

## Fisheries Sub Sector

### Preparation of the 8<sup>th</sup> Five Year Plan (8 FYP) (2021-2025)

#### 1. