

# Annual Report 2013



**Department of Fisheries, Bangladesh**  
**Ministry of Fisheries & Livestock**



## Annual Report 2013

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## *Preface*

Fisheries sector of Bangladesh has been playing an increasingly important role in our economy for few decades. Fisheries in Bangladesh have both prospects and challenges. Fisheries sector is contributing a significant role in the economy of Bangladesh. Department of Fisheries (DoF) is carrying out activities related to providing animal protein to the huge population of Bangladesh through fisheries conservation, proper management and planned development of fisheries resources to uplift socio-economic condition of the fishers, creating employment opportunity for the rural unemployed and landless people, earning foreign currency by exporting shrimp, fish and fishery products. Department of Fisheries also assists government in formulating policies and acts required for the sustainable development and integrated natural resources management and fisheries conservation.

Fish provides about 60% of animal protein of our daily diet. In order to ensure overall development of the sector, DoF is implementing several projects and programs under both development and revenue budget. The annual report 2013 brought together the brief of the activities performed by the DoF, mainly demand driven extension services, community based fisheries management, hilsa conservation, environment friendly shrimp culture, HACCP and traceability based quality control of fish and fish products, integrated natural resources management, sustainable marine fisheries management etc. The report also presents the development of fisheries sector to visualize the potential and achievements in the contemporary period.

We believe this report will be helpful for the field officers of DoF, planners, researchers, development partners, extension workers, NGOs and all other relevant stakeholders to fisheries sector. I appreciate my colleagues who have given their valuable time, effort and endeavor in preparing this report. I offer my heartfelt thanks, gratitude and acknowledgement to them.

(Syed Arif Azad)



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## 1. Introduction

Bangladesh, a riverine country is blessed with many rivers-canal, depressions and oxbow lakes, ponds and floodplains, covering a huge area of water resources of 4.575 million hectares. Besides, there is a huge marine fisheries resources expanding over an Exclusive Economic Zone (EEZ) of 1, 66,000 sq. km. Since time immemorial, these inland, coastal and marine waters are the main sources of fish. As an agro-based country, the contribution of fisheries sector to the national economy has always been important and main source of animal protein, employment opportunities, food and nutritional security, foreign earnings, aquatic biodiversity conservation and socio-economic development. Fisheries sector contributes 4.39% to GDP and 22.76% to agricultural GDP. Fish supplements to about 60% of our daily animal protein intake. About 10% of the population is dependent directly and indirectly on the fisheries for their livelihood.

Extension programs of sustainable aquaculture technologies for fish and shrimp, conservation and management of the fresh water and marine open water capture fisheries, optimization and fine-tuning of fish inspection and quality control programs and use of information and communication technologies in fisheries sector has been taken to achieve the much desired targets. As a part of the 'Digital Bangladesh' program the Government initiated e-Extension services of fish/shrimp culture and extension programs to provide appropriate services to the door steps of the farmers. In addition of these, existing laws and acts related to fisheries have been amended and updated to ensure quality fish/shrimp production and availability of quality inputs.

In conformity with the targets of 'Vision-2021' of the present Govt., the Department of Fisheries (DoF) has also envisioned some important programs and targets to achieve expedite that goal. Initiation of good practices in environment friendly fish/shrimp farming for promotion of export, biological management of jalmohals, establishing of easy access of real fishers to the open water capture fisheries, creation of employment opportunities and other various pragmatic programs have been taken by the DoF to facilitate achievement of 'Vision-2021'. It is expected that all these programs will contribute to reduce present poverty from 6.5 crores to 2.2 crores by the year 2021.

## 2. Background

Department of Fisheries, Bangladesh was first established in the undivided Bengal of the British India in 1908 and since then it has experienced many changes. In 1910, the DoF was merged with the Department of Agriculture, but as per the recommendations of Mr. T. Southwell, the DoF regained its status as an independent organization in 1917. The DoF was abolished again in 1923. However, after a long gap, following the recommendations of Dr. M. Ramswami Naidu, the DoF was revived in May, 1942. Since the inception of the then East Pakistan, the activities of DoF had been continued. After the independence of Bangladesh in 1971, the organization renamed as Department of Fisheries (DoF) instead of the Central Fisheries Department in April 1975, and in 1984, the Central Marine Fisheries Department merged with the DoF as Marine Fisheries wing.



### 3. Mission of the Department of Fisheries (DoF)

The mission statement reflects the overall goal for the Department of Fisheries (DoF) and incorporates the objectives for the sector as a whole including all stakeholders.

The Department's mission is to support sustainable growth in fish and shrimp production with other aquatic resources as well, for domestic consumption and exports, and management of open water fisheries resources through community participation leading to equitable distribution of the benefits generated, for optimal economic and social growth in Bangladesh.

### 4. Mandate of the DoF

- To disseminate improved aquaculture technologies through training and demonstration and to extend advisory services to the farmers.
- To enhance fisheries resources through facilitating conservation and management measures.
- To assist the administrative ministry in formulation of policies, acts etc.
- To enforce quality control measures and issuance of health certificates for exportable fish and fish products.
- To conduct fisheries resources survey and assessment of stock to develop fisheries database for proper planning.
- To facilitate arrangement for institutional credit for fish and shrimp farmers, fishers and fish traders.
- To facilitate alternative income generating activities for rural poor and unemployed people towards poverty alleviation.
- To formulate and implement development projects towards sustainable utilization of fisheries resources to ensure food security.

### 5. Organizational Setup of the DoF

DoF has following wings to render its services:

- ◆ Inland Fisheries,
- ◆ Marine Fisheries,
- ◆ Fisheries Resource Survey System (FRSS),
- ◆ Fish Inspection and Quality Control (FIQC), and
- ◆ Training.

## 5.1 Manpower under Revenue

Table 1: Manpower under revenue budget and manpower in position

Heads	Category		Number of Posts	Number of Vacant Posts	In position
Revenue	Class-I	Cadre	725	169	556
		Non-Cadre	355	91	264
	Class-II		634	184	450
	Class-III		1935	139	1796
	Class-IV		1329	81	1248
	Total		4978	664	4314

## 5.2 Manpower under Development Projects

Table 2: Manpower under development project and manpower in position (2012-13)

Heads	Category	Number of Posts	Number of vacant posts	In position
Development Projects (27 Nos)	Class-I	151	23	128
	Class-II	15	11	4
	Class-III	259	20	239
	Class-IV	91	28	63
	<b>Total</b>	<b>516</b>	<b>82</b>	<b>434</b>

## 6. Budgetary Allocation

The Departmental Budget is a comprehensive blueprint of the annual activities expressed in financial terms. It authorizes the department to make expenditure in order to perform its functions and to implement its policy to achieve desired objectives stated in mission's statement. The budget has two distinct categories: (a) Revenue and (b) Development.

### 6.1 Revenue Budget of DoF

Under the revenue budget regular activities are accomplished and expenses include payment of pay and allowances, supplies and services, repair- maintenance and rehabilitation, miscellaneous, procurement of civil works and program apart from Annual Development Program (ADP) fall under the revenue budget. During the last five years, non-development budget of DoF is shown in Table-3.

Table 3: Non-development budget of DoF (2012-13)

(Taka in lakh)

Code No.	Description	2008-09	2009-10	2010-11	2011-12	2012-13
4500	Pay of Officer	1524.43	2364.90	2477.33	2548.46	236758
4600	Pay of Staff	2098.84	2645.27	2700.46	2181.19	298611
4700	Allowances	2169.62	2468.98	3799.07	3606.10	363219
4800	Supplies and Services	1879.60	1929.47	2102.42	3197.12	402743
4900	Repair-Maintenance	167.80	170.3	203.85	467.00	60476
7000	Civil Works	0	0	0	0	0
6800	Assets Procurement	0	0	0	210.00	24695
<b>Total</b>		<b>8840.29</b>	<b>9578.99</b>	<b>11283.13</b>	<b>11283.13</b>	<b>1386502</b>



## 6.2 Development Budget of DoF

Development budget includes all expenditures included in Annual Development Plan (ADP).

Table 4: Development budget of DoF (2006-07 to 2012-13)

(Taka in lakh)

Financial Year	Number of Project	Development budget						Achievement
		Expenditure			Allocation			
		Total	LC	PA	Total	LC	PA	
2006-07	17	4617.33	2948.10	1669.23	4829.00	3381.00	1448.00	97%
2007-08	16	5544.13	8960.53	1583.60	6370.00	4567.00	1804.-00	87%
2008-09	17	5840.11	3147.92	2692.19	7905.00	3817.00	4088.00	74%
2009-10	21	8851.71	5132.41	3719.30	10119.00	5342.00	4777.00	87%
2010-11	23	12903.42	-	-	13547.00	-	-	96%
2011-12	28	19410.00	-	-	19410.00	-	-	100%
2012-13	27	15618.06	9282.99	6335.07	15337.00	9331.00	6006.00	102%*

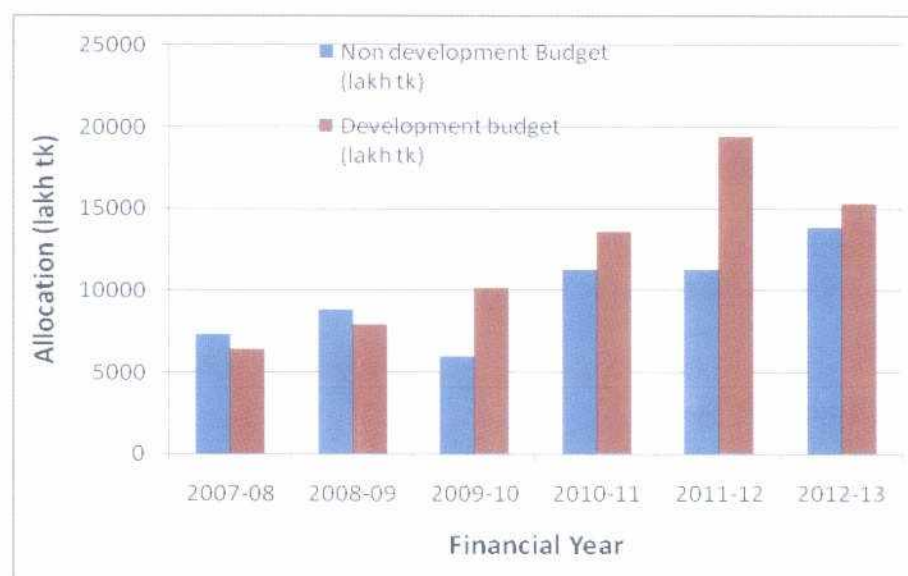


Figure 1: Development and Non-Development budgetary allocation of last six years

## 7. Sources of Revenue Earnings

There are two major sources for government revenue earning:

1. Tax Revenues (TR)
2. Non-tax Revenues (NTR)

All revenue earning by the DoF is Non-tax Revenues. During last five years, non tax revenue earned by the DoF is shown in Table 5



Table 5: Non tax revenue earned in last five years

(Taka in Thousand)

Economic Code	Description	Financial Year				
		2008-09	2009-10	2010-11	2011-12	2012-13
2037	Rent of Govt. Vehicles	24	70	80	80	80
2047	Fish hunting fee	40	150	450	250	450
2071	Other service fee	158	0	4	0	0
2111	Rent of Residences	11	0	900	40	200
2326	Fish and fisheries product	70434	80483	102537	88737	140000
2366	Tenders and other documents	2400	4500	2950	6000	3260
2371	Non usable materials and scrap etc.	15	140	250	250	300
2376	Miscellaneous non commercial sale	1322	1000	1950	1750	2370
2671	Refund of extra payment	3331	5010	9960	5860	10,000
2681	Miscellaneous revenue earning	12631	28647	25646	15548	20,000
	<b>Total</b>	<b>90366</b>	<b>120000</b>	<b>144727</b>	<b>118477</b>	<b>176660</b>

### 8. Status of Fisheries Resources and Production

Bangladesh is endowed with rich and vast fisheries resources. Due to favorable natural conditions and geographical location, these fisheries resources having high potential of increasing fisheries production. Country's fisheries resources are divided into two major groups such as inland fisheries and marine fisheries. Inland fisheries is further divided into two groups i.e. aqua-culture and inland capture. Inland fisheries occupies an area of 47.04 lakh ha and with an area of 1,18,813 sq.km along with 200 nautical miles of EEZ form the baseline. The Culture fisheries include ponds,



Some fishing trawlers in the port, Chittagong



Inland open water, Dawudkandi, Comilla.

ox-bow lakes and coastal shrimp farms. The flood-plains and the beels, which cover an area of 29.25 lakh ha, offering tremendous scope and potential for augmenting fish production by adopting appropriate aquaculture enhancement techniques.

The country has huge opportunities for the development of brackish water aquaculture boosting shrimp production and earning substantial amount of foreign currencies. Production of shrimp both from culture and



capture fisheries has been increased to a great extent since beginning of 1980's. After that, brackish water shrimp farming has been expanded to over 2.76 lakh ha of land by 2013 from 1.4 lakh ha in 1980. It is expected that with the introduction of improved scientific method of shrimp culture, the present production of shrimp will be increased substantially. The country has limited access to marine fisheries resources in the Bay of Bengal. Only demarsal fish and shrimp are being trapped from here. Other potential marine resources are yet to be exploited on commercial scale. Only 18% of total fish production comes from Marine capture fisheries and 82% from inland fisheries. The status of fisheries resources and fish production of the Country is shown in *Annexure 1* and *Annexure 2*.

The present democratic government has undertaken new policy for sustainable aquaculture production; provide need based aquaculture extension services, implements fish conservation activities which help the national fisheries production as well as the growth rate in fisheries sector. Besides these, fisheries extension and conservation activities, AIGs and rehabilitation programs for poor fisher etc. were undertaken. Through the Execution of Fisheries

Friendly Policy of the present government, total fish production has been increased from 27.00 lakh metric ton in 2008-09 to 34.10 lakh metric ton in 2012-13.

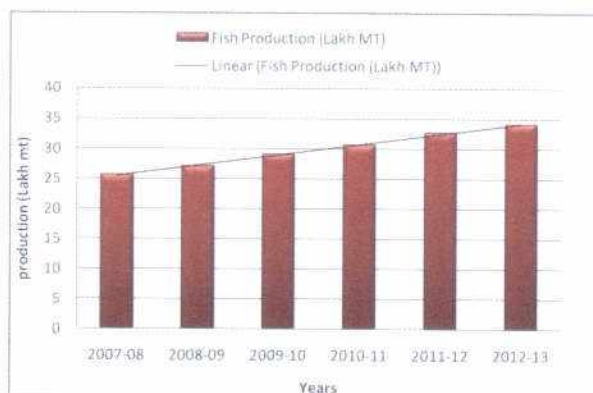


Figure 2: Fish Production of last six years

## 9. Fisheries Extension Activities

### 9.1 Fish Seed and PL Production

#### 9.1.1 Spawn collection from natural sources and fry production

During sixties and early seventies aquaculture activities were mainly dependent on seeds from natural sources. Natural carp hatchlings collected from the river Jamuna, Padma, Boral, Old Brahmaputra and fertilized eggs from the river Halda of Chittagong and other natural sources during the monsoon (April- August) were usually reared in the nursery ponds. Availability of hatchlings from natural sources is being declined due to habitat destruction and changes in climatically condition. The carp hatchlings production from natural sources during 2008 to 2013 period is shown in the following Table. The production from natural source contributes only 0.68 % to the total production of hatchlings (2013) depicting the extent of environmental degradation.



Table 6: Carp hatchlings collection from natural sources of last six years

Year	Fish hatchling (Kg)
2008	1872
2009	1984
2010	2204
2011	4370
2012	4093
<b>2013</b>	<b>3326</b>

### 9.1.2 Fish seed production through induced breeding

During 1961-62 to 1974-75 the government has established Fish Seed Multiplication Farms (FSMFs) to supply required quantity of quality seeds to the fish farmers. During that period, mostly wild fish seeds collected from the rivers were reared in the FSMFs and supplied to the fish farmers. In addition, fish farmers were provided to practical hand-on training on rearing and production of carp seeds in these fish seed multiplication farms. In the mid 60s, due to reduction in the availability of wild carp seeds in the rivers, the DoF initiated research and studied on artificial propagation of carps and their seed rearing. In 70s, fisheries scientists have succeeded in it and developed artificial sustainable technology of carp seed production. Consequently, the increased fish culture efforts demands increased amount of carp seeds production. At the same time, as the natural fish seeds were not able to meet the demand of the fish farmers, the Govt. has established fish hatcheries to produce quality fish seeds and to disseminate induced breeding technology. At present the country is self-sufficient in carp seeds production, though quality fish seeds are produced in a limited scale. For that DoF has introduced fish Hatchery Act 2010 for quality hatchlings and fingerlings from the Government of Bangladesh have promulgated hatchery and farm.



Brood Fish, Fish seed farm Ullapara, Shirajgonj

In the mean time, sustainable aquaculture technologies for commercial purposes of carps, catfishes, pangus, koi, shing, magur and tilapia fish have been developed and quality hatchlings and fingerlings of those fishes are being produced in the country. In the year 2013, around 2.03% of total fish hatchlings were produced in the government FSMFs and rest of 97.29% of fish hatchlings were produced from the private fish hatcheries.



Table 7: Production of hatchling in 2010-2013

Source of Production	Year-2010		Year-2011		Year-2012		Year-2013	
	No of hatchery	Production (kg)	No of hatchery	Production (kg)	No of hatchery	Production (kg)	No of hatchery	Production (kg)
Government fish farm	76	5592	76	7168	81	9222	76	9044
Private hatchery	865	499578	845	617637	866	59858	852	477393
<b>Total</b>	<b>941</b>	<b>505170</b>	<b>921</b>	<b>629175</b>	<b>947</b>	<b>69080</b>	<b>928</b>	<b>486437</b>

Table 8: Production of fry in 2010-2013

Source	Year-2010		Year-2011		Year-2012		Year 2013	
	No. of nursery	Production (in lakh)	No. of nursery	Production (in lakh)	No. of nursery	Production (in lakh)	No. of nursery	Production (in lakh)
Govt. fish farm	120	211.01	124	217.00	124	222.00	136	207.115
Private nursery	8921	98387.01	10298	81821.00	10450	99653.00	10814	99769.00
<b>Total</b>	<b>9041</b>	<b>98598.02</b>	<b>10422</b>	<b>82038.00</b>	<b>10574</b>	<b>99875.00</b>	<b>10950</b>	<b>99976.12</b>



Fish seed produced by induced breeding, Raipur, Laxmipur.

With the establishment of Brood Bank Project, DoF has taken initiative to produce quality brood fishes free of genetic drifts and in-breeding problems. Both Government and private fish hatcheries procured quality brood from the project and -----for the production of quality hatchlings and fingerlings. Information regarding production of Government FSMFs fish hatchlings is shown in Annexure-3.



## 9.2 Post Larvae (PL) Production

### 9.2.1 PL collection from natural sources

At present, shrimp farming (both golda and bagda) is mainly depend on hatchery produced PL. According to recent statistics, the total number of golda and bagda hatchery in Bangladesh is around 80 and 59 respectively. There had been practices of natural PL collection before the year 2000. To protect natural biodiversity, government has imposed ban on natural PL collection by amending The Protection and Conservation of Fish Act 1950.

### 9.2.2 PL Production in hatchery

Due to extension of breeding technology of *golda* and *bagda*, many private entrepreneurs have established shrimp hatcheries for shrimp post larvae (PL) production. About 21 Galda and 60 Bagda hatcheries have been established by both Govt. and private sector which produced 92392 lakh bagda 331 lakh golda PL in the country in 2013 (Table 9).

