ANNUAL REPORT 2014

Department of Fisheries, Bangladesh
Ministry of Fisheries and Livestock

ANNUAL REPORT 2014

Annual Report 2014

Chief Editor
Syed Arif Azad
Director General
Department of Fisheries, Bangladesh

Editorial Panel
Parimal Chandra Das
Md. Arifur Rahman Tarafder
Md. Majibur Rahman
Dr. Ali Muhammad Omar Faruque
Krishnendu Saha
Mohammod Kamruzzaman Hossain

Published by
Department of Fisheries, Bangladesh.

Printed by
Golden Printing & Packages
Dhaka-1000

Date of Publication
May 2015

ANNUAL REPORT 2014

Annual Report 2014

Department of Fisheries, Bangladesh
Ministry of Fisheries & Livestock

Director General
Department of Fisheries
Bangladesh

May 2015

Preface

The Fisheries sector represents one of the most productive and dynamic sectors in Bangladesh. The sector has been playing an increasingly important role in our economy for the last few decades. Fisheries in Bangladesh have both prospects and challenges. Department of Fisheries (DoF) has taken the responsibilities for providing animal protein to the huge population of Bangladesh through aquaculture, fisheries conservation, proper management and planned development of fisheries resources to uplift the socio-economic conditions of the fishers and other stakeholders. One of the other important agenda for the department is to facilitate and maintain fish and fishery products' quality and safety for enhancing of export. Department of Fisheries also assists government in formulating policies and acts required for the sustainable development and integrated natural resources management and fisheries conservation. As a result Bangladesh acquired fourth position regarding World inland waters capture fisheries.

Bangladesh is the third largest country in the world in inland fisheries, after China and India. Fish provides about 60% of animal protein. 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 2014 brought together the brief of the activities performed by the DoF. The report also presents the development of fisheries sector to visualize the potential and achievements in the contemporary period.

I strongly believe and hope that this report will be helpful for the field officers of DoF, planners, researchers, development partners, extension workers, NGOs and all other relevant stakeholders of fisheries sector. I appreciate the initiatives of my colleagues who provided their valuable time, effort and endeavor in preparing this report.

(Syed Arif Azad)

Contents

Contents

List of Table

List of Figures

Annexure

1. Introduction

Bangladesh, a riverine country blessed with many rivers-canals, depressions and oxbow lakes, ponds and floodplains, covering a huge area of water resources of 4.70 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 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 3.69% to GDP and 22.60% to agricultural GDP. Fish supplements to about 60% of our daily animal protein intake. About11% of the population dependents 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	726	72	554
		Non-Cadre	355	89	266
	Class-II		634	224	410
	Class-III		1935	139	1796
	Class-IV		1329	81	1248
	Total		**4979**	**605**	**4374**

5.2 Manpower under Development Projects

Table 2: Manpower under development project and manpower in position

Heads	Category	Number of Posts	Number of vacant posts	In position
Development Projects (26 Nos)	Class-I	151	69	82
	Class-II	15	0	15
	Class-III	264	16	248
	Class-IV	87	5	82
	Total	**517**	**90**	**427**

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

Activities which include expenditures of pay and allowances, supplies and services, repair-maintenance and rehabilitation, miscellaneous, procurement of civil works and projects and program apart from Annual Development Program (ADP) fall under revenue budget. During the last five years, non-development budget of DoF is shown in Table-1.

Table 3: Non-development budget of DoF

Code No.	Description	2009-10	2010-11	2011-12	2012-13	2013-14
4500	Pay of Officer	2364.90	2477.33	2548.46	2367.58	2463.72
4600	Pay of Staff	2645.27	2700.46	2181.19	2986.11	2597.12
4700	Allowances	2468.98	3799.07	3606.10	3632.19	4823.82
4800	Supplies and Services	1929.47	2102.42	3197.12	4027.43	4952.35
4900	Repair-Maintenance	170.37	203.85	467.00	604.76	674.01
7000	Civil Works	0	0	0	0	383.00
6800	Assets Procurement	-	-	210.00	246.95	247.00
Total			**11283.13**	**11283.13**	13865.02	16141.02

6.2 Development Budget of DoF

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

Table 4: Development budget of DoF (Taka in lakh)

Financial Year	Number of Project	Development budget						Achievement
		Expenditure			Allocation			
		Total	LC	PA	Total	LC	PA	
2007-08	16	5544.13	8960.53	1583.60	6370.00	4567.00 1	804.-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%
2013-14	26	23407.57	14932.23	8475.34	21761.00	14979.00	6782.00	107%

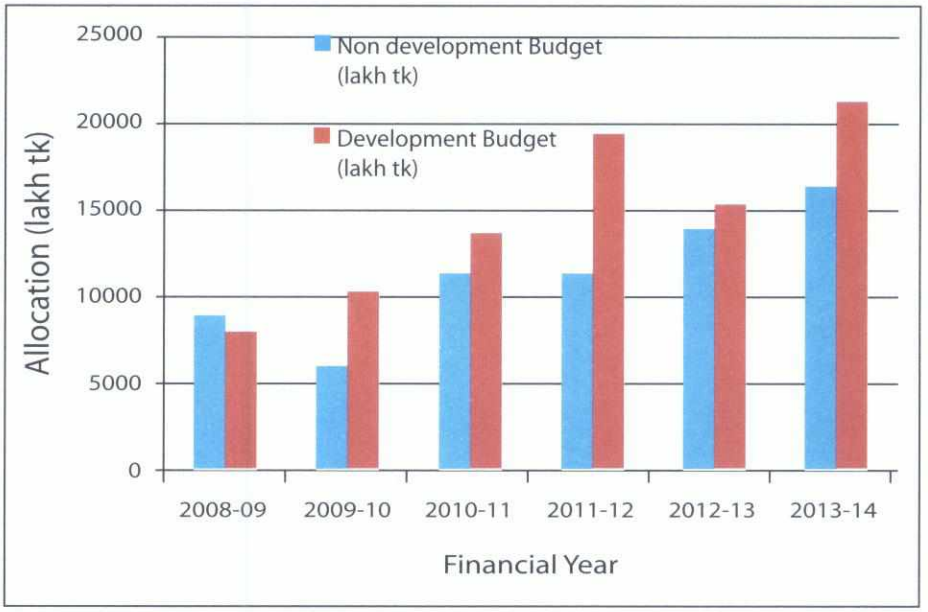


Figure 1: Development and Non-Development budgetary allocation of last six years

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				
		2009-10	2010-11	2011-12	2012-13	2013-2014
1901	Punishment	**0**	**0**	**0**	**0**	**2830**
2037	Rent of Govt. Vehicles	70	80	80	80	67
2047	Fish hunting fee	150	450	250	450	35
2071	Other service fee	0	4	0	0	183
2101	Rent of non recidence	-	-	-	-	168
2111	Rent of Residences	0	900	40	200	1784
2326	Fish and fisheries product	80483	102537	88737	140000	63782
2366	Tenders and other documents	4500	2950	6000	3260	1031
2371	Non usable materials and scrap etc.	140	250	250	300	2332
2376	Miscellaneous non commercial sale	1000	1950	1750	2370	163
2671	Refund of extra payment	5010	9960	5860	10000	30
2681	Miscellaneous revenue earning	28647	25646	15548	20000	21380
	Total	**1200000**	**144727**	**118477**	**176660**	**94590**

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. aquaculture and inland capture. Inland fisheries occupies an area of 46.99 lakh ha and marine capture covers 118813 sq.km along with 200 nautical miles of EEZ from the base line. The Culture fisheries include ponds, ox-bow lakes and coastal shrimp farms.

Some fishing trawlers in the port, Chittagong

Inland open water, Dawudkandi, Comilla.

The flood-plains and the beels, which cover an area of 28.10 lakh ha, offering tremendous scope and potential for augmenting fish production by the adopting aquaculture- based 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 from culture and capture fisheries increased to a great extent in the beginning of 1980's. Since then,

brackish water shrimp farming has been expanded to over 2.75 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 17% of total fish production comes from Marine capture fisheries and 83% from inland fisheries. The status of fisheries resources and fish production of the Country is shown in 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 increase the national fisheries production as well as the growth rate in fisheries sector. Besides these, fisheries extension and conservation activities, AIGs and rehabilitation program for poor fishers etc. were undertaken. Through the Execution of Fisheries Friendly Policy of the present government, total fish production has been increased from 28.99 lakh metric ton in 2009-10 to 35.48 lakh metric ton in 2013-14.

Figure 2: Fish Production of last five 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 included mainly rearing of 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). Availability of hatchlings from natural sources is being declined due to habitat destruction and change in ecological system. The carp hatchlings production from natural sources during 2009 to 2014 period is shown in the following Table. The production from natural source contributes only 0.55 % to the total production of hatchlings (2014) depicting the extent of environmental degradation.

Table 6: Carp hatchlings collection from natural sources

Year	Fish Hatchling (Kg)
2009	1984
2010	2204
2011	4370
2012	4093
2013	3326
2014	2695

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 quality and required quantity of 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 on-hand 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 studies 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

Brood Fish,Kotchadpur, Jhenaidah

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 seed and to extend 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 Hatchery Act 2010 for quality spawn and fingerlings for registered hatchery and Farm.

Table 7: Production of carp hatchling in 2011

Source of Production	Year-2011		Year-2012		Year-2013		Year-2014	
	No of hatchery	Production (kg)	No of hatchery	Production (kg)	No of hatchery	Production (kg)	No of hatchery	Production (kg)
Government fish farm	76	7168	81	9222.00	76	9944	86	7510
Private hatchery	845	617637	866	59858	852	477393	907	522894.4
Total	**921**	**629175**	**947**	**69080**	**928**	**486439**	**993**	**530404.4**

Table 8: Production of fry in 2011-2014

Source	Year-2011		Year-2012		Year-2013		Year-2014	
	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	124	217.00	124	**222.00**	**136**	**207.115**	**136**	**427.86**
Private nursery	10298	81821.00	10450	**99653.00**	**10814**	**99769.00**	**13475**	**79731.33**
Total	**10422**	**82038.00**	**10422**	**99875.00**	**10950**	**99976.12**	**11286**	**80159.19**

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 from genetic drifts and in-breeding problems. Both Government and private fish hatcheries are produced quality brood for the production of quality hatchlings and fingerlings. Information regarding expenditures and income of Government FSMFs fish spawn and fingerlings production is shown in Annexure-4(a).

9.2 Post Larvae (PL) Production

9.2.1 PL collection from natural sources

At presents shrimp farming (both golda and bagda) is mainly depends on hatchery produced PL. There had been practices of natural PL collection before the year 2000. To protect to 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 27 Galda and 55 Bagda hatcheries have been established by both Govt. and private sector which produced 115880 lakh bagda and 270 lakh golda PL in the country in 2014 (Table 9).

Table 9: Production of golda and bagda PL in 2011-2014

Name	Year-2011		Year-2012		Year-2013		Year-2014	
	No. of hatchery	Production (PL in lakh)	No. of hatchery	Production (PL in lakh)	No. of hatchery	Production (PL in lakh)	No. of hatchery	Production (PL in lakh)
Golda	60	51000	80	82000	21	331	27	270
Bagda	70	10800	59	125000	60	92392	55	115880
Total	**130**	**61800**	**139**	**207000**	**81**	**92723**	**82**	**116150**

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 3.71 lakh ha which is 7.4 % of total inland water. Pond aquaculture is producing about 15.26 lack mt fish which contributing 43.10% of total inland production in 2013-14. The pond production involves composite culture produces an average 4110 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 (2013-14)

Sl NO	Farming System	Area (Ha)	Production
1	Extensive	59008	77743
2	Semi intensive	221362	717674
3	Intensive	80077	471981
4	Highly intensive	10862	258960
Total		**371309**	**1526160**

10.1.2 Fish culture in paddy field

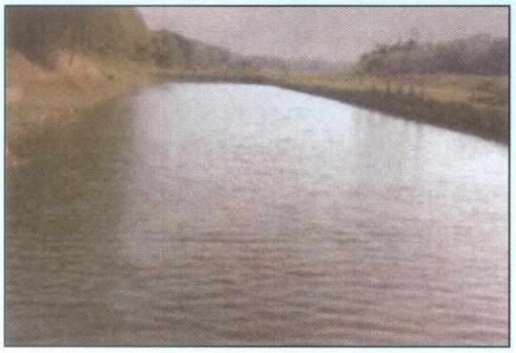
Paddy fields and seasonal floodplains are promising and potential resources for aquaculture. It has been estimated that paddy fields cover an area of about 80 lakh ha of which 26.95 lakh ha floodplains which remain 4-5 months under water. Previously Government has taken initiative to increase fish production 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. 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 improved under Integrated Fisheries and Livestock Development Project in Flood Control, Drainage and Irrigation (FCDI) Project area and other water bodies also included in the aquaculture systems. Information of developed water body and its area are shown in Table 11.



