



**FISH CATCH
STATISTICS OF
BANGLADESH**

1983-84

DEPARTMENT OF FISHERIES

PREFACE

Reliable catch statistics is necessary for fisheries development and management planning. In Bangladesh, however, there has been no reliable catch statistics in the past. The Fisheries Resources Survey System Project of the Department of Fisheries initiated the Catch Assessment Survey for the riverine fisheries in September 1983, with the technical assistance of the UNDP/FAO project BGD/79/015. It was the first time in Bangladesh to start a continuous catch survey for the riverine fisheries covering the whole country.

The Fisheries Resources Survey System Project has also implemented various statistical survey since its commencement in 1980. For preparing a complete list of sampling units of the population for each sector of the fisheries, frame surveys have been conducted for rivers, beels, baors and shrimp farms. For collecting sample catch data for estimating the total catch, Catch Assessment Surveys have been initiated for rivers, beels, ponds and subsistence fisheries. Total area of different types of water bodies were measured by SPARRSO (Bangladesh Space Research and Remote Sensing Organization) under a sub-contract of the Project. This publication was prepared for presenting annual catch statistics of Bangladesh for the one year 1983-84, on the basis of survey results of such statistics surveys.

It is hoped that catch statistics compiled here will be fully utilised for development of the fisheries of Bangladesh. Any comments are welcome for improving the fishery statistics.

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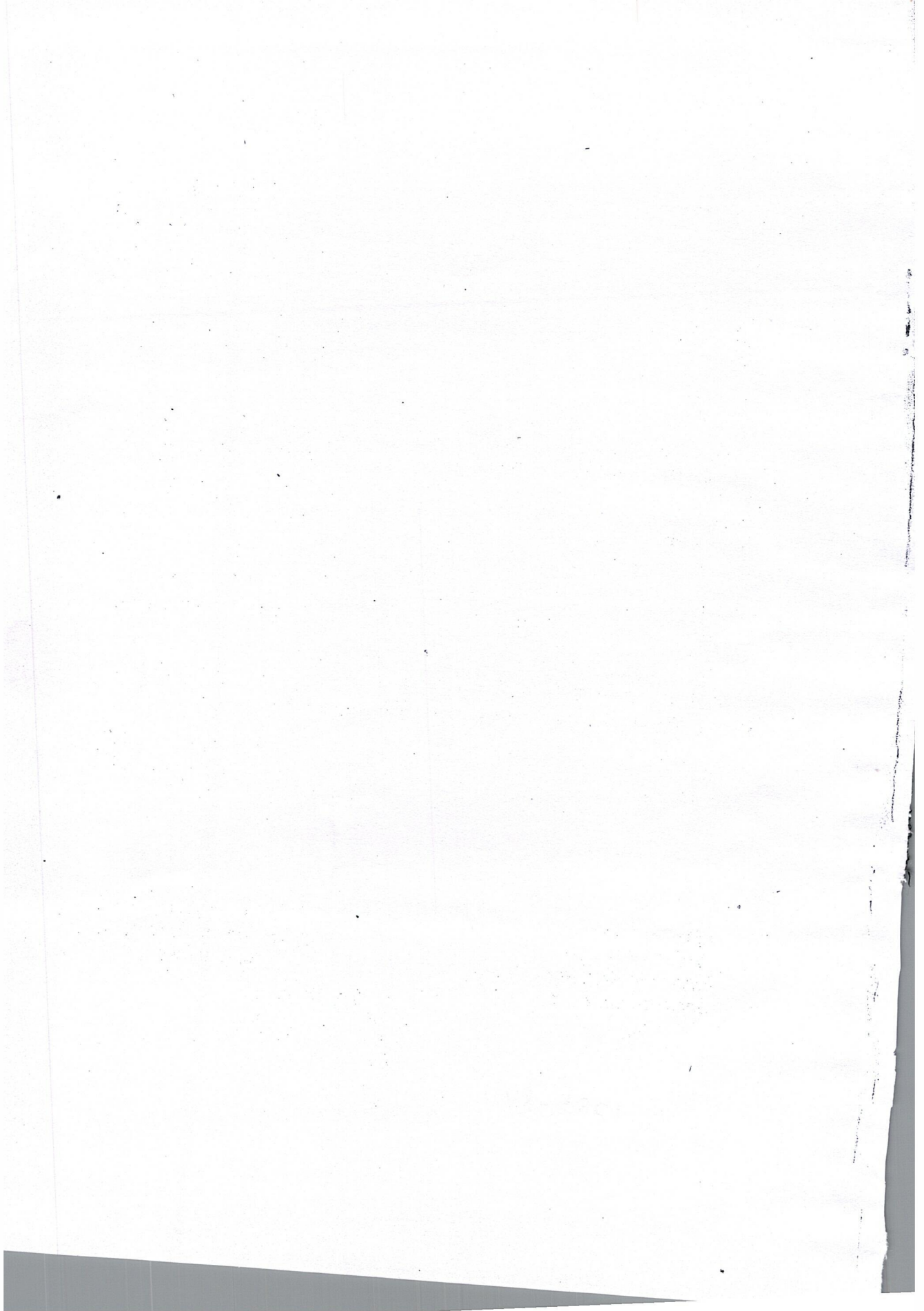
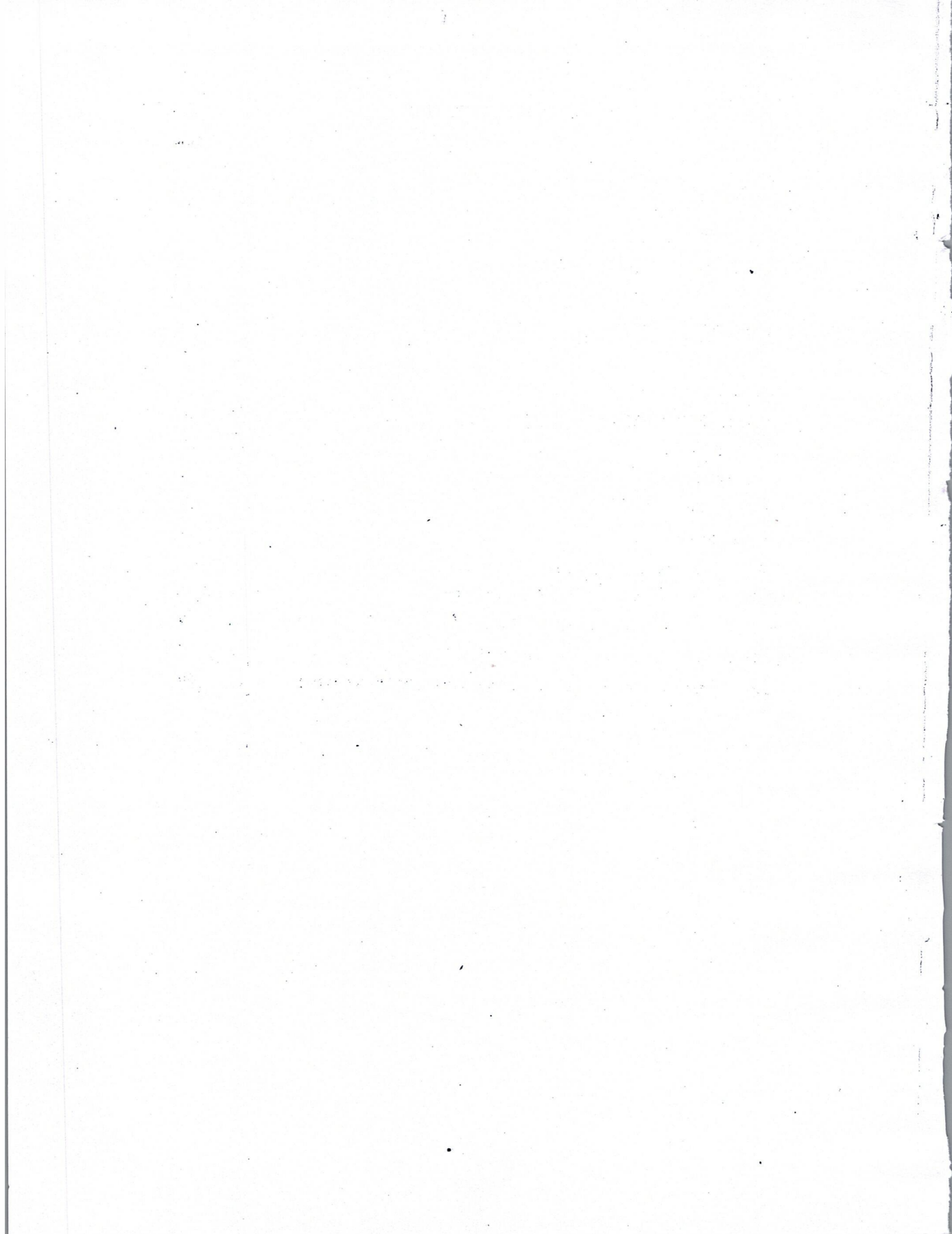


