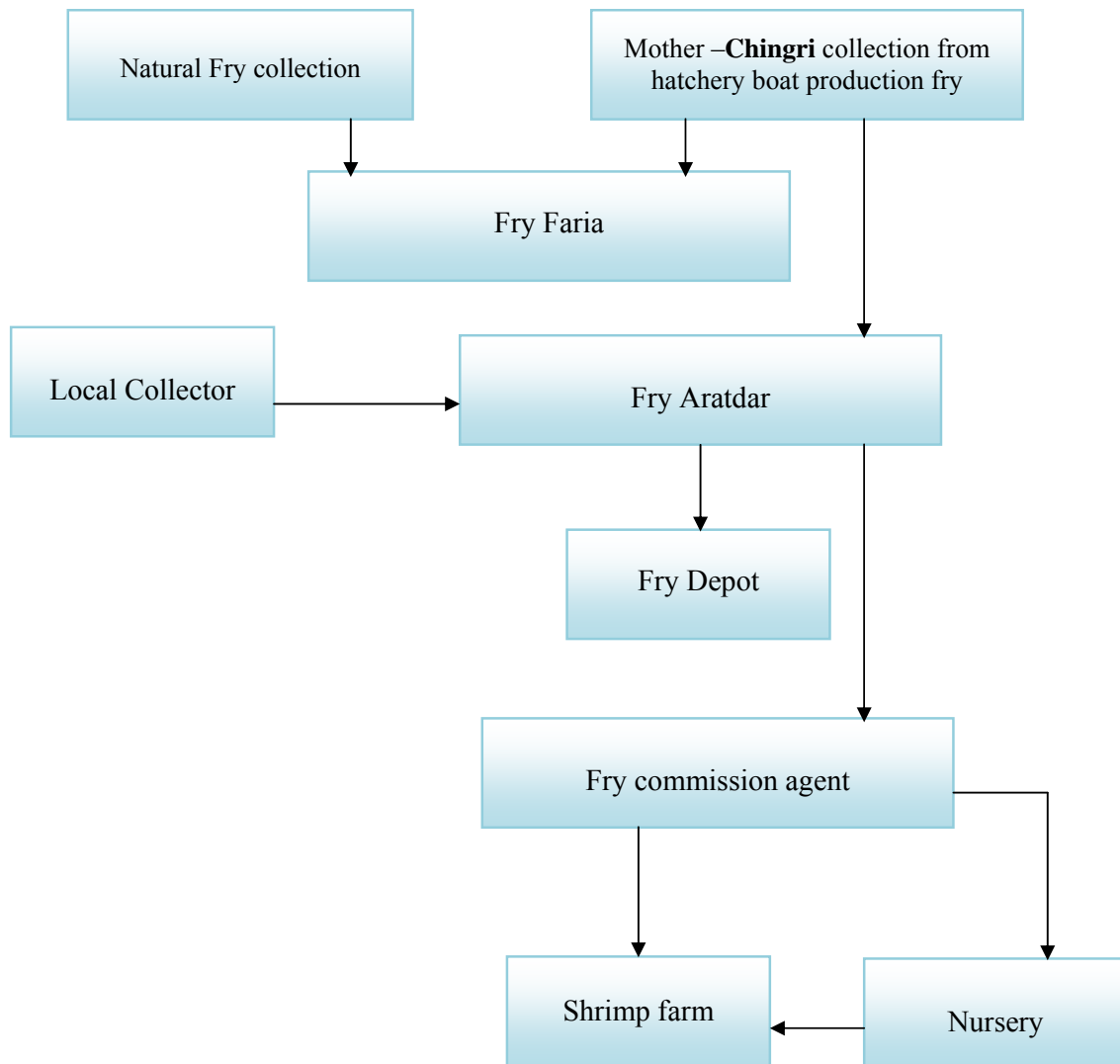
Flow chart C.17: Value chain for bee wax



Flow chart C.18: Value chain for hantal



Flow chart C.19: Shrimp supply chain



Annex D: Annex Tables: Chapter 2

Table D2.1: Major NGOs operating in SIZ upazilas

SIZ District	SIZ Upazila	NGOs operating in locality
Bagerhat	Bagerhat Sadar	1.CARE 2.BRAC 3.PROSHIKA 4.ASA 5.Shapla Phul 6.Dak Diya Jai
	Mongla	1.BRAC 2.ASA 3.CARITAS and 4.World Vision
	Morrelganj	1.BRAC 2.PROSHIKA 3.ASA 4.GRAMEEN BANK 5.Bima Prokalpo 6.Ranar Uddipan 7.Mashuk 8.Gono Shastho Kendra 9.Dak Deya Jai 10.CDC
	Sarankhola	1.BRAC 2.GRAMEEN BANK and 3.Agradut
Khulna	Dacope	1.BRAC 2.PROSHIKA 3.World Vision 4.Gonoshahajjo Sangstha 5.HEED Bangladesh 6.Step 7.Prodipon
	Koyra	1.BRAC 2.PROSHIKA 3.GRAMEEN BANK 4.Prodipan 5.Ahsania Mission 6.World Vision 7.Grameen Swanirvar 8.Setu 9.JSS
	Paikgacha	1.Satkhira Unnayan Sangstha (SUS) 2.Uttoron 3.CSS 4.BRAC 5.ASA 6.GRAMEEN BANK 7.Mukulito Khulna
Satkhira	Shymnagar	1.BRAC 2. CARITAS 3. ASA 4. Sushilan 5. Nakshi Kantha Mohila Unnayan Sangstha

		6. Shymnagar Mohila Atta karma Sangsthan 7. Setu 8. Bharasa
Pirojpur	Matbaria	1.BRAC 2.PROSHIKA 3.ASA 4.Dak Diye Jai 5.Jubak
Barguna	Patharghata	1.BRAC 2.ASA 3.CARITAS 4.PROSHIKA 5.GRAMEEN BANK 6.Sankalpa 7.Sangram

Table D2.2: Beneficiaries and credit coverage of Grameen Bank, 2008

District	No. of villages covered	No. of Branches in operation	No. of members (Landless)			Crore Tk (2008)	
			Male	Female	Total	Disbursement	Recovery (%)
Bagerhat	1126 (1.3)	41 (1.6)	0 (0.0)	89371 (1.2)	90538 (1.2)	433.3 (1.0)	86.7
Barguna	791 (0.9)	36 (1.4)	5926 (2.5)	91302 (1.2)	98055 (1.3)	490.1 (1.2)	85.9
Khulna	816 (1.0)	24 (0.9)	0 (0.0)	73897 (1.0)	74737 (1.0)	241.7 (0.6)	84.7
Pirojpur	904 (1.1)	34 (1.3)	329 (0.1)	94013 (1.3)	95280 (1.2)	540.6 (1.3)	89.4
Satkhira	1171 (1.4)	33 (1.3)	150 (0.1)	95223	96577	528.4 (1.3)	89.2
SIZ districts	4808 (5.8)	169 (6.7)	6405 (2.7)	443806 (6.0)	455187 (5.9)	2234.1 (5.3)	87.6
Bangladesh	83566 (100.0)	2539 (100.0)	239117 (100.0)	7431086 (100.0)	7670203 (100.0)	41890.3 (100.0)	89.4

Source: BBS (2009).

Annex D: Annex Tables: Chapter 3

Table D3.1: Sample size by upazila

Upazila	Sample	%
Bagerhat Sadar	20	8.4
Mongla	22	9.3
Morrelganj	19	8.0
Sarankhola	29	12.2
Dacope	18	7.6
Koyra	10	4.2
Paikgacha	17	7.2
Shymnagar	60	25.3
Matbaria	10	4.2
Patharghata	19	8.0
KCC	13	5.5
Total	237	100.0

Table D3.2: Type of SRF products under investigation

	Sample	%
Sundri	1	0.4
Goran	6	2.5
Golpata	54	22.8
Grass	2	0.8
Gura fish	16	6.8
Sada (White) Large	46	19.4
Hilsha	19	8.0
Shrimp Galda	7	3.0
Shrimp Bagda	1	0.4
Shrimp Fry (galda)	10	4.2
Shrimp Fry (bagda)	9	3.8
Crab	45	19.0
Mollusc	1	0.4
Honey	15	6.3
Hantal	2	0.8
Shutki	3	1.3
Total	237	100.0

Note: Not all products are studied in detail.

Table D3.3: Type of business markets surveyed

	n	%
Primary	210	88.6
Secondary	26	11.0
Bazar	1	0.4
Total	237	100.0

Table D3.4: Sample size by concentration centers (landing places)

Concentration centers	Sample	%
Joymoni Ghol	12	5.1
Rayenda	9	3.8
Chila Bazar	3	1.3
Chanmari	7	3.0
Shoilmari	1	0.4
Bogi	5	2.1
Charduani	11	4.6
Digraj Bazar	4	1.7
Gabtala	2	0.8
Horinagar	4	1.7
Jaudhara	2	.8
Kalbari	17	7.2
Kashimari	3	1.3
Mongla	2	0.8
Monshigonj	7	3.0
Morrelganj	5	2.1
Matbari	7	3.0
Natun Bazar	2	0.8
Nildomor	6	2.5
Nolian	18	7.6
Noyabeki Bazar	9	3.8
Padma	5	2.1
Rajapur	3	1.3
Rupsha Ghat	3	1.3
Sannyashi	8	3.4
Shymnagar	3	1.3
Southkhali	5	2.1
Sranikhali	2	0.8
Tafalbaria	6	2.5
Vaga Bazar	2	0.8
Betkhali	1	0.4
Burigoalini	4	1.7
Kalikapur	1	0.4
Dumoria	2	0.8
Khalifar hat	1	0.4
Kathaltali	1	0.4
Shibsa	1	0.4
Bagerhat Sadar	8	3.4

Bagerhat Thana Ghat	1	0.4
Chandkhali	7	3.0
Santa Bazar	8	3.4
Paikgacha	1	0.4
Katkata	4	1.7
Koyra Bazar	6	2.5
Golbunia	2	0.8
Shaplaja	2	0.8
Rahimabad	2	0.8
K. B. Bazar	9	3.8
Badhamary	1	0.4
Kaliarkhal	1	0.4
Mothurapur	1	0.4
Total	237	100.0

Table D3.5: Land ownership and operational holdings of respondents by Range

Range	Land holding (decimals)	
	Owned	Operated
Sarankhola	77.7	31.4
	(100.6)	(104.0)
Khulna	123.7	81.2
	(356.1)	(167.4)
Chandpai	47.5	31.2
	(62.2)	(43.0)
Satkhira	83.1	51.7
	(130.7)	(103.4)
Total	87.5	48.7
	(199.7)	(120.1)

Note: Figures in parentheses denote standard deviations.

Table D3.6: Land ownership and operation by district

District	Land holding (decimals)	
	Owned	Operation
Bagerhat	45.8	16.8
	(46.0)	(31.5)
Khulna	123.7	81.2
	(356.1)	(167.4)
Satkhira	83.1	51.7
	(130.7)	(103.4)
Pirojpur	137.4	71.8
	(171.7)	(114.2)
Barguna	157.8	76.0
	(137.3)	(208.7)
Total	87.5	48.7
	(199.7)	(120.1)

Note: Figures in parentheses denote standard deviations.

Table D3.7: Distance of harvest place from home village by district

District	Distance of harvest place (Km)		
	Mean	N	Std. Deviation
Bagerhat	31.57	77	49.50
Khulna	38.05	55	33.49
Satkhira	36.35	60	25.65
Pirojpur	16.25	10	18.30
Barguna	40.13	15	30.76
Total	34.42	217	37.71

Note: 217 out of 237 actors responded.

Table D3.8: Capital structure by products

Product	Capital structure (Tk)			Dadon (Tk)
	Fixed capital	Working capital	Total capital	
Sundri	100,000	100,000	200,000	100,000
Goran	78,333	64,167	142,500	41,667
Golpata	91,481	164,259	255,741	74,167
Grass	-	750,000	750,000	175,000
Small Gura	37,250	189,500	226,750	44,188
White Large	102,457	119,283	221,739	30,457
Hilsha	86,842	131,789	218,632	73,684
Shrimp Galda	55,429	38,571	94,000	44,286
Shrimp Bagda	-	400,000	400,000	200,000
Shrimp Fry (Galda)	11,200	105,100	116,300	30,000
Shrimp Fry (Bagda)	9,111	116,111	125,222	36,222
Crab	28,822	311,133	339,956	105,422
Mollusc	7,000	2,200	9,200	5,000
Honey	28,187	79,400	107,587	31,667
Hantal	30,000	10,000	40,000	10,000
Shutki	216,667	100,000	316,667	12,5000
Total	65,349	169,444	234,793	63,156

Table D3.9: Sample of saw mills/furniture units by District

District	No. of units	%
Bagerhat	10	29.4
Khulna	10	29.4
Satkhira	4	11.8
Pirojpur	5	14.7
Barguna	5	14.7
ALL	34	100.0

Table D3.10: Sample of saw mills/furniture units by upazila

Upazila	No. of units	%
Bagerhat Sadar	4	11.8
Mongla	2	5.9
Morrelganj	1	2.9
Sarankhola	3	8.8
Shymnagar	4	11.8
Matbaria	5	14.7
Patharghata	5	14.7
KCC	10	29.4
Total	34	100.0

Table D3.11: Primary occupation of entrepreneurs

	Occupation	
	Primary	Secondary
Saw milling	26.5	-
Saw mailing incld. wood Arat	17.6	-
Other industry	52.9	5.9
Other business/trading	-	29.4
Service	2.9	-
Construction	-	2.9
Total	100.0	38.2

Table D3.12: Type of enterprises

Type of enterprises	n	%
Mainly manufacturing	9	26.5
Mainly Service	12	35.3
Mainly Trading	5	14.7
Mixture of manuf. service	8	23.5
Total	34	100.0

Table D3.13: Number of workforce by type of enterprise

Type of enterprises	Years of operation of enterprise	Number of workers			
		Family	Casual	Permanent	Total
Mainly manufacturing	8.7	1.7	0.2	3.0	4.9
Mainly Service	19.6	1.1	2.5	4.0	7.6
Mainly Trading	16.4	1.0	1.0	3.0	5.0
Mixture of manuf. service	14.4	1.0	4.1	4.8	9.9
Total	15.0	1.2	2.1	3.8	7.0

Table D3.14: Trend of local raw materials used in previous 5 years by Range

RANGE	Trend of local raw materials used in					Trend rate of growth rate *
	2005	2006	2007	2008	2009	
Sarankhola	51,067	63,478	75,217	84,625	99,389	.16*
Chandpai	31,550	34,675	45,000	50,000	55,000	.15*
Khulna	158,390	174,612	280,480	309,300	335,100	.21**
Satkhira	312,000	371,000	290,500	297,500	331,500	.01***
Total	112,182	130,649	159,138	173,713	193,412	.14*

Note: Exponential growth rate; Population growth rate in SIZ was 2.5%; Log linear models used to estimate trend estimates. *=Statistically significant at 99 percent significance level. **=Statistically significant at 95 percent significance level. ***= Not statistically significant.

Table D.15: Trend of SRF timber products used in previous 5 years by Range

RANGE	Trend of SRF raw materials used in					Trend rate of growth rate *
	2005	2006	2007	2008	2009	
Sarankhola	29,656	24,522	19,450	17,986	11,889	- .21*
Chandpai	2,450	1,825	0	0	0	- 1.62**
Khulna	5,310	838	820	0	0	- 1.70**
Satkhira	0	0	0	0	0	No use
Total	17,406	13,336	10,538	9,522	6,294	- .24*

Note: Exponential growth rate; Population growth rate in SIZ was 2.5%; Log linear models used to estimate trend estimates. *=Statistically significant at 99 percent significance level. **=Statistically significant at 95 percent significance level. ***= Not statistically significant.

Table D.16: Trend of gross income earned in previous 5 years by Range

RANGE	Average gross income in					Trend rate of growth rate *
	2005	2006	2007	2008	2009	
Sarankhola	80,722	88,000	94,667	102,611	109,833	.08*
Chandpai	34,000	36,500	45,000	50,000	55,000	.13*
Khulna	160,900	175,100	280,900	309,300	335,100	.20**
Satkhira	312,000	371,000	290,500	297,500	331,500	-.10***
Total	128,765	143,882	169,559	183,235	198,941	.11*

Note: Exponential growth rate; Population growth rate in SIZ was 2.5%; Log linear models used to estimate trend estimates. *=Statistically significant at 99 percent significance level. **=Statistically significant at 95 percent significance level. ***= Not statistically significant.

Table D3.17: Level of satisfaction on level of margins

Level of satisfaction	% of respondents		
	Collectors	Mahajans	Aratdars
Highly satisfied	-	15.4	12.5
Moderately satisfied	8.5	23.1	37.5
Just satisfied	25.4	46.2	25.0
Not satisfied at all	66.1	15.4	25.0
N =	59 (100.0)	13 (100.0)	8 (100.0)

Table D3.18: Major factors influencing price

Major factors influencing price	% of responses	Rank of factors
Supply situation	14.0	6
Number of buyers	46.7	1
Unofficial payments, ransoms, etc.	23.4	5
Quality of products	37.4	2
System of dadon lending	28.0	4
Will of Mahajans/Aratdars/dadon lenders	30.4	3
Transportation facilities	9.3	8
Seasonal effect	11.7	7

Note: The results are based on sample excluding export oriented products. Total may not be 100 due to multiple responses; n=214.

Rank 1= highest frequency and so on.

Table D3.19: Major reasons of exploitation (for harvesters)

Major reasons of exploitation	% of responses	Rank
Lack of working capital	41.7	3
Act of Mahajans/dadon lenders – price exploitation	58.3	2
High interest rate & never-ending dadon repayment	62.5	1
(Act of Aratdars – high commission, etc)		4
Act of pirates – high ransom	30.0	4
Bad transportation	12.0	8
Deception in weights	20.8	6
Lack of preservation/storage facilities	8.3	9
Lack of marketing system	25.0	5
Others	16.7	7

Note: The results are based on sample excluding export oriented products. Total may not be 100 due to multiple responses.

Rank 1= highest frequency and so on.

Table D3.20: Most severe problem of SRF harvest/trade activities

Major severe problem	% of responses	Rank of problems
<u>For harvesters</u>		
Lack of working capital/boat/equipment	75.0	1
Dependence on Mahajans/dadon lenders	38.5	5
Risk of life	61.5	2
Natural disasters	19.2	8
Quantity of SRF products declined	9.6	10
Act of pirates/tigers	48.1	4
Lack of compensation for loss of life/injury	28.8	6
Lack of marketing system	19.2	8
Few credit facilities	55.8	3
Shortages of drinking water in forest	9.6	10
Others	19.2	-
n=52		
<u>Mahajans/Aratdars/dadon lenders</u>		
Act of pirates/ransom	34.6	1
Political influence for waving dadons/subscription	9.6	9
Shortage of ice/cold storage	15.4	6

Syndication of transport owners	13.5	8
Payment from buyers	15.4	4
Corruption (various departments)	15.4	5
Harassment from police/coast guard	34.6	2
Lack of preservation/storage facilities	17.3	3
Lack of working capital	15.4	7
Natural disasters	9.6	10
Others	9.6	-
n=25		

Note: The results are based on sample excluding export oriented products. Total may not be 100 due to multiple responses.

Rank 1= highest frequency and so on.