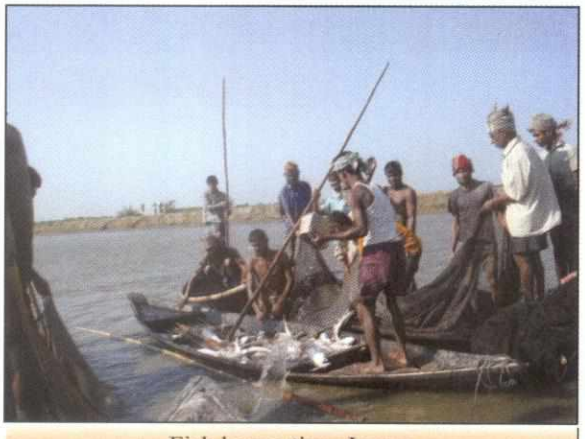
Aquaculture in borrow-pit in Sadar, Feni.

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

Types of water body	2nd phase	3rd phase	4th 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
Total	**447.139**	**454.570**	**611.058**	**3066.234**

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, Jessor

10.1.5 Cage culture

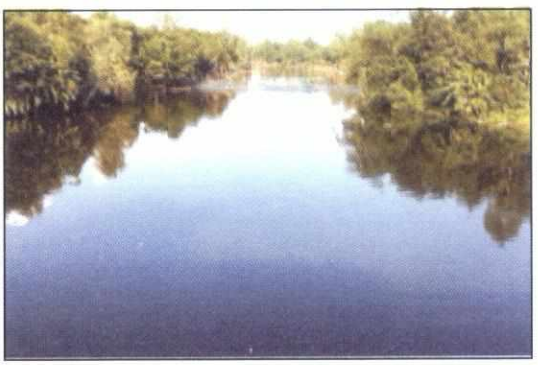
Several decades ago, attempts were taken to raise fish in cages under different development projects by several institutions/organizations of the country. Though it is well practiced in other countries but it is not yet popular in our country for many reasons. At least 2 projects and a number of NGOs have 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 constrains. Cage culture of monosex tilapia is being practiced in Chandpur, Laxmipur Faridpur, Barishal, Mymensingh, Dhaka, Munsigonj, Gopalganj and other regions of Bangladesh. In 2014, about 22kg fish were produced per cubic meter in case of cage culture.

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.



Pen culture in channel, Jessore.

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 2014 over 215305 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 2013-14 bagda production in Bangladesh was 71430.00 MT.

Table 12: Shrimp farming and production

Year	Area farmed (ha)	Shrimp production (MT)	Remarks
2009-2010	186145	43154	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.
2010-2011	213617	56569	
2011-2012	209456	57784.87	
2012-2013	210053	68948	
2013-2014	215305	71430	

Source: Fisheries statistical yearbook of Bangladesh 2013-2014, FRSS, DoF

10.2.2 Prawn (golda) culture

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 macrobrachium sp. is being cultured in gher in organized way along with other aquaculture, agriculture and horticulture crops. Different culture systems such as monoculture, poly- culture along with other

Golda farming in the gher, Devhata, Satkhira.

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.

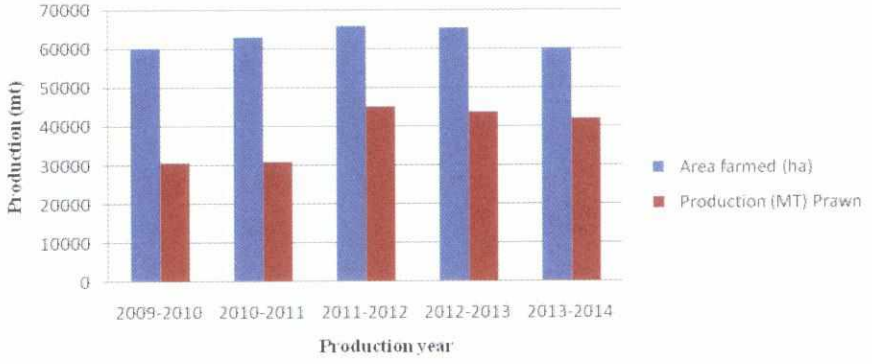


Figure 3: Year-wise production of golda

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

Year	Area farmed (ha)	Production (MT) Prawn
2009-2010	60052	30636
2010-2011	62874	30868
2011-2012	65777	45162.95
2012-2013	65221	43713
2013-2014	59972.23	42097

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 2013-14 was 2.09%. 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 Nitrofuran 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 these circumstances, Bangladesh along with donors and private initiatives undertook several measures to identify source of Nitrofuran 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

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 looses 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	4273749	46.21	77.00	
2012-2013	84905	50333	59.28	81.18	
2013-2014	77328	47635	61.06	86.22	

10.2.4 Fish feed and animal feed act 2010 implementation

Fish feed is one of the most important factor for commercial aquaculture. There were no rules and regulations to maintain the quality of the feed and feed ingredients for the farmers 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. In present it is implementing all over the country. The Status of the fish feed and animal act 2010 and fish feed rules 2011 are given the table below:

Fish Feed Factory, Gazipur

Factory Lab, Narayanganj

Inspection at Feed Factory, Manikgong

Table 15: Status of the fish feed act 2010 and fish feed rules 2011 implementation (2013-2014)

Serial No.	Division/Head Office	Types of fish feed company				Total revenue earn (lakh Tk)	Remarks
		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	8
1	Dhaka	69	33	857	959	6.82	
2	Chittagong	40	10	560	581	7.13	
3	Rajshahi	28	6	456	490	7.43	
4	Khulna	8	2	329	338	3.66	
5	Sylhet	0	0	106	106	0.42	
6	Barisal	3	2	86	91	0.76	
7	Rangpur	1	0	92	93	0.63	
Total		149	53	2475	2677	26.85	

10.2.5 Fish Hatchery act 2010 and fish hatchery rule 2011

Aquaculture of Bangladesh will be benefited with the good quality fish seed support from public and private hatcheries. The quality of fish seeds in Bangladesh has declined over the years. 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. 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 declared the hatchery act and rules for the quality artificial seed production in both public and private hatcheries. Under the act and rules, every hatchery must be taken registration from competent authority of DoF. The Status of the fish hatchery act 2010 and fish hatchery rule2011 are given the table below:

Table 16: Status of the fish hatchary act 2010 and fish atchary rules 2011 implementation (2013-2014)

Division	Total Hatchery	Registered	Unregistered	Total revenue earn (lakh Tk)
Dhaka	214	212	02	1.57
Chittagong	261	187	74	6.84
Rajshahi	198	117	81	3.13
Khulna	117	78	39	2.4
Sylhet	19	18	1	0.35
Barisal	28	28	00	0.43
Rangpur	70	35	35	0.62
Total =	**907**	**675**	**232**	**15.34**

Fish Hatchery in Jessor

Shrimp Hatchery in Jessor

10.2.6 Piranha fish prohibition act Implementation

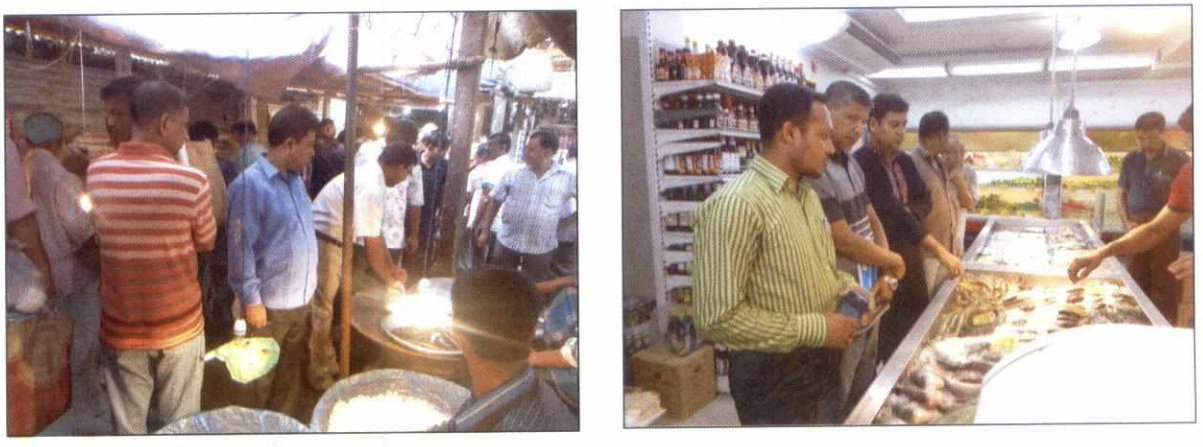
Piranha, called caribe or piraya, any of more than 60 species of razor-toothed carnivorous fish of South American rivers and lakes, with a somewhat exaggerated reputation for ferocity. Piranha (1978), the piranha has been depicted as a ravenous indiscriminate killer. Most species, however, are scavengers 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 this act- any kind of Pirhana 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 jel and 10,000 Tk. penalties. Second time it would be double.

Awareness meeting	No of Inspections	Cases	Fees/ revenue
2426	6015	32	76,500 TK.

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 and there are more harmful effects of formalin abuse in foods for human body. 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 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 abuuse 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 formalin detecting digital kitbox and each district has got one kit box under this project. After supplying of 80 digital kitbox, a total of 576 mobile courts have been operated at district and upazila level including Dhaka city. A total of 2499 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 ÔÔIndiscriminate 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 other concern stakeholders received training. Due to different activities of the project, rampant formalin abuse in fish has significantly decreased in the country.



Mobile Court Operation in Dhaka

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. 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.

Diploma Institution, Chandpur

10.2.9 Nimgachi Project

Nimgachi 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 783 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 concerned that the communities involved in management have had no savings and their livelihood have not been developed 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, improve aquaculture practices. Nimgachi project is again handover 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 Nemgachi Community based Fisheries policy, through which the community will solely avail the ownership of ponds by paying only revenue. DoF will provide

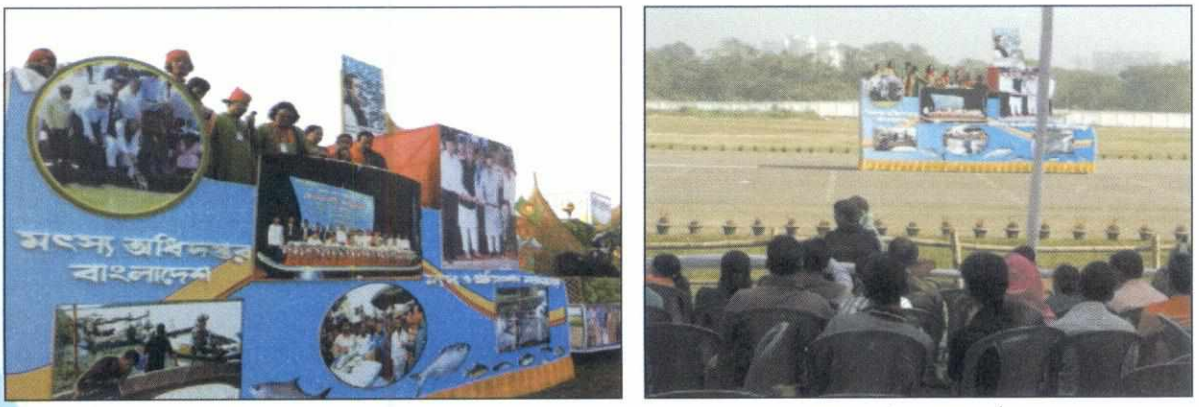
all technical and management supports for aquaculture and group management under the guidance of Upazila and district level committee according to the policy.

Ponds at Nimgachi,Sirajgonj

In this year, 546 ponds, covering area of 3224 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 lack taka as small loan and 10.00 lakh taka as fish feed as grand, 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, 400 kg hatchling and 7 lakh fingerlings was produced in the hatchery and nursery. DoF have taken initiative for the development of ponds and hatchery of Nimgachi through a development project.

10.2.10 Great Victory day Display

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



Display of DoF at National parade ground, Dhaka 16 December'2014

11.Fisheries Resource Management

11.1 Inland Open Water Fisheries Resource management

Bangladesh has potential of inland open water resources, including 853,863 ha of rivers and estuaries, about 177,700 ha of Sundarbans, 114,161 ha of natural depressions or beels, 68,800 ha of reservoir and about 26, 95,529 ha of floodplains. Annual flooding during the rainy season inundates up to 60% of the total land surface. Bangladesh possesses the 5th largest inland fisheries resources and 4th in culture After China and India, Bangladesh is the third largest country in the world in inland fisheries. The inland open water is inhabited by 260 species of fish and 25 species of shrimp. Despite the existence of huge resources the inland capture fisheries has over the years been replaced as top fish producing source by aquaculture, due mainly to decline and degradation of resources. The priority is given to improve biological management that will restrict the declination of resources and production. The DoF has prepared a sub strategy on Inland Capture Fisheries based on the National Fisheries Strategy 2006 and National Fisheries Policy 998.

11.1.1 Community based fisheries Management

Community based management of resources is a time-deriven 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 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.

Community based organization meeting Companigonj, Sylhet

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 comprises the area of about 70% of 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.