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SECTION 1 : INTRODUCTION

1. Statistics compiled

Statistics compiled in this publication are *catch statistics of Bangladesh*.

2. Time reference

Annual catch data compiled in this booklet refer to the one year period from September 1983 to August 1984. This is because the Catch Assessment Survey for the reiverine fisheries has been initiated from September 1983, and Catch Assessment Surveys of the other sectors such as beels, ponds and subsistence fisheries have been also initiated after that.

3. Sectors of fisheries

The fisheries of Bangladesh is divided into ten sectors as follows :

Inland waters—Rivers and estuaries, Sundarban area, beels, kaptai lake, flood lands, ponds, baors and shrimp farms.

Marine waters—Marine industrial fisheries and marine artisanal fisheries.

4. Geographical Divisions

As a standard geographical divisions, all catch statistics of Bangladesh are divided into twenty former Districts. Chittagong and Chittagong Hill Tracts districts have been shown together.

5. Source of data :

Soureeof data of the statistics are as follows :

Inland waters—Survey results of the Catch Assessment Surveys conducted by the Fisheries Resources Survey System of the Directorate of Fisheries.

Marine waters—Surveys conducted by the Marine Fisheries Department in Chittagong.

6. Fisheries Statistical System

The fisheries statistical system consists of the following three surveys :

- (1) Frame Surveys—To prepare a Complete list of sampling units in the population such as fishing villages, fishing units and water bodies.
- (2) Catch Assessment Surveys—To collect sample catch data for estimating monthly total catches.
- (3) Water bodies Study—To measure total area of different types of water bodies.

The Fisheries Resources Survey System conducted the frame Survey, catch assessment Survey for each of the sectors of fisheries by using its 36 Recorders assigned in the field.

In addition Bangladesh Space Research and Remote Sensing Organization (SPARRSO) measured total area of different types of water bodies under a contract with the FAO/UNDP under the project Fisheries Resources Survey System BGD/79/015.

7. Survey methods

Survey methods and methods of estimation of catch statistics compiled for various sectors are briefly described in Appendix-1.

In each sector, a frame survey was conducted to establish the population. Then, a sample survey on catch was conducted regularly for collecting sample catch data. Total catch data were calculated on the basis of sample catch data thus collected. Area data were mainly quoted from results of the SPARRSO study and partially from the frame surveys. Area statistics of inland water bodies are shown in Appendix 2.

SECTION 2: OUTLINE OF CATCH STATISTICS

Outline of catch statistics appearing in the statistical tables in section 3 are presented as follows :

TABLE 1—Annual Total Catch and Area Productivities of Fisheries for September 1983—August 1984 :

This is a summary table of total catches by sectors of the fisheries in Bangladesh. Annual total catch of all the sectors was 753,502 metric tons for the one year period from September 1983 to August 1984. The inland catch was 588,620 metric tons representing 78.1% of the total catch, while the marine catch was 164,882 metric tons representing 21.9%.

Out of 588,620 metric tons of the inland catch, the capture fisheries (rivers, beels, lake and flood lands) caught 471,595 metric tons and the culture fisheries (ponds, baors and shrimp farms) harvested 117,000 metric tons. Among the inland catches by sectors, the riverine catch was the biggest being 208,000 metric tons, the flood lands catch was the second being 201,000 metric tons and the ponds catch was the third being 103,000 metric tons. The beels catch was the fourth being 51,000 metric tons and the shrimp farms catch was the fifth being 8,000 metric tons.

Out of 164,882 metric tons of the marine catch, 73 trawlers caught 14,500 metric tons and the marine artisanal fisheries including hilsa gill net fishing, set bag net fishing, jew fish, long line fishing and other marine fishing, caught 150,382 metric tons.

Area productivities of the inland sectors differ from sector to sector. The highest productivities has been achieved in ponds, that was 735 kg/hectare

The next highest was the beels productivity, that was 450 kg/hectare, and the third was the rivers being 209 kg/hectare. Area productivities of shrimp farms and baors come next being 159 kg/hectare and 157 kg/hectare respectively.

TABLE 2—Annual Total Catch of Inland Waters by Districts for September, 1983—August, 1984 :

This is another summary table of the annual total catch of the inland fisheries broken down by the sectors and by the old districts.