Table D3.21: Recommendations towards improving the situation

Recommendations	% of responses	Rank
<u>For harvesters</u>		
Increase provision of working capital	74.5	1
Ensure security during harvests and on the river networks	49.0	5
Create and allocate fund for Bawalis/Mawalis/Jalles	39.2	8
Abolish Mahajan system and provide credits through scheduled banks	47.1	6
Provide alternative opportunities/subsidy for lean season	58.8	2
Bring genuine Bawalis/Mawalis within safety networks in slack time	29.4	9
Introduce insurance for loss of life/injury	19.6	12
Create provision for drinking water in forest	43.1	7
Form cooperatives with Bawalis/Mawalis/Jalles	54.9	3
Create specialized institutions/cooperative bank for SRF harvesters	23.5	10
Create more market networks, landing places and secondary markets	49.0	5
Others	19.6	12
N = 52		
<u>Mahajans/Aratdars/dadon lenders</u>		
Enhance FD's capacity to protect from pirates	32.0	4
Remove corruption police/coast guard/FD	48.0	2
Remove political elites from SRF trading	20.0	6
Establish adequate cold storages	48.0	2
Provide loans on BLC	44.0	3
Remove syndication of transport owners	20.0	6
Others	20.0	6
n =25		

Note: The results are based on sample excluding export-oriented products. Total may not be 100 due to multiple responses.

Rank 1= highest frequency and so on.

Annex D: Annex Tables: Chapter 4

Table D4.1: Per center no. of boats involved in collecting SRF products and involvement of persons by upazila

Upazila	Weekly average no. of boats entering into sample landing places		Weekly average no. of persons involved in sample landing places	
	Harvest season	Off season	Harvest season	Off season
Bagerhat Sadar	90	55	747	450
Mongla	358	100	775	500
Morrelganj	88	80	449	386
Sarankhola	129	162	348	331
Dacope	1,185	-	2,018	-
Koyra	187	-	540	-
Paikgacha	68	-	349	-
Shymnagar	80	35	308	85
Matbaria	210	82	505	204
Patharghata	97	34	439	158
Khulna (KCC)	90	-	559	-
Average	222	77	587	257

- = NA.

Table D4.2: Per center no. of boats involved in collecting SRF products and involvement of persons by district

District	Weekly average no. of boats entering into sample landing places		Weekly average no. of persons involved in sample landing places	
	Harvest season	Off season	Harvest season	Off season
Bagerhat	170	113	495	346
Khulna	495	-	1,026	-
Satkhira	80	35	308	85
Pirojpur	227	84	823	276
Barguna	97	34	439	158
Average	222	77	587	257

- = NA.

Table D4.3: Per center no. of boats involved in collecting SRF products and involvement of persons by Range

Range	Weekly average no. of boats entering into sample landing places		Weekly average no. of persons involved in sample landing places	
	Harvest season	Off season	Harvest season	Off season
Sarankhola	119	78	463	259
Khulna	495	-	1,026	-
Chandpai	358	100	775	500
Satkhira	80	35	308	85
Average	222	77	587	257

Table D.4.4: Per center weekly average no. of actors in the current harvest season by center

Concentration center	Per center weekly average no. of actors							Total	Rank
	Collector	Faria/Bepari	Choto Mahajan	Boro Mahajan	Aratdar	Wholesaler	Retailer		
Joymoni Ghol	903	45	27	4	6	0	5	990	6
Rayenda	280	25	14	6	3	1	11	340	33
Chila Bazar	350	35	23	0	6	5	14	433	23
Chanmari	569	72	59	29	4	1	22	757	11
Shoilmari	56	4	3	2	5	3	10	83	45
Bogi	470	30	122	51	2	0	4	679	15
Charduani	122	18	9	6	11	7	5	178	43
Digranj Bazar	967	103	30	12	51	3	0	1,165	4
Gabtala	300	30	20	10	4	0	10	374	27
Horinagar	168	8	4	2	5	1	9	196	42
Jaudhara	225	6	18	7	1	0	6	262	38
Kalbari	309	30	9	8	17	1	4	377	26
Kashimari	367	20	12	7	6	0	11	421	24
Mongla	450	13	18	0	7	6	23	516	20
Monshigonj	385	30	13	18	21	1	38	505	21
Morrelganj	98	10	8	5	3	0	7	131	44
Matbari	807	21	26	10	10	1	2	877	8
Nildomor	275	13	10	10	21	0	3	332	35
Nolian	2,018	503	121	56	9	0	6	2,713	1
Noyabeki Bazar	298	12	10	10	8	0	11	349	32
Padma	280	8	26	13	8	16	20	370	28
Rajapur	567	27	167	100	6	0	21	887	7
Rupsha Ghat	600	60	35	18	2	0	23	737	12
Sannyashi	278	23	20	9	2	0	4	335	34
Southkhali	324	66	43	15	3	0	12	463	22
Sranikhali	215	10	14	7	2	0	8	256	39
Tafalbaria	310	30	24	14	2	0	16	396	25
Vaga Bazar	450	225	45	20	46	0	0	786	10
Burigoalini	300	18	13	12	5	4	10	361	29
Kalikapur	500	40	10	10	10	0	10	580	19
Dumoria	650	30	15	15	8	0	10	728	13
Khalifar hat	500	0	70	40	30	0	50	690	14
Kathaltali	400	200	0	0	30	20	0	650	17
Shibs	220	30	0	20	12	8	15	305	36
Chandkhali	572	0	7	16	24	7	23	649	18
Santa Bazar	203	8	5	7	5	3	8	239	40
Paikgacha	300	20	10	10	20	0	0	360	30
Katkata	253	8	10	12	6	0	0	290	37
Koyra Bazar	755	23	13	18	24	6	16	853	9
Golbunia	500	0	0	0	150	0	0	650	17
Shaplaja	800	150	0	0	255	70	0	1,275	2
Rahimabad	338	0	0	0	5	0	6	349	32
K. B. Bazar	838	123	16	4	9	3	22	1,016	5
Badhamary	1,200	40	0	0	4	0	0	1,244	3
Mothurapur	200	15	0	0	12	0	0	227	41
Average	568	76	31	16	14	2	10	718	-

Note: Total no. concentration center = 48; no. of primary centers = 45. Information based on all products.

Table D4.5: Average no of actors (per landing center) in the current harvest season by upazila

Upazila	Per center weekly average no. of actors							Total	Rank
	Collector	Faria/ Bepari	Choto Mahajan	Boro Mahajan	Aratdar	Wholesaler	Retailer		
Bagerhat Sadar	747	101	13	4	9	2	19	895	3
Mongla	775	68	27	6	17	2	6	901	2
Morrelganj	452	17	22	10	4	0	5	510	7
Sarankhola	357	34	59	29	3	0	12	494	8
Dacope	2018	503	121	56	9	0	6	2,713	1
Koyra	540	16	11	15	16	3	9	612	5
Paikgacha	354	8	6	12	14	4	14	411	9
Shymnagar	313	21	10	9	13	1	9	376	10
Matbaria	425	45	8	3	86	14	1	583	6
Patharghata	214	27	18	10	13	10	12	303	11
Khulna (KCC)	524	63	49	24	4	1	21	686	4
Average	568	76	31	16	14	2	10	718	-

Table D4.6: Per center weekly average no. of actors in the current harvest season by district

District	Per center weekly average no. of actors							Total	Rank
	Collector	Faria/ Bepari	Choto Mahajan	Boro Mahajan	Aratdar	Wholesaler	Retailer		
Bagerhat	499	50	34	14	7	1	10	615	3
Khulna	1019	200	58	31	10	2	12	1,332	1
Satkhira	313	21	10	9	13	1	9	376	4
Pirojpur	750	40	16	6	80	14	1	908	2
Barguna	214	27	18	10	13	10	12	303	5
Average	568	76	31	16	14	2	10	718	-

Table D4.7: Per center weekly average no. of actors in the current harvest season by product

Product type	Per center weekly average no. of actors							Total	Rank
	Collector	Faria/ Bepari	Choto Mahajan	Boro Mahajan	Aratdar	Wholesaler	Retailer		
Golpata	525	24	32	15	9	2	15	622	6
Gura fish	700	30	25	8	13	4	19	799	5
Sada (white) large fish	450	34	53	26	6	2	13	584	8
Hilsha	852	88	18	8	13	2	15	996	4
Shrimp galda	309	20	15	9	12	2	19	386	9
Shrimp bagda	1,200	40	0	0	4	0	0	1,244	3
Shrimp Fry (galda)	1,525	585	80	45	53	14	0	2,302	1
Shrimp fry (bagda)	978	352	71	43	7	7	11	1,467	2
Crab	503	41	15	9	26	1	0	595	7
Honey	164	9	7	5	2	0	11	198	10
Average	568	76	31	16	14	2	10	718	-

Table D4.8: Per center no. of jobs offered by actors in the sample business sites in this harvest season by upazila

Upazila	Per center no. of jobs offered by actors							Total	Rank
	Collector	Faria/ Bepari	Choto Mahajan	Boro Mahajan	Aratdar	Wholesaler	Retailer		
Bagerhat Sadar	865	167	15	5	64	4	25	1145	4
Mongla	807	57	19	6	20	1	3	913	5
Morrelganj	512	53	17	8	27	18	6	641	7
Sarankhola	357	38	66	32	4	0	15	512	9
Dacope	2,018	2	4	5	9	0	0	2,038	2
Koyra	540	15	13	16	19	10	12	625	8
Paikgacha	354	5	5	11	19	8	15	417	10
Shymnagar	314	16	6	10	21	1	8	376	11
Matbaria	1,260	496	9	3	392	18	2	2,180	1
Patharghata	1,002	110	81	44	98	30	31	1,396	3
Khulna (KCC)	584	51	89	81	7	1	21	834	6
Average	685	65	27	17	44	6	11	855	-

Table D4.9: Per center no. of jobs offered by actors in the sample business sites in this harvest season by district

District	Per center no. of jobs offered by actors							Total	Rank
	Collector	Faria/ Bepari	Choto Mahajan	Boro Mahajan	Aratdar	Wholesaler	Retailer		
Bagerhat	525	58	35	16	17	1	11	663	4
Khulna	1,032	15	24	24	13	4	11	1,123	3
Satkhira	314	16	6	10	21	1	8	376	5
Pirojpur	1,600	505	8	3	392	44	2	2,554	1
Barguna	1,002	110	81	44	98	30	31	1,396	2
Average	685	65	27	17	44	6	11	855	-

Table D4.10: Proportions of SRF products moved at the first stage in this harvest season from selected primary centers

Name of concentration	Proportions of products moved from selected primary center (%)															Total
	SIZ UZ										Other parts					
	Bag. Sadr	Mongla	Morgnj	Shkhola	Dacope	Koyra	Pkgacha	Shmnagar	Matbaria	Pathrghata	Khulna	Chittagong	Dhaka	Other places	Outside country	
Joymoni Ghol	13.01	31.02	5.02	-	-	-	-	-	-	-	14.97	-	15.68	20.30	-	100.00
Rayenda	26.40	-	11.86	32.03	-	-	-	-	-	5.93	16.75	-	5.85	1.19	-	100.00
Chanmari	-	-	-	-	-	-	-	-	-	-	61.01	-	-	38.99	-	100.00
Shoilmari	-	-	-	-	-	-	-	-	-	-	90.00	-	-	10.00	-	100.00
Bogi	54.36	-	-	14.19	-	-	-	-	-	-	31.45	-	-	-	-	100.00
Charduani	16.35	-	-	-	-	-	-	-	-	44.89	23.75	3.40	-	11.61	-	100.00
Digrj Bazar	-	1.83	-	-	-	-	-	-	-	-	0.00	-	40.46	57.71	-	100.00
Gabtala	10.00	-	90.00	-	-	-	-	-	-	-	-	-	-	-	-	100.00
Horinagar	-	-	-	-	-	-	-	27.98	-	-	24.04	-	41.52	6.46	-	100.00
Jaudhara	20.00	-	80.00	-	-	-	-	-	-	-	-	-	-	-	-	100.00
Kalbari	-	-	-	-	-	-	-	27.78	-	-	0.37	1.97	57.82	0.80	11.26	100.00
Kashimari	-	-	-	-	-	-	-	20.00	-	-	40.00	-	-	40.00	-	100.00
Mongla	7.07	14.14	-	-	-	-	-	-	-	-	18.28	2.93	57.58	-	-	100.00
Monshigonj	-	-	-	-	-	-	-	56.37	-	-	5.27	-	33.08	5.27	-	100.00
Morrelganj	15.90	-	82.92	-	-	-	-	-	-	-	1.18	-	-	-	-	100.00
Matbari	22.37	-	0.28	-	-	-	-	-	11.39	-	57.17	-	-	8.80	-	100.00
Nildomor	-	-	-	-	-	-	-	30.00	-	-	15.34	-	48.08	6.58	-	100.00
Nolian	1.95	4.75	-	4.99	6.07	-	23.32	-	-	-	52.71	-	-	6.21	-	100.00
Noyabeki Bazar	-	-	-	-	-	-	-	79.62	-	-	13.96	-	-	6.43	-	100.00
Padma	50.49	-	-	-	-	-	-	-	0.98	29.27	19.27	-	-	-	-	100.00
Rajapur	20.00	-	-	20.00	-	-	-	-	-	-	60.00	-	-	-	-	100.00
Rupsha Ghat	-	-	-	-	-	-	-	-	-	-	60.00	-	-	40.00	-	100.00
Sannyashi	29.01	17.44	17.68	-	-	-	-	-	-	-	35.87	-	-	-	-	100.00
Southkhali	31.38	-	-	67.20	-	-	-	-	-	-	1.42	-	-	-	-	100.00
Sranikhali	10.00	-	90.00	-	-	-	-	-	-	-	-	-	-	-	-	100.00
Tafalbaria	52.61	-	-	22.52	-	-	-	-	-	-	24.08	-	0.78	-	-	100.00
Vaga Bazar	-	-	-	-	-	-	-	-	-	-	-	-	100.00	-	-	100.00
Burigoalini	-	-	-	-	-	-	-	30.00	-	-	30.00	-	20.00	20.00	-	100.00

Dumoria	-	-	-	-	-	20.00	20.00	60.00	-	-	-	-	-	-	-	100.00
Khalifar hat	40.00	-	-	-	-	-	-	-	-	20.00	40.00	-	-	-	-	100.00
Kathaltali	40.00	-	-	-	-	-	-	-	-	40.00	20.00	-	-	-	-	100.00
Shibsa	-	-	-	-	-	-	54.73	-	-	-	-	-	-	45.27	-	100.00
Chandkhali	-	-	-	-	-	-	1.39	-	-	-	20.00	-	-	78.61	-	100.00
Santa Bazar	-	-	-	-	-	-	54.86	-	-	-	15.90	-	29.24	-	-	100.00
Paikgacha	-	-	-	-	-	-	20.00	-	-	-	-	-	80.00	-	-	100.00
Katkata	-	-	-	-	-	-	80.00	-	-	-	-	-	20.00	-	-	100.00
Koyra Bazar	-	-	-	-	-	-	28.99	-	-	-	17.21	-	53.81	-	-	100.00
Golbunia	50.00	-	-	-	-	-	-	-	50.00	-	-	-	-	-	-	100.00
Shaplaja	60.00	-	-	-	-	-	-	-	40.00	-	-	-	-	-	-	100.00
K. B. Bazar	26.74	-	-	-	-	-	-	-	-	-	4.39	-	65.29	3.58	-	100.00
Badhamary	-	10.00	-	-	-	-	-	-	-	-	90.00	-	-	-	-	100.00
Average	6.90	2.37	1.33	1.82	0.50	0.01	10.00	8.52	1.15	1.48	19.75	0.65	35.40	7.86	2.25	100.00

Note: Other places include elsewhere in the country (other than mentioned above); movements represent at the first stage. Figures under “outside country” represent exports directly from the current primary center.

Table D4.11: Proportions of SRF products moved at the first stage in this harvest season from selected primary centers by upazila

Upazila	Proportions of products moved from selected primary center (%)																Total
	SIZ UZ											Other parts				Outsid e country	
	Bag. Sadr	Mongl a	Morgn j	Shkhol a	Dacop e	Koyr a	Pkgach a	Shmnaga r	Matbari a	Pathrghat a	Sub- total	Khuln a	Chittagon g	Dhak a	Other place s		
Bagerhat Sadar	26.74	-	-	-	-	-	-	-	-	-	26.74	4.39	-	65.29	3.58	-	100.00
Mongla	4.47	10.72	0.72	-	-	-	-	-	-	-	15.91	16.39	1.08	56.28	10.34	-	100.00
Morrelganj	29.68	7.40	28.11	-	-	-	-	-	6.41	-	71.6	28.41	-	-	-	-	100.00
Sarankhola	32.01	-	11.44	30.60	-	-	-	-	-	3.51	77.56	18.21	-	3.53	0.70	-	100.00
Dacope	1.95	4.75	-	4.99	6.07	-	23.32	-	-	-	41.08	52.71	-	-	6.21	-	100.00
Koyra	-	-	-	-	-	-	55.38	-	-	-	55.38	8.30	-	36.31	0.00	-	100.00
Paikgacha	-	-	-	-	-	-	26.76	-	-	-	26.76	9.13	-	47.07	17.04	-	100.00
Shymnagar	-	-	-	-	-	0.05	0.05	33.21	-	-	33.31	3.03	1.54	51.14	2.20	8.78	100.00
Matbaria	24.39	-	0.28	-	-	-	-	-	13.49	-	38.16	53.04	-	-	8.80	-	100.00
Patharghat a	26.27	-	-	-	-	-	-	-	0.18	40.20	66.65	23.42	2.25	-	7.68	-	100.00
KCC	-	-	-	-	-	-	-	-	-	-	-	72.14	-	-	27.86	-	100.00
Average	6.90	2.37	1.33	1.82	0.50	0.01	10.00	8.52	1.15	1.48	34.08	19.75	0.65	35.40	7.86	2.25	100.00

Note: Other places include elsewhere in the country (other than mentioned above); movements represent at the first stage. Figures under “outside country” represent exports directly from the current primary centers.