Table 9: Production of golda and bagda PL in 2013

Name	Year-2010		Year-2011		Year-2012		Year-2013*	
	No. of hatchery	Production (PL in lakh)	No. of hatchery	(PL in lakh)	No. of	Production (PL in lakh)	No. of hatchery	Production (PL in lakh)
Golda	60	51000	60	51000	80	82000	21	331
Bagda	70	10800	70	10800	59	125000	60	92392
<b>Total</b>	<b>130</b>	<b>61800</b>	<b>130</b>	<b>61800</b>	<b>139</b>	<b>207000</b>	<b>81</b>	<b>92723</b>

\*Source: FRSS 2012-13

## 10. Fish and Shrimp Culture

### 10.1 Fish Culture

#### 10.1.1 Pond aquaculture

Currently pond aquaculture has been practiced in a total area of about 3.7 lakh ha which is 7.9 % of total inland water. Pond aquaculture is producing about 14.5 lakh mt fish which contributing 42.41% of total inland production in 2012-13. The pond production involves composite culture produces an average 3430 kg/ha whereas there are records of 90 mt/ha production of pangas under intensive farming in Khulna region.



Fish culture in pond, Nawabgonj, Dhaka



Table 10: Status of pond culture (2012-13)

SI NO	Farming System	Area (Ha)	Production
1	Extensive	-	67083.1
2	Semi intensive	-	655574
3	Intensive	-	722657
4	Derelict	-	1280.21
<b>Total</b>		<b>371309</b>	<b>1446594</b>

### 10.1.2 Fish culture in paddy field

Paddy fields and seasonal floodplains are promising and potential resources for aquaculture. It has been estimated that paddy fields cover an area of about 80 lakh ha of which 28.34 lakh ha floodplains which remain under water for 4-5 months. Previously Government has taken initiative to increase fish production from these flood plains through stocking fish fingerlings. Through 2nd ADP and 3rd Fisheries project, farmers were motivated to stock in suitable floodplain. SHISHUK (an NGO) has been leading community based floodplain aquaculture in Daudkandi of Comilla District and achieved an average production of 2100 kg/ha/year (SHISHUK 2009). DoF along with partner NGOs has taken initiatives to maximize fish production from rice fields and to extend the coverage area. If 10% of paddy field will come in this culture system where paddy field go under water, then near about 85 lakh mt more fish will grow annually producing 300 kg fish per ha.

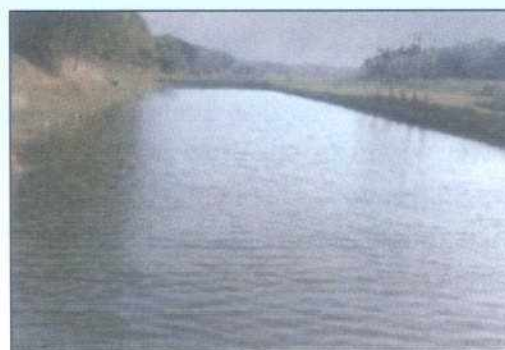


Fish culture Paddy fields, Dumuria, Khulna



### 10.1.3 Fish culture in borrow-pit and khal

Different types of water bodies re-excavated and improved under Integrated Fisheries and Livestock Development Project in Flood Control, Drainage and Irrigation (FCDI) Project and other waterbodies also included in the aquaculture systems. Information of developed waterbody and its area are shown in Table 11.



Aquaculture in borrow-pit in Feni Sadar, Feni.

Table 11: Improvement of different types of water body through FCDI project (2013)

Types of water body	2 <sup>nd</sup> phase	3 <sup>rd</sup> phase	4 <sup>th</sup> phase	Total developed water body (ha)
	Developed water body in hectare 2000-2001 and 2002-2003 Financial year	Developed water body in hectare 2006-2007 to 2009-2010 Financial year	Developed water body in hectare 2011-2012 to 2013-2014 Financial year	
Borrow-pit	207.965	230.277	271.584	1846.062
Close Khal	105.632	54.138	34.842	406.950
Dead river	75.49	47.393	154.465	415.493
Ponds	58.052	122.762	150.167	397.729
<b>Total</b>	<b>447.139</b>	<b>454.570</b>	<b>611.058</b>	<b>3066.234</b>

### 10.1.4 Fish culture in baor (Ox-bow Lake)

A total of about 600 baors having an area of 5,488 ha are situated in the south west part of the country. Different development projects have been implementing to increase the fish production from baor. The total water area of baors have been developed and brought under improved aquaculture through fingerling stocking and management practices. Six baors of Jessore district were under disposal of DoF till Feb/2009 and now these baors are under disposal of Department of Fisheries according to the MoU signed between Ministry of Land and Ministry of Livestock and Fisheries for next 6 years. Besides this, 30 baors are managing by OLP-2 project of DoF with the financial support of IFAD. These baors covered area of 1137 ha and fish production has increased from 80 kg to 750 kg/ha (DoF 2008). Local fisher communities are being involved in the baor management and improved their livelihood.



Fish harvesting in Baor, Jessore.



### 10.1.5 Cage culture

Several decades ago, attempts were made to raise fish in cages under different development projects by several institutions/organizations of the country. Though it is well practiced in other countries but it was not earlier popular in our country for many reasons. At least 2 projects and a number of NGOs had been working with cage culture using different materials like bamboo, steel rod, net and feed and feed ingredients like rice bran, fish meal, green grass etc to culture fish species like monosex tilapia, pangas, koi, singh, magur, rui, GIFT, thai sorpunti etc.

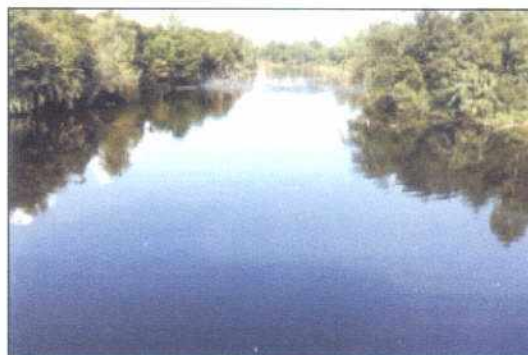
Cage aquaculture has been identified as a means of livelihoods for landless people. Northwest Fisheries Extension Project (NFEP) in Parbatipur, Dinajpur and Patuakhali-Barguna Aquaculture Extension Project (PBAEP) demonstrated cage aquaculture as pilot basis. The production achieved through cage culture was encouraging and satisfactory but the activities were discontinued due to socio-economic condition of the farmers and some constraints. Cage culture of monosex tilapia is being practiced in Chandpur, Laxmipur Faridpur, Barishal, Mymensingh, Dhaka, Munsigonj, Gopalganj, Narshindi, Chapainawabgonj and other regions of Bangladesh. In 2013, about 6750 MT fish produced from 6000 cages.



Cage aquaculture in open water, Chandpur

### 10.1.6 Pen culture

Pen culture is also one of the potential means of producing fish from vast water body or water channel. In recent years, pens are made with different materials like bamboo, net, iron-meshed, wooden pillar etc. The area of pen also varies in size from half to few ha. The fish species reared in the pen are carp, tilapia, pangas etc. Feeds are also applied in pen culture system but not regularly. Both single and multi owner are found in pen management. Culture period also varies from June to December depending on the availability of water. Pen culture is also becoming popular in and around Dhaka and Narayanganj and expanding every year.



Cage aquaculture in open water, Chandpur



## 10.2 Shrimp Culture

### 10.2.1 Shrimp (*bagda*) culture

Black tiger shrimp (*Penaeus monodon*) in Bangladesh is known as Bagda. Bagda grows faster and bigger in size, the species is very popular for coastal aquaculture among shrimp species available in Bangladesh. Bagda culture has been starting in the South-West region of the country using agricultural land since early 1970s. The larvae of shrimp and other fish are trapped into the crop fields during high tide and reared for several months. With the increasing demand of shrimp and prawn in the international market rapid expansion of shrimp farming was observed in dyke elevated rice fields (traditionally known as gher).



Shrimp culture in Cox's Bazar

In 1994 government declared the coastal region as 'Open for brackish water shrimp farming' through a government order. From then, brackish water shrimp farming has been expanded rapidly. By 2012 over 209456 ha of land were brought under bagda culture and till it is increasing. The highest shrimp culture area was in South-West region i.e. Bagerhat, Khulna and Satkhira region because of abundant source of saline water and shrimp

post larvae (fry) in the Sundarbans mangrove forest and surrounding rivers and estuaries. Among the coastal districts, the highest production of bagda was observed in Bagerhat, Khulna, Satkhira and Cox's Bazar. The culture system of bagda involves traditional extensive to improved extensive. In 2012-13 bagda production in Bangladesh was 57784.87 MT.

Table 12: Shrimp farming and production

Year	Area farmed (ha)	Shrimp production (MT)	Remarks
2007-2008	172817	42593	Paddy and salt are produced in very near to coast as alternative crops. White fish and crabs are also produced in some places as by-culture.
2008-2009	172817	49710	
2009-2010	186145	43154	
2010-2011	213617	56569	
2011-2012	209456	57784	
2012-2013	210053	68948	

Source: Fisheries statistical yearbook of Bangladesh 2012-2013, FRSS, DoF

### 10.2.2 Prawn (*golda*) culture

Traditionally the Giant freshwater prawn (*Macrobrachium rosenbergii*), called as Golda in Bangla, were being trapped and reared with other fishes in the tidal pond and low lands. Generally, the species were harvested from the river/canals, flood plains and beel areas which have connectivity with rivers. At present macro



Golda farming in the gher, Devhata, Satkhira.



brachium sp. is being cultured in gher in organized way along with other aquaculture, agriculture and horticulture crops. Different culture systems such as monoculture, polyculture along with other fishes, and aquaculture in paddy fields along with paddy are being practiced. The unit production of Golda under the different systems ranged from 375 kg/ ha to 750 kg / ha. The highest production was observed in monoculture (750 kg / ha). Currently golda are farming in gher, pond and paddy field covering an area of about 0.63 lakh ha. About additional 0.60 lakh MT fish are produced along with golda.

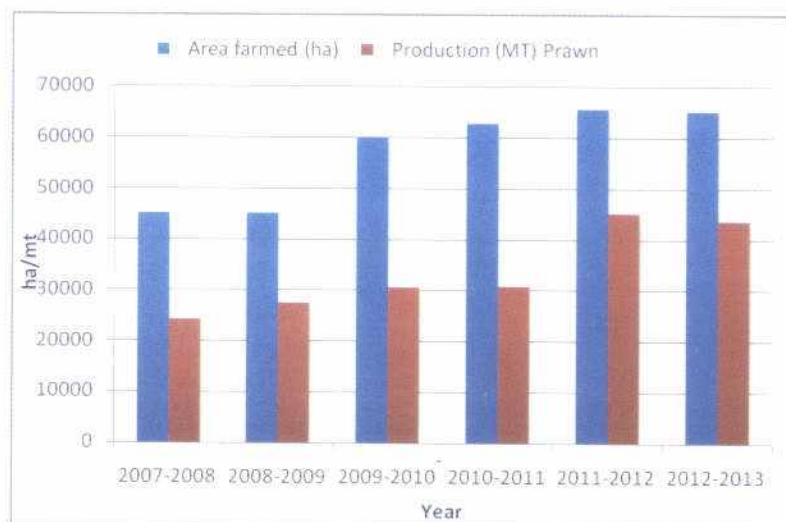


Figure 3: Year-wise production of golda

Table 13: Prawn (*golda*) farming and production

Year	Area farmed (ha)	Production (MT) Prawn
2007-2008	45060	24296
2008-2009	45060	27412
2009-2010	60052	30636
2010-2011	62874	30868
2011-2012	65777	45162
2012-2013	65221	43713

### 10.2.3 Marketing and export

Almost all farmed produced shrimps are exported as processed frozen sea food and is the second largest export item in Bangladesh. The contribution of fisheries sub-sector to the total export earnings during 2012-13 was 2.46%. Presently 82 processing plants are in operation, all are HACCP certified and licensed by DoF for export of fish and fish products to European Union (EU), USA, Japan, Russia, Korea, China and India. In order to find out new market destination, Ministry of Fisheries and Livestock has already sent proposal to sign MoU with five East- European Nations for exporting fishery products.

As consequence of repeated Rapid Alert System of Food and Feed (RASFF) against Bangladeshi fresh water prawn being contamination with Nitrofurans metabolites especially Semicarbazide (SEM) in May 2009. Bangladesh Government had been imposed six-month voluntary ban on export of fresh water prawn to EU market. The number of RASFF was



increased in 2009 because of adopting faulty protocol by Belgian testing laboratory. The Belgian laboratory started testing shrimp with tail and exo-skeleton instead of flesh. Under this circumstance, Bangladesh along with donors and private initiatives undertook several measures to identify source of Nitrofurantoin contamination. As well as the country has been engaged an international residue expert to research the issue. Finally the fact was identified that live crustaceans are able to synthesize SEM naturally and accumulate it in their shell and tail.

In order to check the quality of exported shrimp the EU authority has imposed 20% mandatory testing requirement at border entry of European countries. MoFL along with DoF taken serious measures to rectify the controlling measures, legal provisions as well as monitoring measures of food contamination. As a result the EU authority has lifted the 20% mandatory testing requirement of exported products at EU border and it is notable that this mandatory requirement still prevails in some large shrimp exporting countries.

Table 14: Contribution of shrimp in frozen food export (2007-2013)

Financial year	Total quantity of Fish and Shrimp exported (MT)	Contribution of shrimp/Prawn			Remarks
		Quantity (MT)	Exported (%)		
			Volume	Value	
2007-2008	75299	49907	66.28	84.33	Shrimp loses about 35% of total body weight during beheading and shell off processing
2008-2009	72888	50368	69.10	84.60	
2009-2010	77647	51554	66.39	84.65	
2010-2011	96469	54891	56.90	77.50	
2011-2012	92476	48007	46.21	77.00	
<b>2012-2013</b>	<b>84905</b>	<b>50333</b>	<b>59.28</b>	<b>81.18</b>	

#### 10.2.4 Fish feed and animal feed act 2010 implementation

Fish feed is one of the most important input for commercial aquaculture. There were no rules and regulations upon the feed manufacturers and retailer that could control to the quality of the feed and feed ingredients before 2010. But the present democratic fisheries friendly government has taken the initiative to formulate the acts and rules and Fish feed and animal feed act 2010 and Fish feed rules 2011 are formulated. At present it is being implemented all over the country. The Status of various types of fish feed company and revenues earning under this acts are given the table below (Table-15).



Inspection at Spectra Hexa Feed Limited at Manikgong



Table 15: The Status of various types of fish feed company and revenues earning under the acts (2012-2013)

Serial No.	Division/Head Office	Types of fish feed company				Total revenue earn (lakh Tk)
		Fish feed production: Category :1	Fish Feed Import-Export: Category:2	Fish Feed Sale: Category-3 a and b	Total Number	
1	2	3	4	5	6	7
1	Head office	54	78	2	134	14.30
2	Dhaka	63	1	819	885	2.57
3	Chittagong	31	7	518	556	1.30
4	Rajshahi	23	2	424	449	1.67
5	Khulna	8	0	363	371	1.03
6	Sylhet	0	0	71	71	0.42
7	Barisal	1	0	89	90	0.12
8	Rangpur	0	0	71	71	0.05
<b>Total</b>		<b>180</b>	<b>88</b>	<b>2357</b>	<b>2627</b>	<b>21.46</b>

#### 10.2.5 Fish Hatchery act 2010 and fish hatchery rule 2011 implementation:

Aquaculture productivity mostly depends on quality of fish seed that is produced from public and private hatcheries. The quality of fish seeds has deteriorated over the years due to many reasons. The quality reduction is mostly observed in private hatcheries. There are many reasons for the low quality, for instance, inbreeding, inter-specific hybridization, negative selection, improper brood-stock management etc. Furthermore, hybridization and cross breeding are threatening the genetic diversity of indigenous wild stocks of Indian Major Carps. To protect these undesirable practices, Bangladesh government enacted the fish hatchery act 2010 and fish hatchery rules to ensure the production of quality seeds in both public and private fish and shrimp hatcheries. Under the act and rules, every hatchery must be registered from the competent authority of DoF and follow the prescribed protocol of hatcheries operation. The Status of the hatchery registration and revenue earning under the fish hatchery act 2010 and fish hatchery rule 2011 are given in the table below (Table -16):

Table 16: Status of the fish hatchery act 2010 and fish hatchery rules 2011 implementation (2012-2013)

Division	Total Hatchery	Registered	Unregistered	Total revenue earn (lakh Tk)
Dhaka	194	192	2	3.96
Chittagong	289	191	98	4.42
Rajshahi	198	84	114	1.93
Khulna	87	40	47	1.69
Sylhet	13	12	1	0.19
Barisal	36	19	17	0.28
Rangpur	76	21	55	0.47
<b>Total =</b>	<b>893</b>	<b>559</b>	<b>334</b>	<b>12.90</b>





Fish Hatchery in Jessore.



Shrimp Hatchery in Mirzapur, Tangail.

### 10.2.6 Piranha fish prohibition act Implementation

**Piranha**, called caribe or piraya, any of more than 60 species of razor-toothed carnivorous fish of South American rivers and lakes, with a somewhat exaggerated reputation for ferocity. Most species, however, are scavengers or feed on plant material. Most species of piranha never grow larger than 60 cm (2 feet) long. Colours vary from silvery with orange undersides to almost completely black. These common fishes have deep bodies, saw-edged bellies, and large, generally blunt heads with strong jaws bearing sharp, triangular teeth that meet in a scissor like bite. Piranha fish is prohibited by the gazette notification in February' 2008 under the clause 16 of Fish preservation and conservation act 1950 due to their dangerous carnivorous nature. According to this act- any kind of Piranha group fish import, transport, breeding, culture, sale etc are completely band in Bangladesh. First time if someone breaks the act, he will be given 6 month jail and 10,000 Tk. penalties. Second time penalties would be double. In the year 2012-13, 620 no awareness meeting were organized in different places of the country. Inspection team visited 2598 fish market to implement the acts and rules and 86 cases were filed as well as about 84 thousand BDT was penalized.



Mobile Court in Kawranbazar, Dhaka to Impliment Fish Act.



### 10.2.7 Control of Formalin use in Fish Preservation and Mass Awareness Campaign

Formalin preserved fish is very detrimental for human health due to its toxic and volatile nature. It may cause various diseases like skin disease, diarrhea, asthma, blindness, kidney diseases etc and even cancer. The abuse of formalin as fish preservative will create health hazards and it might have negative impact on aquaculture production in Bangladesh. However, it is necessary to protect abuse of formalin to save human health. At the same time, it is necessary to create awareness for fish traders, consumers and other stakeholders regarding the toxic and injurious effect of formalin abuse in fish. In this circumstance, the present democratic government has taken an initiative to stop abuse of formalin in fish. As part of its initiative, Department of Fisheries is implementing a project namely 'Control of Formalin use in Fish Preservation and Mass awareness Campaign'. Department of Fisheries distributed formaline detecting digital kit box and each district has got one kit box under this project. After supplying digital kit box, a total no of 3,211 mobile courts have been operated at district and upazila level including Dhaka city up to May, 2013. An amount of 46.73 lakh taka were fined, 6.71 m.ton fish seized to dispose up and 6 persons have been put into jail for one month. A total of 752 awareness meetings at district and upazila level and 33 workshops at district level have been organized. A workshop was organised by Department of Fisheries and Planning Commission jointly at NEC Bhaban of Planning Commission on "Indiscriminate use of Chemicals on Fish and Fruits: What Can We Do about it?" High officials from different organizations, Teachers from different Universities, Researchers and other related stakeholders participated. Besides, 31,450 representatives from fish traders and



Mobile Court Operation in Shoarighat, Dhaka to Control use of formalin in Fish

other concerned stakeholders received training. Due to different activities of the project, rampant formalin abuse in fish has been significantly decreased in the country.