As can be seen in the table, catch of rivers, ponds and flood lands distribute throughout all the districts, while beels concentrate in Sylhet, Mymensingh and Rajshahi, Kaptai Lake is in Chittagong Hill Tract. Baors are mainly in Jessore, Kushtia and Faridpur, and shrimp farms are mainly in Khulna and Chittagong (Cox's Bazar).

As can be seen at the bottom of the table, about one third of the inland catch is coming from rivers, another one third is coming from the flood lands, about one fifth is coming from ponds and the rest from the others.

The biggest quantity of fish is caught in Barisal District. This is mainly because the catch in rivers was highest in Barisal.

TABLE 3—Annual Total Catch of the Riverine Fisheries (September 1983—August 1984); Principal Rivers:

(a) Annual Catch by Species

Out of 208,000 metric tons of the riverine catch, 92,000 metric tons was caught in principal rivers (Meghna, Padma, Jamuna and Brahmaputra). Among the principal rivers, Lower Meghna produced 60,000 metric tons, out of which 53,000 metric tons was hilsa.

(b) Percentage by Species

Hilsa catch was 88% of the total catch in Lower Meghna, but only 23% in Upper Meghna. In Padma, hilsa catch was 64% in Lower Padma and 16% in Upper Padma. In Jamuna, hilsa catch was only 7% and in Brahmaputra it was merely 1.6%.

In the total catch of all the principal rivers, Hilsa catch was 66%, and the next was catch of miscellaneous fish being 24%, cat fish 3.7%, shrimp 2.9% and major carp 2.3% follow:

TABLE 4—Annual Catch in Principal and Major Rivers by Districts:

This table presents catch by species data of the principal rivers further divided by Districts, and three major rivers, that is, Titulia, Garai-Madhumati and old Brahmaputra, also divided by Districts.

It is to be noted that hilsa catch in Barisal District in Titulia River was as large as 18,000 metric tons:

TABLE 5—Annual Catch in All Rivers by Districts by Species:

This table presents estimated total catch in all rivers in Bangladesh, including not only principal rivers, major rivers, but also minor rivers.

Among the Districts, Barisal was the biggest fishing ground of the riverine fisheries, catching 60,000 metric tons, out of which 45,000 metric tons was hilsa.

Hilsa catch in all rivers was 90,000 metric tons, representing 43.4% of the total catch which was 208,000 metric tons.

TABLE 6—Annual Total Catch of the Beel Fisheries 1983/1984:

Total area of beels was 114,000 hectare, according to SPARRSO report (area of dead rivers in other Districts than Jessore, Kushtia and Faridpur were added to the original beels area). Sylhet, Mymensingh and Rajshahi are biggest three Districts beel area of which are 32,700 hectare, 29,400 hectare and 19,800 hectare respectively.

Annual total catch data were calculated by multi-plying the estimated average catch per hectare by the total area of beels. The estimated average catch per hectare of beels was calculated from several sample catch data obtained in Sylhet and Mymensingh Districts as 450 kg/ha.

TABLE 7—Kaptai Lake Catch (1983/1984):

According to BFDC (Bangladesh Fisheries Development Corporation), the total catch handled by BFDC was 4,057 metric tons. Among species caught, chapila (small pelagic fish) was caught in the biggest quantity which was 1,622 metric tons. Catch of rui, catla and mrigal which are major carp, were 286, 307 and 87 metric tons respectively. Catch of Kalibaush and Ghania, which are minor carp were 308 and 401 metric tons respectively.

TABLE 8—Annual Total Catch in Flood Lands (September 1983—August 1984):

Annual total catch in flood lands for September 1983—August 1984 was estimated as about 200,000 metric tons. This includes not only catches in flood waters during the rainy season but also catches in various types of waters such as small rivers, canals, ditches, swamps during the dry season.

According to the survey results, about 8,800,000 households engaged in subsistence fisheries at least once during the year. This represent about 60% of the total number of household in Bangladesh, that is about 15,000,000.

TABLE 9—Total Area and Total Production of Ponds by Districts (September 1983—August 1984):

Total area of ponds in the whole country was estimated as about 363,000 acres or 147,000 hectare. Total area of cultured ponds (fish fry or fingerling were liberated), culturable ponds (no fish seed was liberated but fish culture is possible) and derelict ponds (fish culture is not possible under the present condition) were about 189,000 acres, 111,000 acres and 63,000 acres respectively. They represent 52%, 31% and 17% of the total area respectively.

Total production of ponds was about 108,000 metric tons. Total production of cultured, culturable and derelict ponds were about 89,000 metric tons, 15,000 metric tons and 4,000 metric tons respectively, which represent 82%, 14% and 4% of the total catch respectively.

TABLE 10—Annual Total Production of Baors for 1983/1984:

Total area of baors was 5,488 hectare. This was calculated on the basis of area data of dead rivers by districts provided by SPARRSO. Inundated dead rivers are usually called beels, and non-inundated dead rivers are called baors. With this view area of dead rivers in Jessore, Kushtia, Khulna and partially in Faridpur were treated as baors, and those of the other districts were added to the area of beels.

Total production was estimated as 862 metric tons.

TABLE 11—Annual Total Production of Shrimp Farms for 1983/1984:

According to the results of the Frame Survey of Shrimp Farms conducted during 1982/1983 total area of shrimp farms was 51,812 hectare. Out of this 31,817 hectare (about 60%) was in the old Khulna District and 19,531 hectare (about 40%) was in the old Chittagong District.

Total production was estimated as 8,219 metric tons, out of which 4,386 metric tons was shrimp.

TABLE 12—Annual Total Catch of the Marine Fisheries for 1983/84:

Statistics in this table were compiled by the Marine Fisheries Wing of Department of Fisheries in Chittagong.

1. Trawl fishing

Total catch by 73 trawlers was 14,500 metric tons out of which about 4,500 metric tons was shrimp.

2. Gill net and seine net

Total catch by a few thousand motorized gill net and seine net boats was estimated as 80,000 metric tons, out of which about 70% (56,000 metric tons) was hilsa.

3. Set bag net fishing

Total catch of about 12,000 set beg nets (estimated on the basis of frame survey of marine fishing village conducted in 1985) was estimated as about 57,000 metric tons.

4. Long line fishing

Total catch of about 750 Jew fish long line boats was estimated as 3,000 metric tons, all of which were Jew fish.

5. Other fishing

Total catch of the other fishing in the marine was estimated as 10,000 metric tons.

6. Marine Total Catch

Total catch of all the marine fisheries was about 164,800 metric tons, out of which 4,500 metric tons was shrimp.