Annex E: SRF Concentration Centers

Major SRF Products Concentrations

Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat Sadar	Bagerhat launch ghat (Katpatti)	Primary	M	1
2	Sarankhola	Bagerhat	Bagerhat Sadar	Bagerhat Sadar Bazar	Secondary	M	1
3	Sarankhola	Bagerhat	Bagerhat Sadar	Chulkati	Secondary	M	-
4	Sarankhola	Bagerhat	Bagerhat Sadar	CNB Bazar	Secondary	H	-
5	Sarankhola	Bagerhat	Bagerhat Sadar	Jatrapur	Primary	M	-
6	Sarankhola	Bagerhat	Bagerhat Sadar	K. B. Bazar	Primary	H	1
7	Sarankhola	Bagerhat	Bagerhat Sadar	Khanpur	Primary	M	-
8	Sarankhola	Bagerhat	Bagerhat Sadar	Mazar Road	Secondary	M	-
9	Sarankhola	Bagerhat	Bagerhat Sadar	Rahimabad	Primary	M	1
10	Sarankhola	Bagerhat	Morrelganj	Amtali Bazar	Primary	M	-
11	Sarankhola	Bagerhat	Morrelganj	Gabtala Bazar	Secondary	M	1
12	Sarankhola	Bagerhat	Morrelganj	Jaudhara	Primary	M	1
13	Sarankhola	Bagerhat	Morrelganj	Morrelganj Sadar	Primary	H	1
14	Sarankhola	Bagerhat	Morrelganj	Sannyashi Bazar	Primary	M	1
15	Sarankhola	Bagerhat	Morrelganj	Sranikhali	Primary	M	1
16	Sarankhola	Bagerhat	Sarankhola	Bakultala	Secondary	M	-
17	Sarankhola	Bagerhat	Sarankhola	Bogi Bazar (Sundri)	Primary	M	1
18	Sarankhola	Bagerhat	Sarankhola	Lakurtala	Secondary	M	-
19	Sarankhola	Bagerhat	Sarankhola	Rajapur	Primary	M	1
20	Sarankhola	Bagerhat	Sarankhola	Rayenda	Primary	H	1
21	Sarankhola	Bagerhat	Sarankhola	Sonatala (Sundri)	Primary	M	-
22	Sarankhola	Bagerhat	Sarankhola	Southkhali (Sundri)	Primary	M	1
23	Sarankhola	Bagerhat	Sarankhola	Tafalbari Bazar	Primary	M	1
24	Chandpai	Bagerhat	<u>Mongla</u>	Banshkali	Primary	M	-
25	Chandpai	Bagerhat	Mongla	Banshtala	Primary	M	-
26	Chandpai	Bagerhat	Mongla	Bidyamari	Primary	M	1
27	Chandpai	Bagerhat	Mongla	Bidyamari Bazar	Primary	M	1
28	Chandpai	Bagerhat	Mongla	Chaterhat	Primary	M	-
29	Chandpai	Bagerhat	Mongla	Chila Bazar	Primary	H	1
30	Chandpai	Bagerhat	Mongla	Digraj	Primary	H	1
31	Chandpai	Bagerhat	<u>Mongla</u>	Haldibunia	Primary	M	-
32	Chandpai	Bagerhat	<u>Mongla</u>	Joymonighol	Primary	M	1
33	Chandpai	Bagerhat	<u>Mongla</u>	Kumarkhali	Primary	M	-
34	Chandpai	Bagerhat	<u>Mongla</u>	Mongla (Madrashwa Road)	Primary	M	-
35	Chandpai	Bagerhat	<u>Mongla</u>	Mongla Sadar	Primary	M	1
36	Chandpai	Bagerhat	<u>Mongla</u>	Selabunia	Primary	M	-
37	Sarankhola	Bagerhat	Rampal	Banshtali	Primary	M	-
38	Sarankhola	Bagerhat	Rampal	Belai Bridge	Primary	M	-
39	Sarankhola	Bagerhat	Rampal	Chultati	Primary	M	-
40	Sarankhola	Bagerhat	Rampal	Faltitaa	Primary	M	-
41	Sarankhola	Bagerhat	Rampal	Foyla	Primary	M	-
42	Sarankhola	Bagerhat	Rampal	Gaurambha	Primary	M	-
43	Sarankhola	Bagerhat	Fakirhat	Gazalia	Primary	M	-
44	Sarankhola	Bagerhat	Fakirhat	Rampal Sadar	Primary	M	-
45	Sarankhola	Bagerhat	Kachua	Vagha	Primary	M	1
1	Khulna	Khulna	KCC	Natun Bazar	Primary	M	1
2	Khulna	Khulna	KCC	Chanmari	Primary	H	1
3	Khulna	Khulna	KCC	5 No. ghat	Primary	M	-
4	Khulna	Khulna	KCC	Rupsha Katgola	Primary	M	-
5	Khulna	Khulna	KCC	Rupsha Matsya Arat	Secondary	H	1

6	Khulna	Khulna	Batiaghata	Solemari	Primary	M	1
7	Khulna	Khulna	Batiaghata	Khunia Bazar	Secondary	M	-
8	Khulna	Khulna	Batiaghata	Batiaghata	Secondary	M	-
9	Khulna	Khulna	Batiaghata	Birat Bazar	Primary	M	-
10	Khulna	Khulna	Batiaghata	Taliamara	Primary	M	-
11	Khulna	Khulna	Batiaghata	Halia	Primary	M	-
12	Khulna	Khulna	Batiaghata	Aranghata more	Primary	M	-
13	Khulna	Khulna	Dumuria	Dumuria	Secondary	M	-
14	Khulna	Khulna	Rupsha	Bhandar koat	Secondary	M	-
15	Khulna	Khulna	Fultala	Fultala	Secondary	M	-
16	Khulna	Khulna	Dalutpur	Rail gate	Secondary	M	-
17	Khulna	Khulna	<u>Dacope</u>	Bajua Bazar	Primary	H	-
18	Khulna	Khulna	<u>Dacope</u>	Batbunia	Primary	H	-
19	Khulna	Khulna	<u>Dacope</u>	Chalna Bazar	Primary	H	-
20	Khulna	Khulna	<u>Dacope</u>	Dacope Lunch ghat	Primary	H	-
21	Khulna	Khulna	<u>Dacope</u>	Joynagar	Primary	M	-
22	Khulna	Khulna	<u>Dacope</u>	Kalabagi	Primary	M	-
23	Khulna	Khulna	<u>Dacope</u>	Kalibari	Primary	M	-
24	Khulna	Khulna	<u>Dacope</u>	Kalinagar	Primary	M	-
25	Khulna	Khulna	Dacope	Khutakhali	Primary	M	-
26	Khulna	Khulna	Dacope	Nalian	Primary	H	1
27	Khulna	Khulna	Dacope	Ramnagar	Primary	M	-
28	Khulna	Khulna	Dacope	Telikhali Bazar	Primary	M	-
29	Khulna	Khulna	Paikgacha	Chandkhali	Primary	M	1
30	Khulna	Khulna	Paikgacha	Chuknagar	Primary	M	-
31	Khulna	Khulna	Paikgacha	Dhamrail	Primary	M	1
32	Khulna	Khulna	Paikgacha	Garerdanga	Primary	M	-
33	Khulna	Khulna	Paikgacha	Holda	Primary	M	-
34	Khulna	Khulna	Paikgacha	Kapilmani	Secondary	M	-
35	Khulna	Khulna	Paikgacha	Katkata	Primary	M	-
36	Khulna	Khulna	Paikgacha	Maukhali	Primary	M	-
37	Khulna	Khulna	Paikgacha	Naksha	Primary	M	-
38	Khulna	Khulna	Paikgacha	Paikgacha	Primary	M	1
39	Khulna	Khulna	Paikgacha	Patharkhali	Primary	M	-
40	Khulna	Khulna	Paikgacha	Shanta	Primary	M	1
41	Khulna	Khulna	Koyra	Angtihara	Primary	M	-
42	Khulna	Khulna	Koyra	Banbibir Mela	Secondary	M	-
43	Khulna	Khulna	Koyra	Baniakhali	Primary	M	1
44	Khulna	Khulna	Koyra	Choramukha	Primary	M	-
45	Khulna	Khulna	Koyra	Dakshin Bedkashi	Primary	M	-
46	Khulna	Khulna	Koyra	Fatekati	Primary	M	-
47	Khulna	Khulna	Koyra	Gharilal	Primary	M	-
48	Khulna	Khulna	Koyra	Gilbari	Primary	M	-
49	Khulna	Khulna	Koyra	Golkhali	Primary	M	-
50	Khulna	Khulna	Koyra	Uttar Bedkashi	Primary	M	-
51	Khulna	Khulna	Koyra	Hayetkhali	Primary	M	-
52	Khulna	Khulna	Koyra	Jaigirmohal	Secondary	M	-
53	Khulna	Khulna	Koyra	Jorsing	Primary	M	-
54	Khulna	Khulna	Koyra	Katkata	Primary	M	1
55	Khulna	Khulna	Koyra	Kharia Mathbari	Primary	M	-
56	Khulna	Khulna	Koyra	Khirol	Primary	M	-
57	Khulna	Khulna	Koyra	Koyra sadar Bazar	Primary	M	1
58	Khulna	Khulna	Koyra	Maheshwarpur	Primary	M	-
59	Khulna	Khulna	Koyra	Sardar ghat	Primary	M	1
1	Satkhira	Satkhira	Shymnagar	Bhetkhali	Primary	M	-
2	Satkhira	Satkhira	Shymnagar	Burigoalini	Primary	M	1

3	Satkhira	Satkhira	Shymnagar	Gabura	Primary	M	-
4	Satkhira	Satkhira	Shymnagar	Harinagar	Primary	M	1
5	Satkhira	Satkhira	Shymnagar	Kalbari	Primary	H	1
6	Satkhira	Satkhira	Shymnagar	Kashimari	Primary	M	1
7	Satkhira	Satkhira	Shymnagar	Nurnagar Bazar	Secondary	M	-
8	Satkhira	Satkhira	Shymnagar	Mothurapur	Primary	M	-
9	Satkhira	Satkhira	Shymnagar	Munshigonj	Primary	M	1
10	Satkhira	Satkhira	Shymnagar	Nildomor	Primary	M	1
11	Satkhira	Satkhira	Shymnagar	Noabeki	Primary	M	1
12	Satkhira	Satkhira	Shymnagar	Shinghortoli	Primary	M	-
13	Satkhira	Satkhira	Shymnagar	Shymnagar	Primary	M	1
14	Satkhira	Satkhira	Kaligonj	Kaligonj	Secondary	M	-
15	Satkhira	Satkhira	Devhata	Parulia Bazar	Secondary	M	-
1	Sarankhola	Pirojpur	Matbaria	Amragachhia	Primary	M	-
2	Sarankhola	Pirojpur	Matbaria	Baburhat	Primary	M	-
3	Sarankhola	Pirojpur	Matbaria	Bandhabpara	Primary	M	-
4	Sarankhola	Pirojpur	Matbaria	Boro Machua (Sundri)	Primary	M	1
5	Sarankhola	Pirojpur	Matbaria	Boro Machua Strimar ghat	Primary	M	-
6	Sarankhola	Pirojpur	Matbaria	Golbunia	Primary	M	1
7	Sarankhola	Pirojpur	Matbaria	Gulsakhali	Primary	M	-
8	Sarankhola	Pirojpur	Matbaria	Kachubaria	Primary	M	-
9	Sarankhola	Pirojpur	Matbaria	Matbaria Bazar	Primary	H	1
10	Sarankhola	Pirojpur	Matbaria	Saplaza	Primary	M	1
11	Sarankhola	Pirojpur	Matbaria	Talikhali	Primary	M	-
12	Sarankhola	Pirojpur	Matbaria	Tikikata	Primary	M	-
13	Sarankhola	Pirojpur	Matbaria	Tuskhali	Primary	M	-
1	Sarankhola	Barguna	Patharghata	Amtala	Primary	M	1
2	Sarankhola	Barguna	Patharghata	Badurtala	Primary	M	-
3	Sarankhola	Barguna	Patharghata	Bakultali	Primary	M	-
4	Sarankhola	Barguna	Patharghata	Bashtala	Primary	M	-
5	Sarankhola	Barguna	Patharghata	Battali Bazar	Primary	M	-
6	Sarankhola	Barguna	Patharghata	Chaharabad	Primary	M	-
7	Sarankhola	Barguna	Patharghata	Charduani	Primary	M	1
8	Sarankhola	Barguna	Patharghata	Choto Tengra	Primary	M	-
9	Sarankhola	Barguna	Patharghata	Gabbaria	Primary	M	-
10	Sarankhola	Barguna	Patharghata	Ghanpara	Primary	M	-
11	Sarankhola	Barguna	Patharghata	Gimtala	Primary	M	-
12	Sarankhola	Barguna	Patharghata	Hazir Khal	Primary	M	-
13	Sarankhola	Barguna	Patharghata	Hogla pasha	Primary	M	-
14	Sarankhola	Barguna	Patharghata	Kakchira	Primary	M	-
15	Sarankhola	Barguna	Patharghata	Kaliar khal	Primary	M	-
16	Sarankhola	Barguna	Patharghata	Kalmegha	Primary	M	-
17	Sarankhola	Barguna	Patharghata	Khalifarhat	Primary	M	-
18	Sarankhola	Barguna	Patharghata	Khatahtali	Primary	M	-
19	Sarankhola	Barguna	Patharghata	Khathaltali	Primary	M	-
20	Sarankhola	Barguna	Patharghata	Kupdhan	Primary	M	-
21	Sarankhola	Barguna	Patharghata	Manik khali	Primary	M	-
22	Sarankhola	Barguna	Patharghata	Nachnapara	Primary	M	-
23	Sarankhola	Barguna	Patharghata	Nali	Primary	M	-
24	Sarankhola	Barguna	Patharghata	Padma Suise	Primary	H	1
25	Sarankhola	Barguna	Patharghata	Patharghata	Secondary	M	-
26	Sarankhola	Barguna	Patharghata	Rupdhan	Primary	M	-
27	Sarankhola	Barguna	Patharghata	Tafalbari	Primary	M	-

Note: H=High, M=Medium.

Major SRF Products Concentrations

Timber							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat Sadar	Bagerhat launch ghat (Katpatti)	Primary	M	-
2	Sarankhola	Bagerhat	Bagerhat Sadar	Mazar Road	Secondary	M	-
3	Sarankhola	Bagerhat	Bagerhat Sadar	CNB Bazar	Secondary	H	-
4	Sarankhola	Bagerhat	Bagerhat Sadar	Khanpur	Primary	M	-
5	Sarankhola	Bagerhat	Bagerhat Sadar	Rahimabad	Primary	M	-
6	Sarankhola	Bagerhat	Bagerhat Sadar	Jatrapur	Primary	M	-
7	Sarankhola	Bagerhat	Bagerhat Sadar	Chulkati	Secondary	M	-
8	Sarankhola	Bagerhat	Morrelganj	Morrelganj Sadar	Primary	H	-
9	Sarankhola	Bagerhat	Morrelganj	Sannyashi Bazar	Primary	M	-
10	Sarankhola	Bagerhat	Morrelganj	Amtali Bazar	Primary	M	-
11	Sarankhola	Bagerhat	Sarankhola	Bogi Bazar (Sundri)	Primary	M	-
12	Sarankhola	Bagerhat	Sarankhola	Tafalbari Bazar	Primary	M	-
13	Sarankhola	Bagerhat	Sarankhola	Southkhali (Sundri)	Primary	M	-
14	Sarankhola	Bagerhat	Sarankhola	Sonatala (Sundri)	Primary	M	-
15	Sarankhola	Bagerhat	Sarankhola	Lakurtala	Secondary	M	-
16	Sarankhola	Bagerhat	Sarankhola	Bakultala	Secondary	M	-
17	Sarankhola	Bagerhat	Sarankhola	Rayenda	Primary	H	-
18	Sarankhola	Pirojpur	Matbaria	Matbaria Bazar	Primary	M	-
19	Sarankhola	Pirojpur	Matbaria	Machua (Sundri)	Primary	M	-
20	Sarankhola	Pirojpur	Matbaria	Tuskhali	Primary	M	-
21	Sarankhola	Pirojpur	Matbaria	Saplaza	Primary	M	-
22	Sarankhola	Pirojpur	Matbaria	Baburhat	Primary	M	-
23	Sarankhola	Pirojpur	Matbaria	Bandhab para	Primary	M	-
24	Sarankhola	Pirojpur	Matbaria	Gulsakhali	Primary	M	-
25	Sarankhola	Pirojpur	Shawrupkathi	Sharupkathi (Sundri)	Primary	H	-
26	Sarankhola	Pirojpur	Shawrupkathi	Inderhat (Sundri)	Primary	M	-
27	Sarankhola	Pirojpur	Kawkhali	Kawkhali (Sundri)	Secondary	M	-
28	Sarankhola	Pirojpur	Bhandaria	Bhandaria (Sundri)	Secondary	M	-
29	Sarankhola	Barguna	Patharghata	Charduani	Primary	M	1
30	Sarankhola	Barguna	Patharghata	Babuganj Bazar	Primary	M	-
31	Sarankhola	Barguna	Patharghata	Battali Bazar	Primary	M	-
32	Sarankhola	Barguna	Patharghata	Khataitali	Primary	M	-
33	Sarankhola	Barguna	Patharghata	Nachnapara	Primary	M	-
34	Sarankhola	Barguna	Patharghata	Kupdhan	Primary	M	-
35	Sarankhola	Barguna	Patharghata	Rupdhan	Primary	M	-
36	Sarankhola	Barguna	Patharghata	Kalmegha	Primary	M	-
37	Sarankhola	Barguna	Patharghata	Manik khali	Primary	M	-
38	Sarankhola	Barguna	Patharghata	Bashtala	Primary	M	-
39	Sarankhola	Barguna	Barguna Sadar	Barguna sadar (Sundri)	Secondary	M	-
40	Sarankhola	Barguna	Barguna Sadar	Phuljhuri Bazar	Primary	M	-
41	Sarankhola	Barguna	Barguna Sadar	Nali Bazar	Primary	M	-
42	Sarankhola	Barguna	Barguna Sadar	Nisanbaria	Primary	M	-
43	Sarankhola	Barguna	Barguna Sadar	Latakata	Primary	M	-
44	Sarankhola	Barguna	Barguna Sadar	Padma	Primary	M	-
45	Sarankhola	Barguna	Barguna Sadar	Parirhat	Primary	M	-
46	Sarankhola	Barguna	Bamna	Bamna Sadar (Sundri)	Secondary	M	-
47	Sarankhola	Barguna	Betagi	Betagi Sadar (Sundri)	Secondary	M	-
48	Sarankhola	Barguna	Amtali	Taltoli Bazar (Sundri)	Primary	M	-
49	Khulna	Khulna	KCC	Rupsha Katgola	Primary	H	-
50	Khulna	Khulna	Batiaghata	Khaya Bazar (Sundri)	Primary	M	-
51	Khulna	Khulna	Batiaghata	Solemari	Primary	M	-
52	Khulna	Khulna	Koyra	Koyra Bazar	Primary	M	-
53	Khulna	Khulna	Paikgacha	Chuknagar	Secondary	M	-
54	Khulna	Khulna	Dacope	Khejuria	Secondary	M	-
55	Khulna	Khulna	Dacope	Chalna (Sundri)	Primary	M	-
56	Chandpai	Bagerhat	Mongla	Mongla	Primary	M	-
57	Chandpai	Bagerhat	Mongla	Basundia	Primary	M	-
58	Chandpai	Bagerhat	Mongla	Katakhali	Primary	M	-

59	Satkhira	Satkhira	Shymnagar	Shymnagar	Primary	M	-
60	Satkhira	Satkhira	Shymnagar	Noyabaki	Primary	H	-
61	Satkhira	Satkhira	Kalaroya	Kalaroya	Primary	M	-