11.1.2 Integrated natural resource management

Department of Fisheries is implementing Integreated Natural Resource Management Systems (INRMS) by local users contributes to conserving the biodiversity and livelihoods in the selected wetlands and floodplains of the Jamuna- Padma delta region through Wetland Biodiversity Rehabilitation Project. This activity may be extended in other suitable areas in due course of time.

11.1.3 Fingerling stocking

Fingerling stocking in Dumuria, Khulna

Natural recruitment of carp spawn and fingerling declining due to human interferences and environmental degradation hampared the productivity of open water capture fisheries resources. To improve the productivity of open water the Ministry of Fisheries and Livestock through the Department of Fisheries initiated regular program from revenue budget to release fingerlings of major carp in open water bodies, floodplains and closed water bodies throughout the country. Stocking of fish fingerling into beels and floodplains is a temporary mitigation measure to address the quick declination of fish production in open water. DoF implements its fingerling-stocking program both under development projects and revenue program.

Table 17: Stocking of fish fingerling in open waterbodies and floodplains

Financial Year	Fund allotted Tk. (crore)	Water area (hectare)	Fingerling released		No. of beneficiaries	Remarks
			number (million)	weight (MT)		
2009-10	3.37	103,567	14.4	200.45	530347	About 40% of the stocked fingerling attain to table fish
2010-11	4.00	123,092	123.92	241.12	2363631	
2011-12	8.86	109,070	152.26	570.19	2365631	
2012-13	8.74	142053	171.39	480.24	1012000	
2013-14	7.47	96195.15	156.09	345.00	857676	

11.1.4 Beel Nursery

Beel nursery has been proved to be a significant tool for increased production of natural water bodies and to increase fish production. DoF has continued the program in various dead rivers, beels, haor and government/non-government water bodies from 2009-10 fiscal year. During last year 211 beel nurseries were successfully established in 30701.24 hac which produced 383746.90 kg fingerlings. DoF has continued the program for establishing beel nurseries in suitable water bodies as regular activity from revenue budget to increase natural production in beel areas and the surrounding link water bodies i.e.; low lying rice field, floodplain, other beels, canals, rivers etc.

Beel nursery activities at Golapgonj, Sylhet

11.1.5 Establishment of fish sanctuary

To stop the degradation of aquatic biodiversity specially species diversity of fish and other aquatic species in open water, a set of technical interventions like establishment of fish sanctuaries, fish habitat restoration have been undertaken during the past years. Establishment of aquatic sanctuary is one of the effective tools for conserving fish stock, protecting biodiversity and increasing fish production. The present democratic Government established 550 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 time there found abundance of endangered species like Chital, Foli, Kalibaosh, Air, Tengra, Meni, Rani, Sarputi, Pabda, Kajoli, Gojar, Tara baim etc. These efforts also restored the aquatic bio-diversity. On the other hand, to ensure the migration of fish during the breeding period, different connecting canals of rivers, dead rivers and beels were excavated and re-excavated by DoF. Besides, for the conservation and development of Hilsha fishery five sanctuaries were established in the selected river system. Hence, establishment of sanctuary has become obligatory to protect and conserve these species from extinction and increase fish biodiversity.

Fish Sanctuary, Tungipara, Gopalgonj

11.1.6 Fish act implementation

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

Fish act implementation at Goalando, Rajbari.

chalked out and implemented by the upazila fisheries offices and during observance of National Fish week to create mass awareness about Fish Acts. Different awareness materials like posters, leaflets, booklets etc.were printed and distributed. TV spot prepared and roadcasted, street drama staged, workshops/seminars 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 nets. Offenders were also penalized on the spot.

Table 18: Enforcement of Fish Acts and Rules during 2013-14

Division	No. of undisposed case in the last year (No)	Present Cumul ative no. of case filed (No)	Present Cumulative no. of case dispose d (No)	No. of case	Punishment imposed by mobile court		
					No. of Current Jal seized	Jail	Fine (Tk)
Barishal	1	1013	963	398	434210	412	3342100
Khulna	12	1	1	00	53140	54	40550
Rajshahi	17	10	9	05	5257	12	85900
Dhaka	98	194	215	10	16755	146	1239370
Sylhet	80	02	07	00	8559	00	90620
Chittagong	549	755	647	01	22613	358	1616200
Rangpur	28	7	14	00	1742	01	48500
Total	785	1982	1856	414	542276	983	6463240

Due to the implementation of the fish conservation and protection rules the fishers are affected. 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. The Fig.17 shows the engaged members of the fisher families in different IGA activities.

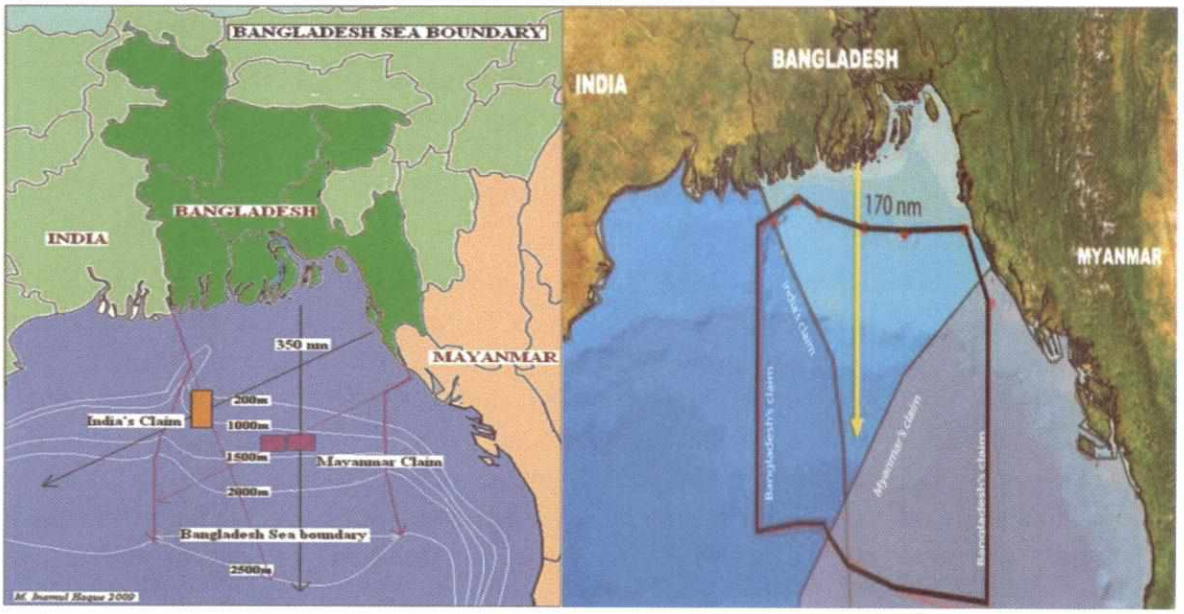
12. Marine Fisheries Resources Management

12.1 Bangladesh Marine Boundary

The marine 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, 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 Myanmar, and under her righteous leadership the country has achieved victory in the case.

Bangladesh will be able to establish its right over maritime resources such as oil, gas, fish and the entire aquatic wealth that lie within its territorial waters that exceeds its original claim 1,18,813 square km.



Bangladesh Sea Boundary

12.2. Maritime Fisheries Resources Conservation and Management

12.2.1. Extension, Monitoring and Development Activities

A. Procurement of multipurpose survey and research vessel:
Bangladesh is collecting a high tech multipurpose survey and research vessel with the aid of Islamic Development Bank and Malaysian Government. It is under construction in Malaysia and hopefully reached in Bangladesh by May, 2015.

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 Fishing 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 (192.168.100/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 centres in coastal districts were selected for Land based survey and initially survey were started in 12 centres. Data on catch composition, length-weight and gonadal maturity of selected 31 fish species is being collected from above mentioned fish landing centers in selected dates in every month.

B. **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 (192.168.100/bmfcb). Updated data of land based survey will be incorporated in the project website once in every year. Related persons and organization can collect data from website bmfcb.fisheries.gov.bd/bmfcb for use.

C. **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 FA)-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, Mechnized boats owner associations, DFOs of coastal districts where non-compliances of MFO 1983 and Rules made there under are discussed and alsl 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 checkingoffishing boats and trawlers etc. are dealt with for sustainable management of marine resources. It is mandatory to get fishing license for evey 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 Nation 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 hygienic standards are allowed for export of fish and shrimp to Japan, China, USA, Middle-East countries etc, Export to European Union nations is restricted as there are not yet HACCP certified. But export of fish and shrimp from marine origin is being exported to EU nations under EU Regulations 2005/2008 through issuance of IIUU-catch certificate which is mandatory. Standard Hygiene and sanitation conditions of trawlers are regularly monitored by FIQC and MFO personnel during inspection. Non-compliance are dealt with punitive measures as specified under Marine Fisheries Ordinance, 1983 and FIQC Ordinance, 1997. Commercial and artisanal fishing boats are also advised to improve post harvest measures to improve to maintain the quality oof catch. The mechanizes 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 except mere checking of presence 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 compliance. For sustainable economic return from sea MoFL and DoF have already formulated ``Marine Fisheries Policy-2014" which is near to finalized. Amendment for Marine Fisheries Ordinance, 1983 is also under process.

12.3 Hilsa Fishery Conservation, Exploitation and Management

Hilsa (Ilish) is the National Fish Of Bangladesh. As aa single species, it has the highest contribution in country's total fish production which is about 12% of total production. Juvenile Hilsa measures upto 25 cm is known as Jatka. For getting sustainable hilsa production it is imperative to protect jatka along with saving berried Hilsa during its peak spawning period for unbated release of matured egg. Government has aadopted coordinated programme to conserve and protect jatka and mother hilsa in definite 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 program to protect jatka and ensure both of its growth and production of Hilsa through reduction of over fishing of hilsa population and scope for recruitment.

During ban period, the Jatka fishers are being provided with 30 kg per food-grain at the rate of household for 4 months from February to May each year.. Government also provide financial incentives and distribute trade materials to enlisted jatka fiishers as Alternative Income Generation (AIG). At present about 65% of the total catch of hilsa is now being supported from marine environment.

Awareness Program for Saving Brood Hilsa Fish, Dhaka

12.4 Exploitation of Marine Fish by Various Methods

12.4.1 Licensing Activities of Mechanized Fishing boat

The land based survey report of Bangladesh Marine Fisheries Capacity Building Project estimated 30,164 mechanized and 27,899 non-mechanized fishing boats engaged in fishing in the marine and coastal waters of Bangladesh. Registration Certification along with Certificate of Inspection (seaworthy) from The Mercantile Marine Department under Ministry of Ports and Shipping and Fishing License from Department of Fisheries under Ministry of Fisheries and Livestock are mandatory for Industrial Fishing Trawlers and Mechanized Boats before fishing operation in the marine and coastal waters of Bangladesh. Under Article 388 of Part IX of the Bangladesh Merchant Shipping Ordinance, 1983 every fishing vessel to which this Chapter applies shall be registered in accordance with the provisions of this section. 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 stop service. But due to lack of manpower it would be difficult to organize combined camps hindering the process.

Table 19: Revenue earned from mechanized fishing boats licensing activities

Year	License Issues (Nos.)			Revenue (lakh taka)	Remarks
	New	Renew	Total		
2013-2014	614	1226	1840	29.74	

12.4.2 Licensing Activities of Industrial Fishing vessel/Trawler

During 2013-14, a total of 199 industrial trawlers in the fleet were engaged fishing into the EEZ of Bangladesh maritime waters 30 shrimp and 169 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 Honourable High Court. The addition of trawlers in the existing fleet is sanctioned by Cabinet Division of the Government. After then through a very stringent process, the Ministry of Fisheries and Livestock 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.

Table 20:Amount of exploitation by licensed industrial trawler

Year	No .of Trawler engaged in fishing			Amount exploited (mt)			Total (MT)
	Shrimp	Fish	Total	Shrimp	Fish	Total	
2012-2013	32	152	184	3083	69947		73,030
2013-2014	30	169	199	3799	73,086		76,885

12.4.3 Inspection and Catch Monitoring of Trawlers and Mechanized boats

No fishing trawler is permitted to go to the sea without prior permission from Marine Fisheries Office. MFD issues the sailing permission (SP) for the period of 13 or 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 sailing of trawlers. Inspectors randomly inspected 345 trawlers in 2011-2012, 435 trawlers in 2012-13 and 332 trawlers in 2013-2014 and imposed punitive measures as per the relevant section of Marine Fisheries Ordinance 1983 by fining Tk.12.55 lakh, TK. 18.70 lakh and Tk. 15.45 lakh respectively.

12.4.4 Issuance Of Illegal, Unreported and Unregulated (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 IUU -CCs under the scheme and collected revenue of TK. 2.63 lakh for 43 no. of CC in 2011-12; TK. 1.92 lakh for 34 no. of CC in 2012-13 and Tk. 1.83 lakh for 29 no. of CC in 2013-2014. Before issuing IUU-CC each consignment is cheeked and verified to ascertain the traceability of the product and the documentation process by The Marine Fisheries Ordinance 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.