SECTION 3 : Tables of Catch Statistics

TABLE 1—Annual Total Catch and Area Productivities of Fisheries for September 1983—August 1984

Sectors of fisheries				Total Catch	Water Area	Catch/Area
				Metric Ton	Hectare	kg/hectare
A. Inland fisheries						
(a) Capture						
1.	Rivers including estuaries except Sundarban	..	..	207,766	1,031,563	209
2.	Sundarban	..	..	7,783		
3.	Beels	..	..	51,373	114,161	450
4.	Kaptai Lake	..	..	4,057	68,800	59
5.	Flood lands	..	..	200,616	2,832,792	71
Capture total				..	471,595 (62.6%)	4,047,316
(b) Culture						
1.	Ponds	..	..	107,944	146,890	735
2.	Baors	..	..	862	5,488	157
3.	Shrimp farms	..	..	8,219	51,812	159
Culture total				..	117,025 (15.5%)	204,190
Inland total				..	588,620 (78.1%)	4,251,506
B. Marine fisheries (1983/84)						
(a) Industrial fisheries (trawl)				..	14,500	
(b) Artisanal fisheries				..	150,382	
Marine total				..	164,882(21.9%)	
Country total catch				..	7,53,502(100%)	

SOURCE: 1 Total Catch by sectors of the inland fisheries except Kaptai lake & Sundarban area were estimated by the Fisheries Resources Survey System of the Directorate of Fisheries.

2 Kaptai Lake catch has been estimated by BFDC and Sundarban catch by Forest Department.

3 Total catch of the marine fisheries were estimated by the Marine Fisheries Department.

TABLE 2.—Annual Total Catch of Inland Waters by Districts for September 1983—August 1984

[Unit : Metric Ton]

Old District	Rivers & estuaries	Sund- arban	Beels	Kaptai lake	Flood lands	Ponds	Baers	Shrimp farms	Total
Chittagong and C.H.T.	8,314	..	206	4,057	10,848	10,688	..	3,281	37,394
Comilla	13,686	..	496	..	22,002	11,846	..	..	48,030
Noakhali	24,845	..	1	..	11,883	9,799	..	..	46,528
Sylhet	14,027	..	14,715	..	16,979	3,905	..	..	49,623
Dhaka	14,066	..	2,213	..	24,127	4,044	..	..	44,450
Faridpur	12,593	..	862	..	14,375	3,727	130	..	31,687
*Jamalpur	1,137	..	..	..	2,866	912	..	..	4,915
Mymensingh	8,379	..	13,233	..	7,374	8,435	..	..	37,421
Tangail	896	..	1,050	..	2,614	927	..	..	5,487
Barisal	59,850	..	36	..	10,320	9,563	..	..	79,769
Jessore	7,786	..	2,267	..	9,464	7,192	491	64	27,264
Khulna	4,472	7,783	164	..	9,464	5,144	44	4,868	31,939
Kushtia	4,862	..	989	..	11,938	1,165	197	..	19,151
Patuakhali	8,346	..	..	..	4,021	5,365	..	6	17,738
Bogra	2,191	..	1,710	..	3,823	4,179	..	..	11,903
Dinajpur	358	..	563	..	4,476	7,059	..	..	12,456
Pabna	3,767	..	1,465	..	21,686	4,018	..	..	30,936
Rajshahi	10,594	..	8,932	..	3,512	8,031	..	..	31,069
Rangpur	7,597	..	2,471	..	8,847	1,945	..	..	20,860
Total	207,766	7,783	51,373	4,057	200,616	107,944	862	8,219	588,620
%	35.3	1.3	8.7	0.7	34.1	18.3	0.1	1.4	100.0

SOURCE : Catch Assessment Survey of various sectors conducted by the Fisheries Resources Survey System.

*Beel catch of Jamalpur is included in Mymensingh.

ANNUAL TOTAL CATCH OF THE RIVERINE FISHERIES

(September 1983—August 1984)

TABLE 3—Principal Rivers (a) Annual Catch by Species

								[Unit: Metric *Ton]	
Name of River	Major Carp	Other Carp	Cat fish	Live fish	Hilsa	Shrimp	Small shrimp	Misc.	Total
— P —									
Lower Meghna	437	..	1,283	..	52,836	1,199	636	3,568	59,959
Upper Meghna	538	167	256	92	2,466	1,240	..	6,081	10,840
Sub-total	975	167	1,539	92	55,302	2,439	636	9,649	70,799
Lower Padma	14	3	267	29	3,370	213	..	1,380	5,276
Upper Padma	157	..	602	..	823	..	135	3,495	5,212
Sub-total	171	3	869	29	4,193	213	135	4,875	10,488
Jamuna	711	..	678	..	472	17	..	4,744	6,622
Brahmaputra	207	6	334	52	61	..	451	2,681	3,792
Sub-total	918	6	1,012	52	533	17	451	7,425	10,414
Total	... 2,064	176	3,420	173	60,028	2,669	1,222	21,949	91,701

(b) Percentage by Species

Name of River	Major Carp	Other Carp	Cat fish	Live fish	Hilsa	Shrimp	Small shrimp	Unit %		
								Misc.	Total	
Lower Meghna	0.7	..	2.1	..	88.1	2.0	1.1	6.0	100.0	
Upper Meghna	5.0	1.5	2.4	0.8	22.8	11.4	11.4	56.1	100.0	
Sub-total	1.4	0.2	2.2	0.1	78.1	3.5	0.9	13.6	100.0	
Lower Padma	0.3	0.1	5.1	0.5	63.9	4.0	..	26.1	100.0	
Upper Padma	3.0	..	11.6	..	15.8	..	2.6	67.0	100.0	
Sub-total	1.6	0.0	8.3	0.3	40.0	2.0	1.3	46.5	100.0	
Jamuna	10.7	..	10.3	..	7.1	0.3	..	71.6	100.0	
Brahmaputra	5.4	0.1	8.8	1.4	1.6	..	11.9	70.7	100.0	
Sub-total	8.8	0.1	9.7	0.5	5.1	0.2	4.3	71.3	100.0	
Total	..	2.3	0.2	3.7	0.2	65.5	2.9	1.3	23.9	100.0

SOURCE: Catch Assessment Survey of Riverine Fisheries conducted by the Fisheries Resources Survey System.

TABLE 4—Annual Catch in Principal and Major Rivers by Districts

[Unit: Metric Ton]

Name of River	Major carp	Other carp	Cat fish	Live fish	Hilsa	Shrimp	Small shrimp	Misc.	Total
LOWER MEGHNA	437	..	1,283	..	52,836	1,199	636	3,568	59,959
Noakhali	170	..	499	..	20,570	467	248	1,389	23,343
Comilla	55	..	163	..	6,706	152	81	453	7,610
Barisal	212	..	621	..	25,560	580	307	1,726	29,006
UPPER MEGHNA	538	167	256	92	2,466	1,240	..	6,081	10,840
Comilla	182	56	87	31	834	420	..	2,058	3,668
Sylhet	37	12	18	6	172	86	..	424	755
Dhaka	258	80	122	44	1,179	593	..	2,907	5,183
Mymensingh	61	19	29	11	281	141	..	692	1,234
LOWER PADMA	14	3	267	29	3,370	213	..	1,380	5,276
Dhaka	5	1	97	10	1,218	77	..	499	1,907
Faridpur	9	2	170	19	2,152	136	..	881	3,369
UPPER PADMA	157	..	602	..	823	..	135	3,495	5,212
Kushtia	84	..	325	..	444	..	73	1,885	2,811
Rajshahi	73	..	277	..	379	..	62	1,610	2,401

SOURCE: Catch Assessment Survey of Riverine Fisheries conducted by the Fisheries Resources Survey System.