Golpata/Goran							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat sadar	Bagerhat Sadar	Secondary	M	-
2	Sarankhola	Bagerhat	Bagerhat Sadar	Bagerhat launch ghat	Secondary	M	1
3	Sarankhola	Bagerhat	Bagerhat Sadar	Rahimabad	Primary	M	-
4	Sarankhola	Bagerhat	Morrelganj	Morrelganj Sadar	Primary	M	1
5	Sarankhola	Bagerhat	Sarankhola	Sarankhola	Primary	M	-
6	Sarankhola	Bagerhat	Sarankhola	Sonatala	Primary	M	-
7	Sarankhola	Bagerhat	Sarankhola	Rayenda	Primary	H	1
8	Sarankhola	Bagerhat	Chitalmari	Chitalmari	Primary	M	-
9	Sarankhola	Bagerhat	Fakirhat	Fakirhat	Primary	M	-
10	Sarankhola	Pirojpur	Matbaria	Matbaria Bazar	Primary	M	-
11	Sarankhola	Pirojpur	Matbaria	Tushkhali	Primary	M	-
12	Sarankhola	Pirojpur	Matbaria	Shapa	Primary	M	-
13	Sarankhola	Pirojpur	Sharupkathi	Sharupkathi	Primary	M	-
14	Sarankhola	Pirojpur	Sharupkathi	Inderhat	Primary	M	-
15	Sarankhola	Pirojpur	Bhandaria	Bhandaria	Primary	M	-
16	Sarankhola	Barguna	Patharghata	Charduan	Primary	M	1
17	Sarankhola	Barguna	Patharghata	Khalifar Hat	Primary	M	-
18	Sarankhola	Barguna	Patharghata	Padma	Primary	M	1
19	Sarankhola	Barguna	Barguna	Barguna Sadar Bazar	Primary	M	-
20	Khulna	Khulna	KCC	Natun Bazar	Primary	M	1
21	Khulna	Khulna	KCC	Chanmari	Primary	H	1
22	Khulna	Khulna	KCC	5 No. ghat	Primary	M	-
23	Khulna	Khulna	Batiaghata	Solemari	Primary	M	1
24	Khulna	Khulna	Batiaghata	Koyra Bazar	Secondary	M	-
25	Khulna	Khulna	Fultala	Fultala	Secondary	M	-
26	Khulna	Khulna	Dalutpur	Rail gate	Secondary	M	-
27	Khulna	Khulna	Dacope	Nolian	Primary	H	1
28	Khulna	Khulna	Dacope	Batbunia	Primary	M	-
30	Khulna	Khulna	Dacope	Khutakhali	Primary	M	-
31	Khulna	Khulna	Paikgacha	Dhamrail	Primary	M	1
32	Khulna	Khulna	Paikgacha	Naksha	Primary	M	-
33	Khulna	Khulna	Paikgacha	Kapilmani	Secondary	M	-
34	Khulna	Khulna	Paikgacha	Chandkhali	Primary	M	1
35	Khulna	Khulna	Paikgacha	Garerdanga	Primary	M	-
36	Khulna	Khulna	Paikgacha	Maukhali	Primary	M	-
37	Khulna	Khulna	Paikgacha	Shanta	Primary	M	-
38	Khulna	Khulna	Koyra	Jaigirmohal	Secondary	M	-
39	Khulna	Khulna	Koyra	Khirol	Primary	M	-
40	Khulna	Khulna	Koyra	Fatekati	Primary	M	-
41	Khulna	Khulna	Koyra	Maheshwaripur	Primary	M	-
42	Chandpai	Bagerhat	Mongla	Chilna	Primary	H	-
43	Chandpai	Bagerhat	Mongla	Joymoni Ghol	Primary	M	1
44	Chandpai	Bagerhat	Mongla	Chaterhat	Primary	M	-
45	Chandpai	Bagerhat	Mongla	Mongla (Madraswa Road)	Primary	M	-
46	Chandpai	Bagerhat	Mongla	Kumarkhali	Primary	M	-
47	Chandpai	Bagerhat	Mongla	Banskhali	Primary	M	-
48	Chandpai	Bagerhat	Mongla	Bidyamari Bazar	Primary	M	-
49	Satkhira	Satkhira	Shymnagar	Shymnagar	Secondary	M	-
50	Satkhira	Satkhira	Shymnagar	Noabeki	Primary	M	1
51	Satkhira	Satkhira	Shymnagar	Bhetkhali	Primary	M	-
52	Satkhira	Satkhira	Shymnagar	Nildomor	Primary	M	1
53	Satkhira	Satkhira	Shymnagar	Kashimari	Primary	H	1
54	Satkhira	Satkhira	Shymnagar	Harinagar	Primary	M	-
55	Satkhira	Satkhira	Shymnagar	Munshigonj	Primary	M	1

San/Matting							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat Sadar	Rahimabad for San	Primary	M	1
2	Sarankhola	Bagerhat	Bagerhat Sadar	Jatrapur for san	Primary	M	1
3	Sarankhola	Bagerhat	Sarankhola	Sonatala	Primary	M	-
4	Sarankhola	Bagerhat	Sarankhola	Rajapur	Primary	H	-
5	Sarankhola	Barguna	Patharghata	Charduani	Primary	M	-
6	Sarankhola	Barguna	Patharghata	Khalifarhat	Primary	M	-
7	Sarankhola	Barguna	Patharghata	Ganpara	Primary	M	-
8	Sarankhola	Barguna	Patharghata	Kaliarkhal	Primary	M	-
9	Satkhira	Satkhira	Ashasuni	Bordal for malley grass	Primary	M	-

Fish (Sada)							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat Sadar	Bagerhat Sadar Bazar	Primary	M	1
2	Sarankhola	Bagerhat	Bagerhat Sadar	K B Bazar	Primary	M	1
3	Sarankhola	Bagerhat	<u>Morrelganj</u>	Morrelganj Sadar	Primary	H	1
4	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sannyashi Bazar	Primary	M	1
5	Sarankhola	Bagerhat	<u>Morrelganj</u>	Gabtala Bazar	Primary	M	1
6	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sannyashi launch ghat	Primary	M	-
7	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sranikhali	Primary	M	-
8	Sarankhola	Bagerhat	<u>Morrelganj</u>	Gabtala	Primary	M	1
9	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sranikhali	Primary	M	-
10	Sarankhola	Bagerhat	<u>Morrelganj</u>	Baharbungia	Primary	M	1
11	Sarankhola	Bagerhat	<u>Sarankhola</u>	Rayenda	Primary	H	1
12	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Bogi	Primary	M	1
13	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Tafalbari	Primary	M	1
14	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Gabtali	Primary	M	-
15	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Southkhali	Primary	M	1
16	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Rajapur	Primary	M	1
17	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Sonatala	Primary	M	-
18	Sarankhola	Pirojpur	Matbaria	Matbaria Bazar	Primary	M	1
19	Sarankhola	Pirojpur	Matbaria	Saplaza	Primary	M	-
20	Sarankhola	Pirojpur	Matbaria	Baburhat	Primary	M	-
21	Sarankhola	Pirojpur	Matbaria	Bhandhab para	Primary	M	-
22	Sarankhola	Pirojpur	Matbaria	Gulshakhali	Primary	M	-
23	Sarankhola	Pirojpur	Matbaria	Tushkhali	Primary	M	-
24	Sarankhola	Pirojpur	Matbaria	Boro Machua	Primary	M	-
25	Sarankhola	Barguna	Patharghata	Patharghata	Primary	M	-
26	Sarankhola	Barguna	Patharghata	Charduani	Primary	M	-
27	Sarankhola	Barguna	Patharghata	Kakchira	Primary	M	-
28	Sarankhola	Barguna	Patharghata	Khalifarhat	Primary	M	-
29	Sarankhola	Barguna	Patharghata	Padma Suise	Primary	H	-

30	Sarankhola	Barguna	Patharghata	Gimtala	Primary	M	-
31	Sarankhola	Barguna	Patharghata	Badurtala	Primary	M	-
32	Sarankhola	Barguna	Patharghata	Tangrabazar	Primary	M	-
33	Sarankhola	Barguna	Patharghata	Hazir Khal	Primary	M	-
34	Sarankhola	Pirojpur	Pirojpur	Parerhat	Primary	M	-
35	Sarankhola	Pirojpur	Bhandaria	Bhandaria	Primary	M	-
36	Sarankhola	Barguna	Barguna Sadar	Taltali Bazar	Primary	M	-
37	Sarankhola	Barguna	Barguna Sadar	Babuganj Bazar	Primary	M	-
38	Sarankhola	Bagerhat	Rampal	Garambha	Primary	M	-
39	Sarankhola	Bagerhat	Rampal	Foyla Bazar	Primary	M	-
40	Sarankhola	Bagerhat	Rampal	Rampal Sadar	Primary	M	-
41	Sarankhola	Bagerhat	Rampal	Belai Bridge	Primary	M	-
42	Sarankhola	Bagerhat	Rampal	Banshtali	Primary	M	-
43	Sarankhola	Bagerhat	Rampal	Proshad Nagar	Primary	M	-
44	Khulna	Khulna	KCC	Rupsha Ghat	Primary	H	1
45	Khulna	Khulna	KCC	Natun Bazar	Primary	M	-
46	Khulna	Khulna	KCC	5 No. Ghat	Primary	M	-
47	Khulna	Khulna	Batiaghata	Batiaghata	Primary	M	-
48	Khulna	Khulna	Batiaghata	Birat Bazar	Primary	M	-
49	Khulna	Khulna	Batiaghata	Taliamara	Primary	M	-
50	Khulna	Khulna	Batiaghata	Halia	Primary	M	-
51	Khulna	Khulna	Rupsha	Bhandar koat	Primary	M	-
52	Khulna	Khulna	Batiaghata	Khunia	Primary	M	-
53	Khulna	Khulna	Batiaghata	Aranghata more	Primary	M	-
54	Khulna	Khulna	Dumuria	Dumuria	Primary	M	-
55	Khulna	Khulna	<u>Dacope</u>	Chalna Bazar	Primary	H	-
56	Khulna	Khulna	<u>Dacope</u>	Nalian	Primary	H	-
57	Khulna	Khulna	<u>Dacope</u>	Batbunia	Primary	H	-
58	Khulna	Khulna	<u>Dacope</u>	Joynagar	Primary	M	-
59	Khulna	Khulna	<u>Dacope</u>	Kalibari	Primary	M	-
60	Khulna	Khulna	<u>Dacope</u>	Kalabagi	Primary	M	-
61	Khulna	Khulna	<u>Dacope</u>	Kalinagar	Primary	M	-
62	Khulna	Khulna	<u>Dacope</u>	Bajua Bazar	Primary	H	-
63	Khulna	Khulna	Dacope	Ramnagar	Primary	M	-
64	Khulna	Khulna	Dacope	Dacope lunch ghat	Primary	H	-
65	Khulna	Khulna	Dacope	Telikhali Bazar	Primary	M	-
66	Khulna	Khulna	<u>Koyra</u>	Koyra sadar Bazar	Secondary	M	1
67	Khulna	Khulna	<u>Koyra</u>	Gilbari	Primary	M	-
68	Khulna	Khulna	<u>Koyra</u>	Angtihara	Primary	M	-
69	Khulna	Khulna	<u>Koyra</u>	Gharilal	Primary	M	-
70	Khulna	Khulna	<u>Koyra</u>	Golkhali	Primary	M	-

71	Khulna	Khulna	<u>Koyra</u>	Jorsing	Primary	M	-
72	Khulna	Khulna	<u>Koyra</u>	Choramukha	Primary	M	-
73	Khulna	Khulna	<u>Koyra</u>	Hayetkhali	Primary	M	-
74	Khulna	Khulna	<u>Koyra</u>	Kharia Mathbari	Primary	M	-
75	Khulna	Khulna	<u>Koyra</u>	Maheshwarpur	Primary	M	-
76	Khulna	Khulna	<u>Paikgacha</u>	Paikgacha Natun Bazar	Primary	M	-
77	Khulna	Khulna	<u>Paikgacha</u>	Shanta	Primary	H	1
78	Khulna	Khulna	<u>Paikgacha</u>	Chandkhali	Primary	M	-
79	Chandpai	Bagerhat	<u>Mongla</u>	Mongla Sadar	Primary	M	-
80	Chandpai	Bagerhat	<u>Mongla</u>	Haldibunia	Primary	M	-
81	Chandpai	Bagerhat	<u>Mongla</u>	Banshtala	Primary	M	-
82	Chandpai	Bagerhat	<u>Mongla</u>	Chila Bazar	Primary	H	-
83	Chandpai	Bagerhat	<u>Mongla</u>	Bidyamari	Primary	M	-
84	Chandpai	Bagerhat	<u>Mongla</u>	Digraj	Primary	M	-
85	Chandpai	Bagerhat	<u>Mongla</u>	Joymanirgol	Primary	M	-
86	Satkhira	Satkhira	Shymnagar	Kalbari	Primary	H	1
87	Satkhira	Satkhira	Shymnagar	Munshiganj	Primary	M	-
88	Satkhira	Satkhira	Shymnagar	Noabeki	Primary	M	-
89	Satkhira	Satkhira	Shymnagar	Sonarmoor	Primary	M	-

Gura fish							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat Sadar	Bagerhat Sadar Bazar	Primary	M	-
2	Sarankhola	Bagerhat	Bagerhat Sadar	K B Bazar	Primary	M	-
3	Sarankhola	Bagerhat	<u>Morrelganj</u>	Morrelganj Sadar	Primary	H	1
4	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sannyashi Bazar	Primary	M	1
5	Sarankhola	Bagerhat	<u>Morrelganj</u>	Gabtala Bazar	Primary	M	-
6	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sannyashi Launch ghat	Primary	M	-
7	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sranikhali	Primary	M	-
8	Sarankhola	Bagerhat	<u>Morrelganj</u>	Gabtala	Primary	M	-
9	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sranikhali	Primary	M	-
10	Sarankhola	Bagerhat	<u>Morrelganj</u>	Baharbunia	Primary	M	-
11	Sarankhola	Bagerhat	<u>Sarankhola</u>	Rayenda	Primary	H	1
12	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Bogi	Primary	M	-
13	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Tafalbari	Primary	M	-
14	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Gabtali	Primary	M	-
15	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Southkhali	Primary	M	-
16	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Rajapur	Primary	M	-
17	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Sonatala	Primary	M	-
18	Sarankhola	Pirojpur	Matbaria	Matbaria Bazar	Primary	M	1
19	Sarankhola	Pirojpur	Matbaria	Saplaza	Primary	M	-

20	Sarankhola	Pirojpur	Matbaria	Baburhat	Primary	M	-
21	Sarankhola	Pirojpur	Matbaria	Bhandhab para	Primary	M	-
22	Sarankhola	Pirojpur	Matbaria	Gulshakhali	Primary	M	-
23	Sarankhola	Pirojpur	Matbaria	Tushkhali	Primary	M	-
24	Sarankhola	Pirojpur	Matbaria	Boro Machua	Primary	M	-
25	Sarankhola	Barguna	Patharghata	Patharghata	Primary	M	-
26	Sarankhola	Barguna	Patharghata	Charduani	Primary	M	1
27	Sarankhola	Barguna	Patharghata	Kakchira	Primary	M	-
28	Sarankhola	Barguna	Patharghata	Khalifarhat	Primary	M	-
29	Sarankhola	Barguna	Patharghata	Padma Suise	Primary	H	1
30	Sarankhola	Barguna	Patharghata	Gimtala	Primary	M	-
31	Sarankhola	Barguna	Patharghata	Badurtala	Primary	M	-
32	Sarankhola	Barguna	Patharghata	Tangrabazar	Primary	M	-
33	Sarankhola	Barguna	Patharghata	Hazir Khal	Primary	M	-
34	Sarankhola	Pirojpur	Pirojpur	Parerhat	Primary	M	-
35	Sarankhola	Pirojpur	Bhandaria	Bhandaria	Primary	M	-
36	Sarankhola	Barguna	Barguna Sadar	Taltali Bazar	Primary	M	-
37	Sarankhola	Barguna	Barguna Sadar	Babuganj Bazar	Primary	M	-
38	Sarankhola	Bagerhat	Rampal	Garambha	Primary	M	-
39	Sarankhola	Bagerhat	Rampal	Foyla Bazar	Primary	M	-
40	Sarankhola	Bagerhat	Rampal	Rampal Sadar	Primary	M	-
41	Sarankhola	Bagerhat	Rampal	Belai Bridge	Primary	M	-
42	Sarankhola	Bagerhat	Rampal	Banshtali	Primary	M	-
43	Sarankhola	Bagerhat	Rampal	Proshad Nagar	Primary	M	-
44	Khulna	Khulna	KCC	Rupsha Ghat	Primary	H	1
45	Khulna	Khulna	KCC	Natun Bazar	Primary	M	-
46	Khulna	Khulna	KCC	5 No. Ghat	Primary	M	-
47	Khulna	Khulna	Batiaghata	Batiaghata	Primary	M	-
48	Khulna	Khulna	Batiaghata	Birat Bazar	Primary	M	-
49	Khulna	Khulna	Batiaghata	Taliamara	Primary	M	-
50	Khulna	Khulna	Batiaghata	Halia	Primary	M	-
51	Khulna	Khulna	Rupsha	Bhandar koat	Primary	M	-
52	Khulna	Khulna	Batiaghata	Khunia	Primary	M	-
53	Khulna	Khulna	Batiaghata	Aranghata more	Primary	M	-
54	Khulna	Khulna	Dumuria	Dumuria	Primary	M	-
55	Khulna	Khulna	<u>Dacope</u>	Chalna Bazar	Primary	H	1
56	Khulna	Khulna	<u>Dacope</u>	Nalian	Primary	H	-
57	Khulna	Khulna	<u>Dacope</u>	Batbunia	Primary	H	-
58	Khulna	Khulna	<u>Dacope</u>	Joynagar	Primary	M	-
59	Khulna	Khulna	<u>Dacope</u>	Kalibari	Primary	M	-

60	Khulna	Khulna	<u>Dacope</u>	Kalabagi	Primary	M	-
61	Khulna	Khulna	<u>Dacope</u>	Kalinagar	Primary	M	-
62	Khulna	Khulna	<u>Dacope</u>	Bajua Bazar	Primary	H	-
63	Khulna	Khulna	Dacope	Ramnagar	Primary	M	-
64	Khulna	Khulna	Dacope	Dacope Lunch ghat	Primary	H	1
65	Khulna	Khulna	Dacope	Telikhali Bazar	Primary	M	-
66	Khulna	Khulna	<u>Koyra</u>	Koyra sadar Bazar	Secondary	M	1
67	Khulna	Khulna	<u>Koyra</u>	Gilbari	Primary	M	-
68	Khulna	Khulna	<u>Koyra</u>	Angtihara	Primary	M	-
69	Khulna	Khulna	<u>Koyra</u>	Gharilal	Primary	M	-
70	Khulna	Khulna	<u>Koyra</u>	Golkhali	Primary	M	-
71	Khulna	Khulna	<u>Koyra</u>	Jorsing	Primary	M	-
72	Khulna	Khulna	<u>Koyra</u>	Choramukha	Primary	M	-
73	Khulna	Khulna	<u>Koyra</u>	Hayetkhali	Primary	M	-
74	Khulna	Khulna	<u>Koyra</u>	Kharia Mathbari	Primary	M	-
75	Khulna	Khulna	<u>Koyra</u>	Maheshwarpur	Primary	M	-
76	Khulna	Khulna	<u>Paikgacha</u>	Paikgacha Natun Bazar	Primary	M	-
77	Khulna	Khulna	<u>Paikgacha</u>	Shanta	Primary	H	-
78	Khulna	Khulna	<u>Paikgacha</u>	Chandkhali	Primary	M	-
79	Chandpai	Bagerhat	<u>Mongla</u>	Mongla Sadar	Primary	M	1
80	Chandpai	Bagerhat	<u>Mongla</u>	Haldibunia	Primary	M	-
81	Chandpai	Bagerhat	<u>Mongla</u>	Banshtala	Primary	M	-
82	Chandpai	Bagerhat	<u>Mongla</u>	Chila Bazar	Primary	H	1
83	Chandpai	Bagerhat	<u>Mongla</u>	Bidyamari	Primary	M	-
84	Chandpai	Bagerhat	<u>Mongla</u>	Digranj	Primary	M	-
85	Chandpai	Bagerhat	<u>Mongla</u>	Joymanirgol	Primary	M	-
86	Satkhira	Satkhira	Shymnagar	Kalbari	Primary	H	1
87	Satkhira	Satkhira	Shymnagar	Munshiganj	Primary	M	1
88	Satkhira	Satkhira	Shymnagar	Noabeki	Primary	M	-
89	Satkhira	Satkhira	Shymnagar	Sonarmoor	Primary	M	-

Hilsha							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat	K. B Bazar	Primary	H	1
2	Sarankhola	Bagerhat	Bagerhat	Bagerhat Sadar	Secondary	M	-
3	Sarankhola	Bagerhat	Morrelganj	Morrelganj Sadar	Primary	M	-
4	Sarankhola	Bagerhat	Sarankhola	Rayenda	Primary	H	1
5	Sarankhola	Bagerhat	Sarankhola	Bogi	Primary	M	1
6	Sarankhola	Pirojpur	Matbaria	Matbaria Bazar	Primary	M	1
7	Sarankhola	Pirojpur	Matbaria	Machua Bazar	Primary	M	-