### 10.2.8 Diploma in Fisheries

Honorable Prime-minister, Government of the People's Republic of Bangladesh desires to establish a Fisheries Diploma Institute in Chandpur to generate mid level technically skilled manpower and Department of Fisheries materialized the vision by implementing Fisheries Diploma Course Implementation project. A new campus of Fisheries Diploma Institute is



established by the project within the Fisheries Training Institute, Chandpur campus and it is providing Diploma in Fisheries degree under proper affiliation of Bangladesh Technical Education Board (BTEB), Dhaka. Diploma in Fisheries degree consists of 08 (eight) semesters, 06 (six) months for each semester and the total duration of the diploma is 04 (four) years. The project provides all the facilities including academic, laboratory & IT facilities, hostel facilities, sports, stipend etc. to the students studying in the Institution. The project also formulated and printed 39 books and 04 syllabuses out of 54 books and 04 syllabuses and another 14 books will be formulated and printed by the upcoming fiscal year. The academic activities of the Institution started from 2009-10 academic year of BTEB, 25 students are admitted for each batch each year and 40 students will be admitted in 2013-14 academic year. The first batch is expected to be completed their Diploma in Fisheries Degree by the end of 2013.



Diploma Institute, Chandpur

The Planning Commission, Bangladesh is interested to make this Institution as a “center of excellence” and expects the other institutions to follow its bench mark. Department of Fisheries is establishing another 03 (three) new Fisheries Diploma Institutes in Gopalganj, Sirajganj and Kishoreganj.

### 10.2.9 Neemgachi Project

Neemgachi project area is one of the unique fisheries resources under the Department of Fisheries. It is situated in four upazilas of Sirajgonj and Pabna districts, covering 4119 bighas of 783govt; khas ponds. But this project was under the control of Grameen Fish foundation of Grameen Bank for long 25 years. It has been observed with serious concern that the beneficiaries communities involved in pond management have had no savings and their livelihood have not been improved at a minimal level, that's why DoF again took over the management control of the project to uplift the socio-economic condition of the concerned communities with the introduction of improved aquaculture practices.



Mou Signing Ceremony to handover Jalmohal, DoF, Dhaka.



Neemgachi project is again handovered to DoF for six years through signing a MoU on 1st January 2012 between Ministry of Land and Ministry of Fisheries and Livestock. This project will be running under the guideline of Neemgachi Community based Fisheries policy, through which the community will solely avail the ownership of ponds by paying only lease value to the govt. DoF will provide all technical and management supports for aquaculture and group management under the guidance of Upazila and district level committee according to the policy. In this year, 457 ponds, covering area of 2720 bighas, was taken under community based fisheries management. As revenue of the pond lease 42.19 lakh taka deposited to Government fund in 2012. DoF also distributed 4.05 lakh taka as small loan and 10.00 lakh taka as fish culture imputes, which will create revolving fund for the beneficiaries. DoF has a hatchery and nursery for seed production in the project area for the availability of quality for the area. The hatchery has been running under direct control of DoF. During last year, 654 kg hatchling and 9.86 lakh fingerlings was produced in the hatchery and nursery. DoF have taken initiative for the development of ponds and hatchery of Neemgachi through a development project.

#### 10.2.10 Great Victory Day Display

Department of Fisheries (DoF) under the Ministry of Fisheries and Livestock organize a display at the National Parade-ground every year to give a salute for the freedom fighters in



Symbolic Display in National parade ground, Dhaka

liberation war 1971 on 16th December. At present among the top ten fish producing countries in the world, Bangladesh secured the 5th position by adopting improved technical management through the Department of Fisheries (DoF). The model in the display reflected the aspiration of present Democratic Government under the leadership of our Honorable Prime Minister Sheikh Hasina toward the development of the fisheries sector by achieving target of vision 2021.

### 11. Fisheries Resource Management

#### 11.1 Inland Open Water Fisheries Resource Management

Bangladesh is blessed with huge inland open water resources including about 853,863 ha of rivers and estuaries, 177,700 ha of *Sundarbans*, 114,161 ha of natural depressions, the *beels*,



68,800 ha of reservoirs and about 2710766 ha of floodplains. Annual flooding during the rainy season inundates up to 60% of the total land surface. Bangladesh possesses the third largest inland fisheries resources in the world after China and India. The inland open water is inhabited with 260 species of fish and 24 species of prawns. Despite the existence of huge resources, the inland capture fisheries has secured the top position as contributor to the country fish production over the year has been replaced by aquaculture due to decline and degradation of open water resource. The priority is given to improve biological management that will restrict the declination of resources and production. The DoF has adopted the Inland Capture Fisheries sub-strategy based on the National Fisheries Strategy, 2006 and the National Fish Policy, 1998.

### 11.1.1 Community based fisheries Mismanagement (CBFM)

Community based management of fisheries resources is a time-driven and successful activity initiated by DoF. Bangladesh is emerging as a country of having positive lessons from community based management of open water. Consultative Group on International Agricultural Research (CGIAR) awarded CGIAR Science Award-2004 to Community Based Fisheries Management Project (CBFM-2) of DoF for its outstanding innovative performance in the field of open water community-based fisheries management. At present 6 out of 16 ongoing development projects under implementation includes community based fisheries management and more than 0.20 million people are enjoying the benefits.

Establishment of Community Based Organizations (CBOs) and village level sub committees has been recognized as the first and fundamental step in creating sustainable co-management of fisheries resources in the decision making process by user's group. Initial work on networking by community-based organizations has been started at regional level. More emphasis has been given to work with community based fisheries management in the inland capture fisheries sub-strategy. Floodplains comprise the area of about 70% of



Community based organization meeting,  
Companygonj, Sylhet

the total inland water resources. Among these floodplains, most of them were unused which remain 4-6 months under water. Aquaculture activities are established for generating income of Stakeholders of surrounding areas of the floodplains. SHISHUK is an NGO which for the first time has been implementing a project named 'Pankouri' in Daudkandi upazila of Comilla district worked with fish culture in floodplains covering an area of about 4400 hectares and average area of each project near about 30 hectares. The revenue expenditure of the projects was being maintained through the distribution of primary shares. The primary share had been fixed as Tk. 500 to 1000, but 90% of the shares was at the rate Tk.1000. Beside these, DoF has implemented a development project in the district of Comilla as entitled 'Infrastructure Development for Flood Plain Aquaculture in Comilla District.



### 11.1.2 Integrated natural resource management (INRM)

Department of Fisheries is implementing Integrated Natural Resource Management Systems (INRMS) by local users that contributes to conserving the biodiversity and livelihoods in the selected wetlands and floodplains of the Jamuna - Padma delta region through Wetland Biodiversity Rehabilitation Project.

### 11.1.3 Fingerling stocking

Natural recruitment of native fish species has been declining due to human interferences and environmental degradation that hampered the productivity of open water capture fisheries resources. To enhance the stock and improve the productivity of open waters, the Ministry of Fisheries and Livestock through the Department of Fisheries initiated regular programme of releasing fingerlings of major carp in open water bodies, floodplains and as well closed water bodies throughout the country. Stocking of fish fingerling into *beels* and floodplains is a temporary mitigation



Fingerling stocking in Lakhai, Hobigonj

measure to address the quick declination of fish production in open water. The DoF implements its fingerling stocking programme under both development and revenue budget.

Table 17: Stocking of fish fingerling in open water bodies and floodplains.

Fiscal year	Fund allocation (Tk. lakh)	Water area (hectare)	Fingerling released		No. of beneficiaries	Remarks
			Number (million)	Weight (MT)		
1	2	3	4	5	6	7
2006-07	260	84815	9.08	-	353709	About 40% of the stocked fingerling attained to table fish.
2007-08	306	58572	14.13	213.30	399827	
2008-09	306	105787	16.24	218.44	542478	
2009-10	337	103567	14.4	200.45	530347	
2010-11	400	123092	123.92	241.12	2363631	
2011-12	886	109,070	152.26	570.19	2365631	
2012-13	874	142,053	171.39	480.244	1012000	

### 11.1.4 Beel Nursery

Beel nursery has been proved as a significant tool for enhancing natural stock, supporting subsistence fishing and increasing fish production. DoF has incepted the *beel* nursery programme in various dead rivers, *beels*, *haors* and other suitable government and non government water bodies in fiscal year 2009-10. During 2012-13, 343 *beel* nurseries were



successfully established at a cost of taka 100 lakh from revenue budget, which produced 552.88 lakh fingerlings of carps weighing 611.545 MT. The 2012-13 beel nurseries have produced additional 2845.77 MT of fish and have positive impacts on about 239280 beneficiaries. The DoF has considered it as regular activities and continued the programme to support sustained increase in natural fish production in *beel* areas and the surrounding link water bodies, i.e. low lying rice fields, floodplains, canals, etc.



Beel nursery activities at Golapgonj, Sylhet

Table 18: Details of beel nurseries programme implemented during 2012-13

Division	Details of Beel Nursery		Fry Production Target		Fry Produced		Additional Fish Produced from Beel Nursery (MT)
	No. of beel	Area (Ha.)	No (Lakh)	Quantity (MT)	No (Lakh)	Quantity (MT)	
1	2	3	4	5	6	7	8
Dhaka	190	2203.22	1638.24	347.87	305.75	333.553	1415.462
Chittagong	28	283.26	50.21	45.626	46.44	41.685	203.375
Khulna	19	562.86	28.42	54.405	23.27	42.057	168.65
Rajshahi	53	46.42	100.35	106.395	80.82	92.938	679.203
Barisal	9	181.46	11.65	15.576	8.70	8.251	81.439
Rangpur	34	461.76	76.15	76.31	71.53	72.973	223.294
Sylhet	10	21.09	18.5	7.253	16.37	20.088	74.346
<b>Total</b>	<b>343</b>	<b>3760.07</b>	<b>1923.52</b>	<b>653.435</b>	<b>552.88</b>	<b>611.545</b>	<b>2845.77</b>

### 11.1.5 Establishment of fish sanctuary

To stop the degradation of aquatic biodiversity, especially species diversity of fish and other aquatic species in open water, a set of technical interventions, e.g. establishment of fish sanctuaries, restoration of fish habitat have been undertaken during the past years. Establishment of aquatic sanctuary is found one of the effective tools for conserving and enhancing fish stock, protecting biodiversity and increasing fish production.



Fish Sanctuary, Tungipara, Gopalganj



The present democratic Government established 438 fish sanctuaries in different water bodies during last five years. As a result, a substantial increase in production of fish was found in those water bodies. At the same, the stock of endangered species, viz. *Chital*, *Foli*, *Kalibaosh*, *Air Tengra*, *Meni*, *Rani Sarputi*, *Pabda*, *Kajoli*, *Gojar*, *Tara baim* etc. were replenished in and around the sanctuary areas. This effort has also helped to restore the aquatic bio-diversity. Besides, five sanctuaries were established in the selected river system for the conservation and development of Hilsa fishery. Hence establishment of sanctuary has become an innovative and obligatory activity to protect, conserve and enhance fish biodiversity and thus support to optimize production. Besides fish habitat restoration was done in connecting canals of different rivers, dead rivers and *beels* though re-excavated by DoF as to ensure the feeding and breeding migration of fish.

#### 11.1.6 Implementation of fish acts at field levels

The provisions of fish Act-1950 is the principal safeguard the breeding and growth of carp and other important fishes contributing to increase fish production in the country. Public



Formalin test and Fish Act implementation in Dhaka

awareness campaign were carried out by the district and upazila fisheries offices on the impact of fish conservation. During observance of National Fish week, different awareness materials like posters, leaflets, booklets etc. were printed and distributed. TV spot, street drama, workshops/seminars etc. were organized to create mass awareness. Appropriate measures were taken to implement the Fish Act-1950 with assistance from local administration and police. Mobile courts were conducted throughout the country and seized and forfeited illegal fishes and fishing gears. Offenders were also penalized on the spot. Table 17 shows the fish acts implementations



Table 19: Enforcement of Fish Acts and Rules during 2012-13

Division	No. of undispensed case in the last year (No)	Present Cumulative no. of case filed (No)	Present Cumulative no. of case disposed (No)	Present no. of undispensed case (No)	Fine imposed by court (Tk)	No. of case	Punishment imposed by mobile court		
							No. of Current Jal seized	Jail	Fine (Tk)
									467500
Khulna	32	2	0	32	22750	2	360595	0	162500
Rajshahi	22	5	5	18	0	0	1695	0	89100
Dhaka	166	129	113	172	0	15	26300	86	538530
Sylhet	98	49	11	57	0	0	308	08	78000
Chittagon	01	67	67	0	0	0	4588	70	304500
Rangpur	51	36	15	35	31500	14	1266	0	37300
<b>Total</b>	<b>377</b>	<b>537</b>	<b>465</b>	<b>316</b>	<b>54250</b>	<b>111</b>	<b>14641147</b>	<b>670</b>	<b>1677430</b>

Due to the implementation of the fish conservation and protection rules the fishers are affected during fishing ban period. Considering the livelihoods of the fishers in the off seasons and during implementation of fish acts, different income generating activities (IGA) program have been undertaken for the affected fishers during enforcement of fish acts, it is observed that there is a tendency to disobey the fish acts among the fishers in Dhaka, Sylhet, Chittagong and Barisal division. This might be due to the abundance of natural water bodies with high fish harvesting potential areas.

## 12. Marine Fisheries resources management

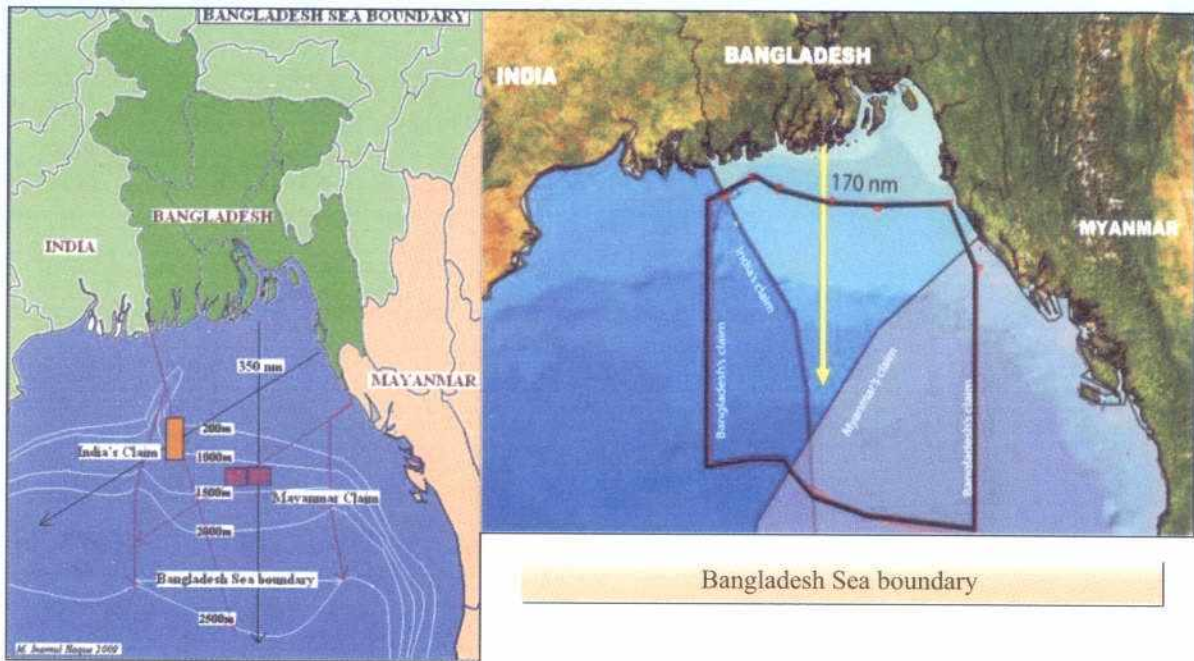
### 12.1 Bangladesh Sea Boundary

The maritime boundary of Bangladesh was delimited with Myanmar in an equitable manner by the International Tribunal for the Law of the Seas (ITLOS) in Hamburg on 14 March, 2012. According to the recent verdict, Bangladesh has exclusive economic and territorial rights for 200 miles into the Bay of Bengal, a substantial share of the outer continental shelf beyond 200 miles, and a full 12-mile territorial area around St. Martin Island.

Our national leader Sheikh Mujibur Rahman led our country during its Liberation War and his daughter Prime Minister Sheikh Hasina also led our country in its maritime boundary case with [Burma], and under her righteous leadership the country has achieved victory in the case. Such achievements of the father and daughter are unique in world history.

Bangladesh will be able to establish its right over the maritime resources such as oil, gas, fish and the entire aquatic wealth that lie within its territorial waters that exceeds its original claim of 1,11,631 square miles.





## 12.2. Marine Fisheries Resources Conservation and Management

### 12.2.1 Extension, Monitoring and developing Activities

#### A. Procurement of multipurpose survey and research vessel:

After getting final approval from the purchase committee of the Cabinet, an agreement signed with the builder and it is supposed to be completed and received by December 2014.

#### B. Land based Survey:

- Baseline survey on fishing boats and gears in project areas in the 49 Upazilas of 14 coastal Districts has been completed. A total 52,514 units of fishing boats are found to exist in 1092 Fishers villages, of which 27,761 are mechanized and remaining 24,753 are non- mechanized which operates 1,58,529 number of artisanal fishing gear. Data on crafts and gear are incorporated in the project data base (192.168.2.100/bmfcb) and are ratified by the Director General of DoF. However, it is a continuous process and cross-checking of the data and information are now undergoing.
- Total 35 fish landing centers in coastal districts were selected for Land based survey and initially survey was started in 12 centers. Data on catch composition, length-weight and gonadal maturity of selected 31 fish species is being collected from abovementioned fish landing centers in selected dates in every month.



### ***C. Establishment of Integrated Data base:***

- As per project provision, a Database is established and placed in the Department of Fisheries. Data collected on crafts and gears are incorporated in the Database (192.168.2.100/bmfcb). Updated data of land based survey will be incorporated in the project website once in every year. Related persons and organization can collect the data from website [bmfcf.fisheries.gov.bd/bmfcb](http://bmfcf.fisheries.gov.bd/bmfcb) for use.

### **D. Establishment of Vessel Tracking Monitoring System (VTMS):**

- Vessel Tracking Monitoring System will be established in the Project Field Office in Chittagong. This system (VTMS) will be used for tracking the fishing vessels operating in the Bangladesh territory of the Bay of Bengal. Requisite formalities are underway for procurement of the VTMS.