TABLE 4—(Continued)

Name of River	Major carp	Other carp	Cat fish	Live fish	Hilsa	Shrimp	Small shrimp	Misc.	Total
JAMUNA	711	..	678	..	472	17	..	4,744	6,622
Dhaka	96	..	91	..	64	2	..	640	893
Jamalpur	63	..	60	..	42	2	..	422	589
Tangail	96	..	92	..	64	2	..	642	896
Bogra	53	..	50	..	35	1	..	353	492
Rangpur	17	..	16	..	11	0	..	112	156
Pabna	386	..	369	..	256	10	..	2,575	3,596
BRAHMAPUTRA	207	6	334	52	61	..	451	2,681	3,792
Rangpur	207	6	334	52	61	..	451	2,681	3,792
Titulia	..	..	1,115	..	21,694	..	2,702	2,434	27,945
Barisal	..	..	930	..	18,092	..	2,253	2,030	23,305
Patuakhali	..	..	185	..	3,602	..	449	404	4,640
GARAI-MOD.	193	20	51	207	1,454	..	673	1,324	3,922
Faridpur	48	5	13	51	360	..	167	329	973
Barisal	89	9	24	96	672	..	312	612	1,814
Jessore	47	5	12	51	356	..	164	323	958
Kushtia	9	1	2	9	66	..	30	60	177
OLD BRAHMA- PUTRA	50	75	9	9	..	2	..	1,869	2,014
Dhaka	3	5	1	1	..	0	..	114	124
Jamalpur	14	20	2	2	..	1	..	509	548
Mymensingh	33	50	6	6	..	1	..	1,246	1,342

TABLE 5—Annual Catch in All Rivers by Districts by Species

[Unit: Metric Ton]

Old Districts	Major carp	Other carp	Cat fish	Live fish	Hilsa	Shrimp	Small shrimp	Misc.	Total	
Chittagong and C.H.T	93	..	73	..	189	1,082	1,748	5,129	8,314	
Comilla	389	56	387	31	7,672	572	394	4,185	13,636	
Noakhali	265	..	585	..	20,652	467	443	2,433	24,845	
Sylhet	3,010	1,246	2,234	590	637	86	..	6,224	14,027	
Dhaka	362	86	311	55	2,461	672	298	9,821	14,066	
Faridpur	57	7	334	70	5,816	136	167	6,006	12,593	
Jamalpur	77	20	62	2	42	3	..	931	1,137	
Mymensingh	1,394	609	1,004	272	484	142	..	4,474	8,379	
Tangail	96	..	92	..	64	2	..	642	896	
Barisal	662	9	1,902	96	44,639	580	3,616	8,346	59,850	
Jessore	47	5	341	51	1,045	..	464	5,833	7,786	
Khulna	282	..	255	..	246	..	581	3,108	4,472	
Kushtia	211	1	434	9	613	..	347	3,247	4,862	
Patuakhali	233	..	396	..	3,806	..	931	2,980	8,340	
Bogra	53	..	50	..	35	1	59	1,993	2,191	
Dinajpur	109	..	23	5	..	..	8	213	358	
Pabna	405	..	397	..	256	10	15	2,684	3,767	
Rajshahi	147	..	537	..	1,353	..	62	8,495	10,594	
Rangpur	690	6	562	72	72	..	970	5,225	7,597	
Total	..	8,582	2,045	9,979	1,253	90,082	3,753	10,103	81,969	207,766
%		4.1	1.0	4.8	0.6	43.4	1.8	4.9	39.4	100.0

REMARKS: 1. Catch of Chittagong Hill Tract is included in Chittagong.
 2. Catch in Sundarbans is not included in Khulna.

SOURCE: Catch Assessment Survey of Riverine Fisheries conducted by the Fisheries
 Resources Survey System.



TABLE 6—Annual Total Catch of the Beel Fisheries 1983/1984

					Area of Beels in Hectare.	Estimated Annual Total Catch in M.T.
Chittagong	..	..	..	..	456	206
Comilla	..	..	..	..	1,103	496
Noakhali	..	..	..	..	3	1
Sylhet	..	..	..	..	32,700	14,715
Dhaka	..	..	..	..	4,918	2,213
Faridpur	..	..	..	..	1,915	862
Mymensingh	..	..	..	..	29,406	13,233
Tangail	..	..	..	..	2,333	1,050
Barisal	..	..	..	..	79	36
Jessore	..	..	..	..	5,037	2,267
Khulna	..	..	..	..	365	164
Kushtia	..	..	..	..	2,197	989
Patuakhali	..	..	..	..	..	..
Bogra	..	..	..	..	3,801	1,710
Dinajpur	..	..	..	..	1,252	563
Pabna	..	..	..	..	3,255	1,465
Rajshahi	..	..	..	..	19,849	8,932
Rangpur	..	..	..	..	5,492	2,471
Total ..					114,161	51,373

REMARKS : Catch of Jamalpur included in Mymensingh.

SOURCE : Area of beels ; SPARRSO report (Beels + Dead rivers)
Recorded catches in several beels and interview results of all
beels in two thanas by the Fisheries Resources Survey System.

TABLE 7— Annual Catch of Kaptai Lake (1983-84)

Rui ..	..	..	..	..	286
Catla	..	..	..	..	307
Mrigal	..	..	..	..	87
Kalibaush	..	..	..	..	308
Ghania	..	..	..	..	401
Bacha	..	..	..	..	41
Air ..	..	..	..	..	82
Boal ..	..	..	..	..	79
Gazar ..	..	..	..	..	87
Shol	..	..	..	..	21
Chital	..	..	..	..	288
Chapila	..	..	..	..	1,622
Phali ..	..	..	..	..	150
Baim	..	..	..	..	25
Punti	..	..	..	..	55
Tengra/Pabda	..	..	..	..	125
Mohashol	..	..	..	..	58
Fessya	..	..	..	..	2
Mola	..	..	..	..	26
Kazari	..	..	..	..	6
Baspata	..	..	..	..	1
Total ..					4,057

(SOURCE : Bangladesh Fisheries Development Corporation).