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

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.

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 your 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 21: Gear-wise harvest (mt) from 12 selective landing Centers during 2013-14

Month	Production (MT)						
	ESBN	MSBN	SMD	LMD	Tong Jal	Rog Jal	Pakua Jal
July/13	17.761	117.390	100.33	110.00	196.859	46.426	--
Aug/13	22.989	1042.894	107.87	100.90	169.51	30.600	--
Sep/13	42.431	2520.98	273.68	520.00	284.555	117.746	--
Oct/13	37.424	191.435	141.14	100.596	34.695	2.449	--
Nov/13	50.81	6770.928	195.345	230.00	1.00	76.32	52.78
Dec/13	127.78	5253.57	148.00	220.12	2.66	64.26	64.05
Jan/14	39.01	2831.073	360.47	307.425	1.34	48.168	94.54
Feb/14	61.845	4142.046	301.142	309.472	--	49.937	30.69
Mar/14	213.11	1794.018	194.00	256.704	--	79.968	104.69
April/14	47.207	311.244	140.00	206.560	--	2.430	4.65
May/14	59.346	230.135	175.04	105.500	--	47.880	--
Jun/14	97.806	254.913	124.20	111.479	--	90.361	--
Total	**817.519**	**25460.626**	**2261.217**	**2578.756**	**690.619**	**656.545**	**351.40**
Percentage	**2.49**	**77.59**	**6.89**	**7.86**	**2.10**	**2.00**	**1.07**

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.

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 Matsya 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 former Institute of Post Graduate Medicine and Research (IPGMR presently BSMRMU, Dhaka. Department of Fisheries (DoF) has transferred FIQC Laboratory by reshaping construction design, on the 11th floor of Matsya Bhaban building in 1994. In the year 2014, it has been shifted at new premises at Savar, Dhaka. Honorable Minister for the Ministry

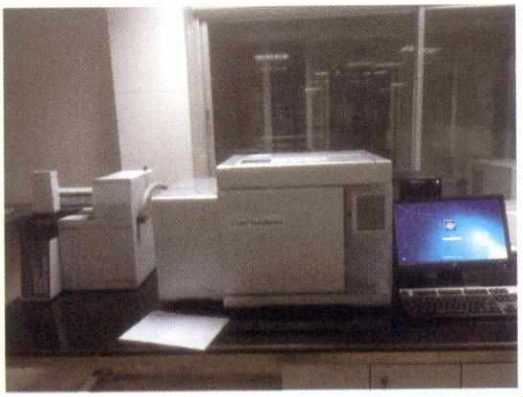
of Fisheries and Livestock Mr. Mohammed Sayedul Hoque MP has inaugurated the newly built Fish Inspection and Quality Control Laboratory at Savar, Dhaka in February, 2015. Besides FIQC Laboratory in Dhaka, two more modern laboratories having chemical and microbiological sections have been established at Chittagong and Khulna by the financial assistance of UNIDO-SFIQC project during 2008-09. 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. More over DoF has started to establish national reference laboratory of international standard through EU-Project Aid.

Hon'ble Minister of MOFL Mr. Mohammed Sayedul Hoque MP visits FIQC Lab, Savar, Dhaka

To address EU requirements, the Department of Fisheries (DoF) has installed four LC-MS-MS machines at FIQC, Dhaka to check the contamination of prohibited antibiotic residues in fishery product. Out of the four LC-MS-MS machines of FIQC laboratory, Dhaka, two were shifted at FIQC laboratory, Khulna in May, 2014. Furthermore, two more ELISA series have been added to FIQC laboratory, Chittagong and Khulna for residue analysis of fishery products. The analysts of the laboratories were trained both locally and abroad to operate the machines as well as performing tests maintaining international standard as per ISO 17025. Presence of chloramphenicol, nitrofuran metabolites, malachite green, crystal violet, anthelmintics etc. in fishery product are being tested by these LC-MS-MS machines. Besides these, new equipments like Kjeldahl Digesters, Distiller; DUMAS Proximate Analyser and NIR Analyser have been installed at FIQC laboratory, Dhaka through the financial assistance of BEST-BFQ project. Moreover, new machines such as an LC-MS-MS machine was installed at FIQC laboratory, Chittagong; a GC-MS(TOF) machine has been installed at FIQC laboratory, Dhaka; and two UPLC machines were installed at FIQC laboratory, Chittagong and Khulna in this year.

13.1 Laboratory services:

There are 3 FIQC Laboratory situated in Dhaka, Khulna & Chittagong. Testing requirements of EU, Russian, USFDA and other importing countries for fish and fishery products as well as for national residue monitoring program (NRCP) are fulfilled by these laboratories. These laboratories are equipped with modern and sophisticated machineries like LC-MS-MS, UPLC, ELISA, AAS, PCR etc. All three FIQC laboratories have been accredited by Bangladesh Accreditation Board (BAB).



New GC-MS (TOF) machine installed at FIQC Laboratory, Savar, Dhaka

There are 3 supporting laboratories (out sourcing). They are-

- Institute of Food Science and Technology Laboratory (IFSTL) of Bangladesh Council for Scientific and Industrial Research (BCSIR), Dhaka
- Atomic Energy Centre, Dhaka of Bangladesh Atomic Energy Commission (BAEC)
- Pesticide Laboratory of Bangladesh Agriculture Research Institute (BARI), Gazipur

There is a Laboratory for microbiological tests. It is located in International Centre for diarrhoeal Diseases Research, Bangladesh (ICDDRB), Dhaka.

13.2 Analytical services provided in FIQC and Supporting Laboratories

Name of Lab	Test parameters
Fish Inspection & Quality Control Laboratory (FIQC), Dhaka	• Microbiological (Standard Plate Count (SPC), Total coliforms (MPN), Faecal coliforms/*E. coli* (MPN), *Salmonella*, *Vibrio cholerae*, *Vibrio parahaemolyticus* etc.) • Bio-chemical • Antibiotics-Metabolities of Nitrofuran, Chloramphenicol • Dyes (Crystal violet & Malachite green) • Anthalmintics
Fish Inspection & Quality Control Laboratory (FIQC), Khulna and Chittagong	• Microbiological (Standard Plate Count (SPC), Total coliforms (MPN), Faecal coliforms/*E. coli* (MPN), *Salmonella*, *Vibrio cholerae*, *Vibrio parahaemolyticus Listeria monocytogenes* etc.) • Antibiotics-Metabolities of Nitrofuran, Chloramphenicol, Tetracycline • Dyes (Crystal violet & Malachite green) • Heavy metals (As, Hg, Pb, Cd, Cr)
Laboratory of Institute of Food Science and Technology (IFST), BCSIR, Dhaka	• Antibiotics (Tetracycline, Oxy-tetracycline, Chlortetracycline) • Mycotoxin
Atomic Energy Center, Dhaka (AECD) of BAEC	• Heavy metals (As, Hg, Pb, Cd, Cr)
Pesticide Laboratory of Bangladesh Agricultural Research Institute (BARI), Gazipur	• Pesticides (DDT, Aldrin, Heptachlor, Endrin, Dieldrin)
International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDRB), Dhaka	• Microbiological tests for ref.

13.3 Licensing of Fish Processing Establishments:

Licenses are issued or renewed annually considering overall condition of Fish processing plants, Non-packer exporters, Fish packing centres, Fish drying yards, Factory trawlers, Fish suppliers and Depots according to Fish and Fish Products (Inspection and Quality Control) Rules,1997 (amended in 2008 & 2014) . The checklist used for evaluation of fish processing plants have been revised and rearranged in 2014. The numbers of Fish processing plants, Non-packer exporters, Factory trawlers, Fish packing centres etc. are as follows-

Table 22: Number of different of establishments involved in fish export value chain:

Sl.No.	Type of Establishment	Number	Remarks
1.	Fish Processing plants	100	75 are EU-approved
2.	Factory Trawlers	46	
3.	Fish Packing Centre	41	
4.	Non Packer	106	
5.	Suppliers	213	
6.	Fish drying yards	30	
7.	Depots	1141	
8.	Service centre/Landing centre	48	

13.4 Routine Monitoring of Quality Assurance Program (QAP):

To ensure HACCP system of Fish processing plants, factory trawlers, packing centres and other establishments involved in 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 & 2014). During routine inspection, emphases are given on:

- Hygiene and sanitation of the establishment concerned
- Personal hygiene of working personnel
- Monitoring of the activities involved in fish process line
- Monitoring and verification of own-check systems of the establishment concerned
- Verifications of traceability documents
- Evaluate GMP and Verification of HACCP documents
- Annual inspection of fish processing establishments for renewal of licenses
- Provide necessary advice and suggestion

13.5 Fish Products Inspection:

Export of fishery products: DoF competent authority inspect 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 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.

Quality checking at a processing factory in Khulna

13.6 Quality Assurance of Fish Products:

13.6.1 Microbiological tests:

Samples drawn by Inspectors are tested at microbiological laboratory under respective FIQC office for assessment of Salmonella sp, Vibrio cholerae, 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.

13.6.2 Chemical tests:

Presence of prohibited antibiotics especially Chloramphenicol (CAP) and Nitrofuran (NF) metabolites in shrimp has become the major concern for EU countries in the recent years. FIQC laboratories, Dhaka, Chittagong and Khulna conducted 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 Flubendazol by LC-MS-MS and ELISA screening as per EU regulation and FIQC rules 1997 (amended in 2008 & 2014). Moreover, FIQC laboratories, Chittagong and Khulna also conducted tests for antibacterial substances (Tetracycline, Oxy-tetracycline and Chlor-tetracycline), Stilbenes and Steroids, heavy metals (Lead, Cadmium, Mercury, Chromium and Arsenic). Tests concerning Mycotoxins and Pesticides were carried out by outsourced laboratories.

13.6.3 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).

13.7 Aquaculture Residues monitoring through NRCP:

The National Residue Control Plan (NRCP) of Bangladesh is a program to monitor fish and fishery products at different levels of production in regard to residues of undesirable substances. A database on NRCP data has been developed by BEST-BFQ project. With the continuous effort and vigilance of the Department of Fisheries, Bangladesh the number of non-compliant samples was reduced remarkably.

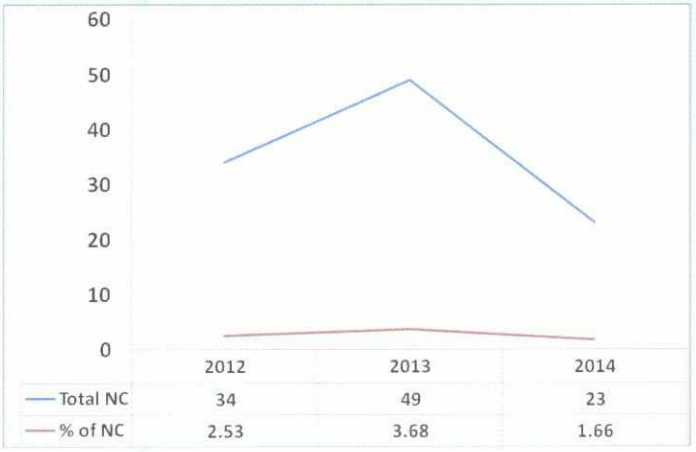


Figure 4: Number of non-compliant samples under NRCP activities in the last three years

Department of Fisheries of Ministry of Fisheries and Livestock operates NRCP, meeting the following requirements:

- There is a centrally coordinated residue monitoring plan in place- Central Competent Authority (CCA)
- CCA will be assisted with a NRCP coordination Committee to monitor the progress of implementation of NRCP.
- Regional Competent Authority (RCA) acts as facilitator in organizing NRCP while sampling is carried out by Local Competent Authority (LCA).
- The program is as per the national legislation governing the use of veterinary medicinal products in fishery products and aquaculture.
- It is as per the stipulated sampling strategies (levels and frequencies) stated in this document.
- It prohibits exporting fish and fishery products containing unauthorized veterinary medicinal products, environmental contaminants, permitted substances beyond MRLs and other substances having anabolic effects.
- Department of Fisheries has enough financial resources to carry out NRCP as planned.