8	Sarankhola	Pirojpur	Matbaria	Saplaza Bazar	Primary	L	-
9	Sarankhola	Pirojpur	Pirojpur	Parerhat	Primary	M	-
10	Sarankhola	Barguna	Patharghata	Patharghata	Primary	M	1
11	Sarankhola	Barguna	Patharghata	Charduani Bazar	Secondary	M	1
12	Sarankhola	Barguna	Patharghata	Kakchira Bazar	Primary	M	-
13	Sarankhola	Barguna	Patharghata	Khalifar Hat	Primary	M	1
14	Sarankhola	Barguna	Patharghata	Padma Suise	Primary	M	1
15	Sarankhola	Barguna	Barguna	Barguna Sadar Bazar	Primary	M	-
16	Sarankhola	Barguna	Amtali	Taltali Bazar	Primary	M	-
17	Khulna	Khulna	Dacope	Dacope	Primary	M	-
18	Khulna	Khulna	Koyra	Koyra	Primary	M	-
19	Khulna	Khulna	Paikgacha	Paikgacha	Primary	M	-
20	Khulna	Khulna	Rupsha	Rupsha ghat	Primary	M	-
21	Khulna	Khulna	Rupsha	5 No. Ghat	Primary	H	-
22	Chandpai	Bagerhat	Mongla	Mongla	Primary	M	-

Shrimp (Galda)							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	<u>Bagerhat</u>	<u>Morrelganj</u>	Morrelganj Sadar	Primary	M	1
2	Sarankhola	<u>Bagerhat</u>	<u>Morrelganj</u>	Sannyashi Bazar	Primary	H	1
3	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Rayanda	Primary	H	1
4	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Bogi	Primary	M	1
5	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Tafalbari	Primary	M	1
6	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Gabtali	Primary	M	1
7	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Southkhali	Primary	M	1
8	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Rajapur	Primary	M	1
9	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Sonatala	Primary	M	1
10	Sarankhola	<u>Pirojpur</u>	<u>Matbaria</u>	Machua Bazar	Primary	M	1
11	Sarankhola	<u>Barguna</u>	Patharghata	Charduani Bazar	Primary	M	1
12	Sarankhola	<u>Barguna</u>	Patharghata	Kakchira Bazar	Primary	M	-
13	Sarankhola	<u>Barguna</u>	Patharghata	Khalifar Hat	Primary	M	1
14	Sarankhola	<u>Barguna</u>	Patharghata	Nolibazar	Primary	M	-
15	Sarankhola	<u>Barguna</u>	Amlati	Taltali Bazar	Primary	M	-
16	Sarankhola	<u>Barguna</u>	Barguna	Barguna Sadar Bazar	Primary	M	1
18	Khulna	Khulna	<u>Dacope</u>	Chalna Bazar	Primary	H	-
19	Khulna	Khulna	<u>Dacope</u>	Nalian	Primary	H	-
20	Khulna	Khulna	<u>Dacope</u>	Batunia	Primary	H	-
21	Khulna	Khulna	<u>Dacope</u>	Joynagar	Primary	M	-
22	Khulna	Khulna	<u>Dacope</u>	Kalibari	Primary	M	-
23	Khulna	Khulna	<u>Dacope</u>	Kalabagi	Primary	M	-
24	Khulna	Khulna	<u>Dacope</u>	Kalinagar	Primary	M	-
25	Khulna	Khulna	<u>Dacope</u>	Bajua Bazar	Primary	H	-
26	Khulna	Khulna	<u>Dacope</u>	Ramnagar	Primary	L	-
27	Khulna	Khulna	<u>Dacope</u>	Dacope Lunch ghat	Primary	H	-
28	Khulna	Khulna	<u>Dacope</u>	Telikhali Bazar	Primary	M	-
29	Khulna	Khulna	<u>Koyra</u>	Koyra sadar Bazar	Secondary	M	-
30	Khulna	Khulna	<u>Koyra</u>	Gilbari	Primary	M	-
31	Khulna	Khulna	<u>Koyra</u>	Angtihara	Primary	M	-
32	Khulna	Khulna	<u>Koyra</u>	Gharilal	Primary	M	-
33	Khulna	Khulna	<u>Koyra</u>	Golkhali	Primary	M	-

34	Khulna	Khulna	<u>Koyra</u>	Jorsing	Primary	M	-
35	Khulna	Khulna	<u>Koyra</u>	Choramukha	Primary	M	-
36	Khulna	Khulna	<u>Koyra</u>	Hayetkhali	Primary	M	-
37	Khulna	Khulna	<u>Koyra</u>	Kharia Mathbari	Primary	M	-
38	Khulna	Khulna	<u>Koyra</u>	Maheshwarpur	Primary	M	-
39	Khulna	Khulna	<u>Paikgacha</u>	Natun Bazar	Primary	M	-
40	Chandpai	Bagerhat	<u>Mongla</u>	Mongla Sadar	Primary	M	-
41	Chandpai	Bagerhat	<u>Mongla</u>	Haldibunia	Primary	M	-
42	Chandpai	Bagerhat	<u>Mongla</u>	Banshtala	Primary	M	-
43	Chandpai	Bagerhat	<u>Mongla</u>	Chila Bazar	Primary	M	-
44	Chandpai	Bagerhat	<u>Mongla</u>	Bidyamari	Primary	M	-
45	Chandpai	Bagerhat	<u>Mongla</u>	Digraj	Primary	M	-
46	Chandpai	Bagerhat	<u>Mongla</u>	Joymanirgol	Primary	M	-
47	Satkhira	Satkhira	<u>Shymnagar</u>	Kalbari Bazar	Primary	M	-
48	Satkhira	Satkhira	<u>Shymnagar</u>	Munshigonj Bazar	Primary	M	-
49	Satkhira	Satkhira	<u>Shymnagar</u>	Harinagar Bazar	Primary	M	-
50	Satkhira	Satkhira	<u>Shymnagar</u>	Nayabaki Bazar	Primary	M	-
51	Satkhira	Satkhira	<u>Shymnagar</u>	Sonarmoor	Primary	M	-
52	Satkhira	Satkhira	<u>Shymnagar</u>	Shymnagar	Primary	M	-

Shrimp (Bagda)							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	<u>Bagerhat</u>	<u>Bagerhat Sadar</u>	Bagerhat Sadar	Primary	M	-
2	Sarankhola	<u>Bagerhat</u>	<u>Bagerhat Sadar</u>	Bagerhat Launch ghat	Primary	M	-
3	Sarankhola	<u>Bagerhat</u>	<u>Morrelganj</u>	Sannyashi Bazar	Primary	M	1
4	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Rayanda Bazar	Primary	M	1
5	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Bogi Bazar	Primary	M	1
6	Sarankhola	<u>Bagerhat</u>	<u>Sarankhola</u>	Tafalbari Bazar	Secondary	M	1
7	Sarankhola	<u>Pirojpur</u>	<u>Matbaria</u>	<u>Matbaria</u>	Primary	M	-
8	Sarankhola	<u>Barguna</u>	Patharghata	Charduani Bazar	Primary	M	1
9	Sarankhola	<u>Barguna</u>	Patharghata	Kakchira Bazar	Primary	M	-
10	Sarankhola	<u>Barguna</u>	Patharghata	Khalifar Hat	Secondary	M	1
11	Sarankhola	<u>Barguna</u>	Amlati	Nolibazar	Primary	M	-
12	Sarankhola	<u>Barguna</u>	Patharghata	Taltali Bazar	Secondary	M	1
13	Sarankhola	<u>Barguna</u>	Barguna	Barguna Sadar Bazar	Secondary	M	1
14	Khulna	Khulna	<u>Dacope</u>	Chalna Bazar	Primary	M	-
15	Khulna	Khulna	<u>Dacope</u>	Nalian	Primary	M	-
16	Khulna	Khulna	<u>Dacope</u>	Batbunia	Primary	M	-
17	Khulna	Khulna	<u>Dacope</u>	Joynagar	Primary	M	-
18	Khulna	Khulna	<u>Dacope</u>	Kalibari	Primary	M	-
19	Khulna	Khulna	<u>Dacope</u>	Kalabagi	Primary	M	-
20	Khulna	Khulna	<u>Dacope</u>	Kalinagar	Primary	M	-
21	Khulna	Khulna	<u>Dacope</u>	Bajua Bazar	Primary	M	-
22	Khulna	Khulna	Dacope	Ramnagar	Primary	M	-
23	Khulna	Khulna	Dacope	Dacope Lunch ghat	Primary	M	-
24	Khulna	Khulna	Dacope	Telikhali Bazar	Primary	M	-
25	Khulna	Khulna	<u>Koyra</u>	Koyra sadar Bazar	Secondary	M	-
26	Khulna	Khulna	<u>Koyra</u>	Gilbari	Primary	M	-
27	Khulna	Khulna	<u>Koyra</u>	Angtihara	Primary	M	-
28	Khulna	Khulna	<u>Koyra</u>	Gharilal	Primary	M	-
29	Khulna	Khulna	<u>Koyra</u>	Golkhali	Primary	M	-
30	Khulna	Khulna	<u>Koyra</u>	Jorsing	Primary	M	-
31	Khulna	Khulna	<u>Koyra</u>	Choramukha	Primary	M	-
32	Khulna	Khulna	<u>Koyra</u>	Hayetkhali	Primary	M	-

33	Khulna	Khulna	<u>Koyra</u>	Kharia Mathbari	Primary	M	-
34	Khulna	Khulna	<u>Koyra</u>	Maheshwarpur	Primary	M	-
35	Khulna	<u>Khulna</u>	<u>Paikgacha</u>	Natun Bazar	Primary	M	-
36	Chandpai	Bagerhat	<u>Mongla</u>	Mongla Sadar	Primary	M	-
37	Chandpai	Bagerhat	<u>Mongla</u>	Haldibunia	Primary	M	-
38	Chandpai	Bagerhat	<u>Mongla</u>	Banshtala	Primary	M	-
39	Chandpai	Bagerhat	<u>Mongla</u>	Chila Bazar	Primary	M	-
40	Chandpai	Bagerhat	<u>Mongla</u>	Bidyamari	Primary	M	-
41	Chandpai	Bagerhat	<u>Mongla</u>	Digraj	Primary	M	-
42	Chandpai	Bagerhat	<u>Mongla</u>	Joymanirgol	Primary	M	-
43	Khulna	<u>Khulna</u>	<u>Dacope</u>	Batbunia	Primary	M	-
44	Khulna	<u>Khulna</u>	<u>Koyra</u>	Koyra	Primary	M	-
45	Khulna	<u>Khulna</u>	<u>Paikgacha</u>	Natun Bazar	Primary	M	-
46	Satkhira	Satkhira	Shymnagar	Kalbari Bazar	Primary	M	-
47	Satkhira	Satkhira	Shymnagar	Munshigonj Bazar	Primary	M	-
48	Satkhira	Satkhira	Shymnagar	Harinagar Bazar	Primary	M	-
49	Satkhira	Satkhira	Shymnagar	Nayabaki Bazar	Primary	M	-
50	Satkhira	Satkhira	Shymnagar	Shymnagar	Primary	M	-
51	Satkhira	Satkhira	Shymnagar	Sonarmoor	Primary	M	-

Shrimp fry							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	<u>Bagerhat</u>	<u>Bagerhat Sadar</u>	Bagerhat Sadar	Primary	M	-
2	Sarankhola	<u>Bagerhat</u>	<u>Bagerhat Sadar</u>	Bagerhat Launch ghat	Primary	M	-
3	Sarankhola	Bagerhat	Fakirhat	Fakirhat	Secondary	M	-
4	Sarankhola	Bagerhat	<u>Morrelganj</u>	Morrelganj	Primary	M	1
5	Sarankhola	Bagerhat	<u>Morrelganj</u>	Sannyashi Bazar	Primary	H	1
6	Sarankhola	Bagerhat	Sarankhola	Rayenda Bazar	Primary	H	1
7	Sarankhola	Bagerhat	Sarankhola	Bogi Bazar	Primary	M	1
8	Sarankhola	Bagerhat	Sarankhola	Southkhali	Primary	M	1
9	Sarankhola	Bagerhat	Rampal	Rampal	Primary	M	-
10	Sarankhola	<u>Pirojpur</u>	<u>Matbaria</u>	Boro Machua	Primary	M	-
11	Sarankhola	<u>Pirojpur</u>	<u>Matbaria</u>	Tuskhali	Primary	M	-
12	Sarankhola	<u>Pirojpur</u>	<u>Matbaria</u>	Saplaza Bazar	Primary	M	-
13	Sarankhola	<u>Barguna</u>	Patharghata	Barguna Sadar Bazar	Primary	M	-
14	Sarankhola	<u>Barguna</u>	Patharghata	Charduani Bazar	Primary	M	1
15	Sarankhola	<u>Barguna</u>	Patharghata	Kakchira Bazar	Primary	M	1
16	Sarankhola	<u>Barguna</u>	Patharghata	Khalifar Hat	Primary	M	1
17	Sarankhola	<u>Barguna</u>	Patharghata	Patharghata	Primary	M	1
18	Sarankhola	<u>Barguna</u>	Amtali	Taltali Bazar	Primary	M	-
19	Khulna	Khulna	Dacope	Chalna	Primary	H	-
20	Khulna	Khulna	Dacope	Nalian	Primary	M	-
21	Khulna	Khulna	Dacope	Batbunia	Primary	M	-
22	Khulna	Khulna	Dacope	Kalabagi	Primary	M	-
23	Khulna	Khulna	Dacope	Kalinagar	Primary	M	-
24	Khulna	Khulna	Paikgacha	Paikgacha	Primary	M	-
25	Khulna	Khulna	Paikgacha	Shanta	Primary	M	-

26	Khulna	Khulna	Paikgacha	Koyra Launch Ghat	Primary	M	-
27	Khulna	Khulna	Paikgacha	ChadKhali	Primary	M	-
28	Khulna	Khulna	Paikgacha	Katkata	Primary	M	-
29	Chandpai	Bagerhat	Mongla	Mongla	Primary	M	-
30	Chandpai	Bagerhat	Mongla	Digraj	Primary	M	-
31	Chandpai	Bagerhat	Mongla	Joymonirgol	Primary	H	-
32	Satkhira	Satkhira	Satkhira	Shatkhira	Primary	M	-
33	Satkhira	Satkhira	Shymnagar	Bangshipur	Primary	M	-
34	Satkhira	Satkhira	Shymnagar	Bhetkhali	Primary	M	-

Crab							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat	Bagerhat Sadar Bazar	Secondary	M	-
2	Sarankhola	Bagerhat	<u>Morrelganj</u>	Morrelganj Sadar	Primary	M	1
3	Sarankhola	Bagerhat	Sarankhola	Bogi Bazar	Primary	M	1
4	Sarankhola	Bagerhat	Sarankhola	Tafalbari	Primary	M	-
5	Sarankhola	<u>Pirojpur</u>	Matbaria	Matbaria Bazar	Primary	M	-
6	Sarankhola	<u>Pirojpur</u>	Matbaria	Machua Bazar	Primary	M	-
7	Sarankhola	<u>Pirojpur</u>	Matbaria	Saplaza	Primary	M	-
8	Sarankhola	<u>Pirojpur</u>	<u>Bhandaria</u>	<u>Bhandaria</u>	Primary	M	-
9	Sarankhola	<u>Barguna</u>	Patharghata	Parehat	Primary	M	-
10	Sarankhola	<u>Barguna</u>	Patharghata	Charduani Bazar	Primary	M	1
11	Sarankhola	<u>Barguna</u>	Patharghata	Kakchira Bazar	Primary	M	-
12	Sarankhola	<u>Barguna</u>	Patharghata	Khalifar Hat	Primary	M	-
13	Sarankhola	<u>Barguna</u>	Amtali	Taltali Bazar	Primary	M	-
14	Sarankhola	<u>Barguna</u>	Barguna	Babuganj Bazar	Primary	M	-
15	Khulna	Khulna	KCC	Rupsha	Secondary	M	-
16	Khulna	Khulna	Dacope	Nalian	Primary	M	1
17	Khulna	Khulna	Koyra	Koyra	Secondary	M	-
18	Khulna	Khulna	<u>Dacope</u>	Batbunia	Primary	M	-
19	Khulna	Khulna	<u>Dacope</u>	Kalabagi	Primary	M	-
20	Khulna	Khulna	<u>Dacope</u>	Kalinagar	Primary	M	-
21	Khulna	Khulna	<u>Koyra</u>	Angtihara	Primary	M	-
22	Khulna	Khulna	<u>Koyra</u>	Gharilal	Primary	M	-
23	Khulna	Khulna	<u>Koyra</u>	Golkhali	Primary	M	-
24	Khulna	Khulna	<u>Koyra</u>	Jorsing	Primary	M	-
25	Khulna	Khulna	<u>Koyra</u>	Choramukha	Primary	M	-
26	Khulna	Khulna	Paikgacha	Patharkhali	Primary	M	-
27	Khulna	Khulna	Paikgacha	Shanta- Fakirabad	Primary	M	1
28	Khulna	Khulna	Paikgacha	Holda	Primary	M	-
29	Khulna	Khulna	Paikgacha	Paikgacha	Primary	M	1
30	Khulna	Khulna	Debhata	Shakhipur	Primary	M	-
31	Khulna	Khulna	KCC	Rupsha ghat	Primary	M	1
32	Khulna	Khulna	KCC	Natun Bazar	Primary	M	1
33	Chandpai	Bagerhat	Mongla	Joymonir ghol	Primary	M	1
34	Chandpai	Bagerhat	Mongla	Digraj	Primary	H	1
35	Chandpai	Bagerhat	Mongla	Vagha	Primary	H	1
36	Satkhira	Satkhira	Shymnagar	Kalbari Bazar	Primary	M	1
37	Satkhira	Satkhira	Shymnagar	Harinagar Bazar	Primary	M	1
38	Satkhira	Satkhira	Shymnagar	Nildumur Bazar	Primary	M	1
39	Satkhira	Satkhira	Shymnagar	Nayabaki Bazar	Primary	M	-
40	Satkhira	Satkhira	Shymnagar	Bhetkhali Bazar	Primary	M	-
41	Satkhira	Satkhira	Devhata	Parulia Bazar	Primary	M	-
42	Satkhira	Satkhira	Kaliganj	Kaliganj	Primary	M	-
		Dhaka	-	Uttara (Dhaka)	Primary	-	-

Honey							
Sl.no	Range	District	Upazila	Concentration center	Type	Scale (H, M)	Sample Covered (=1)
1	Sarankhola	Bagerhat	Bagerhat	Bagerhat Sadar	Secondary	M	-
2	Sarankhola	Bagerhat	<u>Morrelganj</u>	Morrelganj Sadar	Secondary	M	-
3	Sarankhola	Bagerhat	Sarankhola	Rayenda	Primary	M	1
4	Sarankhola	Bagerhat	Sarankhola	Tafalbari	Primary	H	1
5	Sarankhola	Bagerhat	Sarankhola	Southkhali	Primary	M	-
6	Sarankhola	Bagerhat	Sarankhola	Rajapur	Primary	M	-
	Sarankhola	Bagerhat	Sarankhola	Bogi Bazar	Primary	M	-
7	Sarankhola	<u>Pirojpur</u>	Matbaria	Matbaria Bazar	Primary	M	-
8	Sarankhola	<u>Pirojpur</u>	Matbaria	Machua Bazar	Primary	M	-
9	Sarankhola	<u>Pirojpur</u>	Matbaria	Saplaza Bazar	Primary	M	-
10	Sarankhola	<u>Pirojpur</u>	<u>Bhandaria</u>	<u>Bhandaria</u>	Primary	M	-
11	Sarankhola	<u>Barguna</u>	Patharghata	Patharghata	Primary	M	-
12	Sarankhola	<u>Pirojpur</u>	Patharghata	Charduani Bazar	Primary	M	-
13	Sarankhola	<u>Pirojpur</u>	Patharghata	Kkalifur Hat	Primary	M	-
14	Khulna	Khulna	Dacope	Dacope	Primary	M	-
15	Khulna	Khulna	Koyra	Baliaunga	Primary	M	-
16	Khulna	Khulna	Koyra	Shengher Char	Primary	M	-
17	Khulna	Khulna	Koyra	Koyra Sadar	Primary	M	-
18	Khulna	Khulna	Koyra	Amadi	Primary	M	-
19	Khulna	Khulna	Koyra	Uttar Bedkashi	Primary	M	-
20	Khulna	Khulna	Koyra	Balirghor	Primary	M	-
21	Khulna	Khulna	Koyra	Khajura	Primary	M	-
22	Khulna	Khulna	Paikgacha	Paikgacha	Secondary	M	-
23	Khulna	Khulna	KCC	Khulna	Secondary	M	-
24	Chandpai	Bagerhat	Mongla	Mongla	Secondary	M	-
25	Satkhira	Satkhira	Shymnagar	Harinagar Bazar	Primary	M	1
26	Satkhira	Satkhira	Shymnagar	Bhetkhali Bazar	Primary	M	-
27	Satkhira	Satkhira	Shymnagar	Nildumur Bazar	Primary	M	1
28	Satkhira	Satkhira	Shymnagar	Munsiganj Bazar	Primary	M	1
29	Satkhira	Satkhira	Shymnagar	Shymnagar Bazar	Secondary	M	-
30	Satkhira	Satkhira	Shymnagar	Burigoalini	Primary	M	1
31	Satkhira	Satkhira	Shymnagar	Kalbari Bazar	Primary	M	-
32	Satkhira	Satkhira	Shymnagar	Gabura	Primary	M	-
33	Dhaka	Dhaka	-	Dhaka	Secondary	-	-
34	Chittagong	Chittagong	-	Chittagong	Secondary	-	-