Fisher's are provided with training on FAO-CCRF, compliances of various Acts, Regulations and Rules lamenting importance of conservation for sustainable exploitation of marine and coastal resources. Besides, regular bi-monthly meetings are being arranged with representatives from Bangladesh Navy, Bangladesh Coast Guard, RAB, Police, MMD, BGB, BMFA, Mechanized boats owner associations, DFOs of coastal districts where non-compliances of MFO 1983 and Rules made there under are discussed and also way out means to overcome them for conserving resources. Contemporary issues, like piracy on fishing boats, boat registration and issuance of fishing license, sea safety of sails and fishers', regular checking of fishing boats and trawlers etc. are dealt with for sustainable management of marine resources. It is mandatory to get shing license for every mechanized fishing boat according to Marine Fisheries Ordinance 1983 and renew the license having registration and fitness certificate issued by the Marine Mercantile Department (MMD).

Mass awareness campaign are also organized in major fish landing centers and fishing villages specially to alert the deleterious impact of destructive fishing methods. Fishers' and local people representatives are motivated to show respect to Acts and Rules promulgated for restoring our biodiversity and to protect the resiliency of the marine environment. Strong MCS procedures are in place to increase boat registration and issuance of fishing license. The National Plan of Action (NPOA) has been drafted to eliminate IUU fishing in the EEZ waters of Bangladesh. Besides, the catch and compliance issues are regularly monitored from the only marine fisheries surveillance check post stationed at Patenga, Chittagong. These types of facilities should be established at strategic areas for stringent implementation of MCS.

### **12.2.2 Enacting Acts, Rules and Policies**

The Fish and Fishery Products (Fish Inspection and Quality Control Rules) 1997 provide guideline for production of safe seafood in trawlers. Currently, 63 freezing trawlers are issued license from Fish Inspection and Quality Control Office as factory vessel complied



with sanitary and hygiene standards allowed for export of fish and shrimp to Japan, China, USA, Middle-East countries etc. Export to EU nations is restricted as these are not yet HACCP certified. But export of fish and shrimp from marine origin is being exported to EU nations under EU Regulation 2005/2008 through issuance of IUU-catch certificate which is mandatory. Standard Hygiene and Sanitation conditions of trawlers are regularly monitored by FIQC and MFO personnel during inspection. Non-compliances are dealt with punitive measures as specified under MFO 1983 and FIQC Ordinance 1997. Commercial and artisanal fishing boats are also advised to improve post harvest measures to maintain the quality of catch. The mechanized boats engaged in small scale and artisanal fisheries are checked for navigational, life saving appliances and fire fighting equipments on sea safety perspective. Still there exist no legislations ensuring quality of imported fisheries products expect mere checking of formalin only. The government has amended the Marine Fisheries Ordinance 1983 to incorporate FAO-CCRF to control, deter and eliminate Illegal, Unreported and Unregulated (IUU) fishing to conserve marine life. Due to current prevailing situation Marine Fisheries Ordinance 1983 would warrants for its amendment to suit compatible. For sustainable economic return from sea DoF has already drafted “Marine Fisheries Policy of Bangladesh-2013”.

### 12.3 Hilsa Fishery Conservation, Exploitation and Management

Hilsa (Ilish) is the National Fish of Bangladesh. As a single species, it has the highest contribution in the country's total fish production which is about 12% of total production. Juvenile Hilsa is known as Jatka measures upto 25cm. For getting sustainable hilsa production it is imperative to protect jatka along with saving berried hilsa during at its peak spawning period for unabated release of matured egg. Government has adopted coordinated programme to conserve and protect jatka and mother hilsa in definitive time of the year. Government also already opened separate economic code for conservation of Jatka. Since 2007, Jatka Conservation Week has been observed in 91 coastal upazilas of 23 districts as a national programme to protect jatka and ensure its growth and production Hilsa through reduction of both growth and recruitment overfishing of hilsa population.

During ban period, the Jatka/Hilsa fishers are being provided with food-grain at the rate of 30 kg per household (1.64,740 family) for 4 months since February to May each year. Government provided financial incentives and distributed trade materials about 50 million taka to 1,86361 Jatka/Hilsa fishers as Alternative Income Generation (AIG) in the year 2009-10 for not catching jatka during the ban season. As alternative generating activities, Jatka/Hilsa fishers were provided with financial support to run small businesses like rearing of poultry and livestock, rickshaw pulling, van, cart, fruit and vegetables business, running of grocery and tea stall, using sewing machines, net making etc. Consequently Hilsa production increased from 1.99 lakh mt.(2003- 2004) to 3.45 lakh mt. in 2010-11. At present about 65% of the total catch of hilsa is now being supported from marine environment. During peak spawning period seized hilsa worth Tk. 58.18 lakh, and Tk. 18.71 lakh were sold by open auction in tandem distributing 30 orphanages and other institutions.



The objective of this programme is to aware all stakeholders regarding the importance of Hilsa fishery in our national economy. Every year, the government have executed comprehensive programme for the protection of this natural wealth by ensuring active participation of all stakeholders including local-public representatives, local administration, Police, RAB, BGB, Coast Guard, Bangladesh Navy, DoF, fishers and mass people residing at brinks of rivers and coastal belt. Marine Fisheries Office actively participated in Peak Hilsa Breeding Season Programme of 2011-2012 and through its Marine Fisheries Surveillance Check Post checked 133 mechanized fish boats, seized 34 of them and confiscated 37,072 kg of Hilsa fish of which 32500kg was sold for Taka 54,28,890/- (Fifty four lacs twenty eight thousand eight hundred and ninty taka ) and 4592 kg was distributed to 102 orphanages.

## 12.4 Exploitation of Marine Fish by Various Methods

### 12.4.1 Licensing Activities of Mechanized Fishing boat

The survey report of Strengthening of Marine Fisheries Management Project estimated 21,016 mechanized and 22,120 non-mechanized fishing boats engaged in fishing in the marine and coastal waters of Bangladesh. Registration, certificate of inspection (fitness) and fishing license is mandatory before fishing operation in the marine and coastal waters. Under Article 388 of Part IX of the Bangladesh Merchant Shipping Ordinance-1983 all sea going fishing power driven vessels are liable to register under the ordinance from Marine Mercantile Department. After receiving registration and COI from MMD, the Marine Fisheries Office is authorized to issue fishing license complying Section 17 and 18 of Marine Fisheries Ordinance 1983 by paying fees according to the gross tonnage approved by the government. During recent years efforts has been taken to organize combined camps at important fishing sites comprising personnel of MMD and MFD from where registration, COI and fishing license are issued as one service. But due to lack human capacity it would be difficult to organize combined camps hindering the process.

Table 20: Revenue earned from mechanized fishing boats licensing activities

Year	License Issues (Nos.)			Revenue (Lakh taka)	Remarks
	New	Renew	Total		
2003-04	-	-	1008	15.75	Not documented separately into the register during 2003-04 and 2004-05.
2004-05	-	-	991	16.77	
2005-06	177	950	1127	17.98	
2006-07	85	898	983	15.18	
2007-08	112	910	1022	14.96	
2008-09	63	861	924	12.73	
2009-10	93	760	853	11.93	
2010-11	342	962	1304	17.81	
2011-12	603	1021	1624	20.70	
2012-13	289	1251	1540	22.78	

### 12.4.2 Licensing Activities of Industrial Fishing Vessel/Trawler

During 2012-13, a total of 184 industrial trawlers in the fleet were engaged fishing into the EEZ of Bangladesh maritime waters 32 shrimp and 152 fish trawlers comprising mid-water,



demersal, bottom water, white fish and modern trawler along with trawlers permitted to fish on trial trip basis by the honorable high court. The addition of trawlers in the existing fleet is sanctioned by Cabinet decision of the government. After then through a very stringent process, the MoFL has give permission and approval for importing or to built trawlers locally. After built or import, the trawler is provided necessary registration, fitness and fishing license as is followed for mechanized fishing boats. Based on the gross tonnage government approved fees are deposited through treasury chalan prior to issue fishing license. License is issued or renewed on yearly basis till 31 December each year.

Table 21 : Revenue earned from industrial trawlers licensing activities

Year	No. of trawlers engaged in fishing			Amount exploited (mt)			Total (mt)
	Shrimp	Fish	Total	Shrimp	Fish	Total	
2007-08	38	95	133	2620	31568	91	34,279
2008-09	36	101	137	2932	32497	156	35,585
2009-10	37	115	152	2496	31490	196	34,182
2010-11	35	123	158	2785	45950	198	48,933
2011-12	33	132	165	2212	71174	22	73,408
2012-13	32	152	184	3083	69947	-	73,030

#### 12.4.3 Inspection and Catch Monitoring of Trawlers and Mechanized Boats

Marine Fisheries Office issues the sailing permission (SP) for the period of 13/14 days for non-freezer trawler and 30 days for freezer trawler according to Marine Fisheries Rules 1983. After completion of each trip fishing trawlers report to the Marine Fisheries Office with submission of fishing logs. The Inspectors of marine fisheries office observe the unloading and collect information about catches. They also check the fish appliances and gears during inspection before the sailing of trawlers. Inspectors randomly inspected 345 trawlers in 2011-2012 and 435 trawlers in 2012-13 and imposed punitive measures as per the relevant section of MFO 1983 by fining Tk. 12.55 lakh and Tk. 18.70 lakh respectively. Likewise, for non-compliances caused by mechanized fishing boats were also fined Tk. 0.65 Lakh and k. 2.97 lakh during 2011-12 and 2012-13 respectively. Fishing nets and equipments those are used in trawler are imported by trawler owners as per their requirements subject to approval from DoF. Inspectors inspect the imported nets at unloading and monitor the proper or improper use of nets. In the year 2011-12 one NOC was issued to one company for import of 1180 kg of nets for two trawlers

#### 12.4.4 Issue of Identity Card (ID) to Skipper, Officers and Sailors of Trawlers

It is compulsory to take identity card for marine sailors and fishers' according to Marine Fisheries Rules 1983. The provision of ID card has been stayed by of the Honorable High Court due to writ files by the Trawler Owner's Association.



#### 12.4.5 Issuance of IUU-Catch Certificate

The European Union through its Council Regulation EC 1005/2008 has laid down Catch Certificate Scheme (CSS) to combat Illegal, Unreported and Unregulated (IUU) Fishing. Under the scheme any company wanting to export marine fishes to European Union countries must take IUU-Catch Certificate (CC) from the flag state's Competent Authority. The Marine Fisheries Ordinance 1983 has been amended to include the provision of issuing IUU-Catch Certificate in 2010. The Director as Competent Authority issued 44 IUU-CCs under the scheme and collected revenue of Tk. 2.62 lakh in 2011-12 and Tk.1.92 lakh in 2012-13. Before issuing IUU-CC each consignment is checked and verified to ascertain the traceability of the product and the documentation process by MFO officials.

#### 12.5 Disaster Management Activities

Disaster management is a process or strategy that is implemented before, during or after any type of catastrophic event takes place. This process can be initiated whenever anything threatens to disrupt normal operations or puts people's lives at risk. Governments at all levels as well as many businesses create their own disaster plans that make it possible to overcome various catastrophes and return to functioning normally as quickly as possible.

There are four essential pails to disaster management: prevention, preparation, relief and recovery. Not all catastrophes can be prevented, but many types can be avoided, and the effects of others can be mitigated. Preparation might include long-term plans for readiness as well as processes that can be done quickly when a disaster seems imminent, such as when a hurricane is expected to make landfall soon. Relief involves action during and immediately after a catastrophe has taken place. Recovery includes repairing, rebuilding, restoring or replacing whatever was damaged, injured or lost because of the disaster.

DoF has been trying to implement sorts of activities through to mitigate disaster through short term, midterm and long term planning to:

- Restore the aquaculture production chain in the cyclone affected coastal areas providing aquaculture inputs to the coastal fish farmers.
- Restore the livelihood of cyclone affected coastal fishers providing fishing nets and repair their boats.
- Aware coastal fishers/farmers about cyclone enabling them to safe their lives and properties.
- Ensure the steady economic growth in the fisheries sector of the coastal region.
- Improve knowledge base on existing status of coastal fishers and small-scale fisheries.



## Progress

Sl.	Component	Distribution of inputs/ other activities	Number of Beneficiaries
1	Aquaculture	i. Carp- 800/P	i. 15550
	a. Input distribn	ii. tilapia fingerlings-1200 /P	ii. 5650
		iii. Bagda(2400/P)/ Galda Pl (800/P)	iii. 3650
		iv. lime, fertilizer and fish feed	iv. 24850
	b. FFS Training	i. all beneficiaries	i. 24850
		ii. Facilitator	ii. 150
		iii. experience sharing tour- FFS member	iii. 51
	c. CBOs and FFS	i. Distribution of 35 LLP pump	i. 35 CBOs
2		ii. Distrn. of 464 seine nets	ii. 35 CBOs and 388 FFS
	Capture Fisheries	a. Distribn. of 93 FRP boats to fishers	639
	a. FRP boat	b. Withdrawal of destructive nets replaced by 1110 eco friendly nets (Pomajal)	3330
	b. Pomajal	c. Sea safety equipment (life jacket, life buoy, marine compass, radio, LED torch, capsize rope, steelbase mirror and cool box) for 1020 sea going multiday boat	8160
	c. Sea safety equipment		
	d. Training	i. FRP boat beneficiaries	i. 639
		ii. Wooden boat builders	ii. 20
		iii. FRP boat repairing	iii. 15
		iv. DoF officials training on Marine courses	iv. 73



DG Fisheries Handed over of FRP boat to Fishers at Patharghata Upazila, Barguna.



Showing demonstration of danger signal by hand flare at Sharankhala Upazila, Bagerhat.



## 12.6 Implementation of Marine Fisheries Rules 1983

### 12.6.1 Penalties/case against breaching Marine Fisheries Rules 1983

Bangladesh Navy sometimes seizes foreign fishery vessels and file case against sailors for their illegal activities. The seized trawlers are handed over to Marine Fisheries Office and are disposed of as per Marine Fisheries Ordinance 1983. In the year 2011-12 no foreign fishing vessel was seized by the Bangladesh Navy. But during April 2012-13, a Srilankan FRP boat was seized by Bangladesh Navy and afterwards handed over to MFO with about 250 kg of yellow fin tuna weighing between 8-60 kg each. Bangladesh Navy regularly reported with list of mechanized fishing boats each month involved fishing without valid and required documents. But no action other than forwarding the same for taking legal measures by the concerned DFOs is being done.

In the month of November 2011 during 2011-12, Bangladesh Navy reported against 14 shrimp and 5 fishing trawlers for fishing within 24-28 meters depth which was serious infringement and thus took punitive measure with fine of Tk. 2.10 lakh according to MFO 1983. Likewise, in March 2013 during 2012-13, one shrimp and 22 fishing trawlers identified deployed fishing between 11 and 18 meters depth for which Tk. 5.85 lakh was fined for non-compliance. Fishing less than 40 meter depth by the industrial fishing trawlers are completely prohibited by MFR 1983 for conserving the ecological balance for whole of the marine environment. During meeting organized bi-monthly, Bangladesh Navy has been repeatedly requested to report the non-compliance more specially fishing less than 40 meter depth.

Bangladesh Marine Fisheries Association and other Trawlers Owners filed Writ Petition in the Hon'ble High Court when required Rules are framed under authority given to MoFL by Section-55 against Marine Fisheries Office. At present, three writ petitions are being pending to Hon'ble High Court against staying the order passed for close season of important marine shrimps; other against staying of order issued for mandatory employment of three officials passed out from Marine Fisheries Academy, and another against the provision of issuing ID card to officials and sails of industrial trawlers. The government prosecutors appear before the court on behalf of Marine Fisheries Office. Government prosecutors also defend the Department of Fisheries and Ministry of Fisheries and Livestock in the writ petitions regarding issuance of fishing license, fishing permission on trial trip basis and other suits.

## 12.7 Marine Fisheries Survey and Management Unit

After liberation, some survey works was done with the assistance of foreign experts under UNDP assistance. The two survey vessels named R.V. Anushandhani and R.V. Machranga under Marine Fisheries Survey and Management Unit is out of commission and is awaiting to be disposed as scrap. Eighty three survey cruises have been conducted by R.V. Anushandhani up to the year of 2001 and nineteen survey cruises have been undertaken by RV. Machranga up to the year of 1996. So for the pre- and post-liberation surveys detected 4 fishing grounds, estimated fish and shrimp stock and MSY and two peak breeding season of shrimp.

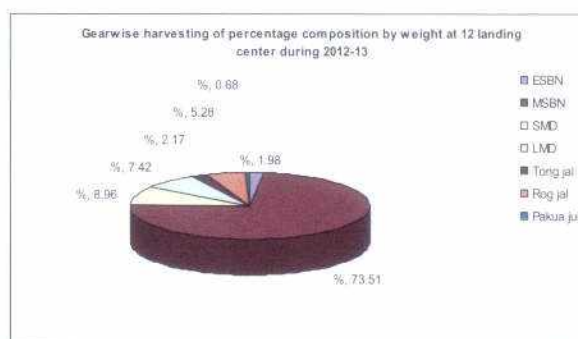


Governments declare an area of 698 sq.km "Marine Reserve" in the Bay of Bengal in 2000 for precautionary management perspective. But effective implementation of MCS procedure would be crucial to harness the best outcome from the reserve. As per the Marine Fisheries Ordinance 1983 and the Marine Fisheries Rule, it is established that the fishing areas for mechanized and non-mechanized fishing boat is limited within the 40 m depth and for industrial fishing trawler fleet it shall be beyond 40 meter depth counter during the high tide. Proper and effective MCS procedure would be desirable by comprehensive and concerted effort by the Guardian at Sea-The Bangladesh Navy and Bangladesh Coast Guard to protect maritime boundary.

Table 22: Gear-wise harvest (mt) from 12 selective landing Centers during 2012-13.

Month	Production (MT)						
	ESBN	MSBN	SMD	LMD	Tong Jal	Rog Jal	Pakua Jal
Jul/12	39.532	43.624	450.36	112.59	104.05	128.70	-
Aug/12	29.12	2854.810	294.589	126.253	326.57	1037.475	-
Sep/12	362.39	237.624	496.231	267.187	375.95	236.950	-
Oct/12	22.384	10393.551	1413.042	760.869	166.78	231.693	-
Nov/12	139.365	5228.834	500.236	516.42	-	86.762	6.130
Dec/12	50.778	2737.80	227.540	341.316	-	105.090	62.061
Jan/13	70.432	1640.540	152.912	283.979	-	91.810	80.648
Feb/13	12.64	2913.390	97.611	227.759	-	72.920	71.43
Mar/13	11.70	3630.90	109.215	254.835	-	95.350	74.33
Apr/13	59.022	2364.65	111.263	333.788	-	152.220	6.558
May/13	36.096	787.028	22.44	67.32	-	101.460	1.900
Jun/13	52.097	115.588	141.600	35.400	0.782	26.220	
<b>Total</b>	<b>885.556</b>	<b>32948.339</b>	<b>4017.039</b>	<b>3327.716</b>	<b>974.123</b>	<b>2366.65</b>	<b>303.057</b>
<b>Percentage</b>	<b>1.98%</b>	<b>73.51%</b>	<b>8.96%</b>	<b>7.42%</b>	<b>2.17%</b>	<b>5.28%</b>	<b>0.68%</b>

At present, a land base survey work is being conducted in selected 12 fish landing centers in coastal region of Chittagong and Cox's Bazar districts by technical staffs and scientists of Marine Fisheries Survey and Management Unit. From data and information generated from this land base survey, it is possible to estimate the amount of harvested fish/shrimp in artisanal sector, species composition, catch composition of ESBN catch, length frequency, landed boats, used gears, destructive gear etc. which are essential for the planning process.