13.7.1 NRCP Findings in Last 03 years

SL No.	Year	Number of Sample Tested	Number of Non-compliance	Number of Non-compliance in substance
1	2014	1388	23	CAP-02, SEM-19, AHD-01, As-01
2	2013	1332	49	CAP-08, SEM-33, AHD-02, CV-1, Pb-4, Afl-1
3	2012	1342	34	CAP-03, AOZ-1, SEM-20, AHD-10

13.7.2 NRCP Sample-2014 –Test details

Group of Compounds	Test Parameters	Number of Samples tested			Total	No. of Non-compliant samples
		FIQC, Dhaka	FIQC, Khulna	FIQC, Chittagong		
A_1	Stilbenes	04	-	11	15	-
A_3	Steroids	04	-	11	15	-
A_6	Antibiotics	10	368	74	452	22 (CAP-02, SEM-19, AHD-01)
B_1	Antibacterial substances	16	336	98	450	-
B_2a	Anthalmintics	06	135	39	180	-
B_3a	Pesticides	03	49	14	66	-
B_3c	Chemical elements	02	53	13	68	01 (As-01)
B_3d	Mycotoxin	3	50	14	67	-
B_3e	Dyes	04	54	17	75	-
Total		52	1045	291	1388	23

13.7.3 Planned NRCP-2015 for Shrimp and Finfish

National Plan						Khulna Zone				Chittagong zone			Dhaka zone		
Test Parameter	Shrimp		Fin Fish	Total		Shrimp		Total		Shrimp	Fin Fish	Total	Shrimp	Fin Fish	Total
	Plan	N.C Plan	Plan	Plan	N.C Plan	Plan	N.C Plan	Plan	N.C Plan	Plan	Plan	Plan	Plan	Plan	Plan
A1	0	0	15	15	0	0	0	0	0	0	11	11	0	4	4
A3	0	0	0	15	0	0	0	0	0	0	11	11	0	4	4
A6	394	21	15	409	21	342	21	342	21	49	11	60	3	4	7
B1	400	0	47	447	0	347	0	347	0	51	34	85	2	13	15
B2a	159	0	19	178	0	138	0	138	0	20	14	34	1	5	6
B3a	56	0	7	63	0	50	0	50	0	6	5	11	0	2	2
B3c	62	1	7	69	1	53	1	53	1	8	5	13	1	2	3
B3d	59	0	7	66	0	51	0	51	0	8	5	13	0	2	2
B3e	63	0	8	71	0	54	0	54	0	8	5	13	1	3	4
Total	1093	22	140	1333	22	1035	22	1035	22	150	101	251	8	39	47

13.8 Export condition of Fish and Fishery products:

13.8.1 Export performance of recent years

Freshwater prawn, Galda at a depot in Khulna

Bangladesh exports frozen shrimp and other fish and fisheries products to a number of developed countries in EU member countries, USA, Japan, Russia, Hong Kong, Saudi Arabia, Singapore and other developed countries by properly addressing international food safety regulations throughout the supply chain. This success is due to export of quality shrimp processed by introducing HACCP and traceability system implemented in the country according to the requirements of EU and USA. Fisheries sector is contributing a lot of national foreign exchange earnings and often this sector holds the second highest position. Bangladesh exports frozen shrimp eg. Golda, Bagda, Horina etc. and other fish such as Koral, Datina, Kamila, Lakha, Poa, Rui, Catla, Pabda, Chapila, Sorputi, Air, Koi, Pangas, Sol, Gazar etc. Besides this a noticeable amount of live crab and cuchia (eel) are also exported. Export statistics of Fish and Fishery Products of the last three fiscal years are presented below. The present government has extended help amd co-operations for exporting shrimp including 10% cost incentives, reduced interest rate etc. to sustain continuous growth of exports of this sector which reflected through increasing the export of high valued shrimp. Bangladesh earned foreign currencies equivalent to about 21,927 crore taka between last five years (2009-10 and 2013-14) by exporting fish and fishery products.

SL. No	Fiscal Year	Exported Quantity MT	Value in Million USD	Value in Crore TK
1.	2011-12	92,479	598.00	4703.94
2.	2012-13	84,905	534.92	4158.97
3.	2013-14	77,328	630.29	4898.22

13.8.2 New Entrepreneurship in Fish Processing

The exporters are investigating 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 value added products of shrimp and fish. As for example, in order to coup with the requirements of competitive global seafood market some entrepreneurs of the country have already started to establish processing plants at Gazipur, Mymensingh etc. with the facilities of fish fillet, fish oil and canned items with the support jointly provided by INFOFISH and Department of Fisheries, Bangladesh.

13.8.3 Traceability

To ensure the traceability of shrimp value chain rule-23 has been incorporated in the Fish and Fish Products (Inspection and Quality Control) rules 1997 (amended in 2008). Three Upazilla Fisheries Officers as well as shrimp farmer of the coastal belt trained up about the implementation of traceability. About 2.07 lacs 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. Piloting on e-traceability has been started through EU-funded BEST-BFQ Project of DoF.

13.8.4 Hazard Analysis and Critical Control Point (HACCP) implementation:

Checking of the temperature control system of a fish processing industry in Khulna

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 pathogenic bacteria contamination from post harvest chain. Recently, environmental aspects, human rights, i.e. child labor, gender issues, etc. have gained prominence. To ensure safe fish and fish products for the markets, the government has undertaken stringent measures to improve QAP and strong compliances of HACCP guidelines and to ensure that all fish processing establishments follow HACCP principles mandatorily. 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 on traceability as well as Eco-leveling Act is given to the processors and suppliers.

13.8.5 Surveillance and mobile court to prevent fish adulteration:

Regular inspection and mobile court was operating at landing centres, depot and processing plants to control adulteration (pushing water, gel etc.) of fish and shrimp. Numbers of accused establishments and persons were taken under punitive measures with the help of law enforcing agencies and adulterated fish and shrimps were destroyed on regular basis. In 2014, FIQC moved 268 mobile court, imposed fine Tk. 2,536,500/ and destroyed 9,495.00 kg Shrimp and 36.5 kg white Fish.

EU-FVO Audit team visits a depot in Khulna

13.8.6 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.

13.8.7 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. Some FIQC officers were trained from abroad both in Laboratory (microbiological and chemical aspects) and Inspection side.

Hands on training on LC-MS-MS operation at FIQC Laboratory, Savar, Dhaka

13.9 Laws, Policies and Documents

Legal basis for production of safe fish and fish products to ensure the safety and quality of exportable fish and fishery products from farm to fork are as follows-

Legal Framework

- The Fish and Fish Product (Inspection and Quality Control) Ordinance, 1983
- The Marine Fisheries Ordinance, 1983
- The Marine Fisheries Rules, 1983
- The Fish and Fish Product (Inspection and quality control) Rules, 1997 (amended in 2008 & 2014)
- The Fish Hatchery Act, 2010
- The Fish Feed and Animal Feed Act, 2010
- The Fish Feed Rules, 2011
- The Fish Hatchery Rules, 2011

In addition to the regulations, the following policies and guidelines are also in place for official control of fish products-

- National Fisheries Policy-1998
- National Residue Control Plan Policy Guidelines, 2011 (amended in 2012)
- National Shrimp Policy, 2014
- Fish and Fishery Products Official Control Protocols, 2015
- Guidelines for the Control of Aquaculture Medicinal Products-AMPs, 2015
- Manual on Good Aquaculture Practice- Trainer Manual
- Compliance Guidelines for Fish Feed Production, Import & Marketing
- Guidebook on Waste Management in Fish and Fishery Industries
- Good Aquaculture Practice – A Farmer's Guide
- Compliance Guidelines for Shrimp Hatchery
- ISO/IEC 17025:2005 General Requirements for Competence of testing Laboratories

The following rules and regulations of different importing countries are applicable for exporting fish and fish products to different countries-

- The Public Health Security and Bioterrorism Preparedness and Response Act, commonly known as The Bioterrorism Act of 2002 of FDA
- US Anti Dumping Act of different exporting countries
- Food Safety Modernization Act 2011
- Commission Decision 2011/163/EU (2011/690/EU); 2008/630/EC (2010/387/EU)
- Commission Regulation 188/2008; 488/2014
- Regulations (EC) No. 178/2002; 852/2004; 853/2004; 854/2004; 2073/2005
- EU Directive 96/23/EC
- Russian Sanitary Rules and Norms SanPiN 2.3.2.1078-01 & 2.3.4.050-96 etc.

13.10 Rapid Alert System for Food and Feed (RASFF):

Shrimp of aquaculture origin of Bangladesh being contaminated by the NF metabolite evolved through repeated Rapid Alert System for food in the year 2009. Meanwhile substantial actions/ programs have been implemented for the total development of infra-structure, management and documentation. Motivational programmers and training has been undertaken to increase the awareness about product quality and safety and to comply with HACCP and international obligations. Beside this, traceability system in aquaculture and processed products are being implemented and taskforce activities related to develop HACCP system in every stage from hatchery to processing of shrimp are also implemented according to EU requirements. Due to the repeated Rapid Alert System for Food and Feed (RASFF) from EU, National Working Committee was formed and that committee is working to mitigate the problem. With the continuous effort and progress achieved in residue analysis the rapid alert and RASFF has been reduced to zero in 2013 from the highest number of 50 in the year 2009.

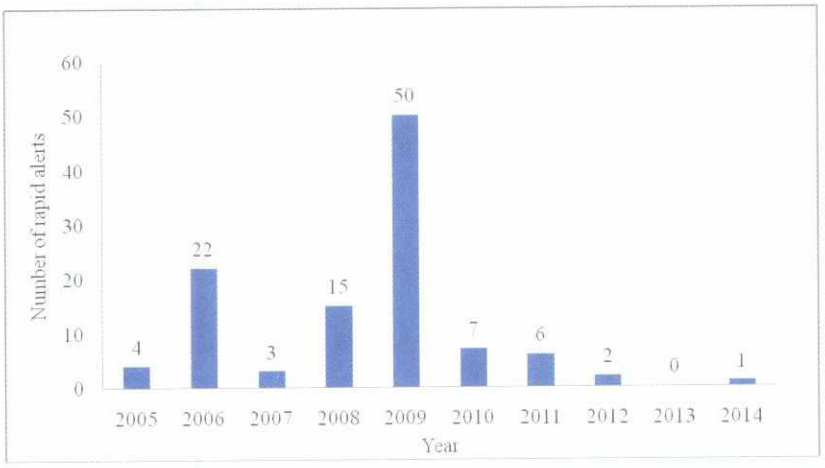


Figure 5: Number of rapid alerts concerning fish and fishery products exported to EU from 2005 to 2014.

Hon'ble Secretary Shelina Afroza, PhD presents greetings to the members of EU-FVO Audit team

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 22: Progress of training activities

Financial Year	In Country Training	Foreign Training		
	Government personnel	Fish Farmers/ Fishers/ NGO personnel	Government personnel	Fish Farmers/ Fishers/ NGO personnel
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
2013-2014	3154	298783	76	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.

Fish harvesting by a rural women
Dohar, Dhaka.

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.

15. National Fish Week 2014

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 2014 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 2014 was onna bostro basostan, Mas cashae somadhan. At the instruction of the 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.

Inauguration session of the National Fish Week 2014, Dhaka.

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 has inaugurated the national event on 07 July 2012 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 02 July 2014 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.

Fingerling releasing by the Honorable Prime Minister Sheikh Hasina

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 21761.00 lakh has been allocated for 26 development projects in the financial year 2013-2014 under the annual development program of DoF. The actual expenditure and achievements were 23407.57 lakh and 107% respectively. Some programs are also submitted to the ministry for budget allocation from revenue head. The list with 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

The use of information and communication technology has been playing a vital role in the 21st century due to globalization and the government is encouraged to adapting with the coming future. The democratic government has declared the "Vision 2021" in the election manifesto which targets establishment of a resourceful and modern country by 2021 through effective use of information and communication technology-a "Digital Bangladesh

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.

"Digital Bangladesh" does not only mean the broad use of computers, perhaps it means the modern philosophy of effective and useful use of technology in terms of implementing the promises in education, health, job placement, poverty reduction etc. Therefore, the government underscores a changing attitude, positive thinking and innovative ideas for the success of "Digital Bangladesh".

Diagram of Digital Bangladesh

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 2011 DoF Connected Headquarters to District level office under E-mail connectivity for quick service.In 2013 fisheries mail system have been modernized to improve service quality. Mail has been converted into the group mail system. As a result, if the group address write in the address bar and send the mail, all member of that group get mail in a moment . Which increase in the quality of office work and also save much time. Ten

upazila and l0 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)

The philosophy of "Digital Bangladesh" comprises ensuring people's democracy and rights, transparency, accountability, establishing justice and ensuring delivery of government services in each door through maximum use of technology-with the ultimate goal to improve the daily lifestyle of general people. Government's "Digital Bangladesh" includes all classes of people and does not discriminate people in terms of technology. Hence, government have emphasized on the four elements of "Digital Bangladesh Vision" which are human resource development, people involvement, civil services and use of information technology in business. In this section 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 is 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 wants 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 SUF0s/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.
- "We may not reap immediately the benefits of the programme, we undertook in the past years . . . as we had to start everything afresh. for Successfully implement e-Leaf program, two projects Department of Fisheries a) Expansion of Aquaculture Technology Services Up to Union Level Project and b) The National Agricultural Technology Project (DoF Part) appointed e-Leaf in almost all upazila in the country.