Shutki			
District	Upazila	Concentration center	Type
Satkhira	Shymnagar	Shymnagar	Secondary
Khulna	Khulna	Khulna	Primary
Bagerhat	Bagerhat	Bagerhat	Primary
	Mongla	Dubla (within SRF)	Primary
	Morrelganj	Gabtala	Secondary
	Sarankhola	Rayanda	Secondary
Pirojpur	Matbaria	Matbaria	Secondary
Barguna	Patharghata	Patharghata	Secondary
Dhaka	-	Dhaka	Secondary
Chittagong	-	Chittagong	Secondary
Syedpur	-	Syedpur	Secondary

Source: IPAC VCA Study: Reconnaissance Survey

Note: H=High, M=Medium

Annex F: Survey Instruments

A Study of the Principal Marketed Value Chains Derived from the Sundarbans Reserve Forest Survey Questionnaire for SRF Actors

Collector/Faria/Bepari/Mahajan/Bahaddaer/Aratdar/Wholesaler/Retailer/Exporter
(One questionnaire should be administered separately to each actor)

Date of interview :

Name of Enumerator :

Name of Supervisor :

We, researchers of the Bangladesh Institute of development Studies (BIDS), are carrying out a research on **The Principal Marketed Value Chains Derived from the Sundarbans Reserved Forest (SRF)** for the Integrated Protected Area Co-management (IPAC), Banani, Dhaka. As the title of the research suggests, the aim of the research is to look into value chains derived from the SRF products. The survey is completely confidential; the names and views of individuals participating will not be revealed to anyone and the survey information will be used in generating some unidentifiable statistical tables for **research purpose only**. All cooperation and help in this regard will highly be appreciated.

[All figures should be put in English]

1. Area Identification of Interview

District : Range

Upazila : Union :

Village :

Business location (Primary/Secondary/Hat/Bazar)

[Four Ranges: 1. Satkhira; 2. Khulna; 3. Chandpai; and 4. Sarankhola]

2. Respondent characteristics

2.1 Actor type (Tick)

- | | |
|------------------|--|
| 1. Collector | <input type="checkbox"/> |
| 2. Faria/Bepari | <input type="checkbox"/> |
| 3. Choto Mahajan | <input type="checkbox"/> |
| 4. Boro Mahajan | <input type="checkbox"/> |
| 5. Bahaddar | <input type="checkbox"/> |
| 6. Aratdar | <input type="checkbox"/> |
| 7. Money lender | <input type="checkbox"/> |
| 8. Wholesaler | <input type="checkbox"/> |
| 9. Retailer | <input type="checkbox"/> |
| 10. Exporter | <input type="checkbox"/> |
| 11. Others | <input type="checkbox"/> (specify) |

2.2 Product name (Tick)

- (a) Timber : Sundri Kewra Kankra
Passur Gewa Various types
- (b) Non-timber : Goran Golpata Grass
- (c) Fish : Small (Gura) White Large Hilsha Jatka
: Shrimp (Golda) Shrimp (Bagda)
- (d) Shrimp Fry
- (e) Crab Mollusc
- (f) Honey

2.3 . Respondents

- (a) Individual (name):
.....
- (b) No. of members, in group, if any:
.....
- (c) If member of any co-operative, name of the cooperative
.....
- (d) Sex: 1 = Male 2 = Female
- (e) Age 1 = Up to 18 2 = Above 18
- (f) Education of respondent (code):
[Code: 1 = illiterate; 2 = only read and write; 3 = Up to SSC; 4 = above SSC]

2.4. Land holding

- (a) Owned (decimals) Operated (decimals)
- (b) Name and location of harvest (three important locations) :
..... Range.....
- (c) Origin of respondent :
- Local : Village..... Union..... UZ.....
District Range
 - Non-local : Village..... Union..... UZ
 - District Range
 - Average distance of harvest place from home village (Km)

4.5 **Mapping chains, Actors and Jobs: Chain:** To your knowledge, **who are the actors** in the whole value chain in **this site in this harvest season?** (code) (start with your own activity)

Who are the actors in the chain										
Actors	1	2	3	4	5	6	7	8	9	10
Code										

4.6 **Actors:** To your knowledge, on weekly average, **how many actors** in the whole value chain in your **present business site** in this harvest season? (start with your own activity) (Refer Q4.4)

Number of actors in this site										
Actors	1	2	3	4	5	6	7	8	9	10
Number										

4.7 **Actors:** To your knowledge, how many actors in the whole value chain **in and around this site (Upazila)** in this harvest season? (considering number of concentrations in this UZ shown elsewhere)

Number of actors in UZ										
Actors	1	2	3	4	5	6	7	8	9	10
Number										

4.8 **Actors:** To your knowledge, approximately how many actors in the whole chain **in this Region (District)** in this harvest season? (start with your own activity)

Number of actors in District										
Actors	1	2	3	4	5	6	7	8	9	10
Number										

4.9 **Jobs:** How **many jobs** in the whole value chain offered by actors in **this business site** in this harvest season? (start with your own activity) (Refer to Question 4.6)

Number of jobs offered by actors										
Actors	1	2	3	4	5	6	7	8	9	10
No. of jobs										

5. **Mapping Geographical Places of Flows**

5.1 **Places:** Mapping major places of transactions in this harvest season from selected concentration sites

Name of primary concentration	Major places of product movements from selected primary concentrations*									
	Name of major places									

* Start from the major selected place of concentrations

5.2 **Places:** Mapping major **places of product movements** from selected major concentrations (with the help of previous Table 5.1)

Name of primary concentration	Product movements to SIZ UZs from selected major concentrations *														
	SIZ UZs										Other parts				Outside country
	Bag. Sadr	Mongla	Morgnj	Shkhola	Dacope	Koyra	Pkgacha	Shmnagar	Matbaria	Pathrghata	Khulna	Chittagong	Dhaka	Other places	

* Start from the place of major selected concentration

5.3 **Volume:** Mapping **volume of products moved** in this harvest season from selected sites **

Name of primary concentration	Trade volumes of products transacted (%) to SIZ UZs from selected major concentrations														
	SIZ UZ										Other parts				Outside country
	Bag. Sadr	Mongla	Morgnj	Shkhola	Dacope	Koyra	Pkgacha	Shmnagar	Matbaria	Pathrghata	Khulna	Chittagong	Dhaka	Other places	

* Start from the place of major selected concentration.

** Pl. take additional help from any other key informants/stakeholders in the estimations.

6. Mapping Values in the Chain

6.1 Mapping **value at different levels** of value chain in this harvest season

Actor (Name as per code)

	Unit	Peak	Non-peak
1. Average selling price (collection price) for collectors =buying price for other actors (1)			
2. Average selling price per unit			
3. Average volume of sale per month (2)			
4. Total value of sales per month	Tk		
5. Working capital employed (3)			
6. Cost of operation per boat/month (4)			
7. Living expenses during harvest (collectors only)	Tk		
8. Wage/salary			
9. Transport cost (5) (Diesel, Kerosene, etc.)			
10. Marketing cost			
11. Storage cost (6)			
12. Tolls (official)			
13. Unoff. expenses (Police, Coast guard, FD etc)			
14. Mastans/Pirates			
15. Ransom			
16. Other costs			
17. Total costs per month			
18. Gross margin(GM) per month			
19. Net margin (NM) per month			

(1) Start from the collection/harvest

(2) All averages estimated based on peak and non-peak season

(3) Working capital denotes *Chalan* only, excluding land and buildings

(4) Start with costs per trip and then convert to monthly

(5) Identify mode of transportation : 1=Boat, 2= Van, 3=Truck, 4= others (specify) -----:

(5) Assess Duration : 1=1 month, 2= 3 months, 3= 6 months, 4=more than 6 months

(6) Identify also mode of storage 1= Godown, 2= Cold storage, 3=others:

Gross Margin (GM) = Total sales – purchase

Net Margin (NM) = GM – Total costs

7. Regulations and Seasonality

7.1 Existing regulation/condition

- (a) Currently no moratorium Moratorium exists
- (b) Annual ban period (months) Duration (Bengali month) From..... To
- (c) Annual normal harvest period (months)..... Duration (Bengali month) From To

7.2 Seasonality

- (a) How many months of a year can you be involved in harvest/trade ?
- (b) Peak/harvest time (months) Duration (Bengali month) From To
- (c) Non-peak/banned (months)Duration (Bengali month) From To
- (d) Average days per month work during peak/harvest time
- (e) Average days per month work during non-peak/banned months

7.3 Occupation and Income

- (a) Occupation and income during harvest and off-harvest time

	Primary occupation (*)		Secondary occupation	
	Code	Av. Monthly income (TK)	Code	Av. monthly income (TK)
During official harvest time				
During off harvest time				

* Primary occupation represents main occupation in terms of income.

[Code: 1=This activity collection/business (see q 2.1, 2.2); 2= More or less all SRF collection/Business; 3=Other business/Trading.; 4=Industry; 5=Agriculture (crop); 6=Agriculture (non-crop); 7=Wage earner; 8=Communication/Transport; 9=Construction work; 10=Service holder; 11=Self-employed; 12=Others (specify).....]

- (b) What is the pattern of primary occupations whole year (Occupation code)? (For unemployment= zero)

1 Baisak (April-May)	2. Jaista (May-June)	3 Ashar (June-July)	4 Sraban (July-Aug)	5 Bhadra (Aug-Sep)	6 Ashin (Sep-Oct)	7 Kartik (Oct-Nov)	8 Agrhayan (Nov-Dec)	9 Poush (Dec-Jan)	10 Magh (Jan-Feb)	11 Falgun (Feb-March)	12 Chaitra (March-April)

8. Capital and Source of Financing

8.1 Capital employed for this activity

Capital	Amount (Tk)
Fixed capital-1*	
Fixed capital-2**	
Working capital***	
Total	

* Boat, net, equipment, ropes, etc.

** Land, building, etc.

*** What is traditionally called *Chalan*, which includes expenses such as salary, wage, raw material, etc. to run the day-to-day business.

8.2 Source of financing capital (Fixed capital -1 + Working) for the current forest activity

Source of financing	Amount (TK)
(a) Own source	
(b) Bank loan	
(c) NGO loan	
(d) Loan from friends/relatives	
(e) Loan from Mahajan/money lenders	
(f) Loan from Bepari/Faria	
(g) Loan from Bahaddar	
(h) Loan from Aratdar	
(i) Loan from local leaders	
(j) Loan others (e.g. FD, Political/urban elites etc)	
(k) Total	

8.3 Terms of loan repayments

- (a) Repayment in cash (without interest)
- (b) Repayment in cash (with interest) (interest rate)(%)
- (c) Repayment in goods at market price Market price (Tk/unit)
- (d) Repayment in goods at reduced price Reduced market price (Tk/unit)
- (e) Wage repayment contractual Wage rate (incl. Kind) .(TK/day)

8.4 Selling markets (for collectors)

8.4.1 Where do you generally sell your harvests (%) ?

- (a) Primary market (Collection point or on the way, boat to boat)
- (b) Primary market (Landing place)
- (c) Secondary market
- (d) Tertiary/retail/consumer markets/hat/Bazars

8.5 Terms of Current Business Transaction

Terms of business	Unit	Value (Tk)	Interest rate
(a) Advance payment and wage adjustment/buy/sell at fixed price			-
(b) No advance payment/Buy/sell at market price			-
(c) Advance payment/Buy at market price + pay interests on advance			
(d) Difference between fixed price and market price (per unit) [a – b]			-

8.6 Marketing constraints

- (a) Distance between collection point and primary (landing) market. (Km)
- (b) Distance between primary (landing) market and secondary (wholesale) market (Km)
- (c) Distance between secondary (wholesale) and retail market(Km)
- (d) Marketing facilities at present (applicable largely for fish)

Standard practices (as applicable)	Existing facility code	Infrastructure facilities	Existing facility code	Markets	Existing facility code
1 Handling		1 Storage capacity		1. Bargaining power	
2. Washing		2. Cold storage		2. Market information	
3. Sorting		3. Ice		3. Credit faculties	
4. Grading		4. Transport facilities		4. Others (specify)	
5. Cleaning		5. Others (specify)			
6. Icing					
7. Knowledge about hygiene					

[Facility code: 1=High; 2=Average; 3=Low; 4=Very low]

9. Problems and Recommendations

- (a) Level of satisfaction (regarding price)
- (b) Actual margin/unit Expected margin/unit
- (c) Perception regarding price determiner (factors influencing product price)
.....
.....
- (d) Exploitation extent, if any
.....
.....
- (e) Existing most severe problem
.....
.....
- (f) Other problems (other than mentioned above, if any)
.....
.....
- (g) How do you recommend for improving the situation?
.....
.....
- (h) Can you recommend ways towards making SRF collectors/**harvesters** more involved/upgraded in the Value Chain process? How to organize this through creating appropriate institutions?
.....

10. Aspects related to Climate Change and Global Warming

10.1 Severity Level of Changes

(a) Perceptions of Value Chain Actors on probable changes under increment of temperature and CO² level

Changes *	Severity code
1. Yield of SRF declining	
2. Quality of SRF declining	
3. Salinity increasing	
4. Ecosystem affected	
5. Dykes under threat	
6. Agriculture badly affected	
7. Further shortage of fresh water in SRF zone	
8. Incidence of water logging	
9. Incidence of increased temperature	
10. Incidence of pests	
11. Incidence of diseases	
12. Incidence of severe flooding	
13. Mangroves swamp getting/would be under water	
14. Protection from tidal surge/cyclone would be affected	
15. Employment dependency on SRF would be impacted	
16. Out-migration taking place	
17. Other impacts (specify)	

[Severity code : 1=Very high; 2= High; 3= Medium; 4=Low; 5=Don't know]

* Changes are merely guide, not to be prompted to respondents.

10.2 Adaptations taken/suggested by Actors

(a) What are the adaptations/preparedness taken/suggested by Actors to deal with climate change ?

Effects of C C	Adaptations/Preparedness
1. Cyclone	
2. Flooding	
3. Water logging	
4. Salinity	
5. Rise in temperature	
6. Increased pests and diseases	
7. Drought	
8. Shortage of fresh water	
9. Others (Specify)	

(b) What would be future plan of adaptations with regard to SRF?

.....

A Study of the Principal Marketed Value Chains Derived
from the Sundarbans Reserve Forest
Check List for FGD

We, researchers of the Bangladesh Institute of development Studies (BIDS), are carrying out a research on **The Principal Marketed Value Chains Derived from the Sundarbans Reserve Forest (SRF)** for the Integrated Protected Area Co-management (IPAC), Banani, Dhaka. The aim of the research is to look into value chains derived from the SRF products. The survey is completely confidential; the names and views of individuals participating will not be revealed to anyone and the survey information will be used in generating some unidentifiable statistical tables for **research purpose only**. All cooperation and help in this regard will highly be appreciated.

[All figures should be put in English]

Focus Group No. of people in the Group.....
Place of discussion Union UZ Dist Range.....
Date of discussion
Name of facilitators
[Four Ranges: 1. Satkhira; 2. Khulna; 3. Chandpai and 4. Sarankhola]

Timber/Non timber

1. Goran/Sundri/Kewra/Golpata/Grass
2. Fish/Small/Large/Hilsha
3. Shrimp (Golda/Bagda)
4. Shrimp Fry
5. Crab/Mollusc
6. Honey

Actors in the Focus Group

FGD with	No.	Product (tick)
Collectors		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Faria/Beparis		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Mahajan		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Aratdars		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Bahaddar		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Wholesalers		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Millers		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Retailers		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Consumers		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey
Exporters		Timber/Golpata/Fish//Hilsha/Fish Fry/Crab/Mollusc/Honey

[Note: Select the priority issue that applies to the particular focus group and use the following points as a guide to the interview. Ensure that variations among different strata within the stakeholder group are captured].

