INTERIM REPORT

APPENDICES

FAP 17
FISHERIES STUDIES AND PILOT PROJECT

JULY 1993

Prepared for the Government of Bangladesh

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APPENDIX I: SCHEDULES OF ACTIVITIES AND OUTPUTS

(a) Fisheries

(b) Socio-economic

FAP 17 FISHERIES STUDY

ACTIVITIES & WORK SCHEDULE

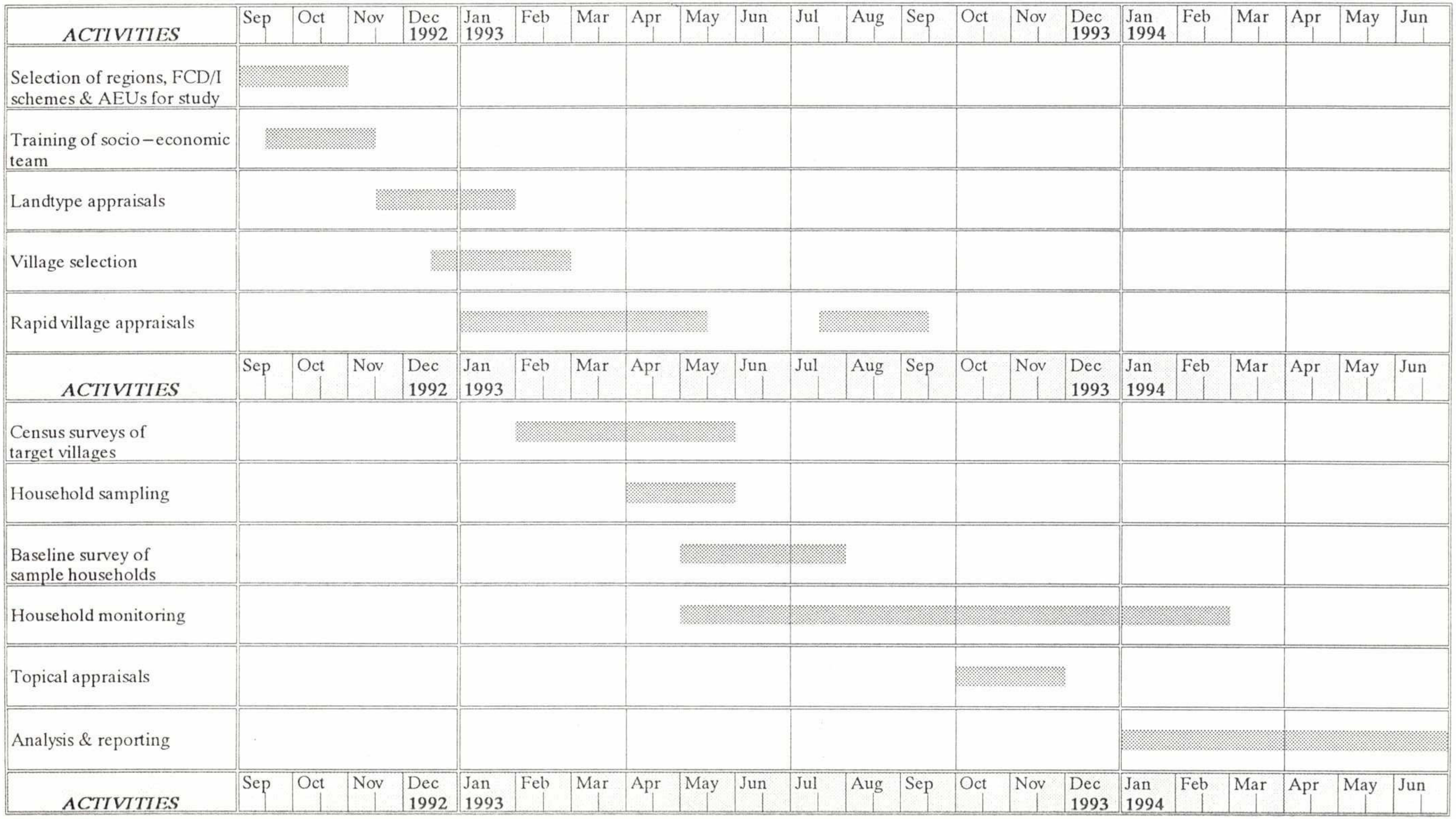
FAP 17 FISHERIES STUDY

OUTPUT SCHEDULE

No.	*PRINCIPLE OUTPUT*	*SUBSIDIARY OUTPUTS*	Jan 1993	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec 1993	Jan 1994	Feb	Mar	Apr	May	Jun
1.	A written report presenting guidelines for the assessment of impacts of future flood control measures.																			
2.	Information on the impact of different flood control measures on the production of fisheries																			
3.	Comparisons of growth, mortality, exploitation of fish populations inside and outside existing flood control schemes																			
4.	A description of the impact of flood control schemes on the movement of floodplain fishes																			
5.	Comparisons of the relations between catch composition, fishing effort and fish catch inside and outside existing flood control schemes																			
6.		A review, including bibliography, of tropical floodplain fisheries																		
7.		A review, including bibliography, of water quality in the floodplain regions of Bangladesh. A preliminiary report on pesticide residue levels in floodplain fish																		
8.		A review of the past treatment of fisheries impact assessment in FCD/I project appraisal																		
9.		Information on design of fish friendly regulators																		
10.	A project proposal for pilot projects to mitigate negative impacts of flood control																			
11.	A database providing social, economic, nutritional, production and biological baseline data and information for the project target areas																			
12.	100 Personnel from both public and private sectors trained in fisheries assessment																			
			Jan 1993	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec 1993	Jan 1994	Feb	Mar	Apr	May	Jun

outpt1.wk1

ACTIVITIES & WORK SCHEDULE



FAP 17 SOCIO–ECONOMIC COMPONENT : OUTPUTS

Technical papers and bibliographies

No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*
1.		Technical paper : alternative approaches to the assessment of the socio–economic impacts of changes in fish production due to the Flood Action Plan
2.		Report on the methodology of the FAP 17 socio–economic study
3.	Annotated bibliography & review of nutrition studies in Bangladesh	
4.	Annotated bibliography & critical review on the social & economic aspects of freshwater fisheries resource exploitation & utilization	
a.		Annotated bibliography of social & anthropological studies of freshwater fisheries & fishing communities
b.		Annotated bibliography on target group approaches in Bangladesh
c.		Annotated bibliography of pond aquaculture in Bangladesh
d.		Annotated bibliography on acts relating to fisheries and institutional study
e.		Annotated bibliography of fish marketing studies in Bangladesh
No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*

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Main socio–economic survey

No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*
5.	Survey–based assessment of the impact of FCD/I projects & related seasonal flood effects on :	
a.	Existing conditions of fishing communities	
(i)		Reports of Landtype & Rapid Appraisals of target communities
(ii)		Preliminary report based on Rapid Appraisals and preliminary data analysis
b.	Social & economic relations in fishing & fish trading households with particular reference to women	
c.	Analysis of recent changes in size, status & structure of fishing communities	
d.	Fisheries income distribution	
(i)		Preliminary report on methodology & algorithms
e.	The role of fish in the rural diet	
(i)		Report on methodology of monitoring of food consumption
No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*

Special studies

No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*
6.	Study & evaluation of target group approaches to fisheries & aquaculture development in Bangladesh	
a.		Report on baseline survey of NGOs working in fisheries in Bangladesh
b.		Report on development approaches followed by NGOs in pond aquaculture
c.		Report on the impact of FCD/I on the extent & level of fish culture technology adoption
d.		Report on a comparative study of risk & investment in pond aquaculture inside & outside FCD/I
No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*
7.	Study of the marketing, infrastructure & institutional constraints on fisheries development in Bangladesh	
a.		Overview of the inland fish marketing system in Bangladesh
b.		Market integration study
c.		Report on a survey of the costs, returns & margins in fish markets in Bangladesh
d.		Report on the management & operation of water regulators in FCD/I schemes
8.	Review of common rights, collective ownership, leasing & other property rights issues with respect to development & management of fisheries & aquaculture in Bangladesh	
a.		Report on historical changes in common rights in fisheries
b.		Report on a survey of jalmahals
No.	*PRINCIPAL OUTPUTS*	*SUBSIDIARY OUTPUTS*

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FAP 17 SOCIO–ECONOMIC COMPONENT

OUTPUT SCHEDULE

No.	PRINCIPLE OUTPUT	SUBSIDIARY OUTPUTS	Jan 1993	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec 1993	Jan 1994	Feb	Mar	Apr	May	Jun
1.		Technical paper : alternative approaches to assessing the socio–economic impacts of changes in fisheries production due to the Flood Action Plan																		
2.		Report on the methodology of the FAP 17 socio–economic study																		
3.	Annotated bibliography & review of nutrition studies in Bangladesh																			
4.	Annotated bibliography & critical review on the social & economic aspects of freshwater fisheries resource exploitation & utilization																			
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(ii)		Preliminary report based on Rapid Appraisals and preliminary data analysis																		
b.	Social & economic relations in fishing & fish trading households with particular reference to women																			
c.	Analysis of recent changes in size, status & structure of fishing communities																			
d.	Fisheries income distribution																			
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(ii)		Report on methodology of monitoring of food consumption																		
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a.		Report on baseline survey of NGOs working in fisheries in Bangladesh																		
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FCD/I SCHEME / OUTSIDE AREA	NEAREST MAJOR WATER–BODY	VILLAGE CATEGORY	INSIDE / OUTSIDE	REGION	VILLAGE CODE	REGIONAL TEAMS
NORTH – CENTRAL						
		Main village	O	NC	1 – 1	*NORTH–CENTRAL*
Ganges Floodplain	Ichamati	Satellite fishing community	O	NC	1 – 2	*REGION*
(Harirampur Thana)	River	Satellite fishing community	O	NC	1 – 3	*REGIONAL SUPERVISOR*
Kaliganga Floodplain	Kaliganga	Main village	O	NC	2 – 1	Bashir Chowdhury
(Ghior Thana)	River	Satellite fishing community	O	NC	2 – 2	*RESEARCH ASSISTANTS*
Gazhikhali		Main village	O	NC	3 – 1	Ms.Sadiqa Akhter
Floodplain	Hajipur	Satellite fishing community	O	NC	3 – 2	Ms.Homaira Tasnim Khan
(Saturia Thana)	Beel	Satellite fishing community	O	NC	3 – 3	Jahurul Kabir
Ganges		Main village	O	NC	4 – 1	Samiul Alam
Floodplain	Diabari	Satellite fishing community	O	NC	4 – 2	Siddiqur Rahman
(Harirampur Thana)	Beel	Satellite fishing community	O	NC	4 – 3	
NORTH–WEST						
Pabna Irrig. Scheme	Gandahasti	Main village	I	NW	1 – 1	*NORTH–WEST REGION*
(Sujanagar Thana)	Beel	Satellite fishing community	I	NW	1 – 2	*REGIONAL SUPERVISOR*
Pabna		Main village	I	NW	2 – 1	Shanti Ranjan Howlader
Irrigation Scheme	Ichamati	Satellite fishing community	I	NW	2 – 2	*RESEARCH ASSISTANTS*
(Santhia Thana)	River	Satellite fishing community	I	NW	2 – 3	Ms.Ferdous Ara
Chalan Beel Polder 'C'	Atrai	Main village	I	NW	3 – 1	Ms.Shirin Sultana
(Gurudaspur Thana)	River	Satellite fishing community	I	NW	3 – 2	Bishwajit Roy
Chalan Beel	Chalan Beel /	Main village	O	NW	4 – 1	Mahabat Ali
(Singra Thana)	Atrai River	Satellite fishing community	O	NW	4 – 2	Tajul Islam
NORTH–EAST						
Manu	Shawajuri	Main village	I	NE	1 – 1	*NORTH–EAST REGION*
Irrigation Project	Haor /	Satellite fishing community	I	NE	1 – 2	*REGIONAL SUPERVISOR*
(Maulvi Bazar Thana)	Manu River	Satellite fishing community	I	NE	1 – 3	Nazrul Islam
		Main village	O	NE	2 – 1	*RESEARCH ASSISTANTS*
Hakaluki Haor	Hakaluki	Satellite fishing community	O	NE	2 – 2	Ms.Mahbuba Shirin
(Kulaura Thana)	Haor	Satellite fishing community	O	NE	2 – 3	Ms.Khaleda Akhter
Shanghair		Main village	I	NE	3 – 1	Atiquzzaman
Haor Project	Mahasingha	Satellite fishing community	I	NE	3 – 2	Abdul Rouf
(Sunamganj Thana)	River	Satellite fishing community	I	NE	3 – 3	Jashim Uddin
	Dekker Haor /	Main village	O	NE	4 – 1	
Dekker Haor	Mahasingha	Satellite fishing community	O	NE	4 – 2	
(Sunamganj Thana)	River	Satellite fishing community	O	NE	4 – 3	
SOUTH–WEST						
Satla – Bagda		Main village	I	SW	1 – 1	*SOUTH–WEST REGION*
Project	Satla–Bagda	Satellite fishing community	I	SW	1 – 2	
(Agailjhara Thana)	Khal	Satellite fishing community	I	SW	1 – 3	*REGIONAL SUPERVISOR*
		Satellite fishing community	I	SW	1 – 4	Yunus Khan
		Main village	O	SW	2 – 1	*RESEARCH ASSISTANTS*
Bagihar Beel	Chagda Beel /	Satellite fishing community	O	SW	2 – 2	Ms.Shameema Akhter
(Kotalipara Thana)	Chitrapara	Satellite fishing community	O	SW	2 – 3	Ms.Rebeka Sharmin
	Beel	Satellite fishing community	O	SW	2 – 4	Sayeduzzaman
Chatla–Fukirhati	Chatla Beel	Main village	I	SW	3 – 1	Shahid Ullah
(Banga Thana)		Satellite fishing community	I	SW	3 – 2	Kartik Chandra Mandal
	Pathankandi	Main village	O	SW	4 – 1	
Pathankandi Beel	Beel /	Satellite fishing community	O	SW	4 – 2	
(Rajoir Thana)	Kumar River	Satellite fishing community	O	SW	4 – 3	

APPENDIX II: SURVEY FORMS
(a) Fisheries
(b) Socio-economic

CATCH ASSESSMENT QUESTIONNAIRE

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Day	Night

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
CA01	NC							

Description of Gears.

Main Gear Code:		Name: Local English	
No: of gears used in sampling site		No. of gears which caught observed catch	

Nets:	No. hauls for this catch.		Total hauls today:			
Traps/hooks	Baited Y / N					
Longline (Daun):	No of lines set:		No of hooks per line (see over)		No of hooks which caught this catch	
Sip/ Barshi	No.of hook/lines in sampling site		No of hooks used		No. of hook/lines caught fish	

Gill net	Setting: Top........T Middle.....M Bottom.....B All settings..A	Setting: Fixed.......F Drifting....D

Mesh Size (mm)	Gear Length (Observe)	Gear Width (Observe)	Fish'man Gear Length	Fish'man Gear Width	Material: Multifilament Monofilament Knotless nylon Other.......	M S K O	Owned by: Self Fishing Unit Outsider....	S U O
E M	E M	E M						

Number of people in fishing unit.

Age 5 - 15				Age 16 - 30				Age 30+			
Male		Female		Male		Female		Male		Female	

Time spent fishing.

What time did you start fishing this place today? (24hr clock)	Date:	
What time will you finish fishing in this place today? (24hr clock)		
How many hours did it take to catch these fish? (Hrs and mins)		
How many days did you fish in the last seven days?		
How many days will you fish in the next seven days?		
Do you fish every month? (Y/N)		
Do you fish at night? (Y/N)		
If Y.. How many nights did you fish last week?		
If Y.. How many nights will you fish next week?		
If Y.. What gear do you use at night?		
If Y.. What time do you finish fishing at night?		

Do you normally (Y/N)	Sell nearly all your catch		Sell half, eat half		Eat nearly all your catch	

Fisherman:

Name		Religion		Fathers name		Code	
Are you Head of your Household? (Y/N)							
How much land is owned by your household excluding the homestead?(State units)							
Village			District				

Do you do any other kind of work at any time of the year? (State Y/N)
If Yes what sort (Show order of importance 1 to 5)?