17.2 Activities of Fisheries Information and Communication Center (FICC)

The philosophy of "Digital Bangladesh" comprises ensuring people's democracy and rights, transparency, accountability, establishing justice and ensuring delivery of government services in each door through maximum use of technology-with the ultimate goal to improve the daily lifestyle of general people. Government's "Digital Bangladesh" includes all classes of people and does not discriminate people in terms of technology. Hence, government have emphasized on the four elements of "Digital Bangladesh Vision" which are human resource development, people involvement, civil services and use of information technology in business. In this section 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 is 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 wants 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 SUF0s/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.
- We may not reap immediately the benefits of the programme, we undertook in the past years . . . as we had to start everything afresh. for Successfully implement e-Leaf program, two projects Department of Fisheries a) Expansion of Aquaculture Technology Services Up to Union Level Project and b) The National Agricultural Technology Project (DoF Part) appointed e-Leaf in almost all upazila in the country.

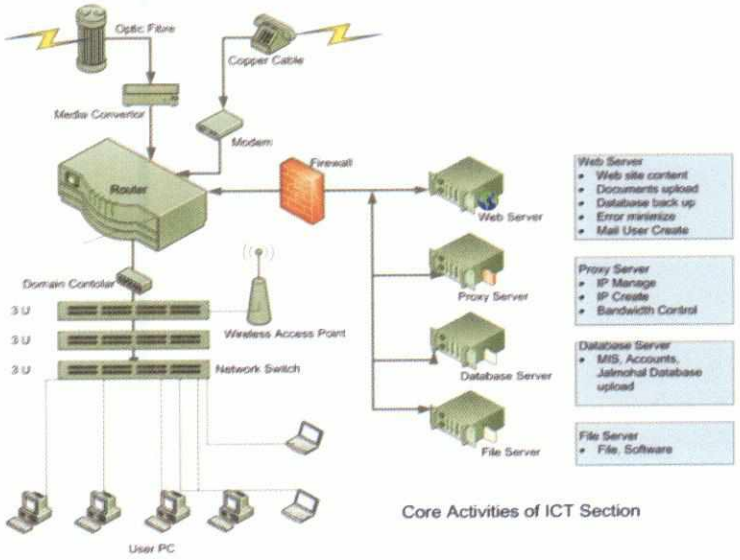
17.3 Success Story of ICT Section of DoF

ICT is the backbone of any digital initiative. ICT covers the vast area of information technology, communication technology and the telecommunication technology. ICT is also a combination of physical backbone and intellect. Computer systems, network machineries, software, wire and wireless connectivity systems, broadcast hardware and many other hardware and accessories are the physical backbone. The trained human behind the backbone is the intellect. 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. To materialize the idea of digital Bangladesh, development of countrywide network and expected number of human recourses are the basic needs. Since the ICT Section, Department of Fisheries began to express itself as a separate Section in the year 2011. The success of the ICT section is given below.

- Web-based fish advice system: Fish farmer get information service when he come to fisheries officers, similar service that he can get through this software. The software supports mobile and Tab also. Farmer also receive services from the data center near to his house.

  FAQs: When a Fish farmer came to office, and asked some general question, that answer also given in this link. That content supports mobile and Tab also.
- DoF PDS: DoF Officers / staff employment aimed at obtaining the necessary information quickly and accurately has been made this software. Which has been successfully running.
- Automation services are aimed to report automated (Accounts/Audit and Budget System, MIS for extension report automation, Jamahal Database, database software for computer distribution etc,): Reports from the field level activities of the Directorate of Fisheries to come. The reports are extremely difficult to integrate. Field reports have been made to integrate this software for the creation of Headquarters report. All reports will be in the process of fisheries in the next two years.

- DoF update mail system : DoF was before Web mail, updates have been added to the mail as group mail. Mail message to everyone in the group if the group goes to an single address. It is an innovation in the ICT Section.
- LAN Connection: With the Directorate of Fisheries to the field office there is no direct connection to the Internet. Field offices are connected to different service provider, or accepts the connection BTCL is offering. But the Head office has its own LAN connection. In addition to exchanges of officials via the LAN, resources via the Internet are being exchanged. LAN Topography Department of Fisheries are given below.



Core Activities of ICT Section

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 ERP Platform;
- 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
- In order to provide fast service to the people, ICT Section has developed 18 service delivery process map, According to the process map, service for the DoF will creating software for providing on-line service to the people;
- All content will be made Mobile supported, so that the information can be reached to the people's Pocket.

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 viz. 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, WorldFish Centre organized seven dissemination workshops in different districts as titled "Dissemination of Good Practices in Fisheries Sector" in Deputy Commissioner's Conference office under this chairmanship and Secretary, Ministry of Fisheries and Livestock was the Chief Guest of the seminar 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:

Bangladesh is one of the world's leading fish producing countries with a total production of 35.48 lac MT in the last financial year 2013-14. The overall growth performance from inland aquaculture shows a moderate increased trend due to dissemination of improved technology packages and supportive/ need-based extension services at farmer's level. A slight growth in the production from both inland capture and marine fisheries was also noticed during the last two and half decades with some exceptions. Besides this, this sector will be able to create per time employment for 6.5 lac in the financial year 2013-14 and up to 32.71 lac by the financial year 2020-21. The declaration of Honorable Prime Minister Shiekh Hasina for food security, 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, "Bangabandhu Sheikh Mujibur Rahman".

Annexure

Annexcer : 1 List of the winners for National Fish Week 2014 awards

Sl. No.	Field area	Name of the Person/Organization	Award
1	Contribution of Socail Organization for Fisheries Development	Major General Md. Sallh uddin Miagi PSC,GOC. 66 Podatic Division, Rangpur Catonment, Rangp	Gold Medal, 50000/- cash and a Certificate
2	Contribution of Socail Organization for Fisheries Development	Mr.Md. Sajahan Bablu, Chairman and MD SB group, Shajahan Bablu Tower, South Matoyal, Jatrabari, Dhaka-1262.	Gold Medal, 50000/- cash and a Certificate
3	Export of fish products (Frozen shrimp/fish/dried fish)	Md. Masodur Rahaman, MD M/S Sea Fresh Ltd. Village- Elypur, P.O: East Ruosa, Rupsa Khulna.	Gold Medal, 50000/- cash and a Certificate
4	Fish Production (Pangus)	Alhaj Belal Hosian Sorder, Vill: Kashimala, Bishiya, Alamdekhi, Bagura.	Gold Medal, 50000/- cash and a Certificate
5	Contribution of Socail Organization for Fisheries Development	Sayeda Sarwoar jahan Village- South Katli. Chittagong	Gold Medal, 30000/- cash and a Certificate
6	Swapan production	Md. Mafijul Islam Village: Bagharpara, P.O.: Kathali Bhaluka, Mymensingh.	Silver Medal, 30000/- cash and a Certificate
7	Fry/Fingerling production	Mr. Salim Reza Village:Vatoria, Chahra, Jessore	Silver Medal, 30000/- cash and a Certificate
8	Fry/Fingerling production	Mr. Md Shahadur Rahaman, Village: Mahabotpur, P.O: Sonapur Sadar, Noakhali.	Silver Medal, 30000/- cash and a Certificate
9	Fish production	Mr. Md. Abul Hasnat Village- Luotia, P.O: - Machiali Tarakada, Mymensingh	Silver Medal, 30000/- cash and a Certificate
10	Fish production	Md.Harun ar Rashid Village- Khamarpara Chachra, P.O: - Chachra Mor, Sadar, Jessore.	Silver Medal, 30000/- cash and a Certificate
11	Fish production	Mr. ATM Payrul Islam Village-Kipait nagor,P.O: Charaliyahat Fatikchari, Chittagong.	Silver Medal, 30000/- cash and a Certificate
12	Fish production	Mr. Abu Taher Village- Forermouk Longgadu, Rangamati	Silver Medal, 30000/- cash and a Certificate
13	Fish production	Mr. Md Shafiulla Mal Village: Dariram shangkor Sadar, Volla.	Silver Medal, 30000/- cash and a Certificate
14	Fish production	Mr. Md. Monaum Kaykobad Village- Boniaukh Nasirnogar, Bramhonbaria.	Silver Medal, 30000/- cash and a Certificate
15	Fish production	Mr. Asim saha Village- Nicha bazar Sadar, Natore.	Silver Medal, 30000/- cash and a Certificate
16	Cage culture	Mr.Md. Hafijur Rahaman Village- Ratonpur, Demra, Faridpur, Pabna.	Silver Medal, 30000/- cash and a Certificate
17	Pl production (Bagda)	Alhaj Sheak Abul Village- Calnabazar Dakob, Khulna	Silver Medal, 30000/- cash and a Certificate

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

[Unit: Metric Ton]

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
A. INLAND FISHERIES	**1,741,360**	**1,848,735**	**1,952,573**	**2,065,723**	**2381917**	**2,381,916**	**25,15354**	**26,83162**	**28,21266**	**29,52730**
(a) Inland Openwater (Capture)	**859,269**	**956,686**	**1,006,761**	**1,060,181**	**1029937**	**1,029,937**	**10,54585**	**957095**	**961458**	**995805**
(1) River and Estuaries	139,798	137,859	136,958	136,812	153695	153,695	144566	145613	147264	167373
(2) Sundarbans	15,724	16,423	17,751	18,151	8109	8,109	22451	21610	15945	18366
(3) Beel (Depression)	74,925	76,365	75,137	77,524	70209	70,209	81564	85208	87902	88911
(4) Kaptai Lake	7,379	7,548	8,085	8,248	7117	7,117	8980	8537	9017	8179
(5) Flood Plain	621,443	718,491	768,830	819,446	790807	790,807	797024	696127	701330	712976
(b) Inland Closewater (Culture)	**882,091**	**892,049**	**945,812**	**1,005,542**	**1351980**	**1,351,979**	**1460769**	**1726067**	**1859808**	**1956925**
(1) Pond and Ditch	756,993	759,628	811,954	866,049	1140485	1140484	1270966	1392412	1446594	1526160
(2) Semi-Closed	0	0	0	0	0	46,902	51230	132163	200833	193303
(3) Baor (Ox-bow Lake)	4,388	4,498	4,698	4,778	8727	8727	4868	5186	6146	6514
(4) Shrimp/Prawn Farm	120,710	127,923	129,160	134,715	145,585	155866	184939	196306	206235	216447
(5) Pen culture	-	-	-	-	-	-	-	-		13054
(6) Cage culture	-	-	-	-	-	-	-	-		1447
B. MARINE FISHERIES	**474,597**	**479,810**	**487,438**	**497,573**	**517282**	**517,282**	**546333**	**578620**	**588988**	**595385**
(a) Industrial	34,114	34,084	35,391	34,159	34182	34,182	41665	73386	73030	76885
(b) Artisanal	440,483	445,726	452,047	463,414	483100	483,100	504668	505234	515958	518500
COUNTRY TOTAL (A+B)	**2,215,957**	**2,328,545**	**2,440,011**	**2,563,296**	**2899199**	**2,899,198**	**3061687**	**3261782**	**3410254**	**3548115**
ANNUAL GROWTH RATE (%)	**5.42**	**5.08**	**4.79**	**5.05**	**5.39**	**7.32**	**5.6**	**6.5**	**4.55**	**4.04**

Annexure 3: Resource wise annual fisheries production

Resource type	Water Area (ha)			Production (mt)			Catch/Area (kg/ha)			% of total production		
	2013-14	2012-13	2011-12	2013-14	2012-13	2011-12	2013-14	2012-13	2011-12	2013-14	2012-13	2011-12
A. Inland Fisheries												
(i) Capture												
1. River and Estuaries	853863	853863	853863	167373	147264	145613	196	172	171			
2. Sundarbans	177700	177700	177700	18366	15945	21610	103	90	122			
3. Beel	114161	114161	114161	88911	87902	85208	779	770	746			--
4. Kaptai Lake	68800	68800	68800	8179	9017	8537	119	131	124			
5. Flood Land (including Seasonal Water body)	2695529	2702304	2832792	712976	701330	878420	265	260	210			
Capture Total	**3910053**	**3916828**	**4047316**	**995805**	**961458**	**1139388**	-	-	-	**28.07**	**34.44**	**34.44**
(ii) Culture												
1. Pond and Ditch	501797	501797	371309	193303	1647427	1342282	3426	5435	3615			
2. Baor	5488	5488	5488	6514	6146	5186	1187	1120	945			
3. Coastal Shrimp/Prawn Farm	275274	275274	275232	216447	206235	196306	786	749	713			
4. Pen Culture	6775			13054			1927					
5. Cage culture	7			1447			22 kg /mt^3					
Culture Total	**789341**	**782559**	**652029**	**195695**	**1859808**	**1543774**	-	-	-	**55.15**	**54.54**	**47.71**
Inland Total	**4699387**	**4699387**	**4699345**	**29,52730**	**2821266**	**2683162**	-	-	-	**83.22**	**82.73**	**47.71**
B. Marine Fisheries												
(i) Industrial Fisheries (Trawl)	-	-	-	76885	73030	73386				2.17		
(ii) Artisanal Fisheries	-	-	-	518500	515958	505234				14.61		
Marine Total		-	-	**595385**	**588988**	**578620**				**16.78**	**17.84**	**17.74**
Country Total	-	-	-	**3548115**	**3410254**	**3261782**						

Annexure : 4(a). Annual Carp Hatchling Production *2014*

Source of Production	No of Hatchery	Hatchling Production (Kg)	%
1. Natural			
Jamuna River		970	
Padma River		613	
Arialkha River		265	
Brahmaputra River		42	
Garai River		240	
Madhumati River		50	
Surma River		7	
Halda River		508	
Natural Total		**2695**	***0.55***
2. Artificial			
Govt. Hatchery	92	10338	***2.10***
Private Hatchery	790	478993	***97.35***
Artificial Total	**882**	**489331**	***99.45***
COUNTRY TOTAL	**882**	**492026**	***100.00***

Note: *Hatchling of 4 -5 days old*

Annexure : 4 (b). Hatchling Production of Private Hatchery *2014*

Division	No. of Hatchery	Hatchling Production (Kg)									Tilapia Juvenile (Lakh)
		Major Carp	Exotic Carp	Pangas	Thai Punti	Bata	Koi	Shingi/ Magur	Other	Total	
Dhaka	194	62209	30769	2357	4777	4897	3415	2167	4138	114729	6178
Khulna	92	40304	24567	2673	2753	2922	800	452	172	74643	2578
Barisal	29	7695	1822	90	227	25	3	4	0	9866	445
Rangpur	73	15033	15867	3	4001	6379	253	727	195	42458	136
Rajshahi	184	36997	29271	41911	6302	10363	7263	4500	1314	137921	1655
Chittagong	201	46693	22412	11771	4031	1123	292	507	1960	88789	5447
Sylhet	17	6594	2570	438	715	270	0	0	0	10587	1100
TOTAL	**790**	**215525**	**127278**	**59243**	**22806**	**25979**	**12026**	**8357**	**7779**	**478993**	**17539**

Note : About four lakh hatchlings contain in one kg spawn and one Kg contains 1000-1200 Tilapia Juvenile.
Other Species: Ghonia, Chitol, Gulsa, Pabda etc.