Gear wise harvesting in Artisanal Fisheries  
during July 2012 to June 2013



### 13. Fish Inspection and Quality Control (FIQC):

The importance of exportable fisheries products' quality was realized in tandem with the expansion of export market vis-à-vis consumer's demand for quality and safe food. Envisaging this context, Government implemented the National Fish Inspection and Quality Control Project in 1976 establishing two regional offices located at Chittagong and Khulna. The office of Dhaka zone was established in 1980 under 'Establishment of National Fish Inspection and Quality Control Service (NFIQC) project at Matshya Bhaban. Without having own laboratory, the initial activities under FIQC, Dhaka were restricted to inspection of fish processing establishments and infrastructure, advisory services for the developments of fish processing plants and processed products as well. Also microbiological tests have been carried out with the assistance of microbiological laboratory of Institute of Post Graduate Medicine and Research (IPGMR presently BSMRMU), Dhaka. Department of Fisheries (DoF) has established another FIQC Laboratory by reshaping construction design, on the 11th floor of Matshya Bhaban building in 1994. Since the creation of lab facilities, testing of microbial quality of exportable fish and fishery products has routinely been performed by the officials of FIQC, Dhaka.

To address the requirements of the European Union the Department of Fisheries (DoF) has been installed two LC-MS-MS machines at FIQC, Dhaka to check the contamination of prohibited antibiotic residues in fishery product. In 2011-12 two more new LC-MS-MS machines have been installed in FIQC Dhaka laboratory by the financial assistance of BEST-BFQ project. The analysts of the laboratory have trained both locally and abroad to operate the machine as well as performing tests as per ISO 17025.

Presence of Chloramphenicol (CAP), Nitrofurantoin (NF) metabolites, Malachite Green (MG), Crystal Violet (CV), Anthelmintics etc. in fishery product are being tested by these LC-MS-MS machines. Besides FIQC Laboratory in Dhaka, two more modern laboratories having chemical and microbiological sections have been established at Chittagong and Khulna by the financial assistance of UNIDO-SFIQC project during 2008-09. Meanwhile more new equipments have been installed in these laboratories by the EU-UNIDO assistance. Moreover DoF has started to establish national reference laboratory of international standard through EU-Project Aid.



Processing Industry visited by H. E US Ambassador  
Mr. Dan W Mizina



### 13.1 Licensing Activities:

Licenses are issued or renewed annually considering overall condition of Fish processing plants, Fish packing centers, Factory trawlers, Non-packer exporters, Fish drying yards, Fish suppliers and Depots according to Fish and Fishery Products (Inspection and Quality Control) Rules, 1997 (amended in 2008). The number s of Fish processing plants, Factory trawlers, Fish packing centers, Non-packer exporters, etc. are as follows-

Table-23: Number of different of Establishments involved in fish export value chain (2012-13)

Sl.No.	Type of Establishment	Number (Licensed in 2013)	Sl.No.	Type of Establishment	Number (Licensed in 2013)
1.	Fish Processing plants	82	2.	Fish drying yards	16
3.	Factory Trawlers	65	4.	Suppliers	60
5.	Fish Packing Center	31	6.	Depots	634
7.	Non Packer	64	8.	Service /Landing center	48

### 13.2 Routine Monitoring of Quality Assurance Program (QAP)

To ensure HACCP system of fish processing plants, factory trawlers, packing centres and other establishments involved fish processing activities are regularly inspected and monitored as per provisions of Fish and Fish products (Inspection and Quality Control) Rules 1997(amended in 2008). During routine inspection, emphases are given on:

- Hygiene and sanitation of the establishments concerned
- Personal hygiene of working personnel
- Monitoring of the activities involved in fish process line
- Monitoring and verification of own-check systems of the establishments concerned
- Verification of traceability documents
- Evaluate Good Manufacturing Practices (GMP) and verification of HACCP documents
- Annual inspection of fish processing establishments for renewal of licenses
- Provide necessary advice and suggestions to ensure QAP.

### 3.3 Fish Products Inspection:

**Export of fishery products:** DoF competent authority inspects a declared consignment of exporter after getting an application along with commercial invoice, packing list, purchase contract or L/C copy for pre-shipment inspection and application fees. Assigned Inspector usually verifies traceability documents, stock, storage condition, packing, labelling and relevant documents of processed products during inspection. Then Inspectors check organoleptic quality of randomly selected samples. Having satisfactory organoleptic assessment and product documentation the assigned Inspector draws samples as per sampling plans for bacteriological and chemical analysis as required by importing countries. Finally,



Inspector submits report on products, processing practice and relevant documentation process to the competent authority for pre-export test and certification.

**Imports of fishery products:** Upon request of Custom authority, representatives of the DoF inspect the quality of imported fish through checking the presence of formalin and physical condition for each exported consignments. Moreover the DOF is also checking the presence of residues of banned antibiotics in fish muscle by random sampling.

### 3.4 Quality Assurance of Fish Products:

#### 13.4.1 Microbiological tests

Samples drawn by Inspectors are tested in Microbiological Laboratory under respective FIQC office for assessment of *Salmonella sp*, *Vibrio cholera*, *Vibrio parahaemolyticus*, Total and Faecal coliforms and to estimate Standard Plate Count (SPC). Reports of microbial tests are evaluated for compliances with Microbiological standards stated in ISO/ICMSF for issuing Salubrity certificates.

#### 13.4.2 Chemical tests

Presence of prohibited antibiotics especially Chloramphenicol (CAP) and Nitrofurantoin (NF) metabolites in shrimp has become the major concern for EU countries in the recent years. FIQC laboratory, Dhaka is conducting tests for analysing residues of CAP and NF metabolites (AMOZ, AOZ, AHD & SEM) Crystal violet (CV) and Malachite green (MG) and its metabolites (LCV & LMG) as well as Flubendazole by LC-MS-MS and ELISA screening as per EU regulation and FIQC Rules 1997 (amended in 2008). FIQC laboratory of DoF also conducting tests for antibacterial substances (Tetracycline, Oxytetracycline and Chlorotetracycline) Stilbenes and Steroids. heavy metals (Lead, Cadmium, Mercury, Chromium and Arsenic). Mycotoxins and Pesticides tests were carrying by outsource.

#### 13.4.3 Water, Ice and Swab tests:

Monitoring samples of water, ice and swab samples collected from fish processing industries are analyzed for SPC and total/faecal coliforms in order to assess the quality of water and ice of fish processing industries, and swab tests results indicate general hygienic and sanitation condition of contact surfaces (workers hand surface and food contact surfaces). Any non-compliance situation if detected by test is soon reported to concerned factory authorities for taking corrective measures as per Fish and Fish products (Inspection and Quality control) Rules 1997 (Amended in 2008).

#### 13.4.4 Aquaculture Residues monitoring Through NRCF

Monitoring of residual existence of antibiotics, pesticides, hormones and other chemical elements in farmed shrimp, fish, feed or water is one of the main activities in FIQC. For effective monitoring of Chemical residues, in aquaculture products, National Residue Control



Plan (NRCP) has been introduced since 2009. NRCP samples of shrimp, fish, feed, water etc are collected and tested in FIQC laboratories and in associated laboratories (BAEC, BCSIR and BARI) as per provision of NRCP policy guideline.



LC-MS-MS Machine in FIQC Dhaka Lab.

National Residue Control Plan to monitor status of chemical contamination of fish at farm

Compo und Group	Test Parameters	Samples tested (2011)			Samples tested (2012)			Samples tested (2013)			Samples tested (2014)		
		Shrimp	Fish	Total	Shrimp	Fish	Total	Shrimp	Fish	Total	Shrimp	Fish	Total
A <sub>1</sub>	Stilbenes	-	18	18		15	15	-	15	15	-	15	15
A <sub>3</sub>	Steroids	-	18	18	-	15	15	-	15	15	-	15	15
A <sub>6</sub>	Antibiotics	322	18	340	438	17	455	405	15	420	438	15	453
B <sub>1</sub>	Antibacter ial substances	326	54	380	378	47	425	389	47	436	403	47	450
B <sub>2a</sub>	Anthelmin tics	131	20	151	152	19	171	156	19	175	160	19	179
B <sub>3a</sub>	Pesticides	47	08	55	54	7	61	57	7	64	59	7	66
B <sub>3c</sub>	Chemical elements	47	08	55	54	7	61	57	7	64	63	7	70
B <sub>3d</sub>	Mycotoxin	47	08	55	54	7	61	57	7	64	60	7	67
B <sub>3e</sub>	Dyes	55	08	63	67	7	74	63	8	71	65	8	73
A.Total (Fish & shrimp)		975	160	1135	1140	141	1281	1192	140	1332	1248	140	1388
B. Fish Feed				300			300			195			200
GT (A+B)				1435			1581			1527			1588

Regional NRCP plan 2011

Group of Compoun- ds	Name of Compounds	No. of Test	Test are done by					
			FIQC-DHK		FIQC-CTG		FIQC-KLN	
			Shrimp	Fish	Shrimp	Fish	Shrimp	Fish
A <sub>1</sub>	Stilbenes	18	-	7	-	11	-	-
A <sub>3</sub>	Steroids	18	-	7	-	11	-	-
A <sub>6</sub>	Antibiotics	340	7	7	50	11	265	-
B <sub>1</sub>	Antibacterial substances	380	7	20	51	34	268	-
B <sub>2a</sub>	Anthelmintics	151	2	7	20	13	109	-
B <sub>3a</sub>	Pesticides	55	1	3	8	5	38	-
B <sub>3c</sub>	Chemical elements	55	1	3	8	5	38	-
B <sub>3d</sub>	Mycotoxin	55	1	3	8	5	38	-
B <sub>3e</sub>	Dyes	63	1	3	10	5	44	-
Total		1135	20	60	155	100	800	-



### 13.5 Export of Fish and Fisheries Products

#### 13.5.1 Export performance of recent years

Bangladesh exports frozen shrimp and other fish and fisheries products to EU, USA, Japan, Russia, Hong Kong, Singapore, Saudi Arab, Sudan and other developed countries. This success is due to export of quality shrimp processed by introducing **HACCP** and traceability system implemented in the country according to the requirement of European Union (EU) and USA. Year wise export volume and value of fish and fisheries products shown in the table below-

Table-24. Year wise export of fish and fisheries products (2003-13).

Financial Year	Quantity Exported (Thousand MT)	Earning (Crore BDT)	Financial Year	Quantity Exported ('000 MT)	Earning (Crore BDT)
2003-2004	54.14	2363	2008-2009	73.00	3274
2004-2005	63.37	2572	2009-2010	78.00	3408
2005-2006	68.83	3030	2010-2011	96.47	4604
2006-2007	73.70	3353	2011-2012	92.48	4704
2007-2008	75.29	3396	2012-2013	84.90	4159

The export earning of the country was Tk. 3352.89 crore by exporting 73704 MT of the fish and fishery products in 2006-07 of the previous government. In 2009-10 export value and quantity of fish and fishery products was Tk. 3408.52 crore and 77643 MT respectively and in 2010-11 total remittance was Tk. 4604.00 crore for exporting 96469 MT of fish and fishery products. During three years regime of present government, export earnings from fish and fishery products increased by 37.30% in spite of the world's economic recession. However in the 2012-13 export hilsa was stopped by the Gvt and in year cash incentive on export of white fish (fin fish) was withdrawn. As a result, total volume of export showing downtrend. Moreover, the present government extended help and co-operations for exporting shrimp including 10% cost incentive, reduced interest rate etc. to sustain continuous growth of exports of this sector which reflected through increasing the export of high valued shrimp.

#### 13.5.2 New Entrepreneurship in Fish Processing

The exporters are investing more to produce value added products instead of traditional block products to meet the demands of the global market. Now a days, exporters are focusing more on production and export of high value addition products of shrimp and fish. As for example, in order coup with requirement of competitive global seafood market some entrepreneurs of the country have already started to establish processing plants at Gazipur and Trishal, Maymenshing with facilities of fish fillet, fish oil and canned items with the support jointly provided by INFOFISH and Department of Fisheries, Bangladesh.



### 13.5.3 Traceability

To ensure the traceability of shrimp value chain ensured by incorporating Rule-23 in the Fish and Fish Products (Inspection and Quality Control) rules 1997 (amended in 2008). The Upazila Fisheries Officers as well as shrimp farmer of the shrimp producing areas trained up on implementation of traceability. About 206,000 shrimp farms and 9624 fin fish farms were registered for implementing Traceability. About 22000 number of officers, shrimp farmers and other stakeholders who are directly involved in this sector were trained on HACCP system and Traceability for strengthening fisheries quality control program.



Semi intensive Shrimp farm at Satkhira

### 13.5.4 Hazard Analysis and Critical Control Point (HACCP) implementation:

Safe and reliable production of quality seafood for global market is a recent challenge for Bangladesh. Previously quality issues mainly dealt with decomposition, filth content and contamination of pathogenic bacteria of post harvest chain. Recently, environmental aspects, human rights, i.e. child labor, gender issues, etc. have gained prominence. These have been compounded by enactment of the Bio-Terrorism Act, Anti Dumping Act, Food Safety Modernization Act 2011 and Traceability Regulation for this business sector. To ensure safe fish and fish products



Monitoring of HACCP activities in a processing plant at Bagerhat District

for the markets, the government has undertaken stringent measures to improve QAP and strong compliances of HACCP guidelines. Department of Fisheries has imparted training to the relevant manpower on HACCP system. Sanitary and Phyto-sanitary measures are followed as per WTO agreement. Transportation network was developed. Waste water treatment plants (ETP) were installed. Awareness building training provided on traceability and Eco-leveling Act to the processors and suppliers.

### 13.5.5 Surveillance and mobile court to prevent fish adulteration

Regular inspection and mobile court was operating at landing centers, depot and processing plants to control adulteration (pushing water, gel etc) of fish and shrimp. Numbers of accused establishments and persons are taking under punitive measures with the help



of law enforcing agencies and adulterated fish and shrimps are destroying on regular basis. Up to March 2014 of 2013-14 year FIQC moved 37 mobile court, imposed fine TK.770,000/= and destroyed 1195 kg fish.

#### **13.5.6 Task Force Committee:**

In shrimp production and processing areas Task Force Committee was formed mainly in Khulna and Chittagong to control the unhygienic systems in every stages of the production, transportation and processing of shrimp. District level Task Force Committee was made headed by respective Deputy Commissioner with member Secretary of respective District Fisheries Officer. Their activities are to develop depot, landing centres and registration of Shrimp hatchery, nursery and shrimp farm /Gher etc. Ensure establishment of sanitary latrine removing unhygienic kacha latrine in the adjacent shrimp farming area. According to HACCP system, shrimp production and processing should be ensured by task force committee.

#### **13.5.7 FIQC training activities:**

As training is essential tool for increasing skills and competence to provide quality services, the department provides training for the officers of FIQC on Food Safety, ISO standards, GMP, GAP and GLP, operation of LC-MS/MS machine and other Lab related activities and other necessary topics related to quality control regularly. Some FIQC officers were trained from abroad both in Laboratory (microbiological and chemical aspects) and Inspection side.

#### **13.5.8 Action Plan and its Implementation**

Shrimp of aquaculture origin of Bangladesh being contaminated by the NF metabolites evolved through repeated Rapid Alert System for Food and Feed (RASFF) from EU in 2009, National Working Committee (NWC) was formed comprised of representatives from MOFL, MOC, MOL&E, DLS, BDA, development partner's food business operators, promoters of aquaculture and quality control sector headed by Joint Secretary (Fisheries), MOFL. The NWC is working since 2009 to combat the issue by formulating annual action plan.

Increasing population in Bangladesh has exerted pressure on the natural fish resources resulting in renewed momentum towards farming of fish and shrimp like other countries. The provoking use of growth promoters and other drugs and gene manipulation practice is leading increase of production in aquaculture, on the other hand, the indiscriminate use of pesticides in agriculture and pollution from industrial effluents has increased the threats of safe fish production. To ensure the market share in the global trade we need to produce products free from contamination and safe for human consumption through the implementation of HACCP and Traceability. Enormous analytical works, extension and development of fish inspection and quality control activities required to avoid health risk from biological and chemical hazard to meet the global requirement of safe and quality food through monitoring and implementation of HACCP and modernizing laboratory facilities.



## 14. Human Resource Development

Human resource development is mandatory for DoF to enhance administrative, management and technological capacity in fisheries sector. The HRD activities meant to enhance capacity in the area of administrative, management, technological aspects and relevant cross cutting issues for conserving and managing the fisheries resources in sustainable manner. The ultimate objective is to augment productivity in fisheries sector, alleviate poverty, address gender issues, reduce unemployment and contribute balanced development having regard to goals and objectives of the national development plans. As a part of National Fisheries Policy implementation, DoF has developed a Human Resource Development Sub-strategy. DoF has organized both in-country and overseas training as major tool for technology transfer and extension activities in order to disseminate new technologies at field level. For this purpose regular training programs are being conducted from both revenue and development budget of DoF for the skill development of concerned personnel including DoF officials, fishers, fish farmers, unemployed youths, distress women, landless and marginal farmers etc. For the continuation of fisheries training, Government already created a new sub-head named "training" in the revenue budget. The progress of training activities at a glance is shown in Table 22.

Table 25: Progress of training activities from 2007 to 2013.

Financial Year	In Country Training	Foreign Training		
	Government personnel	Fish Farmers/ Fishers/ NGO personnel	Government personnel	Fish Farmers/ Fishers/ NGO personnel
2007-2008	2050	45,258	49	01
2008-2009	2801	51,761	118	06
2009-2010	3230	54,527	69	08
2010-2011	3500	60000	99	13
2011-2012	3750	65873	166	03
2012-2013	3995	275437	103	00

### 14.1 Gender Issue

About 50% of our population is women. Therefore, women's participation in aquaculture and fisheries activities is very crucial for the socio-economic development of the country. Department of Fisheries (DoF) is trying to introduce women friendly aquaculture and fisheries technology so that more and more women especially poor women can come up with these activities to make them self dependent as well as empowered in the family and in the society. With this view, Department of Fisheries has been carrying different development projects and programs throughout the country where at least 25% women's participation is mandatory. Department of Fisheries also has been providing need based



training especially for women in different field of aquaculture and fisheries. On the other hand, women also showed their capability by successful operation of some of these programs.

#### 14.1.1 Gender equity

There has been spacefic provision in the development projects and programmes of DoF to include 25-30% women in the community groups. Department of Fisheries (DoF) is responsible for the protection, conservation and development of fisheries resources in Bangladesh. For this purpose, DoF has been executing various programs and plan of actions irrespective of social stratification, geo-location, and gender. However, from the recent past, Department of Fisheries has shifted its focus from single approach to community based approach, from common aquaculture to pro-poor aquaculture and also shifted focus on gender issues.

#### 14.1.2 Women participation in fish culture

At present women (specially rural women) are getting success in different types of aquaculture like pond aquaculture, integrated aquaculture, fry raising, shrimp culture, crab culture etc, and also fish feed preparation. Fourth Fisheries Project (FFP), one of the biggest projects of DoF, which covered 211 Upazilas of the country, has trained up 200,000 farmers in different aspect of aquaculture. Out of these 200,000 farmers 25% (about 50,000) are women. In IFAD project of Faridpur 96% beneficiaries are women. In Greater Noakhali Aquaculture Extension Project (GNAEP), total 35,064 beneficiaries are engaged in aquaculture, out of which 50% (17081) are women. In poverty alleviation through integrated aquaculture project, at least 40% are rural women beneficiaries. Some national and local NGOs involve women in aquaculture activities along with DoF. The participation of women in NGO assisted aquaculture is also very encouraging. The aquaculture program run by CARITAS included 53% women participants.