Farmer		Agricultural Worker		Fish Trader		Other Trader		Job Holder		Student	

Ranking of household income from different sources in order of importance 1 (highest) to 5 (lowest)

Fishing		Farm		Labour		Trade		Other	

2a

Instructions:

Before proceeding check that the fish in front of you were caught in this sampling site. (The boundaries of the site should be known to you).

If this is confirmed you can proceed with the questionnaire.

With reference to fishermans activities questions concerning the numbers of days and night fished are for this gear only and at this site. Other gears are asked about separately.

If number of hooks differ from line to line the AVERAGE should be calculated;

$$\frac{\text{Total hooks}}{\text{Total lines}} \text{ Average}$$

CATCH ASSESSMENT QUESTIONNAIRE (KATHA)

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
CA01A	NC							

Description of Main Gear.

Main Gear Code:	270	Name: Katha/Jakh /Fish aggregation device (FAD)	
No: of Katha in sampling site		No. of Katha which caught observed catch	
Length of Katha (metres)		Width of Katha (metres)	
Material used for Katha Bamboo...Y / N		Bush...Y / N Water Hyacinth .... .% (cover)	
Estimated Depth water (metre)			

Gear used to surround Katha

Name	Code
Length (hat)	
Depth (hat)	
Mesh Size (mm)	
Net material: Multifilament..M Monofilament...S Knotless nylon...K Other.........O	

Gear used to catch fish

Gear Name	Gear Code	Number of gear used

Number of people in fishing unit.

Age 5 - 15				Age 16 - 30				Age 30+			
Male		Female		Male		Female		Male		Female	

Other Information.

Number of boats used				
Is it a Total (T)/Partial (P) Catch ?	T/P		If Partial, give Srl. No. of CA01 of 1st day fishing	
Fishing duration (days): -Number of days from starting to surround Katha to catching all fish				
Date Katha constructed				
Date when last emptied of fish				
Date when Katha will NEXT be emptied of fish				
Number of times Katha emptied this month				

Fisherman:

Name		Religion		Fathers name		Code	
Are you Head of your Household? (Y/N)							
How much land is owned by your household excluding the homestead? (State units)							
Village				District			
Leasing details							
Fish Marketing							

Ranking of household income from different sources in order of importance 1 (highest) to 5 (lowest)									
Fishing		Farm		Labour		Trade		Other	

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CATCH ASSESSMENT QUESTIONNAIRE (KUA)

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
CA01B	NC							

Description of Main Gear.

Main Gear Code:	302	Name: Kua /Fish aggregation device (FAD)	
No: of Kua in sampling site		No. of Kua which caught observed catch	
Length of Kua (metres)		Width of Kua (metres)	
Material used for Kua Bamboo...Y / N		Bush...Y / N Water Hyacinth .... .% (cover)	
Estimated Depth water (metre)			

Gear used to catch fish

Local Gear Name	English Name	Code	Number of gear used

Number of people in fishing unit.

Age 5 - 15				Age 16 - 30				Age 30+			
Male		Female		Male		Female		Male		Female	

Other Information.

Is it a Total (T)/Partial (P) Catch ?	T/P		If Partial, give Srl. No. of CA01 of 1st day fishing	
Date when Kua last fished				
Date when Kua will NEXT be emptied of fish				
Number of times Kua emptied this month				

Owner of Kua:

Name		Religion		Fathers name		Code	
Are you Head of your Household? (Y/N)							
How much land is owned by your household excluding the homestead? (State units)							
Village				District			

Leasing details
Fish Marketing
Any other information

Ranking of household income from different sources in order of importance 1 (highest) to 5 (lowest)									
Fishing		Farm		Labour		Trade		Other	

CATCH ASSESSMENT SURVEY - SAMPLING FORM

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
CA02	NC							

Gear code and Document serial number from CA01	Gear:	Srl No:

Were these fish sent to LAB for	LFA	Y/N	REPRO	Y/N

Scientific name	Species code	Wt gms	Number
TOTAL			

COMMON SPECIES CODES

NC	2	Ailia coila
NC	3	Ailiichthys punctatus
NC	5	Amblypharygodon mola
NC	6	Anabas testudineus
NC	7	Anguilla bengalensis
NC	8	Anodontostma chacunda
NC	9	Aplocheilus panchax
NC	11	Aristichthys nobilis
NC	12	Aspidoparia jaya
NC	13	Aspidoparia morar
NC	15	Badis badis
NC	16	Bagarius bagarius
NC	18	Barilius barna
NC	20	Barilius bola
NC	22	Barilius tileo
NC	24	Batasio batasio
NC	28	Botia dario
NC	29	Botia lohachata
NC	32	Catla catla
NC	33	Chaca chaca
NC	35	Chanda baculis
NC	36	Chanda nama
NC	37	Chanda ranga
NC	39	Channa marulius
NC	40	Channa orientalis
NC	41	Channa punctatus
NC	42	Channa striatus
NC	43	Chela cachius
NC	44	Chela laubuca
NC	47	Cirrhinus mrigala
NC	48	Cirrhinus reba
NC	49	Clarias batrachus
NC	51	Clupisoma garua
NC	54	Coilia ramcarati
NC	55	Colisa fasciatus
NC	56	Colisa lalius
NC	57	Colisa sota
NC	58	Corica soborna
NC	59	Crossocheilus latius
NC	68	Danio devario
NC	75	Esomus danricus
NC	76	Eutropiichthys vacha
NC	77	Gagata cenia
NC	80	Gagata viridescens
NC	81	Gagata youssoufi
NC	83	Glossogobius giurus
NC	86	Gudusia chapra
NC	87	Hara hara
NC	88	Heteropneustes
NC	89	Hilsa ilisha
NC	91	Hypophthalmichthys molitrix
NC	95	Johnius coitor
NC	100	Labeo bata
NC	101	Labeo boga
NC	102	Labeo calbasu
NC	107	Labeo rohita
NC	109	Lepidocephalus beardmorei
NC	110	Lepidocephalus guntea
NC	113	Machrob. birmanicus
NC	119	Macrobrachium malcolmsonii
NC	120	Macrobrachium rosenbergii
NC	121	Macrognathus aculeatus
NC	122	Mastacembelus armatus
NC	123	Mastacembelus pancalus
NC	124	Monopterus cuchia
NC	127	Mugil oligolepis
NC	128	Mugil parsia
NC	130	Mystus aor
NC	131	Mystus bleekeri
NC	132	Mystus cavasius
NC	133	Mystus gulio
NC	134	Mystus menoda
NC	135	Mystus seenghala
NC	136	Mystus tengara
NC	137	Mystus vittatus
NC	138	Nandus nandus
NC	139	Nemacheilus botia
NC	142	Nemacheilus zonatus
NC	144	Notopterus chitala
NC	145	Notopterus notopterus
NC	147	Ompok bimaculatus
NC	148	Ompok pabda
NC	154	Oxygaster gora/Securicula gora
NC	155	Pama pama
NC	156	Pampus argentus
NC	158	Pangasius pangasius
NC	169	Pseudeutropius atherinoides
NC	170	Pseudopacryptes lanceolatus
NC	174	Puntius chola
NC	175	Puntius conchonius
NC	176	Puntius gelius
NC	178	Puntius phutunio
NC	179	Puntius sarana
NC	180	Puntius sophore
NC	181	Puntius terio
NC	182	Rasbora daniconius
NC	184	Rasbora rasbora
NC	185	Rhinomugil corsula
NC	186	Rita rita
NC	187	Rothee cotio
NC	188	Salmostoma bacaila
NC	189	Salmostoma phulo
NC	193	Setipinna phasa
NC	196	Silonia silondia
NC	198	Somileptes gongota
NC	199	Tachysurus gagora
NC	202	Taenioides buchanani
NC	203	Tetraodon cutcutia
NC	207	Trionyx gangeticus
NC	209	Wallagonia attu
NC	210	Xenentodon cancila
NC	211	Colisa labiosus
NC	212	Puntius ticto
Nc	931	Prawn Sp.

CATCH ASSESSMENT SURVEY - SUB SAMPLING FORM

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
CA03	NC							

Gear code and Document serial number from CA01	Gear:	Srl No:

Step 1.

Total weight of Catch in Kg to 2 decimal places. **(A)**	

Step 2. Separate large fish from total catch, group by species, weigh and count.

		Step 2. Individual count		Step 4. Sub-sample count	
Scientific name	Species code	Wt gms	Number	Wt gms	Number

READ INSTRUCTIONS FOR LFA

Was a sub-sample taken or sent to the laboratory for LFA ? (Y/N)	
If "Y" weight of the sub-sample in kg to 2 decimal places	
Was a sub-sample taken or sent to the laboratory for REPRO ? (Y/N)	
Were the lengths of large fish measured ? (Y/N)	

INSTRUCTION FOR IMPROVED LENGTH FREQUENCY ANALYSIS (LFA)

THIS WORK SHOULD BE CARRIED OUT ON CATCHES FROM GEARS:

SEINE NETS = codes 45, 268, 89, 297, 175, 293, 313, 276, 304, 132, 277, 126

LIFT NETS = codes 266, 105, 160, 319

KATHA & KUA = codes 270, 302 & 318

OTHER GEARS = codes 164, 255, 97, 98

Field Biologists : NW, NC and NE regions.

For CAS where whole catch is assessed :-

1. the whole catch OR all of the key species and other common fish species should be sent back to the laboratory for length measurements.

2. if large fish are caught, but the fisherman refuses to sell them, then the lengths of these fish should be measured in the field and recorded on CA04 forms.

3. if the fisherman refuses to sell any fish, then try to persuade the fisherman to allow you to measure all of the key species and other common fish species in the field if time is available.

For CAS where catch is subsampled :-

1. do CAS as usual i.e. weight total catch, separate larger fish and weigh and count and record them individually. Subsample, weigh and count and record as usual.

2. if there are 5 or less large fish, measure lengths individually and record on CA04 forms.

3. if there are more than 5 larger fish, mix these back with the whole catch and take a large subsample for LFA (much larger than the one for CAS). Weigh this LFA subsample and record on CA03 form.

4. send the LFA sample to the laboratory for length measurements.

Field Biologists : Main River Survey.

For CAS where whole catch is assessed :-

1. if the fisherman will sell or allow the catch to be handled, then the lengths of all of the key species and other common fish species should be measured if time is available.

For CAS where catch is subsampled :-

1. do CAS as usual i.e. weight total catch, separate larger fish and weigh and count and record them individually. Subsample, weigh and count and record as usual.

2. if there are 5 or less large fish, measure the lengths of these individually and record on CA04 forms.

3. if there are more than 5 larger fish, mix these back with the whole catch and take a large subsample for LFA (much larger than the one for CAS). Weigh this LFA subsample and record on CA03 form.

4. measure the length of all the key species and other common fish species in the LFA sample and record on separate CA04 forms to the large fish. Be sure to keep all forms from one catch together. If possible measure the lengths of all the fish of the key species and other common fish in the catch.

CATCH ASSESSMENT SURVEY - LENGTH FREQUENCY FORM

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
CA04	NC							

Gear code and Document serial number from CA01	Gear:	Mesh Size		Srl No:

Were the lengths of the large fish of this species measured in field or lab ? Y/N	
Is this a subsample Y/N	

Scientific Name:	Code:

Total length	Standard length	Stage of reproduction	Total length	Standard length	Stage of Reproduction

Number of entries:	

Instructions.

1. Make sure that the details from the preliminary survey form are copied from either original or label on plastic bag.

2. Total the number of entries made on the form when complete.

Sexual Maturity

Resting	RE
Active	AC
Ripe	RI
Ripe Running	RR
Spent	SP

Common Species Codes

NC	2	Ailia coila
NC	3	Ailiichthys punctatus
NC	5	Amblypharygodon mola
NC	6	Anabas testudineus
NC	7	Anguilla bengalensis
NC	8	Anodontostma chacunda
NC	9	Aplocheilus panchax
NC	11	Aristichthys nobilis
NC	12	Aspidoparia jaya
NC	13	Aspidoparia morar
NC	15	Badis badis
NC	16	Bagarius bagarius
NC	18	Barilius barna
NC	20	Barilius bola
NC	22	Barilius tileo
NC	24	Batasio batasio
NC	28	Botia dario
NC	29	Botia lohachata
NC	32	Catla catla
NC	33	Chaca chaca
NC	35	Chanda baculis
NC	36	Chanda nama
NC	37	Chanda ranga
NC	39	Channa marulius
NC	40	Channa orientalis
NC	41	Channa punctatus
NC	42	Channa striatus
NC	43	Chela cachius
NC	44	Chela laubuca
NC	47	Cirrhinus mrigala
NC	48	Cirrhinus reba
NC	49	Clarias batrachus
NC	51	Clupisoma garua
NC	54	Coilia ramcarati
NC	55	Colisa fasciatus
NC	56	Colisa lalius
NC	57	Colisa sota
NC	58	Corica soborna
NC	59	Crossocheilus latius
NC	68	Danio devario
NC	75	Esomus danricus
NC	76	Eutropiichthys vacha
NC	77	Gagata cenia
NC	80	Gagata viridescens
NC	81	Gagata youssoufi
NC	83	Glossogobius giurus
NC	86	Gudusia chapra
NC	87	Hara hara
NC	88	Heteropneustes
NC	89	Hilsa ilisha
NC	91	Hypophthalmichthys molitrix
NC	95	Johnius coitor
NC	100	Labeo bata
NC	101	Labeo boga
NC	102	Labeo calbasu
NC	107	Labeo rohita
NC	109	Lepidocephalus beardmorei
NC	110	Lepidocephalus guntea
NC	113	Machrob. birmanicus
NC	119	Macrobrachium malcolmsonii
NC	120	Macrobrachium rosenbergii
NC	121	Macrognathus aculeatus
NC	122	Mastacembelus armatus
NC	123	Mastacembelus pancalus
NC	124	Monopterus cuchia
NC	127	Mugil oligolepis
NC	128	Mugil parsia
NC	130	Mystus aor
NC	131	Mystus bleekeri
NC	132	Mystus cavasius
NC	133	Mystus gulio
NC	134	Mystus menoda
NC	135	Mystus seenghala
NC	136	Mystus tengara
NC	137	Mystus vittatus
NC	138	Nandus nandus
NC	139	Nemacheilus botia
NC	142	Nemacheilus zonatus
NC	144	Notopterus chitala
NC	145	Notopterus notopterus
NC	147	Ompok bimaculatus
NC	148	Ompok pabda
NC	154	Oxygaster gora/Securicula gora
NC	155	Pama pama
NC	156	Pampus argentus
NC	158	Pangasius pangasius
NC	169	Pseudeutropius atherinoides
NC	170	Pseudopacryptes lanceolatus
NC	174	Puntius chola
NC	175	Puntius conchonius
NC	176	Puntius gelius
NC	178	Puntius phutunio
NC	179	Puntius sarana
NC	180	Puntius sophore
NC	181	Puntius terio
NC	182	Rasbora daniconius
NC	184	Rasbora rasbora
NC	185	Rhinomugil corsula
NC	186	Rita rita
NC	187	Rothee cotio
NC	188	Salmostoma bacaila
NC	189	Salmostoma phulo
NC	193	Setipinna phasa
NC	196	Silonia silondia
NC	198	Somileptes gongota
NC	199	Tachysurus gagora
NC	202	Taenioides buchanani
NC	203	Tetraodon cutcutia
NC	207	Trionyx gangeticus
NC	209	Wallagonia attu
NC	210	Xenentodon cancila
NC	211	Colisa labiosus
NC	212	Puntius ticto
NC	931	Prawn Sp

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FISHING EFFORT QUESTIONNAIRE.