Annexure : 4 (c). Hatchling Production of Govt. Hatchery 2014

Name/Location of Hatchery	No. of Hatchery	Hatchling Production (Kg)								
		Major Carp	Exotic Carp	Pangas	Thai Punti	Bata	Koi	Shingi/ Magur	Other	Total
Fish Seed Multiplication Farm										
1. Dhaka Division	18	1513	328	0	95	64	10	0	0	2010
2. Khulna Division	8	625	105	0	0	0	0	0	0	730
3. Barisal Division	10	407	58	80	6	25	0	2	0	578
4. Rangpur Division	13	245	226	0	38	45	0	0	0	554
5. Rajshahi Division	15	890	608	143	49	252	0	0	0	1942
6. Chittagong Division	15	935	71	20	12	3	0	0	7	1048
7. Sylhet Division	7	545	26	0	77	0	0	0	0	648
Sub Total	**86**	**5160**	**1422**	**243**	**277**	**389**	**10**	**2**	**7**	**7510**
Other Govt. Hatchery										
Central Hatchery Complex, Baor Fish Development Project, Jhenaidah.	1	540	682		10	20				1252
2. Raipur Fish Hatchery and Training Centre, Lakshmipur.	1	471	130		51	10				662
3. Hatchery of Bangladesh Fisheries Research Institute, Mymensingh.	1	160	90		60	0				310
4. Hatchery of Riverine Station, Bangladesh Fisheries Research Institute, Chandpur.	1	2	0		2	0				4
5. Parbatipur Hatchery, Dinajpur.	1	250	250		20	30				550
6. Faridpur Training and Extension Centre, Faridpur.	1	50	0		0	0				50
Sub Total	**6**	**1473**	**1152**	**0**	**143**	**60**	**0**	**0**	**0**	**2828**
TOTAL	**92**	**6633**	**2574**	**243**	**420**	**449**	**10**	**2**	**7**	**10338**

Annexure 5. Annual Catch of Marine Fisheries 2013-14

Type of Fishing	Number of Craft (Trawler/ Boat)	Number of Unit (Gear/Net)	Catch in Metric Ton			
			Shrimp	Hilsa	Other Fish	Total
A. Industrial						
Trawl Fishing						
a) Shrimp Trawler	38	114	3371	0	2307	5678
b) Fish Trawler	187	561	428	2004	68775	71207
TOTAL INDUSTRIAL	***225***	***675***	***3799***	***2004***	***71082***	***76885***
B. Artisanal						
1. Gill Net Fishing						
a) Mechanized	19789	73768	0	235122	78624	313746
b) Non Mechanized	12820	40585	0	20500	22760	43260
SUB-TOTAL	***32609***	***114353***	***0***	***255622***	***101384***	***357006***
2. Set Bag Net Fishing						
a) Seasonal (MB)	7875	20799	31782	0	87968	119750
b) Seasonal (NMB)	3100	10000	7000	0	5185	12185
c) All Seasonal (NMB)	4550	10025	585	0	1000	1585
SUB-TOTAL	***15525***	***40824***	***39367***	***0***	***94153***	***133520***
3. Long Line Fishing						
a) Jew Fish Long Line						
Mechanized	2500	10191	0	0	14629	14629
Non Mechanized	400	900	0	0	965	965
b) Other Long Line (NMB)	325	772	0	0	460	460
SUB-TOTAL	***3225***	***11863***	***0***	***0***	***16054***	***16054***
4. Trammel Net Fishing (NMB)	131	422	1902	0	3455	5357
5. Other Gears Fishing (NMB)	6373	15640	2600	0	3963	6563
TOTAL ARTISANAL	***57863***	***183102***	***43869***	***255622***	***219009***	***518500***
GRAND TOTAL (A+B)	***58088***	***183777***	***47668***	***257626***	***290091***	***595385***

Trawler		Boat		Gear (Artisanal)	
Type	No.	Type	No.	Type	No.
Shrimp Trawler	38	**MB** (Mechanized Boat)	30164	Gill Net	114353
Fish Trawler	187	**NMB** (Non-Mechanized Boat)	27699	Set Bag Net	40824
				Long Line	11863
				Trammel Net	422
				Other Gear	15640
Total	**225**		**57863**		**183102**

Annexure 6. Species-wise Catch of Marine Fisheries2013-14

Type of Fishing	Shrimp (A)	Hilsha (B)	Other Species									Grand Total (A+B+C)
			Sardine	Bombay Duck	Indian Salmon	Pomfret	Jew Fish	Cat Fish	Shark/ Skate/ Ray	Other Marine Fish	Total (C)	
A. Industrial												
Trawl Fishing	**3799**	**2004**	**20680**	**0**	**0**	**505**	**3657**	**2259**	**843**	**43138**	**71082**	**76885**
B. Artisanal												
1. Gill Net Fishing												
a) Mechanized	0	235122	6500	2500	1830	10500	18468	1350	2080	35396	78624	313746
b) Non-mechanized	0	20500	0	50	0	0	4225	200	30	18255	22760	43260
SUB-TOTAL	**0**	**255622**	**6500**	**2550**	**1830**	**10500**	**22693**	**1550**	**2110**	**53651**	**101384**	**357006**
2. Set Bag Net Fishing												
a) Seasonal	38782	0	380	48333	0	12350	1800	60	350	29880	93153	131935
b) All Seasonal	585	0	0	650	0	0	0	45	40	265	1000	1585
SUB-TOTAL	**39367**	**0**	**380**	**48983**	**0**	**12350**	**1800**	**105**	**390**	**30145**	**94153**	**133520**
3. Long Line Fishing												
a) Jew Fish Long Line												
Mechanized	0	0	0	0	100	0	3600	4200	2210	4519	14629	14629
Non Mechanized	0	0	0	0	30	0	575	75	65	220	965	965
b) Other Long Line	0	0	0	0	0	0	300	80	30	50	460	460
SUB-TOTAL	**0**	**0**	**0**	**0**	**130**	**0**	**4475**	**4355**	**2305**	**4789**	**16054**	**16054**
4. Trammel Net Fishing	1902	0	0	40	0	0	2180	1050	0	185	3455	5357
5. Other Gears' Fishing	2600	0	30	100	0	0	1365	400	0	2068	3963	6563
TOTAL ARTISANAL	**43869**	**255622**	**6910**	**51673**	**1960**	**22850**	**32513**	**7460**	**4805**	**90838**	**219009**	**518500**
GRAND TOTAL (Industrial+ Artisanal)	**47668**	**257626**	**27590**	**51673**	**1960**	**23355**	**36170**	**9719**	**5648**	**133976**	**290091**	**595385**
%	***8.01***	***43.27***	***4.93***	***8.68***	***0.33***	***3.92***	***6.08***	***1.63***	***0.95***	***22.50***	***48.72***	***100.00***

Species-wise Shrimp Catch in Marine Fisheries

Sector	Bagda (Tiger)	Harina (Brown)	Chaka (White)	Others	Total
Trawl Fishing	230	4075	149	1027	5481
Artisanal Fishing	3010	26824	4218	8135	42187
Total	**3240**	**30899**	**4367**	**9162**	**47668**

Annexure- 7. Brief on NRCP during 2014

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_1	Stilbenes	-	18	18		15	15	-	15	15	-	15	15
A_3	Steroids	-	18	18	-	15	15	-	15	15	-	15	15
A_6	Antibiotics	322	18	340	438	17	455	405	15	420	438	15	453
B_1	Antibacterial substances	326	54	380	378	47	425	389	47	436	403	47	450
B_2a	Anthelmintics	131	20	151	152	19	171	156	19	175	160	19	179
B_3a	Pesticides	47	08	55	54	7	61	57	7	64	59	7	66
B_3c	Chemical elements	47	08	55	54	7	61	57	7	64	63	7	70
B_3d	Mycotoxin	47	08	55	54	7	61	57	7	64	60	7	67
B_3e	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. List of development projects (2013-14)