Key Questions	Response
<p>1. Existing regulation/condition of harvests</p> <p>How many months can you harvest/deal in business</p> <p>Harvest months and off-harvest months</p> <p>Peak months= From ---- to ----- Non-peak months=..... From ---- to ---</p> <p>How often harvest? With official permit (%) Without permit (%)</p> <p>What is the present system of collecting product? What is the procedure?</p> <p>Timber and others Official fees Unofficial payments to whom?.....</p> <p>Volume of collection/business per month/ Peak and non-peak</p> <p>Terms of Payment for collection–nature of contractual arrangement - Sell wage? Wage rate (TK per person/Tk per unit).....</p> <p>Positive or negative incentives for resource collection, conservation and sustainable use</p> <p>Rule of law, regulations Mastans/Pirates incidence, ransom, etc.</p>	

Key Questions	Response
<p>2. Market Mechanism, Market Characteristics</p> <p>How many market places in the UZ</p> <ul style="list-style-type: none"> - Primary - Secondary - Tertiary/Consumers market/Hat/Bazar 	

<p>Where are ultimate destinations of products?</p> <p>Collection points%</p> <p>Primary markets%.</p> <p>Secondary markets %</p> <p>Consumer markets/Hat/Bazars.....%</p> <p>Processing activities - Processing (<i>Shutki</i>, Saw mils, etc)%</p> <p>Geographical flows from core concentration centers</p> <table border="1"> <thead> <tr> <th>Product</th> <th></th> <th>%</th> </tr> </thead> <tbody> <tr><td></td><td>Satkhira</td><td></td></tr> <tr><td></td><td>Khulna</td><td></td></tr> <tr><td></td><td>Bagerhat</td><td></td></tr> <tr><td></td><td>Pirojpur</td><td></td></tr> <tr><td></td><td>Barguna</td><td></td></tr> <tr><td></td><td>Barisal</td><td></td></tr> <tr><td></td><td>Patuakhali</td><td></td></tr> <tr><td></td><td>Chittagong</td><td></td></tr> <tr><td></td><td>Dhaka</td><td></td></tr> <tr><td></td><td>Outside country</td><td></td></tr> <tr><td></td><td>Total</td><td>100.0</td></tr> </tbody> </table>	Product		%		Satkhira			Khulna			Bagerhat			Pirojpur			Barguna			Barisal			Patuakhali			Chittagong			Dhaka			Outside country			Total	100.0	
Product		%																																			
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	Chittagong																																				
	Dhaka																																				
	Outside country																																				
	Total	100.0																																			

Key Questions	Response
<p>3. <u>SRF Harvests, Control and Market Power</u></p> <p>Who own/control over scarce productive resources demanded by many others? Political, Economic, Social, Legal, etc.</p> <p>- Ownership of boat, nets, etc.</p> <p><u>Actors in SRF Value Chain</u></p> <p>Who control the SRF value chains and how? Who are the Mahajans? Traditional moneylenders and dadon lenders in your locality? Incidence of exploitation</p> <p>What is the network? How do they operate? Why and how they can control? Who are the most powerful/beneficiaries in the chain? In terms of income?.....</p> <p>- Collectors, Bepari/Faria, Mahajan, Bahaddar, Aratdars, Retailers, Exporters</p> <p>What are high value addition SRF products?</p>	

Key Questions	Response
<p>4. <u>Dadon, Advance Sales and exploitation</u></p> <p>Who made advance sales (dadon)..... From whom the dadon taken?..... In what conditions dadon taken?..... How much in cash?..... In kind?..... How much paid back in kind (terms of collected resources)?.....</p> <p>Difference between fixed price and market price?..... Amount of exploitation?..... How to remove the exploitation and improve on existing value chain </p>	

Key Questions	Response		
<p>5. <u>Poverty Situation</u></p> <p>What was the general poverty situation? (Last 5 years)</p>	Poverty indicators	This year (2009)	5 years back (2004)
	Income/ month		
	Expenditure/ month		
	Savings/ month		
<p>6. <u>Effect of Moratorium</u> on population Shift in occupation? What ? How often change major occupation?</p>			
<p>(a) Effect of timber moratorium (Since the late eighties)</p> <p>Changed occupation? Migrated? permanently? Employment/ Law and order situation.....</p> <p>(b) Effect of non-timber (Goran, Golpata, Honey, crab) moratorium</p> <p>(c) How effective was such moratorium? In the context of illegal trade, Sidr, Aila, etc?</p> <p>(d) In the case of fish, how often do you harvest in fish sanctuaries?</p> <p>(e) What would be approximate proportion of your catch to total harvest from fish sanctuaries?</p>			

Key Questions	Response
<p>7. Value Chain and Relationships/linkages/trust</p> <p>(a) Relationship (defined as a social connection), do you have any such relationship with other actors in the value chain network?</p> <p>- Vertical (between actors along the value chain): Formal/Informal, Yes ----- No ----- If Yes, extent</p> <p>- Horizontal (between actors at the same level of value chain): Formal/Informal Yes ----- No ----- If Yes, extent</p> <p>.</p> <p>(b) Linkages, defined as a business relationship, do you have any such business relationship with other actors in the value chain network?</p> <p>- Vertical (between actors along the value chain): Formal/Informal, Yes ----- No ----- If Yes, extent</p> <p>- Horizontal (between actors at the same level of value chain): Formal/Informal Yes ----- No ----- If Yes, extent</p>	
<p>(c) Trust level, trust being defined as social capital formed between two parties enabling a more efficient linkage through reduction of transaction costs.</p> <p>- Vertical (between actors along the value chain): Formal/Informal Yes ----- No ----- If Yes, extent</p> <p>- Horizontal (between actors at the same level of value chain): Formal/Informal (Tick) Yes ----- No ----- -- If Yes, extent [Code: 1= Strong 2=Moderate 3=Weak]</p>	
<p>Lead questions:</p> <p>How important are vertical/horizontal relationships/linkages/trusts?</p> <p>What is the frequency of contact?</p> <p>What is the level of formality?</p> <p>What are the reasons for having or not having linkages?</p> <p>How long have these linkages existed?</p> <p>How has the formality of the linkages changed or evolved?..</p> <p>What is the rate of expansion, if any, of linkages over time?</p>	

<p><u>Bargaining power</u></p> <p>Over or under supply of SRF products</p> <p>Demand-supply situation</p> <p>Number of actors/buyers/Sellers</p> <p>Transportation system</p> <p>Perishable/imperishable goods</p> <p>Storage/transformation facility(e.g. drying, cold storage)</p> <p>Cooperative system of marketing</p>	
---	--

Key Questions	Response
<p>8. <u>Suggestions to improvement of VC</u></p> <p>How do you suggest to improving on the VC through identifying the most disadvantageous target groups?</p> <p>What are your recommendations to remove exploitations/doing better business? In respect of groups involved in resource collection.</p> <p>What interventions are needed? In respect of</p> <ul style="list-style-type: none"> (1) Pro-poor value chain, micro credits? forming co-operatives, insurance? (2) Interventions in upgrading target groups in VC, equity (3) Access to finance (4) Marketing constraints (5) Subsistence to poor <p><u>SRF Collaborative management & VC</u></p> <p>How to design a participatory and collaborative management of the SRF through involvement of the target groups?</p>	

Key Questions	Response
<p>9. <u>Alternatives to SRF, AIG and Assistance</u></p> <p>What proportion of people involved in harvesting whole year?</p> <p>What would be alternative profession, if you give up present profession/ or when the use of forest resources is banned? [Agri-labor, Non agri-labor, Agriculture, Fishing, Artisan, Business, Shrimp, Others]</p>	

<p>Do you need any assistance from GO/NGO help to boost up your present occupation? Alternative profession?</p> <p>What help most? Credit, Security, Equipment, Financial assistance, Livestock, Employment, processing activities</p>	
--	--

Key Questions	Response
<p>10. <u>Climate Change and Coping</u></p> <p>Has the area been affected by any natural calamities in the last 3 years? Sidr, Aila? Coping mechanism? Savings, loans, distress sales, mortgage, relief ?</p> <p>Awareness level and perceptions about CO2 emission, global warming, sea level rise</p> <p>Effects already visible? Quality/quantity of SRF products? What are these..... What would be future effects expected to SRF?</p> <p>How are you currently encountering these? Adaptations?... Preparedness?... Coping with cyclone?... Flooding?... Water logging?... Salinity?... Drought?..... Shortage of fresh water?..... Awareness?.....</p> <p>Future plan of adaptations? e.g., *</p> <ul style="list-style-type: none"> - Homestead raising..... - Roads raising..... - Coastal greenbelt..... - Raising dykes/embankments/polders - Cyclone shelters - Provision for aquaculture - Provision for apiculture - Provision for processing activities - Provision for employment generation <p><u>* For guide only, not to prompt to respondents</u></p>	

A Study of the Principal Marketed Value Chains Derived
from the Sundarbans Reserve Forest

Community (Union-wise) Check List
(Key Informant Interviews)

We, researchers of the Bangladesh Institute of development Studies (BIDS), are carrying out a research on **The Principal Marketed Value Chains Derived from the Sundarbans Reserve Forest (SRF)** for the Integrated Protected Area Co-management (IPAC), Banani, Dhaka. As the title of the research suggests, the aim of the research is to look into value chains derived from the SRF products. The survey is completely confidential; the names and views of individuals participating will not be revealed to anyone and the survey information will be used in generating some unidentifiable statistical tables for **research purpose only**. All cooperation and help in this regard will be highly appreciated.

[All figures should be put in English]

Date of interview :

Name of Enumerator :

Name of Supervisor :

1. Area identifications

(a) Name of UnionUZ..... RangeDistrict
.....

(b) Categorize the Union area according to 3 concentration level w.r.t. SRF harvests (code
[1= Low concentration 2= Medium concentration 3= High concentration]

[Four Ranges: 1. Satkhira; 2. Khulna; 3. Chandpai; and 4. Sarankhola]

2. Stakeholder villages

(a) How many villages in Union engaged in harvesting SRF products?

Timber	No. of villages	Name of major villages
Sundri		
Goran		
Passur		
Gewa		
Kewra		
Kankra		
All above		

Non-timber	No. of villages	Name of major villages
Golpata		
Grass		

Fisheries	No. of villages	Name of major villages
Fish (Small/Large)		
Hilsha		

Fish Fry	No. of villages	Name of major villages
Shrimp fry		

Aquatic resources	No. of villages	Name of major villages
Crab		
Mollusc		

Other resources	No. of villages	Name of major villages
Honey		

(b) How many people/groups engaged in harvesting SRF products in the Union

(c) How many boats that go for collecting SRF products from this Union for

	Golpata	Fish	Crab	Honey
No of boats				

(d) How much of quantity and how many days it takes to procure one boat of SRF products

Item	Days	Quantity of products per boat (Maunds)
Timber		
Golpata		
Grass		
Fish		
Hilsha		
Crab		
Honey		
Others		

(e) How many months can one harvest /do business)?

	No. of months	No. of days	From (Bengali. month)	To (Bengali. month)
Harvest				
Peak months				
Non-peak months				
Business				
Peak months				
Non-peak months				

(f) Where do people usually sell/do business (%)?

	Golpata	Fish	Hilsha	Crab	Honey	Others
	%					
Collection points						
Primary markets						
Secondary markets						
Local retailers						
Processing activities (<i>Shutki</i> , Sawmills, etc.)						

(g) Where are the destinations for your product ?

	Golpata	Fish	Hilsha	Crab	Honey	Others
	%					
Satkhira						
Khulna						
Bagerhat						
Pirojpur						
Barguna						
Barisal						
Patuakhali						
Chittagong						
Dhaka						
Outside country						
Total	100.0	100.0	100.0	100.0	100.0	100.0

(h) What is the pattern of occupations of SRF collectors whole year (code)? (Code unemployment=Nil)

Product	Baishak (April- May)	Jaistah (May- June)	Ashar (June- July)	Sraban (July- Aug)	Bhadra (Aug- Sep)	Ashin (Sep- Oct)	Kartik (Oct- Nov)	Agrahayn (Nov- Dec)	Poush (Dec- Jan)	Magh (Jan- Feb)	Falgun (Feb- March)	Chaitra (March- April)
Timber												
Golpata												
Grass												
Fish												
Hilsha												
Crab												
Honey												
Others												

* Primary occupation represents main occupation in terms of income.

[Code: 1=This activity/collection/business; 2= More or less all SRF collection/Business 3=Other business/Trading.; 4=Industry;. 5=Agriculture (crop); 6=Agriculture (non-crop); 7=Wage earner; 8=Communication/Transport; 9=Construction work; 10=Service holder; 11=Self-employed; 12=Others (specify).....]

3. Loans/Dadons

(a) Do the Bawalis/Mawalis/Fishermen take any loans from any source during harvesting activities?
(1=Yes 2= No)

(b) What are the sources?

		Interest rate (%)
Institutional sources	Bank	
	NGOs	
Non-institutional sources	Money lenders	

(c) Money lenders/Dadon lenders

	No. of operators in		Usual interest rate/kind (%)
	Village	Union	
Money lenders			
Dadon lenders			

4. Infrastructure/Institutions

(a) Infrastructure/Institutions in this Union

Institutions	No.
Primary school	
High school	
Madrasha	
Banks	
NGOs (with micro financing facility)	
NGOs (without micro financing facility)	
Saw mills	
Brickfields	
Cold storage	
Poultry	
Dairy	
Nursery	
Hatchery	
Fishery	
Pucca roads (km)	
Bus stations	
Launch ghats	
Health centers/clinics	
Others	

5. Market s

(a) How many markets are there dealing with SRF products in this Union?

Major SRF item	No. of markets		
	Primary	Secondary	Tertiary
Timber			
Golpata			
Fish			
Hilsha			
Crab			
Honey			
Others			

6. Stakeholders depending on SRF in this area

Resource collectors	Number in	
	Village	Union
Bawalis		
Mawalis		
Bepari/Faria		
Aratdars		
Wholesalers		
Exporters		
Money lenders		
Dadon lenders		
Bawali cooperatives		
Mawali cooperatives		
Fishermen cooperatives		
Crab cooperatives		
Others (Specify)		

Annex G: Problem and Objective Analysis from FGDs

G.I Analysis of Problems in the SIZ Area

The study team conducted 10 problem-analysis sessions with the participants in the study area. They were the same participants, mostly, who participated in the FGDs. The core problem was identified as “income of the SRF collectors is very low”. The construction of each problem tree took about 3 hours. The participants talked about the reasons of their low income. Apart from the cause and effect relationship, the participants also talked about related issues while identifying the problems and issues. With the 10 problem trees constructed, the problems were found to be more or less similar although they had some differences. However, the nature and characteristics of the problems were similar or closer. The reasons for which the study team did the problem analysis or constructed problem trees were to understand the reasons for the low income of the SRF collectors whose income was very low. The analysis of problems was helpful in order to suggest measures for upgrading the situation of the bottom layer of the value chain. The problem trees were constructed through informal discussion with the participants. The composite “problem tree” constructed from all the problem analysis in the study area is presented. The “cause and effect” relationships of the “low income of the SRF collectors” were elaborated in the problem trees.

G.I.I Direct Causes of the Core Problem

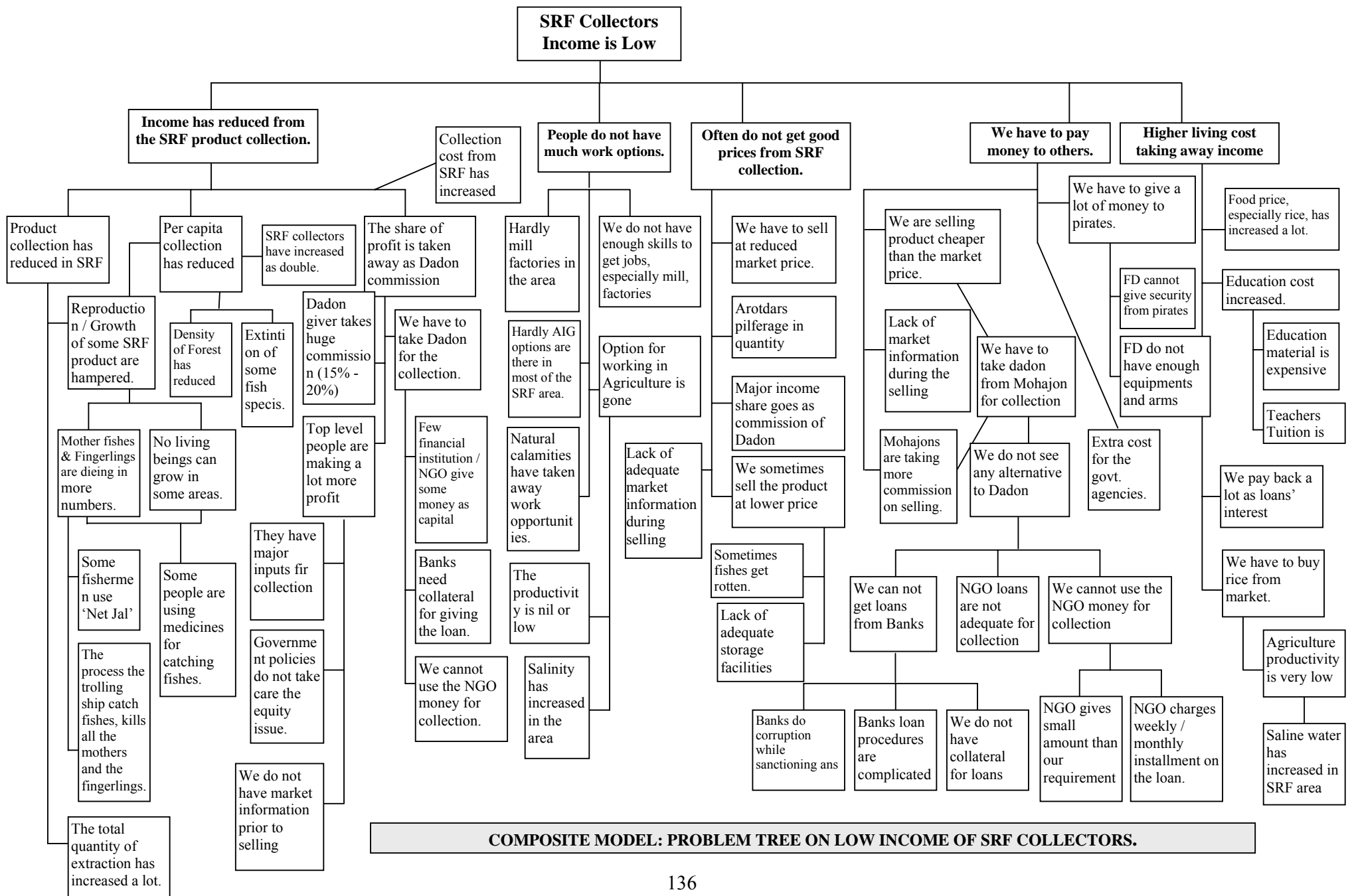
The composite problem tree was concluded with identification of five direct causes to the core problem. Although it can be different based on the perception of the participants, the issues were more or less same. The direct causes for the prevailing low income are given below –

1. income has reduced from the SRF product collection,
2. people do not have much income generating options in the area,
3. collectors often do not get good prices for the collected product,
4. collectors have to make extra unofficial payments others, and
5. higher living expenditure takes away income in recent years.

The above-mentioned causes are resulting in the low-income situation of the collectors. These causes also have other sub-causes, which are linked with the direct causes with cause and effect relationship; and the problem tree is constructed accordingly.

A. Income has reduced from the SRF product collection

- Collection of products from the Sundarbans has reduced significantly over the last 10 years, in terms of per capita resource collection. This reduction is directly affecting the income situation of the people. There are many causes for such happenings. Notably, the reproduction process of the fishes (and other products) is being hampered seriously as, for example, many people are using medicines to capture fishes through large trawling ships; some fishermen are capturing fishes through nets that kill all the species within the net, including mother fishes and the fingerlings.



COMPOSITE MODEL: PROBLEM TREE ON LOW INCOME OF SRF COLLECTORS.

- The reasons for the reduction in per capita collection are, among others, the huge pressure on the Sundarbans (almost doubled in last 10 years) as the population has increased much and people do not have enough work options as the agriculture is no more productive because of the salinity increase due to natural reasons; shrimp culture may also be responsible to some extent for such salinity in the agricultural land. The density of the forest is getting low and the loss of many species is also contributing to low per-capita collection of resources.
- The share of profit from the SRF resources collection is very low as the major chunk is taken away as the commission on dadons. The collectors have no other options but to take dadons for the collection ventures from the Mahajans or Aratdars. The formal institutions, such as banks or NGOs are not providing even 15-20% of the capital necessary for the collection. The NGO loans are not more than 5,000 to 10,000 Taka, which contributes nothing to the capital needed, and on top of that, the collectors have to pay installments in every week or months which is not feasible at all for the collectors. Banks need lots of formalities for giving loans but the amount is very inadequate. Banks need securities for giving loans; and most of the collectors cannot fulfill banks' conditions as they are largely landless. Top-level traders are making huge profit as they are dealing in huge volume of products. The policy support for the government is very weak in this regard.
- The overall collection cost has increased due to increase in the price of fuel and other necessities for the collection. The rate of payment to the pirates and illegal fees to various departments have also increased much.

B. people do not have much income generating options in the area

- Hardly there are any mills, factories in the area where one can seek jobs. In addition, the collectors or the poor people in the community do not have enough training to get engaged in industries or factories. Processing industries for the SRF product is also not much in the areas. Whatever processing industries are there are owned by the top-level traders where not much people are required. The alternative income generating options are very limited in the area.
- Options for working in agriculture have reduced dramatically in the SRF areas. With the increase of salinity in the agricultural land, low agricultural productivity has made many people to leave agriculture. These people have created more pressure on the SRF.
- The natural calamities, such as Sidr and Aila, are much responsible for huge damage in peoples' livelihood. These disasters destroyed income options for the people for a temporary period. The cost of rehabilitation is also causing reduction in income for the people living there.

C. Collectors often do not get good prices for the collected product

- The collectors, in most of the cases, have to sell the product at lower price than the market price. They sell it because they have taken dadon; usually Aratdars offer lower price. The Aratdars also cheat in quantity, and sometimes they do not show sales receipt. Many collectors sell products at lower price due to dadons.

- The collectors do not have the updated information of the market for the product they are collecting. As a result, they just have to accept the price that is determined by the Aratdars or Paikars.
- The collectors sometimes also sell fishes at lower price as the fishes sometimes get rotten. On top of that, there are no storage facilities available where the product, especially fish, can be kept. Due to such problem, the collectors have sell fishes as soon as possible at lower prices.