MORNING

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE01	NC							

Gear Type			8.00hrs count		10.00hrs count		12.00hrs count	
	Name	Code		Total		Total		Total
GILLNET	Current jal	88						
	Drifting Monofil Net	282						
	Koi/Fashi/Fashon/Fash	123						
	Chandi jal	65						
	Par,Pangas jal/Fashon	315						
	Kajuli jal/Nagon jal	316						
	Awo jal	324						
SEINE NET	Ber jal/Zagot ber jal	45						
	Baoli	306						
	Moi jal	202						
	Dora jal	325						
	Konaber jal	268						
	Deol/Bandh/Chota badai/lathi	89						
	Horhori	297						
	Kathi jal / Dolna	175						
	Chabi jal	293						
	Hat panch	276						
	Chapra/Uttar jal	68						
	Satiber jal/Gulti jal	304						
	Gai Dasem	132						
	Kachitana	277						
	Ferra jal	126						
BAG	Beon/Thaga/ Konapatan	285						
	Suti jal	271						
	Ghori jal	320						
LIFT	Veshal/Kora jal	266						
	Dharma jal/Sitki	105						
	Jhali jal	160						
	Jhap jal	319						
	Chota jal	323						
SCOOP	Hat Tana/Sukna/Chak	287						
	Ucha	263						
	Tukri	296						
	Afa/Hat bauli	321						
C	Shangla/ Kharki jal	234						

2d

FISHING EFFORT QUESTIONNAIRE. MORNING

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE01	NC							

Gear Type			8.00hrs count		10.00hrs count		12.00hrs count	
	Name	Code		Total		Total		Total
KATHA	Katha jal	270						
	Boat Katha	314						
	Horga/Shorgia	149						
	Kua	302						
	Kotta	318						
TRAPS	Polo	222						
	Darki/Doiar/Chai/Charo/Anta	95						
	Deal/Baire	286						
	Kadum	311						
	Kakila bana	310						
	Kalsi pata	299						
	Char jal	322						
HOOKLINE	Daun	272						
	Sip/Barshi	30						
	Borsa sip/ Nol barsi	278						
	Tana Barshi/ Zomka/Chara	152						
SP	Juti/Koch	170						
OTHERS	Jhaki jal	164						
	Thella jal	255						
	Urani	291						
	Akra	298						
	Chunga	301						
	Thushi/Baim mara	317						
	Hand fishing	307						
	By hand/ Dewatering	97						
	Net/Basket+ Dewatering	98						

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FISHING EFFORT QUESTIONNAIRE. AFTERNOON

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE01	NC							

Gear Type			14.00hrs count		16.00hrs count		18.00hrs count	
	Name	Code		Total		Total		Total
GILLNET	Current jal	88						
	Drifting Monofil Net	282						
	Koi/Fashi/Fashon/Fash	123						
	Chandi jal	65						
	Par,Pangas jal/Fashon	315						
	Kajuli jal/Nagon jal	316						
	Awo jal	324						
SEINE NET	Ber jal/Zagot ber jal	45						
	Baoli	306						
	Moi jal	202						
	Dora jal	325						
	Konaber jal	268						
	Deol/Bandh/Chota badai/lathi	89						
	Horhori	297						
	Kathi jal / Dolna	175						
	Chabi jal	293						
	Hat panch	276						
	Chapra/Uttar jal	68						
	Satiber jal/Gulti jal	304						
	Gai Dasem	132						
	Kachitana	277						
	Ferra jal	126						
BAG	Beon/Thaga/ Konapatan	285						
	Suti jal	271						
	Ghori jal	320						
LIFT	Veshal/Kora jal	266						
	Dharma jal/Sitki	105						
	Jhali jal	160						
	Jhap jal	319						
	Chota jal	323						
SCOOP	Hat Tana/Sukna/Chak	287						
	Ucha	263						
	Tukri	296						
	Afa/Hat bauli	321						
C	Shangla/ Kharki jal	234						

FISHING EFFORT QUESTIONNAIRE. AFTERNOON

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE01	NC							

Gear Type			14.00hrs count		16.00hrs count		18.00hrs count	
	Name	Code		Total		Total		Total
KATHA	Katha jal	270						
	Boat Katha	314						
	Horga/Shorgia	149						
	Kua	302						
	Kotta	318						
TRAPS	Polo	222						
	Darki/Doiar/Chai/Charo/Anta	95						
	Deal/Baire	286						
	Kadum	311						
	Kakila bana	310						
	Kalsi pata	299						
	Char jal	322						
HOOKLINE	Daun	272						
	Sip/Barshi	30						
	Borsa sip/ Nol barsi	278						
	Tana Barshi/ Zomka/Chara	152						
SP	Juti/Koch	170						
OTHERS	Jhaki jal	164						
	Thella jal	255						
	Urani	291						
	Akra	298						
	Chunga	301						
	Thushi/Baim mara	317						
	Hand fishing	307						
	By hand/ Dewatering	97						
	Net/Basket+ Dewatering	98						

FISHING EFFORT QUESTIONNAIRE (M L OTTER)

Ref No.	Site No	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE01(A)								

Gear Type		Survey Times:	From:		Form:		Form:	
			To:		To:		To:	
	Name	Code		Total		Total		Total
GILLNET	Current jal	88						
	Drifting Monofil Net	282						
	Koi/Fashi/Fashon/Fash	123						
	Chandi jal	65						
	Par,Pangas jal/Fashon	315						
	Kajuli jal/Nagon jal	316						
	Awo jal	324						
SEINE NET	Ber jal/Zagot ber jal	45						
	Baoli	306						
	Moi jal	202						
	Dora jal	325						
	Konaber jal	268						
	Deol/Bandh/Chota badai/lathi	89						
	Horhori	297						
	Kathi jal/Dolna	175						
	Chabi jal	293						
	Hat panch	276						
	Chapra/Uttar jal	68						
	Satiber jal/Gulti jal	304						
	Gai Dasem	132						
	Kachitana	277						
	Ferra jal	126						
BAG	Beon/Thaga/ Konapatan	285						
	Suti jal	271						
	Ghori jal	320						
LIFT	Veshal/Kora jal	266						
	Dharma jal/Sitki	105						
	Jhali jal	160						
	Jhap jal	319						
	Chota jal	323						
SCOOP	Hat Tana/Sukna/Chak	287						
	Ucha	263						
	Tukri	296						
	Afa/Hat bauli	321						
C	Shangla/ Kharki jal	234						

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FISHING EFFORT QUESTIONNAIRE (M L OTTER)

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE01(A)								

Gear Type			First count		Second count		Third count	
	Name	Code		Total		Total		Total
KATHA	Katha jal	270						
	Boat Katha	314						
	Horga/Shorgia	149						
	Kua	302						
	Kotta	318						
TRAPS	Polo	222						
	Darki/Doiar/Chai/Charo/Anta	95						
	Deal/Baire	286						
	Kadum	311						
	Kakila bana	310						
	Kalsi pata	299						
	Char jal	322						
HOOKLINE	Daun	272						
	Sip/Barshi	30						
	Borsa sip/ Nol barsi	278						
	Tana Barshi/ Zomka/Chara	152						
SP	Juti/Koch	170						
OTHERS	Jhaki jal	164						
	Thella jal	255						
	Urani	291						
	Akra	298						
	Chunga	301						
	Thushi/Baim mara	317						
	Hand fishing	307						
	By hand/ Dewatering	97						
	Net/Basket+ Dewatering	98						

FISHING EFFORT QUESTIONNAIRE - PRELIMINARY SURVEY.

GD

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE02	NC							

Gear Type			Gear 1					Gear 2					Gear 3				
	Name	Code	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
GILLNET	Current jal	88															
	Drifting Monofil Net	282															
	Koi/Fashi/ Fashon/Fash	123															
	Chandi jal	65															
	Par,Pangas jal/Fashon	315															
	Kajuli jal/Nagon jal	316															
	Awo jal	324															
SEINE NET	Ber jal/Zagot ber jal	45															
	Baoli	306															
	Moi jal	202															
	Dora jal	325															
	Konaber jal	268															
	Deol/Bandh/Chota badai/lathi	89															
	Horhori	297															
	Kathi jal/Dolna	175															
	Chabi jal	293															
	Hat panch	276															
	Chapra/Uttar jal	68															
	Satiber jal/Gulti jal	304															
	Gai Dasem	132															
	Kachitana	277															
	Ferra jal	126															
BAG	Beon/Thaga/ Konapatan	285															
	Suti jal	271															
	Ghori jal	320															
LIFT	Veshal/Kora jal	266															
	Dharma jal/Sitki	105															
	Jhali jal	160															
	Jhap jal	319															
	Chota jal	323															
SCOOP	Hat Tana/Sukna/Chak	287															
	Ucha	263															
	Tukri	296															
	Afa/Hat bauli	321															
C	Shangla/ Kharki jal	234															

FISHING EFFORT QUESTIONNAIRE - PRELIMINARY SURVEY.

Ref No.	Site No.	Locn	Date.	Recorder 1	Code 1	Recorder 2	Code 2	Tot G
FE02	NC							

Gear Type			Gear 1					Gear 2					Gear 3				
	Name	Code	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
KATHA	Katha jal	270															
	Boat Katha	314															
	Horga/Shorgia	149															
	Kua	302															
	Kotta	318															
TRAPS	Polo	222															
	Darki/Doiar/Chai/Charo/Anta	95															
	Deal/Baire	286															
	Kadum	311															
	Kakila bana	310															
	Kalsi pata	299															
	Char jal	322															
HOOKLINE	Daun	272															
	Sip/Barshi	30															
	Borsa sip/ Nol barsi	278															
	Tana Barshi/ Zomka/Chara	152															
SP	Juti/Koch	170															
OTHERS	Jhaki jal	164															
	Thella jal	255															
	Urani	291															
	Akra	298															
	Chunga	301															
	Thushi/Baim mara	317															
	Hand fishing	307															
	By hand/ Dewatering	97															
	Net/Basket+ Dewatering	98															

Instructions for completion.

1.	Select 3 to 6 separate units of each type of gear operating.	
2.	Question A.	How many **hours** will you fish at this site today?
3.	Question B.	How many days did you fish at this site during the previous seven days?
4.	Question C.	How many days will you fish at this site during the next seven days?
5.	Question D.	Do you fish at night at this site? If **Yes**, enter the number of nights fished during the last seven days.
6.	Question E.	How many nights will you fish at this site during the next seven nights?

GEAR SURVEY CARRIED OUT DURING CAS.

Ref No.	Site No.	Locn	Date	Recorder 1	Code 1	Recorder 2	Code 2
FE03	NC						

Survey Number	Start time	End time

Observation time	Location code	Gear name	Gear code	No. of active gears	No. of inactive gears

Total number of observations:	

Comments

DISEASE OCCURRENCE REPORT

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
DE01								

Gearcode		Whole catch or Subsample W/S		Total weight of subsample or whole catch	

Description

Fish species	No of fish	No infected	% infection	Severity of infection

Comments

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INFORMATION AND FIELD REPORT
(for preparation of site maps in comparing sites).

Give each site a unique number

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
FR01	NC							

Description

1. Approximate distance from field station and main town in miles and hours. Include local Village/Thana/District	
2. Ease of approach. Road conditions etc.	
3. Method of approach car/boat/foot.	
4. Type of habitat(s) and size of site available.	
5. Direction of current.	
6. Connections to other water bodies. Names of adjacent rivers, beels, haors, floodplain areas.	
7. Signs of height of flooding - rust marks, water marks, local knowledge.	
8. Describe fishing activity - see overleaf for gears.	
9. Nearest fish market, DOF office and local FRSS village when known.	
10. Licencing arrangements and controlling authority/ person	
11. Local stocking programs.	
12. Type of fishermen: Commercial/Subsistence Men/Women/Children.	
13. What months of the year is fishing possible.	
14. Employment opportunity when fishing not possible.	
15. List similar sites visited.	
16. List any books or maps used in researching this site.	
17. State map coordinates if any available.	

FISHING INFORMATION CHART

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
FR02	NC							

Gear Usage (tick boxes to indicate activity)

Names of Gears	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Names of people contacted:
(Fishermen/Boatmen/Village Headmen)

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GEAR DESCRIPTION FORM

Ref.	Site	Locn	Date.	Time (24hr)	Recorder 1	Code 1	Recorder 2	Code 2
GE01	NC							

FAP 17 code (leave blank if not known)	
District	
Habitat	MO MS MB SO SB KD PF BE
Bengali Name	
English Name	
Description of use	
Group code (if known)	
Size of net/trap **include units**	Length Width
Size of mesh if applicable (mm)	
Main material used	S M C K B O
Depth of water (metres)	
No. of people in fishing unit	
Number of boats used	
Type of boat(s) used	
Used night or day or both.	Night Day Both
Species of fish caught (use FAP 17 codes)	

Attach sketch or photo

Code descriptions overleaf:

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District codes:

Tangail	95
Pabna	70
Faridpur	40
Jessore	45
Comilla	25
Noakhali	65
Rajshahi	80

Habitat codes:

Main river	open channel	MO
	shallow char	MS
	mainland bank	MB
Secondary river	open channel	SO
	secondary bank	SB
Khal/canal/Ditch		KD
Paddy/floodplain		PF
Beel		BE

Material codes:

Monofilament	S
Multifilament	M
Cotton	C
Knotless nylon	K
Bamboo	B
Other	O

Type of boat:

02

COUNT OF NIGHT FISHING GEARS

Ref. No.	Site No.	Locn.	Date	Recorder 1	Code 1	Recorder 2	Code 2
NF01	NC						

Start time	End time

Gear Name	Gear code	No of Gears			
		Sampled	Observed	Reported	Total

Total number of observations:	

Comments

SAVAR SURVEY

Ref.	Site	Locn	Recorder 1	Code 1	Recorder 2	Code 2	Tot records
SA01	NC						

Date	Time net lifted	Length of time in water	Posn in set	Species	Code	No.	Remarks

DAILY SAVAR SURVEY 1993

Ref.	Site code	Date	Recorder 1	Code 1	Recorder 2	Code 2	Tot records
SA02							

Serial No.

Net code number	Time net set	Time net lifted	Length of time in water	Current Speed				Distance from net top to water surface (cm)	Water level (BWDB)	Direction of flow	Sample preserved labelled? (Y/N)	Nos bottles used for sample
				Distance measured (m)	Time taken (sec)	Number of Revs	Time taken (sec)					

Sluice Gate/Pumphouse Operation:

Time	Water level (m)		Gates/Pumps open							
	Inside	Outside	1	2	3	4	5	6	7	8

Note: For direction of water flow use Code: 1. from river to floodplain.
2. from floodplain to river.

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SAVAR SURVEY: NORTH EAST REGION

Ref.	Site	Date	Recorder 1	Code 1	Recorder 2	Code 2	Tot records
SA04	NES						

Note 1 Samples to be analysed & results presented in chronological order for each net.

Note 2 If no hatchlings present, the data should still be entered with zero catch.