TABLE 8—Annual Total Catch in Flood Lands (September 1983—August 1984)

Old District.			No. of subsistence fisheries households (000)	Average catch per household (Kg.)	Total Catch estimated (M.T.)
Chittagong	..	..	523	17.9	9,362
Chittagong Hill Tracts	..	..	83	17.9	1,486
Comilla	..	..	397	55.42	22,002
Noakhali	..	..	213	55.79	11,883
Sylhet	..	..	637	26.65	16,976
Dhaka	..	..	967	24.95	24,127
Faridpur	..	..	680	21.14	14,375
Jamālpur	..	..	239	11.99	2,866
Mymensingh	..	..	615	11.99	7,374
Tangail	..	..	218	11.99	2,614
Barisal	..	..	639	16.15	10,320
Jessore	..	..	202	46.85	9,464
Khulna	..	..	202	46.85	9,464
Kushtia	..	..	207	57.67	11,938
Patuakhali	..	..	249	16.15	4,021
Bogra	..	..	369	10.36	3,823
Dinajpur	..	..	432	10.36	4,476
Pabna	..	..	367	59.09	21,686
Rajshahi	..	..	711	4.94	3,512
Rangpur	..	..	854	10.36	8,847
Total			8,804	(22.78)	200,616

SOURCE: Catch Assessment Survey of Subsistence Fisheries by the Fisheries Resources Survey System.

TABLE 9—Total Area and Total Production of Ponds by Districts
(September 1983—August 1984)

Old Districts	Total Area of Ponds (Acre)				Total Production of Ponds(M. Ton)			
	Cultured	Culturable	Derelict	Total	Cultured	Culturable	Derelict	Total
Chittagong	17,850	16,211	1,288	35,349	8,390	2,221	77	10,688
Cornilla	22,546	7,695	3,243	33,484	10,597	1,054	195	11,846
Noakhali	18,653	6,366	2,683	27,702	8,766	872	161	9,799
Sylhet	4,946	6,901	10,583	22,430	2,325	945	635	3,905
Dhaka	6,091	6,876	3,990	16,957	2,863	942	239	4,044
Faridpur	5,612	6,335	3,675	15,622	2,638	868	221	3,727
Jamalpur	1,509	1,042	994	3,545	709	143	60	912
Mymensingh	16,779	3,188	1,874	21,841	7,886	437	112	8,435
Tangail	1,533	1,059	1,010	3,602	721	145	61	927
Barisal	17,790	6,819	4,463	29,072	8,361	934	268	9,563
Jessore	14,508	2,380	784	17,672	6,819	326	47	7,192
Khulna	10,282	1,684	1,339	13,305	4,833	231	80	5,144
Kushtia	2,125	871	790	3,786	999	119	47	1,165
Patuakhali	9,980	3,826	2,504	16,310	4,691	524	150	5,365
Bogra	7,254	4,724	2,051	14,029	3,409	647	123	4,179
Dinajpur	12,251	7,979	3,464	23,694	5,758	1,093	208	7,059
Pabna	5,582	8,207	4,508	18,297	2,624	1,124	270	4,018
Rajshahi	11,155	16,401	9,009	36,565	5,243	2,247	541	8,031
Rangpur	2,912	2,171	4,635	9,718	1,369	298	278	1,945
Total ..	189,358	110,735	62,887	362,980	89,001	15,170	3,773	107,944
% ..	52.2	30.5	17.3	100.0	82.4	14.1	3.5	100.0

REMARKS: Total production were calculated with productivities as follows. 470 Kg./acre for cultured, 137 Kg/acre for culturable and 60 Kg/acre for derelict.

SOURCE: Area: Calculated on the basis of data of 40 sample thana of SPARRSO report.

Productivities: Catch Assessment Survey of Ponds by Fisheries Resources Survey System.

TABLE 10—Annual Total Catch of Baors for 1983/1984

Old District.				Area of Baors in Hectare.	Production of Baors in Metric Ton
Jessore :					
Government managed	..	..	..	429	180
Privately managed	..	..	..	2,305	311
Kushtia (Private)	..	..	..	1,458	197
Khulna (Private)	..	..	..	331	44
Faridpur (Private)	..	..	..	965	130
Total				5,488	862

REMARKS : Production were calculated by multiplying the area by average production per hectare as follows.

Government managed .. 420 Kg/Hectare

Privately managed .. 135 Kg/Hectare

SOURCE : Area : SPARRSO report.

Productivities : Fisheries Resources Survey System.

TABLE 11—Annual Total Catch of Shrimp Farms for 1983/1984

Old District.	Area of Shrimp Farms in Hectare.	Production in Metric/Ton		
		Shrimp.	Fish.	Total.
Chittagong ..	19,531	1,836	1,445	3,281
Khulna ..	31,817	2,514	2,354	4,868
Jessore ..	422	33	31	64
Patuakhali ..	42	3	3	6
Total ..	51,812	4,386	3,833	8,219

REMARKS : Production were estimated with the following productivities.

Chittagong : Shrimp .. 94 Kg/Hectare
Fish .. 74 Kg/Hectare.

Other Districts : Shrimp .. 79 Kg/Hectare
Fish .. 74 Kg/Hectare

SOURCE : Area : Frame Survey of Shrimp Farms by the Fisheries Resources Survey System.

Productivities : Fisheries Resources Survey System.

TABLE 12—Annual Total Catch of the Marine Fisheries for 1983/1984

[Catch in Metric Ton]

1. Trawl fishing :

Type of Trawler	No. of Trawlers.	Total Catch		
		Shrimp	Fish	Total.
Shrimp trawlers	27	3,300	1,700	5,000
Fish trawlers	46	1,200	8,300	9,500
Total	73	4,500	10,000	14,500

2. Gill net and Seine net :

	No. of mechanised boats	Total Catch.
Registered	2,857	
Un-registered	500	
Total	3,347	80,000 (70 % Hilsa)

3. Set bag net fishing :

	No. of nets	Total Catch
Seasonal (Nov.—Feb). ..	4,500	39,376
All season	7,410	18,006
Total	11,910	57,382

4. Long line fishing :

	No. of boat	Total Catch
Jew fish (Longlive) ..	743	3,000 (Jew fish).

5. Other fishing :

	Total Catch
gears :	10,000

6. Marine Total Catch :

164,882

METHODS OF ESTIMATION

1. Riverine fisheries

The Catch Assessment survey was conducted by the method of three stage sampling. At the first stage, a few sample fishing villages were selected in each district section of each principal river. For each sample village, two sample days were selected in each bi-month. On each sample day, the recorder visited the sample village, selected maximum five sample fishing units for each type of fishing gear used, and recorded catches of sample fishing units by observation or interview.