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
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	1. Develop, protect and conserve the natural spawning grounds in the Halda river 2. Establish fish sanctuaries in the river Halda for restoration of productivity and bio diversity of existing aquatic resources 3. Build up an appropriate institutional management framework for conserving natural spawning of Halda river through community participation. 4. Create, provide and explore alternate income generating opportunities during ban season	1. Establishment of sanctuary 2. Micro credit for alternate livelihoods of fishers/engine boat drivers 7. Plantation 3. Research /study 4. Extension of existing hatchery facilities at Modunaghat. 5. Extension of DFO office building 1250 sft. 6. Construction of training center at Mobarackhill hatchery 750 sft. 7. Construction of office facilities at hatchery unit. 8. Construction of boundary wall for hatchery unit. 9. Construction of hatchery unit for eggs hatching.	99.68%
2.	Bangladesh Marine Fisheries Capacity Building Project (IDB/GOB) (July 2007-June 2017)	16545.06	14 coastal districts (49 upazilas)	1. Assess the standing stock and MSY of estuarine and coastal fisheries resources 2. Assess the standing stock of pelagic and demersal stocks of aquatic resources 3. Undertake census and establish data bank on different types of fishing crafts and gears. 4. Develop a catch assessment program for routine maintaining of the coastal and marine fisheries as to changes due to the dynamics of fishing. 5. Develop mechanism to implement MCS system to oversee and manage the resources.	1. Marine fisheries survey and development of management framework 2. Staff training for HRD. 3. Procurement of Research/Survey Vessel. 4. Development of an integrated data base for MCS.	100%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
3.	Fisheries Diploma Course Implementation Project (July/2008-June/2014)	1290.17	Fisheries Training Institute, Chandpur Sadar, Chandpur, Chittagong.	1. 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. 2. Develop facilities at one existing DoF training centre for the purpose of running fisheries Diploma course.	1. Develop fisheries training centre at Chandpur. 2. Construction of hostel, class rooms, laboratory building, girl's hostel, upgrading of boundary wall. 3. Laboratories, procurement of instruments. 4. Preparation and printing of books and training modules. 5. Conduct training workshop/seminar.	99.88%
4.	Greater Pabna Fisheries Development Project (January/2009-June/2014)	1223.00	Pabna and Sirajganj districts (18 upazilas)	1. To increase fish production both from culture and capture fisheries of pabna region. 2. To protect fish bio-diversity through establishing fish sanctuary, stocking endangered fish fingerlings and creating awareness. 3. To improve fish habitat through minor infrastructure development. 4. To ensure livelihood security of the poor people of Pabna region.	1. Development of Beel/Canal/Dead river/ Khas pond. 2. Establishment of fish sanctuaries. 3. Construction of earthen dyke/ box/Pipe-culvert & landing center cum Guard Shed. 4. Stocking of indigenous fish & carp fingerlings. 5. Alternative income generating activities through livestock.	99.98%
5.	Emergency 2007 Cyclone recovery and restoration Project (ECRRP) (July/2008-June/2014) (DoF Part)	5423.62	Barisal & Khulna Divisions (13 SIDR affected Upazilas under 6 Districts)	1. To restore the aquaculture production chain to the coastal areas in the cyclone affected coastal areas providing aquaculture inputs to the coastal fishers. 2. To restore the livelihoods of cyclone affected coastal fishers providing fishing nets and repair their boats.	1. Conduct survey to identify the exiting status of coastal fisheries 2. To supply aquaculture inputs to the affected fish/shrimp farmers. 3. Supply of fishing nets to the distressed fishermen and supply/repair fishing boats. 4. Training for CBO/Fishers/Boat crews/ fishermen etc.	100%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
6.	Jatka Conservation, Alternate Income Generation for the Jatka Fishers and Research Project (July/2009-June/2015) (DoF Part)	4095.80	12 Districts 51 Upazilas	1. To Increase Hilsa production by saving Jatka (juvenile Hilsa) and brood Hilsa. 2. Support to strengthen and enhance Hilsa Sanctuary activities; 3. To create alternate job opportunities for the Jatka/Hilsa Fishers for improving their Socio-Economic status. 4. To create mass awareness for the conservation of Jatka-Hilsa.	1. Support to enhance Hilsa sanctuary Activities. 2. Conduct mobile court. 3. Fishers' training on AIGAs. 4. Develop and printing/preparation of posters, leaflets, TV spots, video, CD/DVD etc. 5. Alternative income generating activities (AIG) for fishers.	99.53%
7.	Expansion of Aquaculture Technology Services up to Union Level Project (July/2009-June/2014)	2504.49	51 districts (244 Upazilas covering 1760 Unions)	1. 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. 2. 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. 3. Involve and utilize the Union Parishad as an effective institution in all local level fisheries development including training and demonstration.	1. Establishment of Union based Aquaculture Extension System (UAE) 2. Training of beneficiaries 3. Establishment of linkage with BFRI, Mymensingh 4. Aquaculture extension and training at union level 5. Result demonstration of improved quality fish fingerling production 6. Result demonstration of semi-intensive carp polyculture technology 7. Result demonstration of mixed culture of golda with carp	99.94%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
8.	Aquaculture and Fisheries Management in Bhabodaha Area, Jessore (July 2009-June 2014)	966.00	Jessore district (4 Upazilas)	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. 2. Establish, motivate and strengthen rural fisher community organizations to ensure their access to the water resources for their livelihood security. 3. Improve the status of women by involving them in pond aquaculture and providing support for other AIGAs.	1. Shrimp culture & Carp Polyculture demonstration. 2. Establishment of sanctuaries, integrated fish farm & Carp Nursery. 3. Stocking of Fish fingerlings. 4. Training of beneficiaries. 5. Re-excavation of beel/ baor/ canal/ nursery/ pond etc.	92%
9.	Greater Faridpur Fisheries Development Project (January/2010-June/2015)	7884.89	5 Districts (28 Upazilas)	1. To increase fish production from culture and capture fisheries of Faridpur region. 2. To create employment opportunities by various fish culture activities for the poor and landless one member in each family. 3. To protect fish bio-diversity through establishing fish sanctuary, stocking endangered fish fingerlings and creating awareness. 4. To improve fish habitat through development of water bodies and minor infrastructure development.	1. Development of boro-pits and Khas/private ponds/Canals & Pen culture/ Cage culture. 2. Establishment of sanctuaries, re-excavation of Beel Nursery pond/ Baors and dead rivers. 3. Construction of earthen dyke/ box/Pipe-culvert/ sluice gate. 4. Stocking of indigenous fish and carp fingerlings. 5. Implementation of Fish Conservation Act. 6. Group mobilization and facilitate AIGAs through livestock.	99.92%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
10.	Poverty reduction and livelihoods Security for the People of Economically Depressed Area (April/2010-June/2016)	8380.00	5 Divisions, 34 Districts, 185 Upazilas	1. To create employment opportunities in fisheries sector through excavation and re-excavation of water bodies for the people below poverty line. 2. To develop the skill and knowledge of unemployment poor people through training and involve them in aquaculture and other income generating activities. 3. To reduce malnutrition in the poverty region through increase fish culture.	1. Training for AIG, Small Fish farmers, service provides. 2. Stocking of fish fingerlings. 3. Exchange visit. 4. Establishment of fish sanctuaries. 5. Excavation and re-excavation of pond/borrow pits & installation of spill way.	99.95%
11.	Development and Management of Identified Degraded Water Bodies and Conservation of Small Indigenous Fishes (July 2010-June 2014)	3942.22	64 Districts 472 Upazilas	1. To restore the aquatic habitat & ecosystem & increase fish production. 2. Conserve & enhance production of small indigenous fish species to restore aquatic bio-diversity. 3. Establish community based management of fisheries resources. 4. To uplift the socio-economic condition of fishers in the project area.	1. Improve habitat of 72 water bodies. 2. Training materials preparation. 3. Stocking of indigenous fish fry. 4. Excavation/Re-excavation of connecting canals & selected water bodies.	100%
12.	National Agricultural Technology Project (DoF) Component (IDA) (July/2007-December/2014)	6512.45	150 Selected upazilas of 31districts	1. Decentralized, participatory, demand-led and knowledge based approach for agricultural extension. 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.	1. Establish demonstration farms at different upazila. 2. National and International training. 3. Exchange visit. 4. Survey and studies. 5. MS and Phd program.	99.90%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
13.	Aquaculture and Fisheries Management Project in Haor Area (October/2010-June/2016)	3726.00	3 Divisions 7 Districts 48 upazilas	1. Increase fish production by Establishing beel nursery, fish sanctuary and stocking of fish fry. 2. Poverty elevation of fishers and fish farmers though technology dissemination & employment generation. 3. Development of a sustainable community-based improved management framework for the selected water bodies. 4. Development of knowledge & skills of DoF, selected NGO employees & CBO members involved in the project. 5. Capacity building of DoF technical personnel for managing ICL resources along with CBO members & other stake holders.	1. Establishment fish sanctuary in haor and connecting river. 2. Stocking of fish fingerlings. 3. Community Based Fisheries Management 4. Renovation of fish Hatchery in Haor areas 6. Implementation of Fish act. 7. Group formation and community mobilization.	99.97%
14.	Fish production, conservation and strengthening management project at Kaptai lake (Component -B DoF part) (January/2011-December/2014)	306.80	3 Districts Rangamati Khagracha y Bandorban	1. To support to increase fish production in Kaptai lake by producing quality fry/ fingerlings production through hatchery and nursery production. 2. To establish training center to train the stakeholders for grow up their consciousness through training program. 3. To support legislative enforcement to implement fish act & regulations.	1. Construction of training centre in Rangamati. 2. Procurement of speed boat. 3. Awareness training program. 4. Fingerling stocking. 5. Procurement of desktop computer & furniture.	99.81%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
15.	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/2014)	490.85	Pabna District (Sujanagar Upazila)	1. To increase fish production both from culture and fisheries in Gazner Beel area under Sujanagar Upazila in Pabna District 2. To protect fish biodiversity through establishing fish sanctuary, stocking endangered fish fingerling and creating awareness. 3. To motivate fishermen community lives surrounding the beel by stocking of carp fingerling through establishing beel nursery.	1. Community based CBO formation. 2. Awareness, publicity and motivation activities. 3. Stocking of brood fish and fish spawn. 4. Training of the CBOs. 5. Establishment of cage culture & Beel nursery. 6. Fish act implementation.	100%
16.	Control of formalin use in fish preservation and mass awareness campaign (March/2011-June/2014)	769.50	7 Divisions 64 Districts & All vulnerable Upazilas	1. To identify the presence of formalin in fish. 2. To aware fish traders, consumers and all concerns through the country regarding the attack of formalin as health hazards. 3. To train DoF people as well as other stakeholders to detect formalin in fish.	1. Procurement of testing kits. 2. Training for formalin detection. 3. Awareness and training Program. 4. Support for mobile court/law enforcement.	100%
17.	Hura Sagar Aquaculture and Fisheries Management Project (July/2011-June/2015)	1880.00	Hura Sagar in Belkuchi, Kamarkhanda and sadar upazila of Sirajganj district	1.To improve the fish habitat in the riverbed. 2. To improve production of non stocked indigenous fish and biodiversity and establishing fish sanctuaries. 3. To increase high production by stocking fingerling. 4. To produce fish fingerling in the river. 5. To establish CBO approach.	1. Re-excavation of dead river. 2. Establishment of fish sanctuaries. 3. Fingerling stocking. 4. Establishment of fish nursery. 5. Establishment of cage culture. 6. Construction of road for water regulatory structure.	99.98%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
18.	Establishment of Fisheries Diploma Institute at Gopalgonj, Kishorganj & Sirajganj Districts (July/2011-June/2016)	13543.00	Gopalgonj 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.	99.98%
19.	Rehabilitation & development of fisheries infrastructure to increase production of quality fish seed & fingerlings (Jan/2012-June/2015)	12849.32	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.	99.97%
20.	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.	99.78%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
21.	Fishermen Registration & Issuing of Identity Card Project (Jan/2012-June-2016)	8451.88	64 Districts, 482 Upazilas	1. To identify the genuine fishermen for registration & supply the identity card (ID). 2. To develop the database of genuine fishermen for the better management & sustainable development of the fisheries resources. 3. Financial support (as grant) to the family of decrease fishermen by natural disaster (storm, cyclone & tidal serge).	1. Examination & verification of the primary list of the fishermen and finalization of the primary list of the genuine fishermen by concerned Upazila committee. 2. Installed Software support service and data entry (with photo) of fishermen's. 3. Provides the one time grants to the family of decessed fishermen by natural calamities for the rehabilitation.	100%
22.	Fresh Water Prawn Culture extension Project (2nd Phase) (July/2012-June/2017)	5641.00	7 Division, 61 Districts, 400 Upazilas	1.Establishment of one prawn culture demonstration farm cum training center in Fiier Char, satkhira and two training centers in Gopalganj & Barisal Districts. 2. Renovation & operation of existing 20 small-scale demonstration hatcheries & nurseries. 3. Establishment of 10 small-scale demonstration hatcheries & nurseries. 4. Operation of Demonstration nursery ponds in potential upazilas of 61 Districts. 5. Skill development training on prawn hatchery and farm management. 6. Extension of GAP & GMP in prawn production & safe aquaculture food production. 7. Prawn brood development in selected public & private farm.	1. Establishment of Training Centers. 2. Old hatchery renovation work. 3. Galda brood development. 4. Establishment of Prawn Hatchery. 5. Management of Prawn Nursery. 6. Prawn Demonstration Nursery Programme. 7. Training programme. 8. Extension material preparation. 9. Data base preparation & conservation. 10. Field tour for the beneficiaries (Exchange visit).	96.98%
23.	Aquaculture Development & Extension Project (3rd Phase) in Chittagong Hill Tracts (July/2012-June/2017)	6847.24	All Upazilas in Rangamati, khagrachari & Bandarban districts	1. To increase fish production, enhance income & fulfill the nutritional demand of the household of the hilly people. 2. To develop hilly creeks/wetlands for aquaculture by making dam. 3. To develop nursery for fish fry rearing. 4.To provide training on aquaculture through different technology packages &	1. Creek development. 2. Nursery development. 3. Establishment of Khagrachari mini hatchery. 4. Spawns and fry production. 5. Training for fish farmers. 6. Repairing & renovation of existing mini hatchery.	99.95%

SL. No.	Name of the project and Implementation Period	Total PP Cost (Fig. in lakh)	Project Area	Objectives	Major Activities	Achiev--ement (%)
				extension service to the local fish farmers.		
24.	Establishment of Beel Nursery and Fingerling Stocking in Inland Open Waters (Feb/2014-June/2016)	11809.79	Suitable beel and open waters in 60 districts of the country	1.Increase fish production from the capture fisheries through establishment of beel nursery 2. Develop fish stock in the open water bodies through stocking fingerlings 3. Improve socio-economic condition of the open water dependent poor fishers 4. restore aquatic bio diversity through stocking endangered fish species 5. Create awareness among the open water dependent people foe its sustainable management.	1. Stocking fingerlings 2.Training of fishers and fish farmers 3. Radio/TV advertisement 4. Workshop/Seminer 5. Establishment of beel nursery 6. Group mobilization	100%
25.	Wetland Biodiversity Rehabilitation Project (July/2009-June/2015)	7802.00	9 upazilas in Pabna district	1. To improve the natural resource management system (NRMS) in the command area 2. To increase the income of wetland dependent families as well as fish production 3. To increase the populations and numbers of species present for key wetland dependent wildlife 4. To improve the biodiversity of the wetland	1. Excavation/ re-excavation of floodplain basin 2. Establishment of sanctuary & restoration of habitat. 3. Community mobilization and training 4. Stocking of fingerlings and endangered species 5. Support for alternate income generating activities (AIGs).	100%
26.	Strengthening of Fisheries and Aquaculture Food Safety & Quality Management System in Bangladesh (BEST project) (July/2010-Dec/2015)	10255.81	All over Bangladesh	1. 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.	1. Laboratory Accreditation fee & Assessors Training. 2. Water/soil testing kit box (for QCW, Upazila office & Demo Farmers). 3. Network installation. 4. Construction of FIQC laboratory building. 5. Creation of ice preservation facilities at depots (private owner).	100%