Serial no.	Net code	Time net set	Time net lifted	Species	Code	No.	Remarks

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RECEIPT OF SAVAR SAMPLES FROM NER

Ref.
SA05

The following samples were received at Tangail field station
details given below for each sample

Date handed in to Tangail Field Station		Received by	

Site Code	Date	Serial No.	Net Code No.	Bottle No.	Time		Comments
					Set	Lifted	

Signature of SFS

SITE DESCRIPTION AND WATER QUALITY

Ref.	Site	Location	Date.	Recorder 1	Code 1	Recorder 2	Code 2
SD01	NC						

Details

Section code			
Habitat code			
Type of Vegetation			
% Cover			
Water depth (m)			
Width (metres)			

Water Quality samples	1	2	3	1	2	3	1	2	3
Time measured									
DO % sat.									
DO mg/litre									
Conductivity									
TDS									
pH									
Water colour									
Secchi Disc (m)									
Temperature °C									

Section code			
Habitat code			
Type of Vegetation			
% Cover			
Water depth (m)			
Width (metres)			

Water Quality samples	1	2	3	1	2	3	1	2	3
Time measured									
DO % sat.									
DO mg/litre									
Conductivity									
TDS									
pH									
Water colour									
Secchi Disc (m)									
Temperature °C									

List of Habitats:

MO	Main Channel open water
MS	Main river shallow char
MB	Main river mainland bank
SO	Secondary river open channel
SB	Secondary river bank
KD	Khal/Canal/Ditch
PF	Paddy / Floodplain
BE	Beal

List of vegetation;

01	Indurkani	Wolffia Arrhiza
02	Kachuri Pana	Ecchornia Crassipes
03	Khudi Pana	Lemna Major
04	Khudi pana	Lemna Minor
05	Kuti pana	Azolla Pinnata
06	Musakai Pana/Ulkipana	Salvinia Natans
07	Topa pana	Pistia Stratiotes
08	Shapla	Nymphaea lotus
09	Susni Sak	Marisilea quadrifolia
10	Cadoladoi /moladoi	Ceratophyllum Demersum
11	Keorali	Potamogeton crispus
12	Najas	Najas sp
13	Pani morich	Vallisneria Americana
14	Pani Shaibal	Utricularia sp
15	Arail	Leersia Hexandra
16	Bis Kalali	Polygonium hydropiper
17	Malancha	
18	Shalook	Sagittaria sp
19	Kasordam	Jussicea repens
20	Halencha	Enhydra Fluctuans
21	Kalmilata	Ipomaea Reptans

Water Colours

01	Green	Phytoplankton present
02	Dark Green	Phytoplankton vety abundant or bloom
03	Brown	Inorganic suspended solids
04	Dark brown	Humic acids, Decomposing Vegetation, Jute Retting
05	Grey	Inorganic Suspended solids
06	Red	Red phytoplankton
07	Clear	Little phytoplankton or solids

Section Code

01 ....

02 ....

03 ....

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DAILY SITE WEATHER REPORT

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
SD02	NC							

Raining?	Start time	End time	Type
Type: Light L Medium M Heavy H No rain N			

Windy?	Start time	End time	Type
Type Light L Strong S No wind N			

Waves?	Start time	End time	Type
Type Large L Small S No waves N			

Cloudy?	Start time	End time	Type
Type Sunny S Partly Cloudy P Cloudy C No clouds N			

DAILY SITE WEATHER REPORT

Ref.	Site	Locn	Date.	Time(24hr)	Recorder 1	Code 1	Recorder 2	Code 2
SD02	NC							

Raining?	Start time	End time	Type
Type: Light L Medium M Heavy H No rain N			

Windy?	Start time	End time	Type
Type Light L Strong S No wind N			

Waves?	Start time	End time	Type
Type Large L Small S No waves N			

Cloudy?	Start time	End time	Type
Type Sunny S Partly Cloudy P Cloudy C No clouds N			

PROPOSED FORM FOR SAVAR/HATCHLING STUDY
INFORMATION ON ENVIRONMENTAL CHANGES SINCE LAST SURVEY

REF.	REGION	SITE	LOCN	DATE	TIME	REC-1	CODE	REC-2	CODE	
SS03	NE									

1. **How many days it rained**
   :

2. **Water Level increased or decreased**
   :

3. **Sluice Gate/Pump House open or close**
   :

4. **Difference of water level inside & outside**
   :

5. **Direction of current & current type: strong, slow etc.**
   :

6. **Information of Spawning/Breeding/Migration**
   :

7. **Hatchlings Major fish groups observed today in the Savar sample**
   :

8. **Any other comments/significant changes if any**
   :

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Ref No	Site	Month	Year
FES/CAS10a	NC		

Gear Type	Name	Code	SURVEY 1 FES DATE	SURVEY 1 CAS DATE	SURVEY 2 FES DATE	SURVEY 2 CAS DATE	COMMENTS
			Seen Y/N	How many sampled	Seen Y/N	How many sampled	
G	Current jal	88					
I	Drifting Monofilament Net	282					
L	Koi/Fashi jal/Fashon/Fash	123					
N	Chandi jal	65					
E	Par jal/Pangas jal/Fashon	315					
T	Kajuli jal/Nagon jal	316					
	Awo jal	324					
S	Ber jal/Zagot ber jal	45					
	Baoli	306					
E	Moi jal	202					
	Dora jal	325					
I	Konaber jal	268					
N	Deol/Bandh/Chota badai/lat	89					
E	Horhori	297					
	Kathi jal/Dolna	175					
N	Chabi jal	293					
E	Hat panch	276					
T	Chapra/Uttar jal	68					
	Satiberjal/Gulti jal	304					
	Gai Dasem	132					
	Kachitana	277					
	Ferra jal	126					
B	Beon jal/Thaga/Konapatan	285					
A	Suti jal	271					
G	Ghori jal	320					
L	Veshal/Kora jal	266					
I	Dharma jal/Sitki/Chak toap	105					
F	Jhali jal	160					
T	Jhap jal	319					
	Chota jal	323					
S	Hat Tana/Sukna/Chak jal	287					
C	Ucha	263					
O	Tukri	296					
P	Afa/Hat buali	321					

Ref No	Site	Month	Year
FES/CAS10a	NC		

Gear Type	Name	Code	SURVEY 1 FES DATE / Seen Y/N	SURVEY 1 CAS DATE / How many sampled	SURVEY 2 FES DATE / Seen Y/N	SURVEY 2 CAS DATE / How many sampled	COMMENTS
CLP	Shangla jal/Kharki jal	234					
K	Katha jal	270					
A	Boat Katha	314					
T	Horga/Shorgia	149					
H	Kua	302					
A	Kotta	318					
T	Polo	222					
R	Darki/Doiar/Chai/Charo/Ant	95					
A	Deal/Baire	286					
P	Kadum	311					
S	Kakila bana	310					
	Kalsi pata	299					
	Char jal	322					
HO-	Daun	272					
OK/	Sip/Barshi	30					
LI-	Borsa sip/Nol barsi	278					
NES	Tana Barshi/Zomka/Chara	152					
SPR	Juti/Koch	170					
O	Jhaki jal	164					
T	Thella jal	255					
H	Urani	291					
E	Akra	298					
R	Chunga	301					
S	Thushi/Baim mara	317					
	Hand fishing	307					
	By hand/Dewatering	97					
	Net/Basket+Dewatering	98					

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Ref No	Site	Month	Year
FES/CAS10b	NC		

Gear Type	Name	Code	SURVEY 1 + SURVEY 2 FES DATE	CAS DATE	COMMENTS
			Seen Y/N	How many sampled	
G	Current jal	88			
I	Drifting Monofilament Net	282			
L	Koi/Fashi jal/Fashon/Fash	123			
N	Chandi jal	65			
E	Par jal/Pangas jal/Fashon	315			
	Kajuli jal/Nagon jal	316			
T	Awo jal	324			
S	Ber jal/Zagot ber jal	45			
	Baoli	306			
E	Moi jal	202			
	Dora jal	325			
I	Konaber jal	268			
N	Deol/Bandh/Chota badai/lat	89			
E	Horhori	297			
	Kathi jal/Dolna	175			
N	Chabi jal	293			
E	Hat panch	276			
T	Chapra/Uttar jal	68			
	Satiberjal/Gulti jal	304			
	Gai Dasem	132			
	Kachitana	277			
	Ferra jal	126			
B	Beon jal/Thaga/Konapatan	285			
A	Suti jal	271			
G	Ghori jal	320			
L	Veshal/Kora jal	266			
I	Dharma jal/Sitki/Chak toap	105			
F	Jhali jal	160			
T	Jhap jal	319			
	Chota jal	323			
S	Hat Tana/Sukna/Chak jal	287			
C	Ucha	263			
O	Tukri	296			
P	Afa/Hat bauli	321			

Ref No	Site	Month	Year
FES/CAS10b	NC		

Gear Type	Name	Code	SURVEY 1 + SURVEY 2 FES DATE	CAS DATE	COMMENTS
			Seen Y/N	How many sampled	
CLP	Shangla jal/Kharki jal	234			
K	Katha jal	270			
A	Boat Katha	314			
T	Horga/Shorgia	149			
H	Kua	302			
A	Kotta	318			
T	Polo	222			
R	Darki/Doiar/Chai/Charo/Ant	95			
A	Deal/Baire	286			
P	Kadum	311			
S	Kakila bana	310			
	Kalsi pata	299			
	Char jal	322			
HO-	Daun	272			
OK/	Sip/Barshi	30			
LI-	Borsa sip/Nol barsi	278			
NES	Tana Barshi/Zomka/Chara	152			
SPR	Juti/Koch	170			
O	Jhaki jal	164			
T	Thella jal	255			
H	Urani	291			
E	Akra	298			
R	Chunga	301			
S	Thushi/Baim mara	317			
	Hand fishing	307			
	By hand/Dewatering	97			
	Net/Basket+Dewatering	98			

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Monitoring of Daily Field Documents: CAS and FES

Ref No	Region	Date	Site	Recorder
MF01	NC			

Completed Forms Collected by SFS

CA01		Number of Forms Completed	
1		CA01A	
2		CA01B	
3		CA02	
4		CA03	
5		CA04	
6		DE01	
7		FE01	
8		FE02	
9		FE03	
10		FES/CAS10a	
11		FES/CAS10b	
12		FR01	
13		FR02	
14		GE01	
15		SD01	
16		SD02	
17			
18			
19			
20			

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Data Entry Check

Date		Recorder	

Form Checked	CA01

% Selection per batch	e.g. 10%

No of forms checked	

Form	No of fields checked	No errors	% Errors	Field errors made	dBase corrected Y/N

Summary of Kua Fishing at FAP 17 Sampling Sites

Region:		Year:	

Site Code	Month	Number of Kua			Total no of times Kua fished	Total no Kua on site
		Fished Once	Fished twice	Fished 3rd		

Q8

BLOCK No. ....
VILLAGE SAMPLE No. ....

FAP 17

VILLAGE LAND TYPE APPRAISAL

VILLAGE : ....

MAUZA : ....

UNION : ....

THANA : ....

CROPPING CALENDAR

Village : ______________________ Union : ______________________

Mauza : ______________________ Thana : ______________________

MNTH.	Apr / Baishak	May / Joisthya	Jun / Ashar	Jul / Sraban	Aug / Bhadra	Sep / Ashwin	Oct / Kartik	Nov / Augra	Dec / Poush	Jan / Magh	Feb / Falgoon	Mar / Choytra	Apr
OBSV.													
1.													
2.													
3.													
MNTH.	Baishak	Joisthya	Ashar	Sraban	Bhadra	Ashwin	Kartik	Augra	Poush	Magh	Falgoon	Choytra	
4.													
5.													
6.													
MNTH.	Baishak	Joisthya	Ashar	Sraban	Bhadra	Ashwin	Kartik	Augra	Poush	Magh	Falgoon	Choytra	
7.													
8.													
9.													

TRANSECT

Village : ______________________ **Union :** ______________________

Mauza : ______________________ **Thana :** ______________________

		LAND TYPE		FLOODING				CROPPING PATTERN	IRRIG.	% of village area	LAND TYPE
		Farmer's category		Source	Duration of flood	Timing of flood					Standard category
Obs.		Flood depth	Land type			start	receeds				Land type
1	Now										
	Before										
2	Now										
	Before										
3	Now										
	Before										
4	Now										
	Before										
5	Now										
	Before										
6	Now										
	Before										

Flood timing codes : give code for Bengali month (as below) + week number (1–4)

Baishak =1	Sraban = 4	Kartik = 7	Magh = 10
Joisthya = 2	Bhadra = 5	Augra = 8	Falgoon = 11
Ashar = 3	Ashwin = 6	Poush = 9	Choytra = 12

Irrigation : 1 = Yes : 2 = No

Crop abbreviations :

A = Aus	BH = HYV Boro	MAA = Mixed Aus & Amon	V= Vegetables
DWR = Local Amon	TA = Transplanted Amon	S = Sugarcane	J = Jute
BL = Local Boro	R abi	V = Vegetables	G = Grazing

VILLAGE TRANSECT REVIEW

Village : ______________________ Union : ______________________

Mauza : ______________________ Thana : ______________________

DIAGRAMME of VILLAGE TRANSECT	
LAND TYPE	
% of LAND TYPE (in total village)	
FLOODING DEPTH	
SOURCE of FLOOD	
DURATION of FLOOD	
TIMING of FLOOD	
CROPPING PATTERN	

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HISTORICAL TRANSECT REVIEW

Village : ______________________ Union : ______________________

Mauza : ______________________ Thana : ______________________

No. of years ago :

LAND TYPE	
% of LAND TYPE (in total village)	
FLOODING DEPTH	
SOURCE of FLOOD	
DURATION of FLOOD	
TIMING of FLOOD	
CROPPING PATTERN	

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IRRIGATION

Village : ______________ Union : ______________
Mauza : ______________ Thana : ______________

Irrigation equipment	EQUIPMENT (Boro season '92)		AREA IRRIGATED			
			Total area irrigated	Equipment located inside village/mauza		Equipment located outside
	Nos. installed	Nos. not operating	inside village/mauza (acres)	Area irrigated inside village/mauza (acres)	Area irrigated outside village/mauza (acres)	Area irrigated inside village/mauza (acres)
DTW						
STW						
LLP						

PONDS

PUKUR		GATHA, PAGAR or other water bodies
cultured (nos)	uncultured (nos)	(names + nos)

LABOUR & NGO ACTIVITY

Village : ____________ Union : ____________

Mauza : ____________ Thana : ____________

NGO ACTIVITY

POPULATION

No. of households	Total population	Total voters

NGOs

Sl No.	Name of NGO	Nos. of Groups	Total Members	Activities	Comments

LABOUR OPPORTUNITIES

LANDLESS HOUSEHOLDS

Total landless H/H	Absolute landless	Less than 0.5 acres

LABOUR OPPORTUNITIES

Job description	Nos. of landless H/H involved				% of landless households involved in migrant labour
	Inside village		Outside village		
	Agri.	Non-agri.	Agri.	Non-agri.	