Estimation of bi-monthly total catches by rivers by districts were made in the opposite order to the steps of sampling. First, daily total catches were estimated for each sample day of each sample village, on the basis of catch data of sample fishing units. Second, a bi-monthly average daily total catch of the sample village was calculated by adding estimated daily total catches of the two sample days in the bi-month and dividing it by two. Third, bi-monthly average daily total catches thus calculated for a few sample villages in each section of each principal river were added together and expanded to the whole section by multiplying a raising factor which was calculated by dividing the total number of fishing boats in the section by that in the sample village. Finally, the average daily total catch were multiplied by 61 to get the bi-monthly total catch.

Information on the number of fishing boats in each fishing village used for calculating the raising factor have been earlier collected by the frame survey of rivers.

2. Sundarban area fishery

Quite a considerable quality of fish and shell fish are caught in the sundarban forest area of Khulna zone. As the area is not easily accessible and there is no public transport in the area it is very difficult to collect catch data from the area. All activities including fishing in the sundarban area are controlled and managed by the Forest Department. The Forest Department gives permit to the fishermen for fishing in the waters in sundarban forest area and record information about all fishing efforts and catch data from the fishermen.

They also control seasonal fishing undertaken in the sea based at forest area like Dubla Char etc. Fishing in these area is undertaken by mainly set beg net. This catch has been included in the marine catch under artisanal fishery and as such the catch of Bay of Bengal has been excluded from Sundarban catch.

3. Beels fisheries

Area of beels were measured on aerial photographs by the Bangladesh Space Research and Remote Sensing Organization (SAPRRSO) by old districts. Since area of dead rivers are also utilized as beels, area of dead rivers were added to area of beels excluding those of Jessore, Kushtia, Khulna and particularly Faridpur, where dead rivers were classified as baors.

During the season of 1983-84, six government managed beels in Sylhet and Mymensingh were observed by the government officers. In calculating an average productivity of beels, such data as well as catch data obtained by interview during the frame survey of beels in three thanas were utilized to get an overall average productivity of 450 Kg/hectare.

Production were estimated by multiplying the areas and the productivity for each of the districts.

4. Kaptai Lake

The total catch was estimated on the basis of the landing data recorded by BFDC.

5. Flood lands

Total catches of flood lands by old districts were calculated on the basis of data obtained by the Subsistence Catch Assessment Survey. Number of subsistence fishing households were calculated by districts by multiplying the numbers of households in rural area obtained by Bangladesh Bureau of Statistics by the ratios of subsistence fishing households obtained by the Catch Assessment Survey. Average catch per household for each of the districts were obtained from the Catch Assessment Survey in which catch of subsistence fishermen were observed and recorded by the recorders in sample villages on sample days. Then, total catches by districts were estimated by multiplying the number of subsistence fishing households by the average catch per household.

Ponds

Total area of ponds by districts by conditions, that is, cultured, culturable and derelict, were estimated on the basis of data collected from 40 sample thanas by SPARRSO (Bangladesh Space Research and Remote Sensing Organization). Total production of ponds were calculated by multiplying the area of ponds by productivities by conditions, that is, 470 Kg/acre for cultured ponds, 137 Kg/acre for culturable ponds, and 60 Kg/acre for derelict ponds. Such productivity data were estimated on the basis of sample catch data collected by the Catch Assessment Survey of Ponds.

Catch Assessment Survey of Ponds was conducted monthly on 19 sample villages. The recorders listed 50 ponds in each sample village, and classified them into three classes of condition, that is cultured, culturable and derelict. Five sample ponds were selected from each of the three classes, and production of fish during the past one month was inquired and recorded. The productivities used for estimating the total catches were calculated on the basis of such sample catch data collected.

7. Baors

Area of baors in Jessore, Kushtia, Khulna and Faridpur Districts were quoted from data under heading "Dead rivers and ox-bow lakes" of the SPARRSO report. In Jessore District, 429 hectare was government managed baors out of the total area of 2734 hectare. In Faridpur District, 965 hectare

was estimated as baors and 514 hectare as beels. Production were calculated by multiplying the area of baors by productivities of 420 Kg/hectare for Government managed baors and 135 Kg/hectare for private managed.

8. Shrimp farms

Area of shrimp farms by districts were collected by the Frame Survey of shrimp farms. Production were calculated by multiplying the area by productivities as follows:

Chittagong : Shrimp 94 Kg/Ha, fish 74 Kg/Ha.

Other districts : Shrimp 79 Kg/Ha, fish 74 Kg/Ha.

9. Marine fisheries

Catch statistics of the marine fisheries for 1983-84 were compiled by the Marine Fisheries Department in Chittagong.



APPENDIX 2

AREA STATISTICS OF INLAND WATER-BODIES

1. Total Area of Inland Water-bodies by Districts

[Unit: Hectare]

District	Rivers & estuaries.	Beels	Baors	Kaptai lake	Ponds	Shrimp Farms	Total
Chittagong	60,010	89	..	..	14,305	19,531	93,935
Chittagong H.T.	20,570	367	..	68,800	..	..	89,737
Noakhali	95,732	3	..	..	11,210	..	106,945
Comilla	39,505	1,103	..	..	13,550	..	54,158
Sylhet	20,802	32,700	..	..	9,077	..	62,579
Dhaka	47,317	4,918	..	..	6,862	..	59,097
Faridpur	51,530	1,915	965	..	6,322	..	60,732
Jamalpur	35,496	..	..	..	1,435	..	1,435
Mymensingh	35,496	29,406	..	..	8,839	..	73,741
Tangail	13,130	2,333	..	..	1,458	..	16,921
Barisal	176,105	79	..	..	11,765	..	187,949
Jessore	17,482	5,037	2,734	..	7,151	422	32,828
Khulna	203,612	365	331	..	5,385	31,817	241,510
Kushtia	11,311	2,197	1,458	..	1,532	..	16,498
Patuakhali	107,443	..	..	..	6,600	42	114,085
Bogra	13,736	3,801	..	..	5,677	..	23,214
Dinajpur	9,104	1,252	..	..	9,588	..	19,944
Pabna	41,378	3,255	..	..	7,404	..	52,037
Rajshahi	20,991	19,849	..	..	14,797	..	55,637
Rangpur	46,309	5,492	..	..	3,933	..	55,734
Total	.. 1,031,563	114,161	5,488	68,800	146,890	51,812	1,418,714

Source: Inland Water-bodies Study by SPARSO as of February 1983, excepting for the areas of shrimp farms. Shrimp farm areas are survey results of the Frame Survey of Shrimp Farms conducted by the Fisheries Resources Surveys System during 1982/1983.