#### 14.1.3 Women participation in fish harvesting and processing

Bangladesh is earning a substantial amount of foreign currency by exporting processed fish and shrimp. In the fish processing industries throughout the country, 90% are women workers. DoF has been providing necessary training on HACCP and traceability as well as health- hygiene of the workers as such more and more women are involved in this process and exporters can export their goods maintaining EU regulations. A large number of women are also engaged in icing and drying fish especially in the coastal region of the country. Some are engaged in fish trade and some are working as middle men. In the rural Bangladesh, women are taking part in pond digging, de-weeding, de-watering etc. Fishers' women of Bangladesh are also engaged in net making and other gears making activities.



#### 14.1.4 Women participation in jalmohal management

During the recent years, women are working in the beel, haor, baor, flood plain etc. along with the male members and sometimes in a separate female group. DoF has special package of training program for these female groups. As a result, they are now managing these types of jalmohals very successfully and contributing the national production. On the other hand, female members are encouraging people not to use harmful insecticides and vital role in the execution of fish act by motivating people.



Fish harvesting by a rural women from jalmohal, Dohar, Dhaka

### 15. National Fish Week 2013

The Father of the Nation Bangabandhu Sheikh Mujibur Rahman inaugurated **More Fish Culture Movement in 1974** by releasing 20,000 carp fingerlings at Gonobhabon Lake. Following that movement, National Fish Campaign is being observed throughout the nation to create mass awareness to impart in the process for harnessing the potential from fisheries sector for economic growth of the country since 1993. National Fish Week 2013 has been observed country wide from 2-8 July with due emphasis on fish culture for food safety. The commemorative slogan for National Fish Week 2013 was



Inaugural session of the National Fish Week 2013



Fingerling releasing by the Honorable Prime Minister Sheikh Hasina

**“Mache mache varbo desh, Garbo sonar Bangladesh”**. At the instruction of the Honorable Prime Minister, the Ministry of Fisheries and Livestock through the Department of Fisheries took up a program to build up awareness for conservation of fisheries resources among the people and to motivate them for participation in technology based improved fish culture for increased production of fish and shrimp.



A distinctive character of the "National Fish Week" has been the direct participation of the head of the state, the President; head of the government, the Prime Minister; Speakers of the National Parliament; Cabinet Ministers. The Honorable Prime Minister of Bangladesh inaugurated the national event on 02 July 2013 in the Osmani Memorial Auditorium. Before the inauguration a grand Road Rally was arranged where the Hon'able Minister and respected Secretary MoFL, DG, DoF and BFRI, Chairman, BFDC and officials from MoFL, DoF, BFRI, BFDC, DLS, NGO representatives and other sections of peoples were present. In the inaugural day, special supplements were published in four national dailies- The Daily Star; The Daily Ittefaq, The Daily Janokontha and The Daily Samokal. A press briefing was also arranged on 1 July 2013 to disseminate the significance of the national Fish week. Four seminars were organized on various topics of fisheries importance. Various events like discussion and awareness meeting, fish fair, organized training for unemployed youths, essay competition for school and college students, art competition, execution of Fish Acts and mobile courts were also arranged.

## **16. Implementation of Development Projects**

Government has taken necessary initiatives at the very beginning to increase investment for expected development of fisheries sector. An amount of taka 13547.00 lakh has been allocated for 23 development projects in the financial year 2010-2011 under the annual development program of DoF. The actual expenditure and achievements were 12903.42 lakh and 96% respectively. Some programs are also submitted to the ministry for budget allocation from revenue head. The list, allocation and expenditure of DoF development projects and programs for vision 2021 are shown in Annexure 9 and 10.

## **17. Information and Communication Technology (ICT) in Fisheries**

While Awami League's Charter for Change announced the concept of Digital Bangladesh as an integral Component of Vision 2021, The 6th Five Year Plan places an equal importance to Digital Bangladesh as part of the nation's development strategy. The Information and communication Technology (ICT) Policy 2009, ICT Act 2009, Right to Information Act 2009, various local government acts promulgated in 2009 laid the foundation for identifying the Digital Bangladesh priorities for the government. As such, a strategy document 'Setting Digital Bangladesh Priorities' is being drafted to integrate the goals of Digital Bangladesh with those of key development sectors to harmonize top level priority setting through a participatory and inclusive approach. Digital Bangladesh is an Idea that includes the IT use for management, administration and governance to ensure transparency, accountability and answerability at all levels of society and state.

### **17.1. Door step Services**

This issue covers what delivery channels are used for solving the fish farmers 'problem for taking services to citizens in disadvantaged areas. This issue covers Digital Communication particularly, DoF Head quarters to Upazila level. Last year 2011 DoF Connected



Headquarters to District level office under E-mail connectivity for quick service. Ten upazila and 10 villages under A2I program also connected under digital communication. Implementation of 'e- Extension Services for Need Based Aquaculture Extension' program through the Department of Fisheries, MoFL and A2I program.

### 17.2 Activities of Fisheries Information and Communication Center (FICC)

'e-Extension Services for Need Based Aquaculture Extension' is an on-going pilot program of DoF.

The fish farmers can receive the following services:

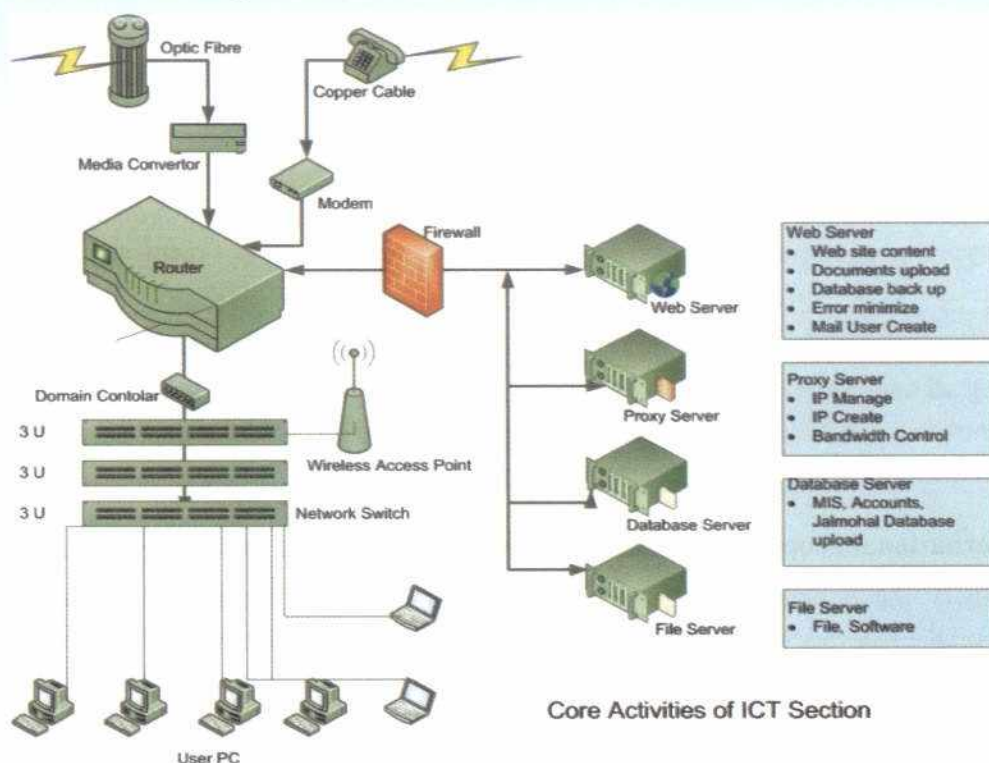
- Fish farmer will get support in solution of their problem from e-LEAF (e-Local Extension Agent for Fisheries). If the e-LEAF cannot solve the problem or unable to solve any problem, he (e-LEAF) would immediately contact with the Senior/Upazila Fisheries Officer or District Fisheries Officer through mobile phone/teleconference or videoconference and discuss the particular problem with them for getting suitable suggestions of the problem.
- Successful implementation of this FICC program will ensure and provide quick and on spot solutions to fish farmers.
- Information regarding fish culture/aquaculture will be easy reachable to general mass through this program. FICC will be enriched with extension videos, audios and other extension materials and tools regarding fish farming.
- As per demand of fish farmer e-LEAF will visit fish farmers' pond/farm/gher and suggest on spot to solve the problems.
- This program will augment mass awareness among those who want to go for fish farming or those who are engaged in fish farming.
- Fish farmers will get hand-on practical and technical knowledge regarding fish farming.
- e-LEAF can provide easy and door steps service delivery on fish farming and extension to fish farmers using IT equipments and related accessories.
- Selected e-LEAF will serve on honorary basis (with no salary) without affecting the aims and objectives of the FICC. It may support to his livelihood using the IT tools.
- For unknown and special problems SUFOs/UFOs and the DFOs have to consult with respective personnel of DoF HQ through video conferencing to get quick solution of the problem. A video conference team is already formed by DG of DoF to provide such services immediate solution of farmer's problem.

### 17.3 Success Story of ICT Section of DoF

The ICT section of the Department of Fisheries has established a separate web-based fish advice system, Accounts/Audit and Budget System, MIS for extension report automation,



Jamahal Database, HRD, e-mail sending system. ICT section also made 2 e-book and a database software for computer distribution.



#### 17.4 Future plan

With the aim of building 'Digital Bangladesh' by the year 2021 the Government is committed to support and ensure the use of IT in the respective areas of aquaculture and management. For timely and need based service delivery to the door steps entrepreneurs, fish farmers and fishers can be ensured with transparency and good governance.

- Introduce e-extension strategies
- Dynamic website management
- Prepare database on geo-physical environment related to fisheries and regular update
- Prepare resource-wise database on inland open waters and regular update
- Introduce use of geographical information systems (GIS) in fish culture and resource management planning
- Introduce IT based monitoring, control and surveillance in marine fisheries management
- Introduce IT based management information system (MIS)

#### 18. Good Aquaculture Practice

There are a good number of success stories in both public and private sectors for enhanced aquaculture production and fisheries resources management through participatory co-management system. It is imperative to disseminate the success stories of this sector under



the preview of "Dissemination of Good Practices in Fisheries Sector" for promotion and expansion of the technological interventions to other regions of the country for improved resource management. In these dissemination workshops all categories of stakeholders, the beneficiaries, NGO's, DoF officials, local administration, social workers and local representatives get the opportunity to share the best practices which expand the possibility to replicate it to other regions or locations.

Department of Fisheries through assistance from Strengthening Institutional capacity of DoF Project, IPAC, World Fish Centre organized seven dissemination workshops in different districts as titled "Dissemination of Good Practices in Fisheries Sector" in Deputy Commissioner's Conference office covering a hundred of participants in related discipline including all categories of stakeholders. The good practices on open water management and other innovative technologies were highly appreciated in the seminar and the administration was convinced to cooperate in dissemination process.

### **19. International cooperation and liaison with development partner Agencies**

To intensify the enhancement fisheries development of the country DoF has joined the international Fisheries Cooperation. DoF maintain a close liaison with a member of donors for technical and financial assistance for implementation of diversified activities under the sector. DoF recognizes the assistance receipt from the donors with great pleasure and importance. DoF welcomed more involvement of donors for manages the diversified fisheries resources of the country to obtain the enefits for her population. At present UNDP, FAO, World Bank, USAID, GiZ, IFAD, EU, DANIDA, IDB, The World Fish Center etc. are the development partners of the different ongoing projects.

### **20. Conclusion**

It is expected that implementing of fisheries activities will facilitate the creation full time employment opportunity of 4.62 lakh (unemployed people) during the financial year 2012-13 and 7.88 lakh during the financial year 2020-21 by. Besides this, this sector will be able to create per time employment for 9.91 lakh in the financial year 2012-13 and up to 32.71 lakh by the financial year 2020-21. The declaration of Honorable Prime Minister Shiekh Hasina for food security by the year 2013, government has undertaken massive activities to desired production of fish to meet the animal protein requirements up to 63% as well as crop production. It is believed that if the increasing trend of development activities of present democratic government, it will be possible to achieve the millennium development goal 2021 by which creation of huge employment opportunity, poverty alleviation and food security will be ensured the Sonar Bangla the dream of 'The Father of the nation, Banghabhundhu Shiekh Mujibur Rahman'.



## Annexure







**Annexer : 1 List of the winners for National Fish Week 2013 awards**

Sl. No.	Field area	Name of the Person/Organization	Award
1	Export of fish products (Frozen shrimp/fish/dried fish)	Jalalabad Frozen Foods Ltd. Md. Jober Mollha Rupsa, Khulna	Gold Medal, 50000/- cash and a Certificate
2	Contribution of Socail Organization for Fisheries Development	BARC Fisheries Enterprise BARC centure, 75, Mohakhali, Gulsan, Dhaka	Gold Medal, 50000/- cash and a Certificate
3	Contribution of Socail Organization for Fisheries Development	Korotua Nadi Shatay Myathso Avoasrom babushapona committe. Debigonj, Punchugor.	Gold Medal, 50000/- cash and a Certificate
4	Technology for fisheries development	Biramar Kandi Mothsho Udpadon somity-02 Md.Jabed Ali. Vill: Biramarkandi, Ps: Kotalipara.Gopalgonj.	Gold Medal, 50000/- cash and a Certificate
5	Fish and fisheries products processing and marketing	Bangladesh Fish Development Corporation 24-15, Dilkhusa C/A Motejhel.	Gold Medal, 50000/- cash and a Certificate
6	Spawn production	Shahsultan Shahjalal Moythsa Bijagar. Mr. MD. Shafikul Islam Village: Biberpukor Kahalo,Bogura	Silver Medal, 30000/- cash and a Certificate
7	Spawn production	Rebly Islam Kobita Village: Charuepara Ullhapara, Sirajgonj	Silver Medal, 30000/- cash and a Certificate
8	Fry/Fingerling production	Mr. Md Giasuddin Khan Village: Charpara Mirpur, Kustia.	Silver Medal, 30000/- cash and a Certificate
9	Fry/Fingerling production	Mr. Md. Abul Kalam Village- Chungrachari Mohalchari, Khakrachuri.	Silver Medal, 30000/- cash and a Certificate
10	Fry/Fingerling production	Mr. T. A Raju Village- Vatay. Shylakopa, Ghenaydha.	Silver Medal, 30000/- cash and a Certificate
11	Fry/Fingerling production	Tai Thai Bangla scientific Hatchery Mohammad eayhia Village- Boro Chari goan. Senbag. Neukhali	Silver Medal, 30000/- cash and a Certificate
12	Fish production	Mr.Md Mojibor Rahaman Village- Champuknagar Sadar, Rangamati	Silver Medal, 30000/- cash and a Certificate

Sl. No.	Field area	Name of the Person/Organization	Award
13	Fish production	Shuk Bilas Fisheries and Plantaion Mr. Arsadur Mahamud Village- Shuk Bilas Rangunia, Chittagonj	Silver Medal, 30000/- cash and a Certificate
14	PL production (Bagda)	ARC Shrimp Hatchery Ltd Alhaj Abdur Rahim Chwdhory Village- Sonarpara Ukhia, Cox's Bazar.	Silver Medal, 30000/- cash and a Certificate
15	Prawn production (Bagda)	Md M A Malek Village- Kalabashi Dakop, Khulna.	Silver Medal, 30000/- cash and a Certificate
16	Technology adopting for Fisheries Development	Md Mr. Kanchon Ali Hawlader Village- Chorcomissioner Moladi. Barisal	Silver Medal, 30000/- cash and a Certificate
17	Contribution of Socail Organization for Fisheries Development	Mrs. Chafura Gegum Village- Cinispur, Sadar, Norshindi.	Silver Medal, 30000/- cash and a Certificate
18	Contribution of Socail Organization for Fisheries Development	Mothshojibi Upajati Abong Hotodoridro Unnoun Society. Md Abu Bokor Sidik 320/6/E, South Jatrabari.	Silver Medal, 30000/- cash and a Certificate
19	Quality Fish Feed producer	Spectra Hexa Feeds Ltd. Khan Md. Aftab Uddin Village- Nali Sibaloy, Manikgonj.	Silver Medal, 30000/- cash and a Certificate



Annexure 2: Year-wise fish production in Bangladesh during last 10 years

[Unit: Metric Ton]										
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
<b>A. INLAND FISHERIES</b>	<b>1,646,819</b>	<b>1,741,360</b>	<b>1,848,735</b>	<b>1,952,573</b>	<b>2,065,723</b>	<b>2,381,917</b>	<b>2,381,916</b>	<b>25,15354</b>	<b>26,83162</b>	<b>28,21266</b>
(a) Inland Openwater (Capture)	732,067	859,269	956,686	1,006,761	1,060,181	1029937	1,029,937	10,54585	957095	961458
(1) River and Estuaries	137,337	139,798	137,859	136,958	136,812	153695	153,695	144566	145613	147264
(2) Sundarbans	15,242	15,724	16,423	17,751	18,151	8109	8,109	22451	21610	15945
(3) Beel (Depression)	74,328	74,925	76,365	75,137	77,524	70209	70,209	81564	85208	87902
(4) Kaptai Lake	7,238	7,379	7,548	8,085	8,248	7117	7,117	8980	8537	9017
(5) Flood Plain	497,922	621,443	718,491	768,830	819,446	790807	790,807	797024	696127	701330
(b) Inland Closewater (Culture)	914,752	882,091	892,049	945,812	1,005,542	1351980	1,351,979	1460769	1726067	1859808
(1) Pond and Ditch	795,810	756,993	759,628	811,954	866,049	1140485	1140484	1270966	1392412	1446594
(2) Semi-Closed	0	0	0	0	0	0	46,902	51230	132163	200833
(3) Baor (Ox-bow Lake)	4,282	4,388	4,498	4,698	4,778	8727	8727	4868	5186	6146
(4) Shrimp/Prawn Farm	114,660	120,710	127,923	129,160	134,715	145,585	155866	184939	196306	206235
<b>B. MARINE FISHERIES</b>	<b>455,207</b>	<b>474,597</b>	<b>479,810</b>	<b>487,438</b>	<b>497,573</b>	<b>517282</b>	<b>517,282</b>	<b>546333</b>	<b>578620</b>	<b>588988</b>
(a) Industrial	32,606	34,114	34,084	35,391	34,159	34182	34,182	41665	73386	73030
(b) Artisanal	422,601	440,483	445,726	452,047	463,414	483100	483,100	504668	505234	515958
<b>COUNTRY TOTAL (A+B)</b>	<b>2,102,026</b>	<b>2,215,957</b>	<b>2,328,545</b>	<b>2,440,011</b>	<b>2,563,296</b>	<b>2899199</b>	<b>2,899,198</b>	<b>3061687</b>	<b>3261782</b>	<b>3410254</b>
<b>ANNUAL GROWTH RATE (%)</b>	<b>5.20</b>	<b>5.42</b>	<b>5.08</b>	<b>4.79</b>	<b>5.05</b>	<b>7.3</b>	<b>7.32</b>	<b>5.6</b>	<b>6.5</b>	<b>6.13</b>