NOTES / REMARKS

FAP 17 VILLAGE CENSUS

INSIDE / OUTSIDE	REGION	VILLAGE CODE	RA CODE	CENSUS FORM NO.	PAGE NO.
O	NC	1 – 1			1

Village : JIKHUTIA MADDHYAPARA | Mauza : JIKHUTIA | Union : BALLA | Thana : HARIRAMPUR

HH SL No. RA Initial	No.	HOUSEHOLD HEAD Name	Father's/husband's name	Subs. Code	Age (years)	Sex (code)	Educ. (years)	No. of H/H Members	No. of income earning H/H members	MAIN OCCUPATIONS H/H head occupation (code)	Ranking of household income from different sources Farm.	Fishing	Labour	Trade	Other	Months Fishing (nos)	LAND OWNED Cultiv. land (dec)	Home stead (dec)	Orch-ard (dec)	Pond/ Ditch (dec)	Non-cultiv. (dec)	Total (dec)	Fishing gear owned ?	Boat owned ?
	1																							
	2																							
	3																							
	4																							
	5																							
	6																							
	7																							
	8																							
	9																							
	0																							
	1																							
	2																							
	3																							
	4																							
	5																							
	6																							
	7																							
	8																							
	9																							
	0																							
				(1)		(2)		(3)		(4)				(5)		(6)					(7)		(8)	

Office Use Only	
Data Entry Date / / 93	Data Entry Operator :

FAP 17 VILLAGE CENSUS

INSIDE / OUTSIDE	REGION	VILLAGE CODE	RA CODE	CENSUS FORM NO.	PAGE NO.
O	NC	1 – 1			2

FISHING GEAR OWNED

HH SL No.		Local	English name	Gear	Amount of gear owned			Bought (1)	Age	Total Replacement	Own cash (1)
RA In.	No.	Bengali name	(category)	Code	nos.	amount	unit	or Made (2)	(Months)	Price	or Credit (2)

FAP 17 VILLAGE CENSUS

INSIDE / OUTSIDE	REGION	VILLAGE CODE	RA CODE	CENSUS FORM NO.	PAGE NO.
O	NC	1 – 1			3

BOATS OWNED

HH SL No. RA In.	HH SL No. No.	Local Bengali name	English name (category)	Boat code	Owner-ship (%)	Bought (1) or made (2)	Age (months)	Total Replace-ment Cost (Tk.)	Own cash (1) or Credit (2)	Exclusively for fishing (Yes = 1 : No = 2)

FAP 17 VILLAGE CENSUS

INSIDE / OUTSIDE	REGION	VILLAGE CODE	RA CODE	CENSUS FORM NO.	PAGE NO.
O	NC	1 – 1			4

POND/DITCH OWNERSHIP * (One line for each pond)										
HH SL No.		Pond (P) or Ditch (D)	Area (dec)	Distance from house (m)	Owned %	Seasonal (1) or Perennial (2)	Flooded during :			Cultured (Yes = 1) (No = 2)
RA Init.	No.						High Flood	Normal Flood	Low Flood	

(12) (13) (14)

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FAP 17 SOCIO-ECONOMIC SURVEY

HOUSEHOLD BASELINE SURVEY

REGION	VILLAGE CODE	H/H CODE

FAP 17 SOCIO–ECONOMIC SURVEY
HOUSEHOLD BASELINE SURVEY

Region	Village Code	RA Initial	H/H Serial No.
	–		79

BASELINE SURVEY FORM 1

HOUSEHOLD INFORMATION

Name of H/H head	Name of Father

H/H Member Serial Numbers	Rel.to H/H Head (Code)	Names of H/H Members	Age (Years)	Sex (Code)	Education Years Complete	Dependency (Code)

HOUSEHOLD MIGRATION

Have you always lived here ? [ ] 1 – Yes 2 – No

If no :

When did you arrive ? (year)	Where did you arrive from ? (thana)

Reasons for moving (Ranked)		Reasons for coming here (Ranked)	
River erosion		Seeking land	
Flooding		Seeking employment	
Other natural calamity		Joining relatives	
Loss of land		Shelter from flooding	
Loss of job		Other :	
Lack of space on H/S			
Other :			

FAP 17 SOCIO-ECONOMIC SURVEY
HOUSEHOLD BASELINE SURVEY

Region	Village Code	RA Initial	H/H Serial Number
			৬৭

BASELINE SURVEY FORM 2

LAND/WATER BODIES OWNED & OPERATED

Plot (no)	Area (dec)	Tenure Status (code)	Dist. from H/H (minutes)	Flood Depth Now (feet)	Land Type Now (code)	CROPS LAST YEAR (by season) AUS Crop (abbr.)	AMAN Crop (abbr.)	RABI Crop (abbr.)	BORO Crop (abbr.)	H/S & Orchard (abbr.)	Irrigation (code)	NOTES

FAP 17 SOCIO-ECONOMIC SURVEY
HOUSEHOLD BASELINE SURVEY

Region	Village Code	RA Initial	H/H Serial Number
	–		

BASELINE SURVEY FORM 3

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HOUSING

NO. of ROOMS	OWNER-SHIP	CONSTRUCTION TYPE

Walls \ Roof	Brick	Tin	Thatch	Leaf
Brick		2	3	4
Tin / Wood		5	6	7
Mud		8	9	10
Bamboo/Jute/Leaf		11	12	13

AGRICULTURAL & HOUSEHOLD ASSETS

AGRICULTURE TOOLS	Nos.	Ownership (Code)
PLOUGH		
LADDER		
COMB		
WEEDER		
POWER TILLER		
THRESHER		

IRRIGATION EQUIPMENT	Nos.	Ownership (Code)
DTW		
STW		
LLP		
MANUAL PUMPS		
SMALL INDUSTRY & ARTISANAL EQUIPMENT		
SEWING MACH.		
LOOM		
POTTERY OVEN		
WORKSHOP		
SHOP		
RICE MILL		
DHEKI		

TRANSPORT	Nos.	Ownership (Code)
BICYCLE		
MOTORBIKE		
CART		
RICKSHAW		
PUSHVAN		
RICKSHAW VAN		
HOUSEHOLD GOODS		
RADIO		
CLOCK		
WATCH		

LIVESTOCK

TYPE OF LIVESTOCK	Nos. Owned	Value Tk.	Ownership (Code)	Nos. Shared In
BULLOCK				
OX				
COW				
CALF				
BUFFALO – MALE				
BUFFALO – FEMALE				
BUFFALO – CALF				
GOAT				
SHEEP				
CHICKENS				
DUCKS				

POVERTY INDICATORS

CLOTHING

H/H Members SL.Nos.	Lungis	Saris	Winter Clothes

DEFICIT PERIODS

FOOD DEFICIT MONTHS						TOTAL
From	To	From	To	From	To	

	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April
	Baishak	Joisthya	Ashar	Sraban	Bhadra	Ashwin	Kartik	Augra	Poush	Magh	Falgoon	Choytra	
FOOD DEFICIT MONTHS													

FAP 17 SOCIO-ECONOMIC SURVEY
HOUSEHOLD BASELINE SURVEY

Region	Village Code	RA Initial	H/H Serial Number
	–		70

BASELINE SURVEY FORM 4

HOUSEHOLD ENTERPRISES

H/H Ent. SL. No.	Enterprise Code	Enterprise Description	Months active Codes						H/H Members Involved (use H/H Member SL.Nos.from Page 1)						NOTES
			from	to	from	to	from	to							

FAP 17 SOCIO-ECONOMIC SURVEY
NON-FISHERIES INCOME & EXPENDITURE SAVING AC ITY

MONITORING FORM 1

Region	Village Code	H/H Code
	-	

MONTH CODE :

MONTH NAME :

											NET INCOME					LABOUR			
							Week Nos.							Stocks		Family			
Date	RA Initial	H/H Ent/Act. SL.No.	Ent/ Activity Code	Enterprise Description	H/H Members Involved SL.Nos.	Location Code	1	2	3	4	Cash Income Tk.	Type of Non-Cash Income Code	Non-Cash Income Tk.	Amount	Units	M MDays	F MDays	C MDays	Hired MDays
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FAP 17 SOCIO-ECONOMIC SURVEY
FISHERIES ENTERPRISES

MONITORING FORM 2

Region	Village Code	H/H Code	H/H Ent./Act. SL.No.
	–		

Fishing Enterprise Code	FE
Fishing Enterprise Type	

						Fishing Activity				Money In							Money Out				Labour			
		Month																			Family			
Date	RA Initial	(Bangla)	Week	Activity (Description)	H/H Mem.Inv. SL.Nos.	Water body Code	Dist-ance Code	Access Code	Water Status Code	Cash Income Tk.	Type Code	Credit In Tk.	Type Code	Source Code	NonCash Income Code	Non-Cash Income Tk.	Cash Exp. Tk.	Access Payment Tk.	Credit Repay. Tk.	Type Code	M MDays	F MDays	C MDays	Hired MDays
/ /																								
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FAP 17 SOCIO–ECONOMIC SURVEY
FISH TRADING ENTERPRISE

MONITORING FORM 3

Region	Village Code	H/H Code	H/H Ent.No.
	–		

Enterprise Code	FT
Enterprise Type	

						Fish In							Fish Out								Credit Out	
Date of Interview	RA Initial	Month (Bangla)	Week	Activity	H/H mem involved Code	Source Code	Dist–ance Code	Days bought No.	Fish bought Tk.	Credit In Tk.	Type Code	Source Code	Sale point Code	Dist–ance Code	Buyer Code	Cash Expenses Tk.	Cash Income Tk.	Type Code	Non–Cash Income Type	NonCash Income Tk.	Credit Repay. Tk.	Type Code
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FAP 17 SOCIO-ECONOMIC SURVEY
FISH CULTURE ENTERPRISES

MONITORING FORM 4

Region	Village Code	H/H Code	H/H Ent/ Act. SL. No.
	–		

Enterprise Code: FC

Water Body Type:

Date of Interview	RA Initial	Month (Bangla)	Week	Activity	H/H mem. involved Code	Inputs: Stocking Species Code	Inputs: Stocking Source Code	Inputs: Input Type Code	Inputs: Cost Tk.	Inputs: Credit In Tk.	Inputs: Type Code	Inputs: Source Code	Fish Out: Harvest by Code	Fish Out: Buyer Code	Fish Out: Amount Mnds.	Fish Out: Cash Income Tk.	Fish Out: Type Code	Fish Out: NonCash Income Code	Fish Out: NonCash Income Tk.	Credit Out: Credit Repay. Tk.	Credit Out: Type Code	Labour: Family M MDays	Labour: Family F MDays	Labour: Family C MDays	Labour: Hired MDays
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FLOOD ACTION PLAN 17
24 Hours Dietary Recall

RA CODE	
Date	
Round	

Region	
Village code	
H/H No.	

Page 1

1. Name of H/H Head	
2. Respondent Name	
3. Status in Family	

4. Information on H/H member:

Sl No.	H/H member and guest name	Relation with H/H head	Age		Sex Code	Pregnant/ lactating infant (code)	Intake (code)	
			Years	Months (<5 years only)			1st day	2nd day
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

***Note**
- Record age in years to the nearest birth date.
- Exclude breastfed babies less than six months old.
- Record age in months for infants and children from 6 months up to 5 years old.
- If any one is not a permanent resident, indicate whether she/he is a visitor/day labourer etc. in the second column.

Sex Code
1. Male
2. Female

1. Pregnant
2. Lactating
3. Infant

Intake
1. One time
2. Two times
3. Three times

Information on 1st days cooking & meal:

a. How many times do you cook today ? ☐

Time	Item		Surplus	Major Ingredients	Mesurement of food		Food code	Total weight (gm)
	No.	Name			Unit	Number		

Information on fish taken on 1st day by the H/H (if known):

Sl. No	Name of species	Size	Number	Value (Tk)	Weight (gm)	Source	If bought	If caught	
							where from	who caught	where
1									
2									
3									
4									
5									
6									
7									
8									
[illegible]									
10									
11									
12									
13									
14									
15									
16									

Source–

- ☐ 1. Caught
- ☐ 2. Bought
- ☐ 3. Previous cooked
- ☐ 4. Gift
- ☐ 5. Others

Bought–

- ☐ 1. Local hat
- ☐ 2. Large hat
- ☐ 3. Thana Bazar
- ☐ 4. Other bazar (Mention specifically)
- ☐ 5. Hawker
- ☐ 6. Direct fishermen
- ☐ 7. Others (mention)

Caught–

- ☐ 1. River
- ☐ 2. Canal
- ☐ 3. Beel/Haor
- ☐ 4. Floodplain
- ☐ 5. Pond
- ☐ 6. Other catch field (mention)

Did any of your H/H member taken food as wages on 1st day ?

☐ 1. Yes 2. No

If yes:–

Who taken from H/H	How times/ Food item	Major Ingredients	Mesurement used in H/H		Food code	Weight (gm)
			Unit	Number		
1						
2						
3						

Did any of your H/H member bring food home which he received as wages ?

☐ 1. yes 2. No

If yes:–

Who taken from H/H	How times/ Food item	Major Ingredients	Mesurement used in H/H		Food code	Weight (gm)
			Unit	Number		
1						
2						
3						

Information on 2nd days cooking & meal :

a. How many times do you cook today ? [ ]

Time	Item		Surplus	Major	Mesurement of food		Food	Total weight
	No.	Name		Ingredients	Unit	Number	code	(gm)

Information on fish taken on 2nd day by the H/H (if known) :

Sl. No	Name of species	Size	Number	Value (Tk)	Weight (gm)	Source	If bought where from	If caught who caught by	where
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

Source–

- 1. Caught
- 2. Bought
- 3. Previous cooked
- 4. Gift
- 5. Others

Bought–

- 1. Local hat
- 2. Large hat
- 3. Thana Bazar
- 4. Other bazar (Mention specifically)
- 5. Hawker
- 6. Direct fishermen
- 7. Others (mention)

Caught–

- 1. River
- 2. Canal
- 3. Beel/Haor
- 4. Floodplain
- 5. Pond
- 6. Other catch field (mention)

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Did any of your H/H member taken food as wages on 2nd day?

[ ] 1. yes 2. No

If yes: –

Who taken from H/H	How times/ Food item	Major Ingredients	Mesurement used in H/H		Food code	Weight (gm)
			Unit	Number		
1						
2						
3						

Did any of your H/H member bring food home which he received as wages ?

[ ] 1. yes 2. No

If yes: –

Who taken from H/H	How times/ Food item	Major Ingredients	Mesurement used in H/H		Food code	Weight (gm)
			Unit	Number		
1						
2						
3						

Did you use any cooking oil yesterday ?

[ ] 1. Yes 2. NO

If yes:–

Item	How many days ago did you buy oil	Purchased Quantity		weight (gm)	Quantity used for cooking	Food code	Average amount oil used daily (grams)
		Unit	Number				
Musterd oil							
Other oil							
Animal fat							

Did your family eat any other fish over the last week (except for yesterday) ?

[ ] 1. Yes 2. No

If yes:–

Species	No. of days when eaten	Source
1		
2		
3		
4		
5		
6		
7		
[illegible]		
9		
10		
11		

* Source

1. Caught
2. Bought
3. Previously cooked
4. Gift fron others
5. Other (mention)

LEASEHOLDER EXPENDITURE SURVEY

Leaseholder Name			
Jalmohal Name			
Habitat	Region		FS:

Date	/ /
Enumerator	
Entered	

Year	Lease Money	Controlling Authority	Admin expen.	Entrmnt expen.	Others	Area Length	Maintenance cost Subs	Boat/No./cost		Guard/No/cost		Other	Notes/Comments

ACCESS SURVEY : Terms of Access

Fisheries Site	
Jalmohal Name	
Jalmohal No.	

FE Survey Data Used		(Y/N)
Months Available: From	/	
: To	/	

Date :	/ /
Enumerator :	
Entered :	

Fishing Gear		Seasons		Location	Who	Charge System – Others			Fishing by Leaseholder				Restrictions/Notes
Local Name	Code	Begin (Mo)	End (Mo)	Code	By	Share %	Tk. Fee	Period	Tk. Fee	Tk. Wages	F' Unit	F'men	

Location Codes	
Anywhere	1
Deep water	2
Margins	3
Selected areas	4

Who By	
Anyone	1
Local (any village)	2
Local (certain village)	3
Leaseholder sponsored	4

Month Code	
Baishak	1
Ashar	3
Ashwin	6
Poush	9
Choyatra	12

Period Code	
All closed season	1
Monthly	2
Weekly	3
Daily	4
Contract basis	5

ACCESS SURVEY : Charge Distribution

FCA Site:	
Date:	

Region:	
Location:	

Enumerator:	
Entered:	

English Month		April May	June	July	August	September	October	November	December	January	February	March	April	Notes
Bangla Month		Baishak	Joistya	Ashar	Sraban	Vadra	Ashwin	Kartik	Augraha	Poush	Magh	Falgoon	Choyatra	Comments
Gear Name	Code													

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TIME LINE OF JALMOHAL

Re: FCA site: ____________ Jalmohal Name: ____________

ENFORCEMENT	1940s	1950s	1960s	1970s	1980s	1990s	Notes
Attitude of leasee or his representative to:							
* Occasional subsistance fishing for home consumption							
* Regular subsistance fishing with small gear							
Forms of enforcememt							
* Warning fines							
* Confiscation of gears (temporary/permanent)							
* Physical violence							
Enforcement when							
* Only in legal season							
* Outside legal season							
* All the years							
Enforcement where							
* Only leased area							
* Outside leased area (floodplain/periphery)							
LEGAL STATUS OF LEASE							
* Leased or not							
Forms of Lease							
* Granted by whom to whom							
ACCESS							
* What were the open & closed period							
* To which gear did they apply							
* To which people did they apply (any exem)							
Fishing							
* Every year/ every three year							

TIME LINE OF JALMOHAL

CODE SHEET

Attitude of lessee

Occassional subsistence fishermen for home consumption
Free access – 1; Partial restriction – 2;
Total restriction – 3;

Regular subsistence fishing with small gear
Free access – 1; Partial restriction – 2;
Total restriction – 3;

Forms of enforcement

Warning fines
Yes – 1; No – 2;

Confiscation of gear: No – 1;
Temporary – 2; Permanent – 3;

Physical violence :
None – 1; Occassional – 2; Regular 3;

Enforcement when

Only in legal season;
Yes – 1; No – 2;
Outside legal season;
Yes – 1; No – 2;
All the years:
Yes – 1; No – 2;

Gear apply

Gear name and Code

Enforcement where

Only leased area:
Yes – 1; No – 2;
Outside leased area:
Yes – 1; No – 2;

Status of lease

Leased – 1; Not leased – 2;

Forms of lease

Granted by whom:
DoF –1; ADC Rev. –2;
To whom:
Local people – 1;
Outsider – 2;

Closed & open period

According to Bangla month such as Baishak – 1;
Sraban – 4; Choyatra – 12

People apply (exem.)