D. Collectors have to make unofficial payments to various departments

- Major chunk of the collectors' income goes to somewhere else. Pirates are to be given big money in every fishing season. There is no way out from that. The government cannot protect the collectors from the pirates as the FD lacks manpower and equipment to fight the pirates.
- The collectors have to pay money to personnel of various departments to avoid harassment while collecting the resources in the SRF. The amount also has increased over the years.
- Due to taking dadons, the collectors are to sell the fishes to the dadon giver at a lower price than the market. The Mahajans or Aratdars are also taking huge commission for the dadons. On top of that, they show low quantity.
- Finding no sources for capital, the collectors take dadons for collecting resources. The NGOs and Banks' loan amount is very low and no way it covers the total cost of collection. On top of that, banks have huge formalities and paper works for giving the loan. Apart from the low amount of loans, the NGOs weekly installment system is a major bottleneck to taking loans. People in the bank ask money while sanctioning the loan.
- The collectors just have to depend on dadons, and getting in the chain of exploitation, although dadons provide some social safety during the lean periods.

E. Higher living expenditures have taken away income in recent years

- The overall increase in living cost is causing low income for the collectors. The prices of the daily necessities have increased much over the years. Hardly the collectors can afford their full meal a day due to such increase in price.
- The cost of education of the children of the collectors has increased a lot. The educational materials have become very expensive for them. There are also children tuition fees apart from the school fees. The education of their children seems like a burden on them.
- The collectors hardly used to buy rice from the market in the past. However, due to the degradation of the agriculture due to salinity increase people have to buy all the rice for their consumption. This is a cost which many of the collectors did not experience before.
- As many collectors live in shortage, they take loans and dadons. They also take loans from micro credit NGOs to meet the immediate needs. They are to pay interest on that.

G.1.2 Conclusion

The problem analysis has helped the study team to understand the nature of the problems for the low income of the collectors in the SRF areas. The problem tree gives an idea to design the areas of intervention.

The following objective analysis from the problem tree will give clearer conception regarding the interventions.

G.2 Analysis of Objectives

The objectives or the solutions to the problem in the context of low-income situation of the collectors were emerged from the discussion in the process of constructing the problem tree. The description is furnished below:

G.2.1. Increase income from the SRF product collection

- Conserve the SRF resources: It is important to undertake conservation through facilitating the reproduction or growth of SRF species, especially fishes. Facilitating the reproduction of fishes can be done through protecting the mothers and fingerlings from dieing. There are fishing nets which kill all the fishes (small, big, mother, fingerlings). Use of such nets is to be prohibited. In addition, some of the trawling ships are catching fishes in a similar way. This also has to be prohibited to save the growth of the fishes. So, the natural growth of fishes and other aquatic species has to be ensured.
- Increase per capita product collection from SRF: The numbers of collectors are more compared to the resources of the SRF. Alternative income options for collectors are the only way to achieve this. The density of the forest has to be increased to get more products; protection of fish species from extinction is crucial in this context.
- Major share of profit is taken away by dadons: Dadon takes out the major share of the harvesters income, as also reported in the problem tree. The commission of the dadon giver has to be reduced. The income share of the collectors in the value chain needs enhancement. Appropriate policy measures supporting the equity of the collectors in the value chain will help in great deal. The collectors also need ‘improved access to market information’ prior to selling to increase their profit share. Alternative to dadon is very difficult, given the present context. Adequate loan has to be provided by the formal financial institutions with flexible terms and conditions. The financial institutions, banks, or NGOs also have to recognize the need for social safety net, which the collectors get from dadons, especially during the lean periods.
- Reduce the cost of SRF resources collection: Payments to pirates and various government departments are contributing to high collection cost in the SRF area. A trawler with 10 persons pays 20,000 to 30,000 Taka to the pirates in each season, which is 40,000 to 60,000 Taka a year. If this can be stopped then the collection cost will be significantly reduced and the income of the fishers will eventually increase.

2. Increase work options in the SRF community

- Increase agricultural options in the SRF areas: Increasing agricultural options will be helpful in getting back many peoples’ livelihood. Leaving jobs in agriculture due to salinity and low productivity has caused people to join the SRF resources collection. Saline adaptive agriculture has to be promoted in the area. Research and development is needed, so that agricultural productivity can be increased in saline environment.
- Create IGA for the marginal collectors: Enough IGAs to support the collectors will be a step forward. This will also reduce pressure from the Sundarbans and will give alternative living for the collectors. Women also should be encouraged to join IGAs. This will also improve the income situation of the family of the collectors.
- Establishment of mills and factories in more numbers: There are very few mills and factories in the area. People do not have many alternatives for livelihood. Establishment of mills and factories will enable many people to be employed.

- Improve skills of the collectors to get jobs: The collectors do not have enough skills to get jobs in the mills, factories or service sectors. Trainings are needed so that the collectors can take jobs in factories.
- Improve capacity of the community to cope with disaster: People often lose their livelihood due to natural calamities. The community needs to prepare themselves for the disaster with improved capacity.

3. Ensure good prices for the collected SRF products

- Avoid selling at reduced market price: Selling products at reduced market price has to be discouraged to get better share of income. The collectors take decisions finding no other options. They also have to avoid taking decisions. They can only do that if there are enough sources for the capital funding. Awareness has to be increased in this regard.
- Stop Aratdars pilferage in quantity: Collectors get price for reduced quantity than what they are selling. If Aratdars' pilferage in quantity can be stopped, the income of the collectors will be increased.
- More number of service centers/Storage : The collectors cannot afford to delay as the fishes will go rotten. The Beparis or Aratdars take this advantage. Protection of fishes from getting rotten is necessary. More number of service centers and storages are to be established for the collectors to be able to store fishes whenever they want.
- Improve access to market information for the collectors: Access to market information is very crucial for the collectors while selling the products. The fishermen are often not aware of the exact market price. Such information will provide opportunity in increasing bargaining capability.

4. Reduce incidence of Pirates and Unofficial Payments

- Reduce threats from pirates: The threats from the pirates have to be reduced to benefit the collectors. They are to pay huge ransoms to the pirates. The FD cannot protect them as they lack equipment and manpower to fight them. The FD needs more modern and efficient equipment and trained manpower. The FD has to seek more help from navy in this regard.
- Increase cooperation of the government departments: Sometimes the collectors are harassed by the government personnel. Less harassment and more cooperation will lead to increased income by the collectors.

5. Reduce the cost of living for collectors

- Give subsistence support to the marginal collectors: The collectors have to be given subsistence support from the government. The marginal collectors particularly are in need of this support. Assistance and subsistence support during the lean period are utterly needed. The NGOs also can provide such support to reduce their cost of living and thus reduce their vulnerability.
- Reduce education cost for children by GO-NGO interventions: The cost of the children education is getting very high. The collectors face severe difficulties in paying the costs for their children education. The Aila and Sidr also have caused huge damage to schools and

infrastructures. Rehabilitation and support from the GO or NGOs in this regard will go a long way to improving the income of the collectors.

Annex H: Persons Interviewed

List of Persons Interviewed

Ahmed, Ali, Mawali, Datnakhali, Shymnagar, Satkhira
Ahmed, Zahir Uddin, Divisional Forest Officer (DFO), Forest Department, Khulna, Tel: 041-720665; 01711-581429
Ahmed, Saleh, Fisherman, Raienda, Sarankhola, Bagerhat, Mobile: 01720-994937
Abdul, Zalil, Fisherman (Hilsha), Rajapur, Sarankhola, Bagerhat
Alam, Md. Shah, Lakurtala, Raienda, Sarankhola, Bagerhat, Mobile: 01713-926836
Ali, Md. Akbar, Service (Rupsha Matshya Arat), KCC, Khulna
Ali, Md. Akkas, Mahajan (Hilsha), Boga, Kachua, Bagerhat Sadar, Mobile: 01918-764307
Ali, Md. Ansar, Aratdar (Golpata), Shibbari, Paikgacha, Khulna, Mobile: 01190-578075
Ali, Md. Kadar, Aratdar (Fish), Tafalbari, Sarankhola, Bagerhat
Ali, Md. Moslem, Demsha Khali, Paikghacha, Khulna
Ali, Md. Sakender, Shrimp fry Collector, Rajoir, Sarankhola, Bagerhat
Ali, Md. Shakur, Aratdar (Golpata), Bagerhat Sadar, Bagerhat
Amin, Md. Ruhul, Bogi, Sarankhola, Bagerhat, Mobile: 01736-591378
Bepari, Md. Babul, Fry Faria, Bidyamari, Sundarban, Mongla, Bagerhat
Bhuiyan, Mohammad Golam Quddus, Assistant Conservator of Forest (ACF), Bagerhat Sadar, Sundarbans East Forest Division, Bagerhat
Bishaws, Babul, Fisherman, Basabati, Malupara, Bagerhat Sadar, Bagerhat
Bishaws, Md. Zahangir, Fisherman (Hilsha), Zilbunia, Sarankhola, Bagerhat
Bishaws, Shree Bus, Fisherman, Basabati, 8 No. ward, Bagerhat Sadar, Bagerhat
Boiarty, Abul Islam Tuhin, Southkhali, Bagerhat, Mobile: 01724-850502
Boiarty, Khayer, Khada, Raienda, Bagerhat, Mobile: 01724-849019
Boiarty, Md. Eusub, Madhya Barisal, Khaulia, Morrelganj, Bagerhat, Mobile: 01719-014750
Dey, Mihir Kumar, Divisional Forest Officer (DFO), Sunderbans East Forest Division, Bagerhat
Dulal, Md. Jahir Uddin, Wood Trader, Rupsha Katgola, KCC, Khulna
Dulal, Mir, Mahajan (Golpata), Paikgacha, Khulna, Mobile: 01717-759115
Emdadul, Md., Aratdar (Golpata), Morrelganj, Bagerhat, Mobile: 01920-196661
Esahak, Malia, Fisherman, Raienda, Sarankhola, Bagerhat, Mobile: 01716-554148
Eskander, Shake, Kalkabaria, Morrelganj, Bagerhat
Fakir, Safayat, Uttar Tafalbari, Sarankhola, Bagerhat, Mobile: 01723-179007
Faraji, Jamal, Fisherman, Khuriakhali, Sarankhola, Bagerhat
Faraji, Harun, Fisherman, Khuriakhali, Southkhali, Bagerhat

Faraji, Md. Ali, Fisherman (Hilsha), Zilbunia, Sarankhola, Bagerhat
 Farazi, Md. Panna, Fish Aratdar, Bogi Bandar, Sarankhola, Mobile: 01714-353783
 Firoz, Md., Fisherman, Khalifar hat, Patharghata, Barguna, Mobile: 01723-194460
 Fulmiya, Md., Ex-Member (UP), Raienda, Sarankhola, Bagerhat
 Gaffer, Md. Abdul, Fisherman, Gabtala, Morrelganj, Bagerhat, Mobile: 01712-404929
 Gazi, Md. Uzzal Hossain, Mahajan (Golpata), Paikgacha, Khulna, Mobile: 01712-862114
 Gazi, Sagir, Fisherman, Khuriakhali, Sarankhola, Bagerhat
 Gharami, Dulal, Fisherman, Raienda, Sarankhola, Bagerhat, Mobile: 01734-655439
 Giasuddin, Md., Fisherman, Gabtala, Morrelganj, Bagerhat, Mobile: 01745-307153
 Guffer, Abdul, Fisherman, Badal, Gopalpur, Bagerhat Sadar, Bagerhat
 Haq, Md. Asadul, Aratdar, Rupsha Matshya Arat, KCC, Khulna
 Haque, Md. Abdul, Bepari (Timber), Lakurtala Bazar, Sarankhola, Bagerhat, Mobile: 01797-860565
 Harun, Md., Fisherman, Khalifar Hat, Patharghata, Barguna, Mobile: 01734-756721
 Hazi, Md. Abdul Mazid, Mawali, Datnakhali, Shymnagar, Satkhira
 Hossain, Jakir, Fisherman, Dakhin Southkhali, Sarankhola, Bagerhat, Mobile: 01922-712923
 Hossain, Md. Nabi, Fisherman (Hilsha), Bakultala, Sarankhola, Bagerhat
 Hossain, Md. Delower (Vabna), Majhi (Hilsha), Kachua, Bagerhat Sadar, Bagerhat
 Hossain, Md. Delower, Fisherman (Hilsha), Purba Khada, Rayenda, Sarankhola, Bagerhat
 Hossain, Md. Hemayat, Shrimp Farmer, Basabati, Bagerhat Sadar, Bagerhat
 Hossain, Md. Jakir, Wholesaler, Bagerhat Sadar Matshya Arat, Bagerhat
 Hossain, Md. Mahamudul, Aratdar, Bagerhat Sadar Matshya Arat, Bagerhat, Mobile: 01714-846175
 Hossain, Md. Motaleb, Bawali, Boro Bhadra, Hoglabunia, Morrelganj, Bagerhat
 Hossain, Md. Shahadat, Crab Collector, Kalbari Bazar, Shymnagar, Satkhira
 Hossain, Md. Shohrab, Natun Bazar, Retailer (Golpata), KCC, Khulna
 Hossain, Md. Sohag, Fisherman, Batiaghata, Khulna, Mobile: 01925-671771
 Hossain, Md. Akbar, Conservator of Forest (CF), Khulna Circle, Forest Department, Mobile: 01711-543475
 Hossain, Shahadat, Rajeshor, Sarankhola, Bagerhat, Mobile: 01713-487916
 Howlader, Abdul Barek, Fisherman, Pashim Barisal, Khaulia, Morrelganj, Bagerhat
 Howlader, Abdul Khalek, Fisherman, Pashim Barisal, Khaulia, Morrelganj, Bagerhat
 Howlader, Abdus Salam, Aratdar, Bagerhat Sadar Matshya Arat, Bagerhat, Mobile: 01711-117335
 Howlader, Dalu, Dhansagor, Bagerhat Sadar, Bagerhat
 Howlader, Md. Abdul Laif, Aratdar (Hilsha), Rajoir, Raienda, Bagerhat

Howlader, Md. Halim, Fisherman (Hilsha), Uttar Kadamtala, Sarankhola, Bagerhat
Howlader, Md. Hanif, Fisherman (Hilsha), Uttar Kadamtala, Sarankhola, Bagerhat
Howlader, Md. Kamal, Fisherman, Amorbonia, Nishanbaria, Morrelganj, Mobile: 01922-618506
Howlader, Md. Kuddus, Jhuadhara, Morrelganj, Bagerhat
Howlader, Md. Mazid, Uttar Sonatali, Sarankhola, Bagerhat, Mobile: 01721-550291
Howlader, Md. Nazrul Islam, Fisherman, Judhara, Morrelganj, Mobile: 01716-779217
Howlader, Md. Shajahan, Khuriakhali, Sarankhola, Bagerhat
Howlader, Md. Sobhan, Fisherman, Uttar Rajapur, Sarankhola, Bagerhat, Mobile: 01721-734891
Howlader, Md. Tayeb Ali, Fisherman, Bhaga, Kachua, Bagerhat Sadar, Bagerhat
Howlader, Md. Zalil, Fisherman, Tafalbari, Sarankhola, Bagerhat
Howlader, Md. Zamal, Fisherman (Hilsha), Zilbunia, Sarankhola, Bagerhat
Howlader, Ziyaul, Dakhin Rajapur, Raienda, Sarankhola, Bagerhat
Hyder, Md. Nadeem, IPAC, Chandpai, Bagerhat, Mobile: 01716-278118; 01818-403502
Hyder, Ali Akbar, Deputy Chief Conservator of Forest (DCCF), Forest Department
Ibrahim, Md., Fisherman, Gabtala, Morrelganj, Bagerhat
Islam, Md. Asraful, Wholesaler, Bagerhat Sadar Matshya Arat, Bagerhat
Islam, Md. Nazrul, Fisherman, Dhansagor, Sarankhola, Bagerhat
Islam, Md. Nazrul, Office staff, DFO Office, West, Khulna, Mobile 01912380458
Islam, Md. Nazrul, Fry Collector, Singhortoli, Shymnagar, Satkhira
Islam, Md. Shahidul, Fry Collector, Singhortoli, Shymnagar, Satkhira
Islam, Shahidul, Dakhin Sonatoli, Sarankhola, Bagerhat, Mobile: 01731-881931
Joardar, Sahidul, Khuriakhali, Sarankhola, Bagerhat
Jobayer, Md., Bawali, Morrelganj, Bagerhat
Kabir, Md. Homayon, Fisherman (Hilsha), Rajoir, Raienda, Sarankhola, Bagerhat
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Mondol, Juthiram, Fisherman, Harinagar, Satkhira
Mondol, Parimol, Crab Depot, Kalbari Bazar, Shymnagar, Satkhira
Mondol, Shree Goutam, Fry Collector, Singhortoli, Shymnagar, Satkhira
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Vabna, Raza Ali, Fisherman, Basabati, Bagerhat Sadar, Bagerhat

Vabna, Taha Ali, Fisherman, Bogi, Bagerhat Sadar, Bagerhat

Zalil, Md. Abdul, Boatman (Hilsha), Sarankhola, Bagerhat

Annex I: Selected Photographs

Photographs: BIDS-IPAC VC Analysis Field Survey 2010



Crabs are sorted to different grades at the crab depot - Koyra Bazar



A retailer, selling honey, at Koyra Bazar. He collects around 80 Kg of honey in one season.



Small boats engaged in catching shrimp PL (bagda renu). Collection of renu is often done at household level and household members participate in it. - Sarankhola UZ.



A labor working at a Timber Gola at Paiksa - Paikgacha UZ



Crab collectors are at the landing site at Joymoni Gol, Mongla UZ



By-product fuel woods/timbers collected from the SRF, Boroikhali Union - Shymnagar UZ



A fish Arat at Rupsha - Khulna City Corporation



A depot of timber at Dhamrai, Paikgacha



Fishes coming to the 'Rupsha Motso Arat', KCC, for selling



Paikars participating in auction at 'Rupsha Motso Arat', KCC



Study Research Officer collecting information on the roof of a fish carrying boat- fish landing site, Rupsha - KCC



Different kinds of fishes at the Rupsa Motso Arat, KCC



Fish being unloaded at Paikari Arat - KCC



View of inside – Rupsa Paikari Motso Arat at the bank of the Rupsa River



Rupsa Motso Arat is one of the biggest Arat in the Khulna region - KCC



Paikars are selling fishes - picture of early morning at Rupsa landing place



Company's shrimp commission agent – Natun Bazar, KCC



Fish boat approaching towards SRF, Bagi, Sarankhola



Boat loaded with Golpata approaching landing place - Morrelganj UZ collection.



Collectors waiting to sell Golpata But they are uncertain about the price Mahajan going to offer.



Golpata Arat - Koyra Launch Ghat.



Sundarbans is at the other side of the river. Local people had started some social forestry at this side.



A common scenario of the renu collection at the bank of the river at Sarankhola UZ. Even kids are sorting the renus.



A young collector is sorting the renu of bagda – to sell to the Farias – Sarankhola UZ



People reluctant to go for SRF extraction in front of tigers and pirates, if similar earthwork is provided, Burigoalini, Shymnagar UZ



Roads are destroyed by Aila at many places in Koyra UZ, making SRF actors more vulnerable- needs serious rehabilitation.



Women waiting in queue for drinking water in a pond- sand-filter (PSF) station, Burigulani, Shymnagar



SRF collectors, who are victims of natural calamities, are to be given priority for IGAs/social safety nets.



A women participant describing poverty situation at a Focus Group Discussion at the Rajapur Gram, Shorankhola UZ



House temporarily located near to the Sundarbans. Poor households sometimes go to forest to collect firewood, Rajapur, Sarankhola.