## Annexure 3: Resource wise annual fisheries production

Resource type	Water Area (ha)			Production (mt)			Catch/Area (kg/ha)				% of total production		
	2012-13	2011-12	2010-11	2012-13	2011-12	2010-11	2012-13	2010-11	2010-11	2010-11	2012-11	2009-10	2010-11
<b>A. Inland Fisheries</b>													
<b>(i) Capture</b>													
1. River and Estuaries	853863	853863	853863	147264	145613	144566	172	171	169				
2. Sundarbans	177700	177700	177700	15945	21610	22451	90	122	126				
3. Beel	114161	114161	114161	87902	85208	81564	770	746	714				--
4. Kaptai Lake	68800	68800	68800	9017	8537	8940	131	124	131				
5. Flood Land (including Seasonal Water body)	2702304	2832792	2810410	701330	878420	797024	260	210	250				
<b>Capture Total</b>	<b>3916828</b>	<b>4047316</b>	<b>40249344</b>	<b>961458</b>	<b>1139388</b>	<b>1054585</b>	-	-	-	<b>28.19</b>	<b>34.44</b>		<b>29.34</b>
<b>(ii) Culture</b>													
1. Pond and Ditch	501797	371309	396744	1647427	1342282	1270966	5435	3615	3203				
2. Baor	5488	5488	5488	6146	5186	4864	1120	945	886				
3. Coastal Shrimp/Prawn Farm	275274	275232	276492	206235	196306	184939	749	713	669				
<b>Culture Total</b>	<b>782559</b>	<b>652029</b>	<b>678724</b>	<b>1859808</b>	<b>1543774</b>	<b>1460769</b>	-	-	-	<b>54.54</b>	<b>47.71</b>		<b>52.92</b>
<b>Inland Total</b>	<b>4699387</b>	<b>4699345</b>	<b>4703658</b>	<b>2821266</b>	<b>2683162</b>	<b>2515354</b>	-	-	-	<b>82.73</b>	<b>82.16</b>		<b>82.26</b>
<b>B. Marine Fisheries</b>													
(i) Industrial Fisheries (Trawl)	-	-	-	73030	73386	41665							
(ii) Artisanal Fisheries	-	-	-	515958	505234	504668							
<b>Marine Total</b>		-	-	<b>588988</b>	<b>578620</b>	<b>546333</b>				<b>17.27</b>	<b>17.84</b>		<b>17.74</b>
<b>Country Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3410254</b>	<b>3261782</b>	<b>3061687</b>							



Annexure : 4 (a). Hatchling Production of Govt. Hatchery 2013

Name/Location of Hatchery	No. of Hatchery	Hatchling Production (Kg)							Total
		Major Carp	Exotic Carp	Pangas	Thai Puntl	Bata	Koi	Shingi/Magur	
<b>Fish Seed Multiplication Farm</b>									
1. Dhaka Division	18	1216	309	0	105	75	5	3	1713
2. Khulna Division	7	536	30	0	50	75	0	0	691
3. Barisal Division	9	290	15	36	5	20	0	5	371
4. Rangpur Division	12	267	188	0	46	79	0	0	580
5. Rajshahi Division	14	1055	683	69	46	289	0	0	2142
6. Chittagong Division	11	534	80	20	31	7	0	0	672
7. Sylhet Division	6	472	39	0	111	0	0	0	622
<b>Sub Total</b>	<b>77</b>	<b>4370</b>	<b>1344</b>	<b>125</b>	<b>394</b>	<b>545</b>	<b>5</b>	<b>8</b>	<b>6791</b>
<b>Other Govt. Hatchery</b>									
1. Central Hatchery Complex, Baor Fish Development Project, Jhenaidah.	1	300	775	0	10	15	0	0	1100
2. Raipur Fish Hatchery and Training Centre, Lakshmipur.	1	500	66	1	65	10	0	0	642
3. Hatchery of Bangladesh Fisheries Research Institute, Mymensingh.	1	170	80	0	50	0	0	0	300
4. Hatchery of Riverine Station, Bangladesh Fisheries Research Institute, Chandpur.	1	22	0	0	0	0	0	0	22
5. Parbatipur Hatchery, Dinajpur.	1	190	255	0	35	25	0	0	505
6. Faridpur Training and Extension Centre, Faridpur.	1	40	0	0	0	0	0	0	40
7. Hatchery of Rural Development Academy (RDA), Bogra.	1	170	140		50	130			490
<b>Sub Total</b>	<b>7</b>	<b>1392</b>	<b>1316</b>	<b>1</b>	<b>210</b>	<b>180</b>	<b>0</b>	<b>0</b>	<b>3099</b>

Annexure : 4 (b). Hatchling Production of Private Hatchery 2013

Division	No. of Hatchery	Hatchling Production (Kg)								Tilapia Juvenile (Lakh)
		Major Carp	Exotic Carp	Pangas	Thai Puntl	Bata	Koi	Shingi/ Magur	Other	Total
Dhaka	196	69245	32894	2275	5764	5194	3132	1939	336	120779
Khulna	90	40084	24577	2633	2180	2138	400	315	10	72337
Barisal	38	11788	6844	102	1398	410	0	0	0	20542
Rangpur	76	15679	16274	0	3053	4280	2	119	0	39407
Rajshahi	198	42381	36488	50972	4662	9266	7455	2880	25	154129
Chittagong	236	26751	7698	13770	9418	2007	265	88	0	59997
Sylhet	18	5573	2870	55	1834	25	10	50	0	10417
<b>TOTAL</b>	<b>852</b>	<b>211501</b>	<b>127645</b>	<b>69807</b>	<b>28309</b>	<b>23320</b>	<b>11264</b>	<b>5391</b>	<b>371</b>	<b>477563</b>
										<b>15314</b>

*Note : About four lakh hatchlings contain in one kg spawn and one Kg contains 1000-1200 Tilapia Juvenile.*

*Other Species: Chitol, Gulsa, Pabda etc.*



## Annexure 5. Annual Total Catch of Marine Fisheries, 2012-13

Type of Fishing	Number of Craft (Trawler/ Boat)	Number of Unit (Gear/Net)	Catch in Metric Ton			
			Shrimp	Hilsa	Other Fish	Total
<b>A. Industrial</b>						
Trawl Fishing						
a) Shrimp Trawler	32	-	2834	0	1953	4787
b) Fish Trawler	152	-	249	2205	65789	68243
<b>TOTAL INDUSTRIAL</b>	<b>184</b>		<b>3083</b>	<b>2205</b>	<b>67742</b>	<b>73030</b>
<b>B. Artisanal</b>						
<b>1. Gill Net Fishing</b>						
a) Mechanized	19223	96115	0	203500	82540	286040
b) Non Mechanized	6861	35211	0	46870	18000	64870
<b>SUB-TOTAL</b>	<b>26084</b>	<b>131326</b>	<b>0</b>	<b>250370</b>	<b>100540</b>	<b>350910</b>
<b>2. Set Bag Net Fishing</b>						
a) Seasonal (MB)	1151	2620	18010	0	40325	58335
b) Seasonal (NMB)	4688	19179	7565	0	58200	65765
c) All Seasonal (NMB)	7255	31025	8285	0	4000	12285
<b>SUB-TOTAL</b>	<b>13094</b>	<b>52824</b>	<b>33860</b>	<b>0</b>	<b>102525</b>	<b>136385</b>
<b>3. Long Line Fishing</b>						
a) Jew Fish Long Line						
Mechanized	1352	13965	0	0	11463	11463
Non Mechanized	351	1801	0	0	1015	1015
b) Other Long Line (NMB)	1121	9772	0	0	560	560
<b>SUB-TOTAL</b>	<b>2824</b>	<b>25538</b>	<b>0</b>	<b>0</b>	<b>13038</b>	<b>13038</b>
<b>4. Trammel Net Fishing (NMB)</b>	1123	7122	7225	0	2500	9725
<b>5. Other Gears Fishing (NMB)</b>	2564	25640	2400	0	3500	5900
<b>TOTAL ARTISANAL</b>	<b>45689</b>	<b>242450</b>	<b>43485</b>	<b>250370</b>	<b>222103</b>	<b>515958</b>
<b>GRAND TOTAL (A+B)</b>			<b>46568</b>	<b>252575</b>	<b>289845</b>	<b>588988</b>

Trawler		Boat		Gear	
Type	No.	Type	No.	Type	No.
Shrimp Trawler	32	MB (Mechanized Boat)	21726	Gill Net	131326
Fish Trawler	152	NMB (Non-Mechanized Boat)	23963	Set Bag Net	52824
				Long Line	25538
				Trammel Net	7122
				Other Gear	25640
<b>Total</b>	<b>184</b>		<b>45689</b>		<b>242450</b>

## Annexure 6. Species-wise annual catch of marine fisheries, 2012-2013

[Unit : Metric Ton]

Type of Fishing	Species										
	Hilsa	Sardine	Bombay Duck	Indian Salmon	Pom fret	Jew Fish	Cat Fish	Shark/Skate/Ray	Other Marine Fish	Shrimp	Total
<b>A. Industrial</b>											
Trawl Fishing	2205	20906	0	0	428	2818	2122	546	40922	3083	73030
<b>B. Artisanal</b>											
<b>1. Gill Net Fishing</b>											
a) Mechanized	203500	8030	10185	2350	12050	16126	895	1885	31019	0	286040
b) Non-mechanized	46870	0	0	0	0	3826	310	0	13864	0	64870
<b>SUB-TOTAL</b>	<b>250370</b>	<b>8030</b>	<b>10185</b>	<b>2350</b>	<b>12050</b>	<b>19952</b>	<b>1205</b>	<b>1885</b>	<b>44883</b>	<b>0</b>	<b>350910</b>
<b>2. Set Bag Net Fishing</b>											
a) Seasonal	0	700	60230	0	17215	1216	185	250	18729	25575	124100
b) All Seasonal	0	0	500	0	0	0	300	180	3020	8285	12285
<b>SUB-TOTAL</b>	<b>0</b>	<b>700</b>	<b>60730</b>	<b>0</b>	<b>17215</b>	<b>1216</b>	<b>485</b>	<b>430</b>	<b>21749</b>	<b>33860</b>	<b>136385</b>
<b>3. Long Line Fishing</b>											
a) Jew Fish Long Line											
Mechanized	0	0	0	75	0	3385	3180	1738	3085	0	11463
Non Mechanized	0	0	0	20	0	650	100	65	180	0	1015
b) Other Long Line (NMB)	0	0	0	0	0	240	92	228	0	0	560
<b>SUB-TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>0</b>	<b>4275</b>	<b>3372</b>	<b>2031</b>	<b>3265</b>	<b>0</b>	<b>13038</b>
<b>4. Trammel Net Fishing (NMB)</b>	0	0	0	0	0	1321	885	125	169	7225	9725
<b>5. Other Gears' Fishing (NMB)</b>	0	0	830	0	0	1018	525	0	1127	2400	5900
<b>TOTAL ARTISANAL</b>	<b>250370</b>	<b>8730</b>	<b>71745</b>	<b>2445</b>	<b>29265</b>	<b>27782</b>	<b>6472</b>	<b>4471</b>	<b>71193</b>	<b>43485</b>	<b>515958</b>
<b>GRAND TOTAL (Industrial+ Artisanal)</b>	<b>252575</b>	<b>29636</b>	<b>71745</b>	<b>2445</b>	<b>29693</b>	<b>30600</b>	<b>8594</b>	<b>5017</b>	<b>112115</b>	<b>46568</b>	<b>588988</b>
<b>%</b>	<b>42.88</b>	<b>5.03</b>	<b>12.18</b>	<b>0.42</b>	<b>5.04</b>	<b>5.20</b>	<b>1.46</b>	<b>0.85</b>	<b>19.03</b>	<b>7.91</b>	<b>100.00</b>

## Species-wise Shrimp Catch in Marine Fisheries

Sector	Bagda (Tiger)	Harina (Brown)	Chaka (White)	Others	Total
Trawl Fishing	170	2104	103	706	3083
Artisanal Fishing	3295	30812	3440	5938	43485
<b>Total</b>	<b>3465</b>	<b>32916</b>	<b>3543</b>	<b>6644</b>	<b>46568</b>



## Annexure- 7. Brief on NRCP during 2013

Compound Group	Test Parameters	Samples tested (2011)			Samples tested (2012)			Samples tested (2013)			Samples tested (2014)		
		Shrimp	Fish	Total	Shrimp	Fish	Total	Shrimp	Fish	Total	Shrimp	Fish	Total
A <sub>1</sub>	Stilbenes	-	18	18	-	15	15	-	15	15	-	15	15
A <sub>3</sub>	Steroids	-	18	18	-	15	15	-	15	15	-	15	15
A <sub>6</sub>	Antibiotics	322	18	340	438	17	455	405	15	420	438	15	453
B <sub>1</sub>	Antibacterial substances	326	54	380	378	47	425	389	47	436	403	47	450
B <sub>2a</sub>	Anthelmintics	131	20	151	152	19	171	156	19	175	160	19	179
B <sub>3a</sub>	Pesticides	47	08	55	54	7	61	57	7	64	59	7	66
B <sub>3c</sub>	Chemical elements	47	08	55	54	7	61	57	7	64	63	7	70
B <sub>3d</sub>	Mycotoxin	47	08	55	54	7	61	57	7	64	60	7	67
B <sub>3e</sub>	Dyes	55	08	63	67	7	74	63	8	71	65	8	73
A.Total (Fish & shrimp)		975	160	1135	1140	141	1281	1192	140	1332	1248	140	1388
B. Fish Feed				300			300			195			200
GT (A+B)				1435			1581			1527			1588

## Annexure 8: Regional NRCP plan 2013

Group of Compound	Name of Compounds	No. of Test	Test are done by					
			FIQC-DHK		FIQC-CTG		FIQC-KLN	
			Shrimp	Fish	Shrimp	Fish	Shrimp	Fish
A <sub>1</sub>	Stilbenes	18	-	7	-	11	-	-
A <sub>3</sub>	Steroids	18	-	7	-	11	-	-
A <sub>6</sub>	Antibiotics	340	7	7	50	11	265	-
B <sub>1</sub>	Antibacterial substances	380	7	20	51	34	268	-
B <sub>2a</sub>	Anthelmintics	151	2	7	20	13	109	-
B <sub>3a</sub>	Pesticides	55	1	3	8	5	38	-
B <sub>3c</sub>	Chemical elements	55	1	3	8	5	38	-
B <sub>3d</sub>	Mycotoxin	55	1	3	8	5	38	-
B <sub>3e</sub>	Dyes	63	1	3	10	5	44	-
Total		1135	20	60	155	100	800	-

Annexure-9: List of ongoing development projects (2012-2013)

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
1.	Restoration of the Natural Breeding habitats of the Halda River Project (GOB) (July 2007-June 2014)	1321.32	Halda and karnafuly River, Chittagong district	<ol style="list-style-type: none"> <li>1. Develop, protect and conserve the natural spawning grounds in the Halda river</li> <li>2. Establish fish sanctuaries in the river Halda for restoration of productivity and bio diversity of existing aquatic resources</li> <li>3. Build up an appropriate institutional management framework for conserving natural spawning of Halda river through community participation.</li> <li>4. Create, provide and explore alternate income generating opportunities during ban season</li> </ol>	<ol style="list-style-type: none"> <li>1. Establishment of sanctuary</li> <li>2. Micro credit for alternate livelihoods of fishers/engine boat drivers</li> <li>3. Research /study</li> <li>4. Extension of existing hatchery facilities at Modunaghat.</li> <li>5. Extension of DFO office building 1250 sft.</li> <li>6. Construction of training center at Mobarackhill hatchery 750 sft.</li> <li>7. Construction of office facilities at hatchery unit.</li> <li>8. Construction of boundary wall for hatchery unit.</li> <li>9. Construction of hatchery unit for eggs hatching.</li> </ol>	100%
2.	Regional Fisheries and Livestock Development (Barisal Component) Barisal (DANIDA) (July 2007-June 2013)	12430.43	6 Districts of Barisal Division 45 Upazila	<ol style="list-style-type: none"> <li>1. Improved and sustainable productivity and returns from fisheries and livestock systems of poor households.</li> <li>2. Effective support to resource poor households through decentralized, integrated and demand driven fisheries and livestock extension services.</li> <li>3. From Community based organization and farmer's associations.</li> <li>4. Linkage with private sector/improved to enable farmers to access quality inputs and markets.</li> </ol>	<ol style="list-style-type: none"> <li>1. Training of trainers.</li> <li>2. Development of training modules.</li> <li>3. Field demonstration/on farm research to modify technical recommendations and develop new foci for FS curricula.</li> <li>4. Promote development of producer and marketing CBOs from FS.</li> <li>5. Training for farmer fish school, input/support providers.</li> <li>6. Training for Awareness campaign on animal diseases, fish act and cross cutting tissues etc.</li> <li>7. Capacity building of union parishad staff.</li> </ol>	100%



SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
					<ol style="list-style-type: none"> <li>1. Block grand for UP &amp; CBO.</li> <li>2. Construction of DFO office building (Barguna &amp; Jalokati), DoF.</li> <li>3. Poultry incubator (Micro claimer echnology) with hatchery capacity accessories.</li> </ol>	
3.	Bangladesh Marine Fisheries Capacity Building Project (IDB/GOB) (July 2007-June 2015)	12825.26	14 coastal districts (49 upazilas)	<ol style="list-style-type: none"> <li>1. Assess the standing stock and MSY of estuarine and coastal fisheries resources</li> <li>2. Assess the standing stock of pelagic and demersal stocks of aquatic resources</li> <li>3. Undertake census and establish data bank on different types of fishing crafts and gears.</li> <li>4. Develop a catch assessment program for routine maintaining of the coastal and marine fisheries as to changes due to the dynamics of fishing.</li> <li>5. Develop mechanism to implement MCS system to oversee and manage the resources.</li> </ol>	<ol style="list-style-type: none"> <li>1. Marine fisheries survey and development of management framework</li> <li>2. Staff training for HRD.</li> <li>3. Procurement of Research/Survey Vessel.</li> <li>4. Development of an integrated data base for MCS.</li> </ol>	100%
4.	Brood Bank Establishment Project (GOB) (July 2007-June 2013)	1370.00	7 Divisions 29 Districts	<ol style="list-style-type: none"> <li>1. Establishment Brood Bank for overall development at aquaculture industry in the country to overcome inbreeding problems and ensure supply of quality brood/fingerling.</li> <li>2. Ensure quality brood fish production.</li> </ol>	<ol style="list-style-type: none"> <li>1. Establishment &amp; renovation of fish seed multiplication farm and Hatchery in 29 districts.</li> <li>2. Establishment of Brood bank for overall development at aquaculture industry.</li> <li>3. Increase supply of quality fish fry in 29 FSMF.</li> </ol>	100%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
5.	Fisheries Diploma Course Implementation Project (July/2008-June/2014)	994.80	Fisheries Training Institute, Chandpur Sadar, Chandpur, Chittagong.	<ol style="list-style-type: none"> <li>To develop skilled technical manpower for fisheries sector (Government, Nongovernmental organizations, fish hatchery, fish farm, processing plants, seed mills etc) through offering fisheries diploma course to eligible candidates.</li> <li>Develop facilities at one existing DoF training centre for the purpose of running fisheries Diploma course.</li> </ol>	<ol style="list-style-type: none"> <li>Develop fisheries training centre at Chandpur.</li> <li>Construction of hostel, class rooms, laboratory building, girl's hostel, upgrading of boundary wall.</li> <li>Laboratories, procurement of instruments.</li> <li>Preparation and printing of books and training modules.</li> <li>Conduct training workshop/seminar.</li> </ol>	100%
6.	Greater Pabna Fisheries Development Project (January/2009-June/2014)	1223.00	Pabna and Sirajganj districts (18 upazilas)	<ol style="list-style-type: none"> <li>To increase fish production both from culture and capture fisheries of pabna region.</li> <li>To protect fish bio-diversity through establishing fish sanctuary, stocking endangered fish fingerlings and creating awareness.</li> <li>To improve fish habitat through minor infrastructure development.</li> <li>To ensure livelihood security of the poor people of Pabna region.</li> </ol>	<ol style="list-style-type: none"> <li>Development of Beel/Canal/Dead river/ Khas pond.</li> <li>Establishment of fish sanctuaries.</li> <li>Construction of earthen dyke/box/Pipe-culvert &amp; landing center cum Guard Shed.</li> <li>Stocking of indigenous fish &amp; carp fingerlings.</li> <li>Alternative income generating activities through livestock.</li> </ol>	100%
7.	Emergency 2007 Cyclone recovery and restoration Project (ECRRP) (July/2008-June/2014)	3447.50	Barisal & Khulna Divisions (13 SIDR affected Upazilas under 6 Districts)	<ol style="list-style-type: none"> <li>To restore the aquaculture production chain to the coastal areas in the cyclone affected coastal areas providing aquaculture inputs to the coastal fishers.</li> <li>To restore the livelihoods of cyclone affected coastal fishers providing fishing nets and repair their boats.</li> </ol>	<ol style="list-style-type: none"> <li>Conduct survey to identify the existing status of coastal fisheries</li> <li>To supply aquaculture inputs to the affected fish/shrimp farmers.</li> <li>Supply of fishing nets to the distressed fishermen and supply/repair fishing boats.</li> <li>Training for CBO/Fishers/Boat crews/ fishermen etc.</li> </ol>	100%



SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
8.	Jatka Conservation, Alternate Income Generation for the Jatka Fishers and Research Project (July/2009-June/2014)	2071.21	4 Districts 21 Upazilas	<ol style="list-style-type: none"> <li>To Increase Hilsa production by saving Jatka (juvenile Hilsa) and brood Hilsa.</li> <li>Support to strengthen and enhance Hilsa Sanctuary activities;</li> <li>To create alternate job opportunities for the Jatka/Hilsa Fishers for improving their Socio-Economic status.</li> <li>To create mass awareness for the conservation of Jatka-Hilsa.</li> </ol>	<ol style="list-style-type: none"> <li>Support to enhance Hilsa sanctuary Activities.</li> <li>Conduct mobile court.</li> <li>Fishers' training on AIGAs.</li> <li>Develop and printing/preparation of posters, leaflets, TV spots, video, CD/DVD etc.</li> <li>Alternative income generating activities (AIG) for fishers.</li> </ol>	100%
9.	Expansion of Aquaculture Technology Services up to Union Level Project (July/2009-June/2014)	2504.49	51 districts (244 Upazilas covering 1760 Unions)	<ol style="list-style-type: none"> <li>Increase fish production by expeditiously bringing all or a greater number of village ponds and other cultivable water bodies in selected unions under improved technology ensuring participation of the local fish farmers.</li> <li>Establish a Union-based Aquaculture Extension (UAE) system with the joint efforts of the DOF, Union Parishad, and Local Extension Agent for Fisheries (LEAF) and the local fish farmers.</li> <li>Involve and utilize the Union Parishad as an effective institution in all local level fisheries development including training and demonstration.</li> </ol>	<ol style="list-style-type: none"> <li>Establishment of Union based Aquaculture Extension System (UAE)</li> <li>Training of beneficiaries</li> <li>Establishment of linkage with BFRI, Mymensingh</li> <li>Aquaculture extension and training at union level</li> <li>Result demonstration of improved quality fish fingerling production</li> <li>Result demonstration of semi-intensive carp polyculture technology</li> <li>Result demonstration of mixed culture of golda with carp</li> </ol>	100%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
10.	Aquaculture and Fisheries Management in Bhabodaha Area, Jessore (July 2009-June 2014)	966.00	Jessore district (4 Upazilas)	<ol style="list-style-type: none"> <li>1. Increase aquaculture production in 11 Beel covering about 12000 ha of Bhabodaha area up to a level of 1000kg/ha and enhance income of the fisheries living in poverty.</li> <li>2. Establish, motivate and strengthen rural fisher community organizations to ensure their access to the water resources for their livelihood security.</li> <li>3. Improve the status of women by involving them in pond aquaculture and providing support for other AIGAs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Shrimp culture &amp; Carp Polyculture demonstration.</li> <li>2. Establishment of sanctuaries, integrated fish farm &amp; Carp Nursery.</li> <li>3. Stocking of Fish fingerlings.</li> <li>4. Training of beneficiaries.</li> <li>5. Re-excavation of beel/ baor/ canal/ nursery/ pond etc.</li> </ol>	100%
11.	Greater Faridpur Fisheries Development Project (January/2010-June/2014)	7884.89	5 Districts (28 Upazilas)	<ol style="list-style-type: none"> <li>1. To increase fish production from culture and capture fisheries of Faridpur region.</li> <li>2. To create employment opportunities by various fish culture activities for the poor and landless one member in each family.</li> <li>3. To protect fish bio-diversity through establishing fish sanctuary, stocking endangered fish fingerlings and creating awareness.</li> <li>4. To improve fish habitat through development of water bodies and minor infrastructure development.</li> </ol>	<ol style="list-style-type: none"> <li>1. Development of boro-pits and Khas/private ponds/Canals &amp; Pen culture/ Cage culture.</li> <li>2. Establishment of sanctuaries, re-excavation of Beel Nursery pond/ Baors and dead rivers.</li> <li>3. Construction of earthen dyke/ box/Pipe-culvert/ sluice gate.</li> <li>4. Stocking of indigenous fish and carp fingerlings.</li> <li>5. Implementation of Fish Conservation Act.</li> <li>6. Group mobilization and facilitate AIGAs through livestock.</li> </ol>	100%



SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
12.	Poverty reduction and livelihoods Security for the People of Economically Depressed Area (April/2010-June/2014)	9149.56	5 Divisions, 29 Districts, 169 Upazila	<ol style="list-style-type: none"> <li>1. To create employment opportunities in fisheries sector through excavation and re-excavation of water bodies for the people below poverty line.</li> <li>2. To develop the skill and knowledge of unemployed poor people through training and involve them in aquaculture and other income generating activities.</li> <li>3. To reduce malnutrition in the poverty region through increase fish culture.</li> </ol>	<ol style="list-style-type: none"> <li>1. Training for AIG, Small Fish farmers, service provides.</li> <li>2. Stocking of fish fingerlings.</li> <li>3. Exchange visit.</li> <li>4. Establishment of fish sanctuaries.</li> <li>5. Excavation and re-excavation of pond/borrow pits &amp; installation of spill way.</li> </ol>	99%
13.	Development and Management of Identified Degraded Water Bodies and Conservation of Small Indigenous Fishes (July 2010-June 2014)	3942.22	64 Districts 472 Upazilas	<ol style="list-style-type: none"> <li>1. To restore the aquatic habitat &amp; ecosystem &amp; increase fish production.</li> <li>2. Conserve &amp; enhance production of small indigenous fish species to restore aquatic bio-diversity.</li> <li>3. Establish community based management of fisheries resources.</li> <li>4. To uplift the socio-economic condition of fishers in the project area.</li> </ol>	<ol style="list-style-type: none"> <li>1. Improve habitat of 72 water bodies.</li> <li>2. Training materials preparation.</li> <li>3. Stocking of indigenous fish fry.</li> <li>4. Excavation/Re-excavation of connecting canals &amp; selected water bodies.</li> </ol>	99%
14.	National Agricultural Technology Project (DoF) Component (IDA) (July/2007-December/2014)	6512.45	25 districts 120 Selected upazilas	<ol style="list-style-type: none"> <li>1. Decentralized, participatory, demand-led and knowledge based approach for agricultural extension.</li> <li>2. Improved post harvest technology and management practices for high value agriculture by promoting farmer market linkages as part of the development of supply chains.</li> </ol>	<ol style="list-style-type: none"> <li>1. Establish demonstration farms at different upazila.</li> <li>2. National and International training.</li> <li>3. Exchange visit.</li> <li>4. Survey and studies.</li> <li>5. MS and Phd program.</li> </ol>	94%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
15.	Aquaculture and Fisheries Management Program in Haor Area (October/2010-June/2016)	2228.91	3 Divisions 7 Districts 18 upazilas	<ol style="list-style-type: none"> <li>1. Increase fish production by Establishing beel nursery, fish sanctuary and stocking of fish fry.</li> <li>2. Poverty elevation of fishers and fish farmers through technology dissemination &amp; employment generation.</li> <li>3. Development of a sustainable community-based improved management framework for the selected water bodies.</li> <li>4. Development of knowledge &amp; skills of DoF, selected NGO employees &amp; CBO members involved in the project.</li> <li>5. Capacity building of DoF technical personnel for managing ICL resources along with CBO members &amp; other stakeholders.</li> </ol>	<ol style="list-style-type: none"> <li>1. Establishment fish sanctuary in haor and connecting river.</li> <li>2. Stocking of fish fingerlings.</li> <li>3. Community Based Fisheries Management</li> <li>4. Renovation of fish Hatchery in Haor areas</li> <li>6. Implementation of Fish act.</li> <li>7. Group formation and community mobilization.</li> </ol>	100%
16.	Fish production, conservation and strengthening management project at Kaptai lake (Component -B DoF part) (January/2011-December/2014)	306.80	3 Districts Rangamati Khagrachay Bandorban	<ol style="list-style-type: none"> <li>1. To support to increase fish production in Kaptai lake by producing quality fry/fingerlings production through hatchery and nursery production.</li> <li>2. To establish training center to train the stakeholders for grow up their consciousness through training program.</li> <li>3. To support legislative enforcement to implement fish act &amp; regulations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Construction of training centre in Rangamati.</li> <li>2. Procurement of speed boat.</li> <li>3. Awareness training program.</li> <li>4. Fingerling stocking.</li> <li>5. Procurement of desktop computer &amp; furniture.</li> </ol>	100%



SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
17.	Re-excavation of connecting river, development of irrigation facilities and fish culture project of Gazner Beel area (Fisheries component) under Sujanagar Upazila in Pabna District. (January/2010-June/2016)	490.85	Pabna District (Sujanagar Upazila)	<ol style="list-style-type: none"> <li>1. To increase fish production both from culture and fisheries in Gazner Beel area under Sujanagar Upazila in Pabna District</li> <li>2. To protect fish biodiversity through establishing fish sanctuary, stocking endangered fish fingerling and creating awareness.</li> <li>3. To motivate fishermen community lives surrounding the beel by stocking of carp fingerling through establishing beel nursery.</li> </ol>	<ol style="list-style-type: none"> <li>1. Community based CBO formation.</li> <li>2. Awareness, publicity and motivation activities.</li> <li>3. Stocking of brood fish and fish spawn.</li> <li>4. Training of the CBOs.</li> <li>5. Establishment of cage culture &amp; Beel nursery.</li> <li>6. Fish act implementation.</li> </ol>	100%
18.	Control of formalin use in fish preservation and mass awareness campaign (March/2011-June/2014)	769.50	7 Divisions 64 Districts & All vulnerable Upazilas	<ol style="list-style-type: none"> <li>1. To identify the presence of formalin in fish.</li> <li>2. To aware fish traders, consumers and all concerns through the country regarding the attack of formalin as health hazards.</li> <li>3. To train DoF people as well as other stakeholders to detect formalin in fish.</li> </ol>	<ol style="list-style-type: none"> <li>1. Procurement of testing kits.</li> <li>2. Training for formalin detection.</li> <li>3. Awareness and training Program.</li> <li>4. Support for mobile court/law enforcement.</li> </ol>	100%
19.	Hura Sagar Aquaculture and Fisheries Management Project (July/2011-June/2015)	1880.00	Hura Sagar in Belkuchi, Kamarkhanda and sadar upazila of Sirajganj district	<ol style="list-style-type: none"> <li>1. To improve the fish habitat in the riverbed.</li> <li>2. To improve production of non stocked indigenous fish and biodiversity and establishing fish sanctuaries.</li> <li>3. To increase high production by stocking fingerling.</li> <li>4. To produce fish fingerling in the river.</li> <li>5. To establish CBO approach.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-excavation of dead river.</li> <li>2. Establishment of fish sanctuaries.</li> <li>3. Fingerling stocking.</li> <li>4. Establishment of fish nursery.</li> <li>5. Establishment of cage culture.</li> <li>6. Construction of road for water regulatory structure.</li> </ol>	100%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achievement (%)
20.	Establishment of Fisheries Diploma Institute at Gopalganj, Kishorganj & Sirajganj Districts (July/2011 - June/2016)	12313.00	Gopalganj Sadar, Kishorganj Sadar & Belkuchi, Sirajganj Districts.	1. To develop skilled technical manpower for the fast growing fisheries sector through offering Fisheries Diploma Course to eligible candidates. 2. To establish a well equipped three diploma institutes with modern teaching facilities for the purpose of running Fisheries Diploma Course.	1. Construction of administrative, academic building, hostels, residence, dormitories, auditorium, prayer mosque, guard room, garage, sub-station & building hatchery building. 2. Construction of internal road, compound drainage system & boundary wall. 3. Pond excavation (1ha) & turfing constructions of pond water supply system & hatchery compounds. 4. Reconstruction of pond dyke with carted earth & pond protection work by RCC retaining wall.	100%
21.	Rehabilitation & development of fisheries infrastructure to increase production of quality fish seed & fingerlings (Jan/2012 - June/2015)	12187.31	All over Bangladesh (60 Districts, 122 Upazilas)	1. To increase good quality seed & fingerlings production by controlling genetic decadence of carps. 2. To demonstrate and dissemination of modern aquaculture technologies among the farmers. 3. Increase production capacity of infrastructures through application of improved aquaculture technologies.	1. Land acquisition for new constructed DD, DFOs & UFOs office buildings. 2. Construction of DD, DFOs & UFOs offices buildings. 3. Repairing & renovation of FSMF -83, FBRTC-04 & DFTC-04 (Shrimp), DD/DFOs including the Savar academy Bhaban & all necessary civil works.	100%
22.	Integrated Agricultural Productivity Project (IAPP), Fisheries Component. (July/2011 - June/2016)	4225.34	54 Upazila of 8 Districts	The overall objective of the IAPP is to enhance the productivity of Fisheries in specific agro-economically constrained and economically depressed areas of the 4 districts in the North and 4 districts in the south. The main objectives include productivity increase through develop brood and mass seed production techniques for pond fish culture and introducing adapting aquaculture technologies.	1. Technology Packages, demonstration, adaptation. 2. Training. 3. Workshop. 4. Module formation. 5. Exchange visit. 6. Printing project documents & materials.	99%



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23.	Fishermen Registration & Issuing of Identity Card Project (Jan/2012-June-2015)	8451.88	64 Districts, 482 Upazilas	<ol style="list-style-type: none"> <li>1. To identify the genuine fishermen for registration &amp; supply the identity card (ID).</li> <li>2. To develop the database of genuine fishermen for the better management &amp; sustainable development of the fisheries resources.</li> <li>3. Financial support (as grant) to the family of decrease fishermen by natural disaster (storm, cyclone &amp; tidal surge).</li> </ol>	<ol style="list-style-type: none"> <li>1. Examination &amp; verification of the primary list of the fishermen and finalization of the primary list of the genuine fishermen by concerned Upazila committee.</li> <li>2. Installed Software support service and data entry (with photo) of fishermen's.</li> <li>3. Provides the one time grants to the family of deceased fishermen by natural calamities for the rehabilitation.</li> </ol>	100%
24.	Fresh Water Prawn Culture extension Project (2 <sup>nd</sup> Phase) (July/2012-June/2017)	5441.00	7 Division, 61 Districts, 400 Upazilas	<ol style="list-style-type: none"> <li>1. Establishment of one prawn culture demonstration farm cum training center in Frier Char, sathkira and two training centers in Gopalganj &amp; Barisal Districts.</li> <li>2. Renovation &amp; operation of existing 20 small-scale demonstration hatcheries &amp; nurseries.</li> <li>3. Establishment of 10 small-scale demonstration hatcheries &amp; nurseries.</li> <li>4. Operation of Demonstration nursery ponds in potential upazilas of 61 Districts.</li> <li>5. Skill development training on prawn hatchery and farm management.</li> <li>6. Extension of GAP &amp; GMP in prawn production &amp; safe aquaculture food production.</li> <li>7. Prawn brood development in selected public &amp; private farm.</li> </ol>	<ol style="list-style-type: none"> <li>1. Establishment of Training Centers.</li> <li>2. Old hatchery renovation work.</li> <li>3. Galda brood development.</li> <li>4. Establishment of Prawn Hatchery.</li> <li>5. Management of Prawn Nursery.</li> <li>6. Prawn Demonstration Nursery Programme.</li> <li>7. Training programme.</li> <li>8. Extension material preparation.</li> <li>9. Data base preparation &amp; conservation.</li> <li>10. Field tour for the beneficiaries (Exchange visit).</li> </ol>	99%
25.	Aquaculture Development & Extension Project (3 <sup>rd</sup> Phase) in Chittagong Hill Tracts (July/2012-June/2017)	6847.24	All Upazilas in Rangamati, khagrachari & Bandarban districts	<ol style="list-style-type: none"> <li>1. To increase fish production, enhance income &amp; fulfill the nutritional demand of the household of the hilly people.</li> <li>2. To develop hilly creeks/wetlands for aquaculture by making dam.</li> <li>3. To develop nursery for fish fry rearing.</li> <li>4. To provide training on aquaculture through different technology packages &amp; extension service to the local fish farmers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Creek development.</li> <li>2. Nursery development.</li> <li>3. Establishment of Khagrachari mini hatchery.</li> <li>4. Spawns and fry production.</li> <li>5. Training for fish farmers.</li> <li>6. Repairing &amp; renovation of existing mini hatchery.</li> </ol>	100%

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26.	Wetland Biodiversity Rehabilitation Project (July/2009-June/2015)	7802.00	9 upazilas in Pabna district	<ol style="list-style-type: none"> <li>To improve the natural resource management system (NRMS) in the command area</li> <li>To increase the income of wetland dependent families as well as fish production</li> <li>To increase the populations and numbers of species present for key wetland dependent wildlife</li> <li>To improve the biodiversity of the wetland</li> </ol>	<ol style="list-style-type: none"> <li>Excavation/ re-excavation of floodplain basin</li> <li>Establishment of sanctuary &amp; restoration of habitat.</li> <li>Community mobilization and training</li> <li>Stocking of fingerlings and endangered species</li> <li>Support for alternate income generating activities (AIGs).</li> </ol>	100%
27.	Strengthening of Fisheries and Aquaculture Food Safety & Quality Management System in Bangladesh (BEST project) (July/2010-Dec/2014)	10255.81	All over Bangladesh	<ol style="list-style-type: none"> <li>To strengthen the national quality infrastructure for fish and fish products to meet safety and quality requirements in export markets, improve competitiveness and take advantage of global market opportunities, particular in EU market.</li> </ol>	<ol style="list-style-type: none"> <li>Laboratory Accreditation fee &amp; Assessors Training.</li> <li>Water/soil testing kit box (for QCW, Upazila office &amp; Demo Farmers).</li> <li>Network installation.</li> <li>Construction of FIQC laboratory building.</li> <li>Creation of ice preservation facilities at depots (private owner).</li> </ol>	100%