Subsistence exempted – 1;
Not exempted – 2;
Traditional exempted – 1;
Not exempted – 2;

Fishing

Every year – 1;
Every three year – 2;

fy

Form:MS01

FAP 17 STUDY

Information on market characteristics and infrastructures.

1. Market identification code

Region code	Mkt type	Mkt Sl. No

1.1 Name of market (village)____________________ 1.2 Union ____________

1.3 Thana ______________ 1.4 Dist. ______________

2. Nature of market code [ ]

Codes: 1. Collection point; 2. Hat; 3. Bazar; 4. Bazar cum Hat.

3. Occurrence frequency:

Day/Time	S	S	M	T	W	TH	F	daily
Morning								
Afternoon								
Evening								

4.Is fish market a part of a general market? Y | N

5. Market area:

5.1 Total market area (L. m x W. m) ____________

5.2 Total area of fish market/ section (L. m x W. m) ____________

5.2.1 Coverd area(L. m X W.m) ____________

5.2.2 Open area (L. m x W. m) ____________

5.2.3 Permanent sheds(number) ____________

5.2.4 Shed Type code [ ]

Shed codes: 1. Tin shed; 2. Bamboo & thached; 3. Tin shed with pucca floor; 4. Building.

(MAP OF MARKET)

6. Infrastructures:

6.1 Number of ice factory/ plants supplying ice for the market ________

6.1.2 Distance of ice factory from the market and capacity:

Distance	Number	Capacity(mt
Within 1 km.		
1 km. to 5 km.		
6 km. to 10 km.		

6.2 Landing platform: (Number) ________

6.2.1 Unit size (L. m. x W. m.) ________

6.2.2 Platform Type code [ ]

Type codes: 1. Wooden; 2. Concrete.

6.3 Retailing facilities: code [ ]

Codes: 1. Sheds & adequate; 2. Sheds,but inadequate; 3. Open area.

6.4 Wholesaling facilities: code [ ]

Codes: 1. water supply & storing; 2. Water supply, but no storing;
3.No water supply & storing.

6.5 Weighing system: code [ ]

Codes: 1. Metric system; 2. Traditional system; 3. Lot; 4. Metric system & lot.

6.6 Bankig facilities exist: Y | N

6.7 Telephone & communiction facilities available: Y | N

6.8 Sorting & grading system exists: Y | N

(If yes, describe)

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7. Package Type used:

Package type	% of traders using
Metalic drum	
Wooden box	
Bamboo basket	

8. Natural material used in package:code ☐ ☐ ☐

Codes: 1. Hogla leaves; 2. Banana leaves; 3.Water hyacinth.

9. Average daily number of consumers and traders attending fish market and volume of fish exported during peak & lean period.

Indicator	Number	
	Peak Period	Lean Period
	mo(	mo( )
Fisherman		
Faria		
Bepari		
Paikar		
Chalani		
Arotdar		
Nikari/Retailer		
Consumer		
Export volume		

10. Linkages of this market to fishing grounds/other markets.

Fishing Grounds		
Name	Union	Thana

Market acting as source of supply		
Name	Union	Thana

Destination markets		
Name	Union	Thana

11. Use of transportation modes in inward and outward movement of fish of the market.

Transport mode	% of total import	% of total export
Head load		
Boat		
Mechanized boat		
Rickshaw van		
Bus		
Truck		
Railway		

Investigator			
Date			93

MAP OF THE MARKET

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FAP 17 STUDY

Form: MS 02 Information on fish market functionaries

(Form MS 02 to be used for interviewing Faria/Bepari/Paikar/Chalani seperately.)

1. Respondent's Identification : code

Region	Market type	Market Sl	Resp type	Resp. Sl.

1.1 Name of Respondent ______________________ 1.3.Age____

1.2 Father's name ______________________ 1.4 Religion _________

1.5 Residence code [ ]

Res. codes: 1. Village; 2. Union; 3. Thana; 4. Dist.; 5. Outside [with ref.to market]

2. How many markets do you operate at? (number) [ ]

3. How long have you been engaged in fish trade? (yrs) [ ]

4. What is the period of your involvement in fish trade ? (code) [ ]

codes: 1. Throughout the year; 2. Beel harvesting period; 3. Pond harvesting period;
4. Beel and pond harvesting period;

5. If you are part–time in fish trade, what do you do during the rest of the year?

code [ ]

Secondary Occupation codes: 1. Fishing; 2. Fish fry trade; 3. Fish net trade;
4. Agriculture; 5. Other.

6. What was the daily average quantity of fish traded by you during the peak and lean periods last year ?

Period	Quantity in kg. and Price in Taka/kg.													
	major carp		Exotic carp		Snake head		other L.Sp.		Live fish		Small fish		Hilsa	
	Qy	Price	Qy	Price	Qy	Price	Qy	Price	Qy	Price	Qy	Price	Qy	Price
Peak(m:														
Lean(m:														

7. State the sources of supply of your fish :

Supply source	% of total supply	
	peak period	lean period
Own		
Fisherman		
Faria		
Bepari		
Fish coop		
Arotdar		

8. Do you sell to selected parties ? [Y | N]

9. If yes, state the main reason. code [ ]

Reason codes: 1.Taken advance; 2. Kinship; 3. Taken advance and kinship;
4.Offer better price; 5. Provide additional services;
6. Offer better price and additional services; 7. Mutual trust.

10. How many days do you require to complete one chalan ? code [ ]

Codes : 1. One day; 2. Two days; 3. Three days; 4. Four days; 5. Five days.

11. What is the amount of money required for one chalan ? Tk. ________

12. What is the source of your working capital ?

source	amount(Tk)	Remark
Own		
Partners		
Credit		
Total		

13. What are the sources and amounts of credit taken ?

source	amount (Tk.)	condition	
		interest%	period
Bank			
Mahajan			
Arotdar			
Bepari			
Coop			
Friend/Reln			

14. In what mode of transportation, you experienced major losses during the last five years? code

15. State major cause of loss: code

Causes of loss codes: 1. Long time; 2. Transport break down; 3. Preservation difficulties; 4. Extortion by third parties.

16. What is your suggestion for the improvement of fish transportation ?

17. What are the marketing costs incured by you at buying point and this market for today's chalan ?
(UseForm: MS03)

18. What are the quantities and prices of fish bought/sold by you to-day ?
(Use Form: MP01)

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Form: MS 03

FAP 17 STUDY
Information on Marketing Cost

ก 2

1.Respondent's name________________________ 1.1 Sl. No __________

2. Indicate Buying point: code [ ]

Buying point codes: 1. Fishing ground; 2.Primary market; 3. Secondary market; 4. Tertiary market.

3. Name of buying point/market________________ Union______________ Thana______________

4. Costs at Buying Point. Tk./Day

Market charges

Market toll __________

Sweeper charge __________

Subscription to association __________

Donations ,tips, etc. __________

Personal expenses __________

____

Packaging & processing costs

material	Useful life(days)	Tk./piece
metalic drum		__________
bamboo busket		__________
jute bag		__________
polythene paper		__________

Other costs Tk./Day

labour charge __________

Ice cost (Qy= Kg) __________

Nail, rope,etc. __________

5.Transportation Cost.

Transport Mode	Distance covered(km	Time(hrs)	Hire charge Tk./day
Head load			
Boat /Mechanized boat			
Rickshaw van			
Bus			
Truck			
Railway			

Other charge Tk./day

Bill charge ______

Ferry charge ______

Porter charge ______

6. Indicate selling point type. code [ ]

1. Same market; 2. Other market,same type; 3. Higher market.

7. Name of selling point/market________________________ 6.1 Thana______________

8. Costs at Selling Point. Tk./day

Market toll __________

Water charge __________

Sweeper charge __________

Icing cost (Qy= kg.) __________

Subscription to association __________

Donations,tips etc. __________

Boarding charge __________

Banking charges __________

Arot's 'kuli' charge __________

Other(specify) __________

9. Arotdar's Commission. ________% __________

Invetigator	
Date	| | 93

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FAP 17 STUDY

Form: MP01 Information on quantities of fish traded by respondents and prices obtained.

Respondent's Name________________ SL. No. __________

Bundle No	Bengali name of Species in bundle	Sp. Code	No./ %	Kg/piece	Bundle Wt(kg)	Bundle price (Tk)		Price / Kg	
						Buying	Selling	Buying	Selling

Investigator			
Date			93

FAP 17 STUDY

Form: MS 04 Information on fish market Arotdari System.
(Form MS 04 to be used for collection of information from arotdars.)

Rgn	Mkt Type	Mkt Sl	Res. Yype	Res Sl

1. Respondent's Identification: Code

1.1 Name of Respondent ____________ 1.3.Age ________
1.2 Father's name ____________ 1.4 Religion ____________

1.5 Residence code [ ]
Res. codes: 1. Village; 2. Union; 3. Thana; 4. Dist.; 5. Outside (with ref.to market)
2. How long have you been engaged in arotdari? (Yrs) [ ]

3. Was your father an arotdar ? | Y | N |

4. Are any of your brothers arotdar ? | Y | N |

5. What was the daily average quantity of fish traded by your arot during the peak and lean periods last year ? [Use seasonality chart]

Period	Quantity in kg and Price in Taka /kg.													
	Major carp		Exo. carp		S. head		Other L.sp		Live fish		Small fish		Hilsa	
	Qy	P	Qy	P	Qy	P	Qy	P	Qy	P	Qy	P	Qy	P
Peak( )														
Lean ( )														

6. From whom do you get your supply of fish?

Supply Source	% of total purchase	
	peak period	Lean period
Fisherman		
Faria		
Bepari		
Fish coop		
Other Arotdar		

'7. If there has been any change in average volume of your business in last 5 years, indicate the change:

Indicator	%increase	%decrease
Volume of trade		
Income		

8.State reasons for the change with ranking:

Reason for change in trade volume	Ranking
Change in fish availabity	
Change in demand	
Change in market competition	
Higher investment need	

Reasons for income change	Ranking
Change in Quantity	
Change in Demand	
High profit	
Low profit	

9. Has fish availability reduced in last 5 years ? | Y | N |

10. If yes, State reasons with ranking:

Reasons	Ranking
Siltation of river/ khal/ beel	
FCD projects	
Over–fishing	
Use of agro– chemicals	
Use of illegal fishing nets	
Fish disease	
Other (specify)	

11. Do you have fixed suppliers? Y | N

12. If yes, how is this relationship sustained: code ☐

Codes: 1.Given credit; 2. Kinship; 3. Given credit and kinship;
4. Mutual trust; 5. Other(specify).

13. What is the source of your capital ?

source	amount(Tk)	Remark
Own		
Partners		
Credit		
Total		

14. What are the sources and amounts of credit taken ?

source	amount (Tk.)	condition	
		interest (%)	period
Bank			
Mahajan			
Coop			
Friend/Reln			

15. What is your suggestion for the improvement of fish transportation ?

16. What is your suggestion for the improvement of fish preservation ?

17. What is your main source of information on price ? code ☐

Informatiion source codes: 1. Contact person in higher market; 2. Radio bulletin;
3. Telephone message; 4. Traders Association; 5. Chalani.

18. Are you a member of the traders association ? Y | N

19. If yes, what are the benefits received by you ?

code ☐

Benefit codes: 1. Credit; 2. Marketing information; 3. Better market management;
4. Credit & marketing information; 5. Marketing information & market management.

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20. Costs incured by arotdar

	Tk./month
Salary for office employees	________
Salary for weigh man	________
Salary for helper	________
Rent for shed	________
Electricity	________
Office stationaries	________
Market guard charge	________
Sweeper charge	________
Water charges	________
Subscription to association	________
Donations(mosque,madrasa,etc.)	________
Expenses for bepari/chalani	________
Taxes	________

21. Commission and other benifits received:

(a) Commission _______ %
(b) Fish _______ %

22. What are the quantities and prices of fish transacted by your arot to-day ?
(use Form: MP01)

Investigator	
Date	/ / 93

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FAP 17 STUDY

Form: MS05 Information on fish collection process.
(information to be collected from fishermen/producers.)

1. Respondent's identification : code

Region	Market type	Market Sl	Resp. type	Resp. Sl.

Gear used :	
Bengali name	code

1.1 Respondent's Name ____________________

1.2 Father's name ____________________

1.3 Age_____

1.4 Religion code [ ]

2. Are you a pond owner? [Y | N]

3. Where do you generally fish ? code [ ]

Fishing ground codes: 1.Main river; 2. Secondary river/khal; 3.Beel; 4. Flood plain; 5. Ditch, Pagar, etc.; 6. Own Pond; 7. Other's Pond.

3.1 Where did you fish to-day ? code [ ]

4.State costs incurred to bring fish to the market and other marketing costs:

Use Form MS 03

5. In how many markets do you sell ? (Number) [ ]

6. Have you taken credit from any fish trader for fishing activity ?

creditor	credit type	amount	condition
Faria			
Bepari			
Arotdar			
Chalani			

Credit code: 1. Dadan; 2. Agam; 3. Loan(Rin).

7. Has fish availability in your locality reduced in last 5 years ? [Y | N]

8. If yes, state reasons with ranking :

Reasons	Ranking
Siltation of river/khal/beel	
FCD Projects(	
Over-fishing	
Use of agro-chemicals	
Use of Illegal fishing nets	
Fish disease	
Other (Specify)	

9. State the quantities of fish sold and prices obtained to-day.
(use Form MP01)

Investigator	
Date	/ /93

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FAP 17 STUDY

Form: MS 06 Information on fish market functionaries(Retailer).

1. Respondent's Identification : code

Region	Market Type	Market SI	Resp. Type	Resp. SI. No

1.1 Name of Respondent ______________________ 1.3.Age____

1.2 Father's name ______________________ 1.4 Religion [ ] code

1.5 Residence code [ ]

Res. codes: 1. Village; 2. Union; 3. Thana; 4. Dist.; 5. Outside [with ref.to market]

2. How many markets do you operate at? (number) [ ]

3. How long have you been engaged in fish trade? (yrs) [ ]

4. What is the period of your involvement in fish trade ? (code) [ ]

codes: 1. Throughout the year; 2. beel harvesting period; 3. pond harvesting period;
4. Beel and pond harvesting period;

5. If you are part–time in fish trade, what do you do during the rest of the year?
code [ ]

Secondary occupation codes: 1. Fishing; 2. Fish fry trade; 3. Fish net trade;
4. Agriculture; 5. Other.

6. What was the daily average quantity of fish traded by you during the peak and lean periods last year ?

Period	Quantity in kg. and Price in Taka / kg.													
	Major carp		Exo. carp		Snake head		Other L.Sp.		Live fish		Small fish		Hilsa	
	Qy	P	Qy	P	Qy	P	Qy	P	Qy	P	Qy	P	Qy	P
Peak														
Lean														

7. From whom do you generally buy fish?

Supply source	% of total purchase	
	peak period	lean period
Own		
Fisherman		
Faria		
Bepari		
Chalani		
Fish coop		
Arotdar		

8. Has there been any change in your business in last 5 years ? [Y | N]

9. If yes, indicate the changes:

Indicator	% Increase	% Decrease
Volume of trade		
Income		

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10.State reasons with ranking:

Reason	Ranking
Change in fish availability	
Incraesed competition	
High prices	
Change in demand	

11. Has fish availability reduced in last 5 years ? | Y | N |

12. If yes, state reasons with rankings:

Reasons	Ranking
Siltation of water bodies	
FCD Projects	
Over fishing	
Use of agro- chemicals	
Use of illegal fishing nets	
Fish disease	
Other (specify)	

13. What is the source of your capital ?

source	amount(Tk)	Remark
Own		
Partners		
Credit		
Total		

14. What are the sources and amounts of credit taken ?

source	amount (Tk.)	condition	
		interest%	period
Bank			
Mahajan			
Arotdar			
Bepari			
Coop			
Friend/Reln			

15. Do you realize extra weight while buying from the fisherman ? | Y | N |

16. If yes, state the system and extent of extra weight:_______ %

17. Are you a member of the traders association ? | Y | N |

18. If yes, what are the benefits received by you ? code [ ]
Benefit codes: 1. Credit; 2. Marketing information; 3. Better market management;
4. Credit & marketing information; 5. Marketing information & better market management.
6. Other.