Area of rivers and beels of Jamalpur is included in Mymensingh.

2. Total Area of Rivers by Districts

APPENDIX-2 (Contd.)

[Unit : Hectare]

District	Principal Rivers						Other Rivers	Estuary	Total
	L. Meg.	U. Meg.	L. Pad.	U Pad.	Jamuna	Total			
Chittagong	..	..	..	..	..	..	9,253	50,757	60,010
Chittagong H.T.	..	..	..	..	..	..	20,570	..	20,570
Noakhali	6,787	..	..	..	..	6,787	3,453	85,492	95,732
Comilla	9,824	17,796	538	..	..	28,158	11,347	..	39,505
Sylhet	..	..	..	..	..	..	20,802	..	20,802
Dhaka	..	14,299	12,588	57	2,946	29,890	17,427	..	47,317
Faridpur	1,400	..	29,199	2,758	..	33,357	18,173	..	51,530
Jamalpur	}	1,497	..	..	5,176	6,673	28,823	..	35,496
Mymensingh									
Tangail	..	..	..	..	6,991	6,991	6,139	..	13,130
Barisal	22,396	..	..	..	..	22,396	42,635	111,074	176,105
Jessore	..	..	..	..	..	..	17,482	..	17,482
Khulna	..	..	..	..	..	..	3,375	200,237	203,612
Kushtia	..	..	..	5,120	..	5,120	6,191	..	11,311
Patuakhali	..	..	..	..	..	..	3,175	104,268	107,443
Bogra	..	..	..	..	9,824	9,824	3,912	..	13,736
Dinajpur	..	..	..	..	..	..	9,104	..	9,104
Pabna	..	..	..	8,858	24,088	32,946	8,432	..	41,378
Rajshahi	..	..	..	10,372	..	10,372	10,619	..	20,991
Rangpur	..	..	..	..	24,641	24,641	21,668	..	46,309
Total	..	40,407	33,592	42,325	27,165	73,666	217,155	262,580	551,828 1,031,563

Source: SPARSO as of February 1983.

REMARKS: Area in Jamalpur is included in Mymensingh.

3. Total Area of Beels and Baors by Districts

APPENDIX-2 (Contd).

[Unit: Hectare]

District	Beels			Baors in Ha.
	Depression (D)	Inundated Dead river (I)	Beels(D+I):	
Chittagong	3	86	89	..
Chittagong H.T. ..	297	70	367	..
Noakhali	..	3	3	..
Comilla	857	246	1,103	..
Sylhet	30,562	2,138	32,700	..
Dhaka	4,037	881	4,918	..
Faridpur	1,401	514	1,915	945
Jamalpur	..	..	..	..
Mymensingh	25 866	3,540	29,406	..
Tangail	2,009	324	2,333	..
Barisal	79	..	79	..
Jessore	5,037	..	5,037	2,734
Khulna	365	..	365	331
Kushtia	2,197	..	2,197	1,438
Patuakhali	..	..	..	..
Bogra	3,229	572	3,801	..
Dinajpur	531	721	1,252	..
Pabna	2,057	1,198	3,255	..
Rajshahi	16,737	3,112	19,849	..
Rangpur	1,912	3,580	5,492	..
Total	97,176	16,985	114,161	5,483 ..

Source: SPARSO as of February 1983.

Areas of dead rivers in Jessore, Kushtia, Khulna and partially in Faridpur are allocated as baors, which are non-inundated dead rivers.

Remark: Area in Jamalpur is included in Mymensingh.

4. Total Number and Total Area of Ponds by District

APPENDIX-2 (Contd.)

[Area : Acre]

District	Total No. of Pond				Total Area of Pond			
	Cultured	Culturable	Derelict	Total	Cultured	Culturable	Derelict	Total
1. Chittagong	43,471	47,085	12,701	1,03,257	17,850	16,211	1,288	35,349
2. Comilla	70,315	35,941	14,352	1,20,608	22,546	7,695	3,243	33,484
3. Noakhali	58,172	29,735	11,874	99,781	18,653	6,366	2,683	27,702
4. Sylhet	20,639	40,340	56,288	1,17,267	4,946	6,901	10,583	22,430
5. Dhaka	17,311	14,380	22,574	54,265	6,091	6,876	3,990	16,957
6. Faridpur	15,948	13,248	20,798	49,994	5,612	6,335	3,675	15,622
7. Jamalpur	4,203	2,097	3,878	10,178	1,509	1,042	994	3,545
8. Mymensingh	47,906	19,304	11,583	78,793	16,779	3,188	1,874	21,841
9. Tangail	4,272	2,131	3,941	10,344	1,533	1,059	1,010	3,602
10. Barisal	85,657	41,190	29,176	1,56,023	17,790	6,819	4,463	29,072
11. Jessore	63,210	14,213	10,859	88,282	14,508	2,380	784	17,672
12. Khulna	35,401	12,276	9,422	57,099	10,282	1,684	1,339	13,305
13. Kushtia	15,552	7,523	8,534	31,609	2,125	871	790	3,786
14. Patuakhali	48,056	23,109	16,369	87,534	9,980	3,826	2,504	16,310
15. Bogra	7,964	8,445	8,875	25,284	7,254	4,724	2,051	14,029
16. Dinajpur	13,451	14,262	14,989	42,702	12,251	7,979	3,464	23,694
17. Pabna	11,629	16,390	8,322	36,341	5,582	8,207	4,508	18,297
18. Rajshahi	23,239	32,753	16,631	72,623	11,155	16,401	9,009	36,565
19. Rangpur	12,299	10,820	23,119	46,238	2,912	2,171	4,635	9,718
Total	5,98,695	3,85,242	3,04,285	12,88,222	1,89,358	1,10,735	62,887	3,62,980
Percent	46.48	29.90	23.62	100.00	52.17	30.51	17.32	100.00

REMARKS: Data by Districts were estimated on the basis of sample data of 40 sample Thanas measured by SPARRSO with infra-red aerial photos taken in February 1983.

AREA STATISTICS OF MARINE WATER

APPENDIX 3

Marine water of Bangladesh

- | | | |
|---|-------------------|--------|
| 1. Coast line of Bangladesh | | 480 km |
| 2. Internal water up to 10 fathom depth (base line) from the coast line. | 7,325 sq. n. mile | |
| 3. Territorial water up to 12 n. miles from the base | 2,640 | " " " |
| 4. Exclusive Economic Zone (200 n. miles from the Zone line) This includes Territorial water. | 41,040 | " " " |
| 5. Continental shelf (Up to 40 fathom depth) excluding internal and territorial water. | 24,800 | " " " |

Total marine water Area (Internal Water+EEZ)	48,365 Sq. n. mile
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SOURCE : IWTA

(TENTATIVE)