19. What are the quantities of fish bought/sold and prices obtained by you to-day ?
(Use Form: MP01)

Investigator	
Date	/ /93

c:\market\qsnr_02 dt26/06/93

Form : MS07

FAP 17 STUDY
Information on ice plants/factories

Region	Market type	Market Sl	Res. type	Res. Sl.

1. Name of the enterprise ______________________
2. Location of the ice plant :
2.1 Place ______________ 2.2 Thana ______________
2.3Dist. ______________

3.1 Respondent's Name ______________________ 3.3 Age ________
3.2 Father's Name ______________________ 3.4 Religior code [ ]
3.5 Designation ______________

4. Basic information on ice plant :
4.1 Year of establishment ________
4.2 Total capacity (tonnes) ________

4.3 Types of ice produced daily

Season	Block		Flake	
	Qy in kg	Price/kg.	Qy in kg.	Price/kg.
Summer				
Other time				

5. Product distribution pattern :

ConsumerType	%	Consumed
	Block	Flake
Ice cream traders		
Fish traders		
Retailers		
Others		

6. Does the plant/factory operate at below normal capacity ? Y | N
7. If yes, please quantify ________%

8. How is ice delivered to the fish market ? code [ ]
Codes : 1. Insulated carrier; 2.Open carrier; 3. Own arrangement of the fish trader.
9. Name the fish markets which obtain ice from this plant/factory:

Market Name	Thana	Distance (km.)

Investigator	
Date	/ /93

FAP 17 STUDY

Form: MS08   Information from transport agency

Respondent's Identification :

	Region	Market type	Market Sl.	Res. Type	Res. Sl.
code					

1. Name of the Agency ______________________
2. Place of information ______________________
2.1 Thana ______________________   2.2 Dist.______________________

3.1 Respondent's Name ______________________   3.3 Age_____
3.2 Father's Name ______________________   3.4 Religion   code [ ]

4. Respondent's Designation ______________________

5. Information on Fish transportation :

Origin of shipment		Destination Market		Distance	Cost Tk./
Market name	Thana	Name	Thana	(km)	md(40 kg)

Investigator	
Date	/ /93

c:market\ qsnr_08 dt 26/06/93

Seasonality Chart

Market type [ ]

Market Code
Primary 1
Secondary 2
Tertiary 3

Village ________ Union ________
Mauza ________ Thana ________

Fish Species		April	May	June	July	August	Sept'ber	October	Nov'mber	Dec'mber	January	February	March	April	COMMENTS
		Baishak	Joisthya	Ashar	Sraban	Bhadra	Ashwin	Kartik	Augra	Poush	Magh	Falgoon	Choytra		
Major carp															
Live fish															
Other large species															
Snake head															
Small fish															
Hilsa															
Sources of fish		April / Baishak	May / Joisthya	June / Ashar	July / Sraban	August / Bhadra	Sept'ber / Ashwin	October / Kartik	Nov'mber / Augra	Dec'mber / Poush	January / Magh	February / Falgoon	March / Choytra	April	
Main River															
Secondary River/ Khal															
Beel															
Floodplain															
Distch, Pagar, etc.															
Pond															
		April / Baishak	May / Joisthya	June / Ashar	July / Sraban	August / Bhadra	Sept'ber / Ashwin	October / Kartik	Nov'mber / Augra	Dec'mber / Poush	January / Magh	February / Falgoon	March / Choytra	April	
Quentity traded (md./ddy)															
		April / Baishak	May / Joisthya	June / Ashar	July / Sraban	August / Bhadra	Sept'ber / Ashwin	October / Kartik	Nov'mber / Augra	Dec'mber / Poush	January / Magh	February / Falgoon	March / Choytra	April	

Seasonality Chart

Name of Market ______________ Market type [ ]

Market Code
Primary 1
Secondary 2
Tertiary 3

Village ________ Mauza ________

Union ________ Thana ________

TOPIC		April–May Baishak	May–June Joisthya	June–July Ashar	July–August Sraban	August–Sept'ber Bhadra	Sept'ber–October Ashwin	October–Nov'mber Kartik	Nov'mber–Dec'mber Augra	Dec'mber–January Poush	January–February Magh	February–March Falgoon	March–April Choytra	COMMENTS
Activity of fish trader														
Fishing														
Fish fry trade														
Fish net trade														
Agriculture														
Other														
No of Buyer & Sellers		April–May Baishak	May–June Joisthya	June–July Ashar	July–August Sraban	August–Sept'ber Bhadra	Sept'ber–October Ashwin	October–Nov'mber Kartik	Nov'mber–Dec'mber Augra	Dec'mber–January Poush	January–February Magh	February–March Falgoon	March–April Choytra	
Buyers														
Sellers														
		April–May Baishak	May–June Joisthya	June–July Ashar	July–August Sraban	August–Sept'ber Bhadra	Sept'ber–October Ashwin	October–Nov'mber Kartik	Nov'mber–Dec'mber Augra	Dec'mber–January Poush	January–February Magh	February–March Falgoon	March–April Choytra	

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Fish Price Monitoring – Retrospective

Primary Market	
District	
Date	

Enumerator	

Species Group	January	Observation			February	Observation		
Puti								
Tengra								
Bailla								
Tilapia								
Ranga chanda								
Pangas								
Magur								
Boal								
Shol								
Tara Baim								
Gura Icha								
Rui								
Karfu								
Ilisha								
Small Shrimp								
Large prawn								

Species Group	March	Observation			April	Observation		
Puti								
Tengra								
Bailla								
Tilapia								
Ranga chanda								
Pangas								
Magur								
Boal								
Shol								
Tara Baim								
Gura Icha								
Rui								
Karfu								
Ilisha								
Small Shrimp								
Large prawn								

Species Group	May	Observation			June	Observation		
Puti								
Tengra								
Bailla								
Tilapia								
Ranga chanda								
Pangas								
Magur								
Boal								
Shol								
Tara Baim								
Gura Icha								
Rui								
Karfu								
Ilisha								
Small Shrimp								
Large prawn								

Fish Price Monitoring
Date : / /

Enumrator:

Market Code

Name		Rn.		Type		Sl.	

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Small fish (gr.1)</u> Puti	180					
Kachki	58					
Mola	5					
Canchan puti	175					
Teri puti	181					
Darkina	75					
Tit puti	212					
Phutani puti	178					
Morarai	13					
Techoukka	9					
Debari	68					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Small fish (gr.2)</u> Tengra	137					
Gang Tengra	81					
Gulsha Tengra	24					
Bata	100					
Baspata/Kajuli	2					
Buzuri	136					
Katari	188					
Batashi	169					
Kabashi	132					

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Fish Price Monitoring
Date : / /
Market Name : Enumerator:

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./kg)			
			1	2	3	4
Small fish (gr.3) Bailla	83					
Kaikka	210					
Khorsula	185					
Meni/Bheda	138					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Small fish (gr.4) Tilapia	150					
Fulchela	189					
Foli	145					
Nola	-					
Nilotica	151					
Sarputi	179					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Small fish (gr.5) Ranga chanda	37					
Chapila	86					
Nama chanda	36					
Chuna	57					
Lal kailsha	56					
Colisha	55					

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Fish Price Monitoring
Date : / /
Market Name :

Enumerator:

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Other Large Species Pangus (small)	158					
Pangus (large)	158					
Chital (small)	144					
Chital (large)	144					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Live Fish Magur (small)	49					
Magur (large)	49					
Shingi (small)	88					
Shingi (large)	88					
Koi (small)	6					
Koi (large)	6					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Cat Fish Boal (small)	209					
Boal (large)	209					
Air (small)	130					
Air (large)	130					
Baghair	16					
Bacha	76					
Ghaura	51					
Rita	186					
Shillong	196					
Pabda (small)	148					
Pabda (large)	148					

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Fish Price Monitoring
Date : / /
Market Name : **Enumerator:**

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Snake Head</u> Shoal (small)	42					
Shoal (large)	42					
Gozar (small)	39					
Gozar (large)	39					
Taki	41					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Spiny Eel</u> Tara Baim	121					
Guchi Baim	123					
Baral Baim	122					
Gutum	110					
Bilturi	139					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Gura Icha	117					

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Major Carps</u> Rui (small)	107					
Rui (large)	107					
Catla (small)	32					
Catla (large)	32					
Mrigal (small)	47					
Mrigal (large)	47					
Kalbaus	102					
Ghainna	104					
Bhagna/Laacho	48					
Bhangan	101					

Fish Price Monitoring
Date : / /
Market Name :

Enumerator:

Bengali Name	Code	Av. Price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Exotic Carps</u> Karfu (small)	62					
Karfu (large)	62					
Mirror carp	65					
Gheso rui	60					
Silver carp (small)	91					
Silver carp (large)	91					

Bengali Name	Code	Av. price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
Ilish (small)	89					
Ilish (large)	89					

Bengali Name	Code	Av. price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Shrimp</u> Chotka chingri	119					
Tengua chingri	113					

Bengali Name	Code	Av. price/ Kg.	Observations (Tk./Kg)			
			1	2	3	4
<u>Large Prawn</u> Golda	120					

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APPENDIX III: LIST OF FISHING GEARS

LIST OF CODED FISHING GEARS

April 1993

Gear Type	Name	Code	Description
Gill Net	Current jal	88	Monofilament fixed gill net, usually small mesh
	Drifting Monofilament Net	282	Monofilament drift gill net, usually top set, any mesh size
	Koi/Fashi jal/Fashon/Fash	123	Multifilament fixed gill net, usually small mesh
	Chandi jal	65	Multifilament drift gill net, usually top set, any mesh size
	Par jal/Pangas jal/Fashon	315	Multifilament drift gill net, usually bottom set, large mesh
	Kajuli jal/Nagon jal	316	Multifilament drift gill net, usually bottom set, small mesh
	Awo jal	324	Gill net lies horozontally near water surface to catch large fish
Seine Net	Ber jal/Zagot ber jal	45	Seine net small medium or large size
	Baoli	306	Medium sized seine net pulled by 2 ropes
	Moi jal	202	Small drag net with pockets of base
	Dora jal	325	Similar to moi jal but pulled by 2 long ropes
	Konaber jal	268	Seine net with pocket of one end
	Deol/Bandh/Chota badai/lathi	89	Small seine usualy pulled by 2 men by sticks on each end of net
	Horhori	297	Seine net with a series of large pockets along net.
	Kathi jal/Dolna	175	Seine net with a series of vertical sticks along net
	Chabi jal	293	Seine/gill net pulled to shore, often used with polo traps
	Hat panch	276	Medium size seine pulled at each end by one man while main in boat. Beats water to drive such into net.
	Chapra/Uttar jal	68	Like a cast net but hung from a boat moving along river and lifted to catch fish.
	Satiberjal/Gulti jal	304	Seine net with a series of pockets at base
	Gai Dasem	132	Drifting seine net used in rivers, has pockets at base
	Kachitana	277	Type of lift net hung from boat on floodplain or beel net used with drag rope to drive fish into net.
	Ferra jal	126	Drag rope used to drive fish into gill net/seine
Bag Net	Beon jal/Thaga/Konapatan	285	Barries across river with bag nets set perpendicular to it.
	Suti jal	271	Single bag net staked to river bed.
	Ghori jal	320	Barricade/fence with nets set in gaps to trap fish
Lift Net	Veshal/Kora jal	266	Triangular lift net on large bamboo frame
	Dharma jal/Sitki/Chak toap	105	Square or round lift nets on bamboo pole
	Jhali jal	160	Small veshal used on main rivers at night for shrimp
	Jhap jal	319	Boat lift net: lifted at 4 corners by men in boats
	Chota jal	323	Gill net fixed horizontally on bottom to catch fish by spines
Scoop Net	Hat Tana/Sukna/Chak jal	287	Oval or triangular scoop nets used with pole and rope or by hand
	Ucha	263	Basket scoop on pole. Used by hand.
	Tukri	296	Snall basket scoop
	Afa/Hat bauli	321	Large thela jal, large mesh, used on boat
Clap Net	Shangla jal/Kharki jal	234	Multifilament drifting bag net on bamboo frame boat used for hilsa fishing.
Katha	Katha jal	270	Submerged Brush shelter used to attract fish.
	Boat Katha	314	Submerged boat filled with branches used to attract fish
	Horga/Shorgia	149	Submerged basket filled with branches used to attract fish
	Kua	302	Fish pit on floodplain
	Kotta	318	Bunded area on floodplain used to trap fish as water recoedes
Traps	Polo	222	Bell-shaped trap used to catch fish by hand
	Darki/Doiar/Chai/Charo/Anta	95	Small, oval or box traps used for shrimp or small fish
	Deal/Baire	286	Larger trap, bilaterally divided to catch fish on 2 sides of bana
	Kadum	311	Large box traps used to catch larger fish e.g. Koi, Taki
	Kakila bana	310	Bamboo fence pulled downstream to trap fish in small area
	Kalsi pata	299	Clay pot used to trap fish set in bank side.
	Char jal	322	Tidal fence trap

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LIST OF CODED FISHING GEARS

April 1993

Gear Type	Name	Code	Description
Hook/ Lines	Daun	272	Long line - many hooks set at intervals on one line
	Sip/Barshi	30	Rod and line-usually one hook per line
	Borsa sip/Noi barsi	278	Hook & line attached to bamboo floats. Many floats/hooks may be joined along line
	Tana Barshi/Zomka/Chara	152	Hand line (no rod) from bank or boat with or without groundbait
Spear	Juti/Koch	170	Spears of various types: fixed or detachable barbs
Other	Jhaki jal	164	Multifilament circular net thrown by hand
	Thella jal	255	Small triangular push net set on bamboo frame
	Urani	291	Various barrier nets/fences used to catch jumping fish.
	Akra	298	Pole with metal hooks used to catch Mud-dwelling fish e.g. baim
	Chunga	301	Hollow bamboo rod shelter used to attract baim
	Thushi/Baim mara	317	Cloth/basket traps used to drive baim into them
	Hand fishing	307	Picking fish by hand but without dewatering
	By hand/Dewatering	97	Empty water and catch fish by hand in mud
	Net/Basket+Dewatering	98	Empty water through an outlet where net or basket used to trap fish

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APPENDIX IV: SPECIES LIST

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
ANABANTIDAE					
Anabas testudineus	X	X	X	X	
ANGUILLIDAE					
Anguilla bengalensis			X		
APLOCHEILIDAE					
Aplocheilus panchax	X	X	X	X	X
BAGRIDAE					
Batasio batasio	X	X	X		
Batasio tengara		X			
Mystus aor	X	X	X	X	X
Mystus bleekeri	X	X	X	X	X
Mystus cavasius	X	X	X	X	X
Mystus gulio	X	X			
Mystus menoda			X		
Mystus seenghala	X	X	X	X	X
Mystus tengara	X	X	X	X	X
Mystus vittatus	X	X	X	X	X
Rama Chandramara			X		X
Rita rita	X	X	X	X	X
BALITORIDAE					
Nemacheilinae					
Nemacheilus botia	X	X	X		X
Nemacheilus zonatus	X		X		
BELONTIIDAE					
Macropodinae					
Ctenops nobilis				X	

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
Trichogosterinae					
Colisa fasciatus	X	X	X	X	X
Colisa labiosus	X	X	X	X	
Colisa lalius	X	X	X	X	
Colisa sota	X	X	X	X	X
Chaca chaca	X	X	X	X	
CHANNIDAE					
Channa marulius	X	X	X	X	X
Channa orientalis	X	X		X	
Channa punctatus	X	X	X	X	X
Channa striatus	X	X	X	X	X
CICHLIDAE					
Oreochromis nilotica		X			
CLARIIDAE					
Clarias batrachus	X	X	X	X	
CLUPEIDAE					
Alosinae					
Gudusia chapra	X	X	X	X	X
Hilsa ilisha	X	X	X	X	X
Dorosomatinae					
Gonialosa manminna	X	X	X		X
Pellonulinae					
Corica soborna	X	X	X	X	X

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
COBITIDAE					
Cobitinae					
Lepidocephalus berdmorei	X				
Lepidocephalus guntea	X	X	X	X	X
Lepidocephalus thermalis	X				
Neoeucirrtichthys (Maydelli)			X		
Somileptes gongota	X	X	X		
Botiinae					
Botia dario	X	X	X	X	X
CYPRINIDAE					
Cultrinae					
Chela cachius	X	X	X		X
Chela laubuca		X			
Securicula gora	X	X	X		X
Cyprininae					
Catla catla	X	X		X	X
Chanda baculis	X	X	X	X	
Chanda nama	X	X	X	X	X
Chanda ranga	X	X	X	X	X
Cirrhinus mrigala	X	X	X		X
Cirrhinus reba	X	X	X	X	X
Cyprinus carpio		X	X		
Labeo bata	X	X		X	X
Labeo boga	X	X	X		X
Labeo calbasu	X	X	X	X	X
Labeo gonius			X		
Labeo rohita	X	X	X	X	X
Puntius casuatis	X	X	X		
Puntius chola	X	X	X		
Puntius conchonius	X	X	X	X	X
Puntius gelius	X	X	X	X	X
Puntius guganio	X	X			
Puntius phutunio	X	X	X	X	X
Puntius sarana		X			
Puntius sophore	X	X	X	X	X
Puntius terio	X	X	X	X	X
Puntius ticto	X	X	X	X	X

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FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
Rasborinae					
Amblypharygodon microlepis		X	X		
Amblypharygodon mola	X	X	X	X	X
Aspidoparia jaya	X	X	X		
Aspidoparia morar	X	X	X	X	X
Barilius barna		X			
Barilius bola	X	X			
Danio devario	X	X	X	X	X
Danio rerio	X	X			
Esomus danricus	X	X	X	X	X
Rasbora daniconius	X	X	X	X	
Rasbora rasbora	X				
Garrinae					
Crossocheilus latius	X	X	X	X	X
Glossogobius giurus	X	X	X	X	X
Leuciscinae					
Aristichthys nobilis	X				
Hypophthalmichthys molitrix	X	X			
Labeo angra				X	
Salmostoma bacaila	X	X	X	X	X
Salmostoma phulo	X	X	X	X	X
ENGRAULIDIDAE					
Setipinna phasa	X	X	X	X	X
GOBIIDAE					
Apocrypteinae					
Apocryptes bato					X
Pseudopacryptes lanceolatus			X		

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
Gobiinae					
Awaous sp	X				
Awaous stamineus	X	X	X		
Brachygobius nunus	X	X	X		X
GOBIOIDIDAE					
Odontamblyopus rubicundus				X	
Taenioides buchanani	X				X
HETEROPNEUSTIDAE					
Heteropneustes fossilis	X	X	X	X	
LOBOTIDAE					
Lobotes surinamensis			X		
MASTACEMBELIDAE					
Macrognathus aculeatus	X	X	X	X	X
Mastacembelus armatus	X	X	X	X	X
Mastacembelus pancalus	X	X	X	X	X
MUGILIDAE					
Mugil cascasia	X	X	X		X
Mugil parsia	X	X			X
Mugil spp.		X			
Rhinomugil corsula	X	X	X	X	X
NANDIDAE					
Nandus nandus	X	X	X	X	

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
Badinae					
Badis badis	X	X	X	X	X
OPHICHTHIDAE					
Ophichthinae					
Pisodonophis boro	X	X	X		
PANGASIIDAE					
Pangasius pangasius	X	X		X	X
PLOTOSIDAE					
Plotosus canius	X	X			
RHINOBATIDAE					
Rhynchobatinae					
Rothee cotio	X	X	X	X	X
SCHILBEIDAE					
Aillinae					
Ailia coila	X	X	X	X	X
Ailiichthys punctata	X	X	X		
Schilbeinae					
Clupisoma garua	X	X	X	X	X
Clupisoma murius		X	X		
Eutropiichthys vacha	X	X	X	X	X
Pseudeutropius atherinoides	X	X	X	X	X
Silonia silondia	X	X		X	X

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
SISORIDAE					
Bagarius bagarius	X	X		X	X
Erethistes pussilus		X	X		
Gagata cenia	X	X	X		X
Gagata viridescens	X	X	X		
Gagata youssoufi	X	X	X	X	X
Glyptothorax telchitta		X			
Hara hara	X	X			
SYNGNATHIDAE					
Ichthyocampus carce	X	X			
SYNBRANCHIDAE					
Monopterus cuchia		X			
SCIAENIDAE					
Johnius coitor	X	X	X		
Pama pama	X	X	X	X	X
STROMATEIDAE					
Pampus chinensis	X				
SILURIDAE					
Ompok bimaculatus	X	X	X		
Ompok pabda	X	X	X	X	X
Ompok spp.					X
Wallagonia attu	X	X	X	X	X

FISH SPECIES LIST BY REGION

	NC	NW	NE	SW	MR
NOTOPTERIDAE					
Notopterus chitala	X	X	X	X	X
Notopterus notopterus	X	X	X	X	
TETRAODONTIDAE					
Chelonodon fluviatilts		X			
Tetraodon cutcutia	X	X	X	X	X
PSILORHYNCHIDAE					
Psilorhynchus balitora		X			
OTHERS					
Unknown	X		X	X	X
Unknown	X				
Unknown		X			
Unknown	X	X	X	X	X
Unknown					X
Prawn sp	X	X	X	X	X
Machrobrachium lammariei	X	X			
Machrobrachium styliferus	X	X			
Macrobrachium rosenbergii		X	X		X
Crab spp.			X		
Paratelphusa sp.	X				
Potamon		X			
Trionyx gangeticus	X	X			

Notes : 1. Taxonomical clarification of family and sub family follows Talwar and Jhingram, 1991.

2. NC = North Central Region, NW = North West Region NE = North East Region, SW = South West Region and MR = Main rivers Jamuna & Padma

APPENDIX V: PROCEDURES FOR THE CALCULATION OF CATCH ESTIMATES.

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ESTIMATES OF CATCH BY GEAR AND SAMPLING SITE.

1 General description

Estimates of catch are based on two separate surveys using five different survey forms. These two surveys are carried out together on two days in each month on each site.

The Catch Assessment Survey (CAS) collects detailed data for individual gears. The total weight of catch and the time taken to achieve that catch are used to calculate the catch rate in kg per hour. As many catches as possible are observed; in order to measure statistical variance a minimum of 3 are required for each gear/site/month.

The Fishing Effort Survey (FES) counts each type of gear operating every two hours for the whole site under observation between 0600 and 1800hrs.

At the end of each survey day the different gears identified during the FES are checked against the documents from CAS to ensure that at least one catch has been recorded for each gear. Where this has not been achieved further site visits are arranged to measure catch rates for the missing gears. Additional site visits at night are also scheduled to collect night catch information for the gears.

By multiplying the catch rate for each gear by the number of gears and the number of hours in the day that they were active, and then extrapolating for the month, an estimate of total catch for the site can be made. The precise steps are described below.

2.0 Catch Rate calculations.

2.1 Select months and sites to be processed.

A monthly schedule is provided by the fisheries specialists to record those site visits which should be considered when estimating both catch rates and gear counts. The database created from this schedule is fully described in the section on effort calculations. However, it is initially used to define those months and sites for which catch rate data is to be processed.

The database of catch data is matched with the monthly schedule file as described above and the required records tagged. These consist of data types CA01, CA02, CA03_S2, CA03_S4. They are then sequenced by site/location/date/time/gear and cross related.

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2.2 Extract information required to calculate catch rates.

The total catch of each observed gear for selected sites and months is appended to a work file which also contains the required catch details from form CA01. Where the catch details have been recorded using the form CA02 the weights of the individual fish must first be summed using the dataset CA02. Where the catch details have been recorded on form CA03 the total catch is directly available without summing the constituent catch records. Catches recorded on CA02 and CA03 are mutually exclusive. Dataset CA02 contains details of small catches where every species of fish is weighed and counted. Dataset CA03 contains details of catches where the catch was large and only large fish are recorded individually. A subsample of the small fish weighing approximately 2kg is taken and analysed for species composition. The detailed breakdown of the subsample is recorded. The computer is then used to calculate the total catch less large fish individually recorded. The balance of catch is split on a *pro rata* basis by species in the same proportions as the subsample.

2.3 Calculate catch rates.

The working file of catch data is indexed in site, location, date, gear sequence. For each catch record the time of interview and the hours taken to catch the fish are converted from hours and minutes to decimal values and used to calculate start and end time for fishing. The time is then divided into components of day and night based on the following definitions:

Day fishing = 0500 to 1800hrs
Night fishing = 1800 to 0500hrs

A file of catch rate data is then prepared using the weight of catch and the time taken to achieve that catch. Each record is first tagged in one of five ways.

1. If the hours fished are only day hours then the catch rate is classed as a day rate.

2. If the hours fished are only night hours then the catch rate is classed as a night rate.

3. If 80% or more of the hours fished are day hours then the catch rate is classed as "80%+" day rate.

4. If 80% or more of the hours fished are night hours then the catch rate is classed as "80%+" night rate.

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5. If the number of hours fished is none of the above then it is classed as a day/night rate.

A second record is generated for all catch rates and tagged as contributing to a "total" catch rate.

The new file is then reindexed by site/location/date/gear/catch rate type.

Mean monthly catch rates in each of the above categories are then calculated for each site and gear. For all catch data tagged as day catch within a site/gear category the total catch is summed. The total hours fished for each observation is multiplied by the number of gears which caught the catch and totals accumulated. The total catch is divided by the total gear hours fished to give weighted mean catch per hour.

This procedure is undertaken for all types of catch rate identified in the previous step. The file is then indexed by site/location/month/gear.

The resultant dataset contains a range of catch rates for each gear/location/site/month.

2.4 Test for significant differences between catch rates.

A *t* test is then applied to compare the calculated catch rates of each site/location/gear for day catches (categories 1 and 3) and night catches (categories 2 and 4). Where a significant difference results the night rate will be applied to night effort and the day rate will be applied to day effort. Where there is no significant difference the total catch rate (category 6) will be applied to both day and night effort.

3.0 Effort calculations

3.1 Select months, sites and survey dates.

FES provides the frame against which catch is estimated by site. Normally two surveys are conducted per month, one in the first fortnight and one in the second fortnight. Occasionally a third survey may be undertaken or only one recorded.

A monthly schedule is provided by the fisheries specialists containing details of those site visits which should be considered when estimating both catch rates and fishing effort. All data collected in the field are entered into the database. However on some occasions logistical or other problems may result in the survey being repeated. In order to select only those surveys which were completed satisfactorily the fisheries specialists provide a monthly schedule of site visits. This schedule further identifies the way in which data collected for locations within sites can be combined.

When all the two hourly surveys were not completed corrections are recorded on the monthly schedule file. This allows the total daily observed effort to be adjusted to 12 hours.

3.2 Extract fishing effort data.

Those months/sites/location which are to undergo analysis are fed into a monthly schedule file. This file is matched against both catch rate and effort data to tag the appropriate data set. The location code structure is modified to indicate the method of combination relevent to each site.

In order to estimate mean monthly counts the number of effort surveys conducted for each site/location is established from the monthly schedule file and a work file created.

The tagged data set for FES consists of data sets FEO1 and FEO2 and are indexed by site/location/date/gear and the files related.

Exclude from further processing gear codes 270, 302 and 314 (Katha, Kua and boat Katha). Production from these gears is presently calculated manually but in future will be estimated in a different program.

3.3 Calculate number of day/night gears and tag night gears.

For each survey record compare with the list of permanent night gears. These are:

95, 286, 311.

These codes tagged as traps.

For other FE01 survey records seek the equivalent FE02 record. If the gear is listed as used at night tag the FE01 record. If the field is blank assume that it is a day gear only.

For all gears flagged as night gears the count to be used for night fishing must be calculated based on the number of gears recorded during first/ last surveys of the day or penultimate surveys if the first and last are not present for that gear. If gear counts are not available from any of these assume the gear count is 0.

Regardless of whether used at night or not, all gears for which FE01 data exists for a particular site/location/date have been observed to fish during the day while only those identified as above will be used to calculate night catch. To estimate the daily count per gear hour, total all observations for each 2 hour survey period.

3.4 Estimate hours fished.

In order to estimate the number of hours fished by those gears identified from FEO2 as night gears the site/location/month/gear is matched against the file of catch rate data already created.

The total number of night hours from all catch data is divided by the number of catch observations recorded to give the mean night hours. Where no night hours are available and the gears are one of the listed night gears then it is assumed that the gear is used all night, ie for 11 or 12 hours depending on the month. Otherwise the number of hours is taken as zero.

Gearcodes 88, 272 and 278 usually fish at night. If no night hours are available from the catch data, then the value should default to 11 or 12 hours and not zero.

For gears tagged as traps it is assumed that they will be operating for 11 or 12 hours through the whole night.

The number of hours fished during the day is 2 hours for each survey during which gears were counted. The number of surveys during which each gear is observed is totalled to give the total hours fished during the day.

An extended file containing day and night gear counts, and day and night gear hours for each site visit is carried forward to the next processing step.

3.5 Calculate mean daily gear hours for each site and month.

The mean day and night gear hours and gear counts are then multiplied together to give a value of gear hours for each site/location/gear. The number of site visits is taken from the work file created earlier and a mean value of gear hours from all site visits then estimated by summing the gear hours from all site visits and dividing by the number of visits. Note that where during a second or subsequent visit a gear is not observed, then the gear count for the second visit is taken as 0. Where only 1 visit is recorded then that visit is taken to be representative of daily fishing for the month.

The result of these procedures is to create a dataset which contains one record for each site/location/gear that has been listed on the monthly schedule. Each record contains counts of both day and night gear hours.

4.0 Catch Estimation

The catch rate file and the effort file produced above are both indexed by site/location/gear/month. The day and night gear counts are multiplied by the number of day and night hours. This will vary from month to month. For those months when there are 13 hours of day fishing the number of gear hours observed during the first survey of the day is raised by a factor of 3/2. During those months the number of night hours is taken as 11. Each value is multiplied by the number of days in the month and then by the appropriate catch rate. The day and night values are added together to give the total production estimate for each site.

5.0 Estimate of Catch by Species, Gear and Site

The procedures to estimate species composition of catch is similar to that of total catch and several of the same routines are used.

Instead of estimating the total catch rate of each gear, the total weight of fish is separated into constituent species weights. The subsampling procedure already described in 2.2 is used to allocate the large catches recorded in dataset CA03 across species. The total weight of each species for each gear for each site and location is summed from both CA02 and CA03 datasets and brought forward as an intermediate file.

The file is then indexed by site, location, month, species and gear. The total gear hours for each site, gear and month for the various types of catch rate already calculated in the total catch estimates routine is copied across to each species record within the site, location, month and gear set of data records. This value is used to divide the total weight of each species of fish caught by a particular gear and produce a catch rate for each species for each gear by site, location and month.

The estimate of mean gear hours already prepared for extrapolation by the mean gear rates is then used to provide a total weight of fish at the species level.

The individual species catch weights are totalled across each gear and then expressed as a percentage of each gear catch.

The file is indexed by site, location, month and species. The individual species catch weights are totalled across each site and location and then expressed as a percentage of the site/location.

This file of values containing both weights and percentages is then matched against the site, gear and species description files to provide text for better reporting.

The site file also contains details of FCD/I scheme, comparative sites, habitat information and area which allow further detailed analysis of catch by these categories in due course.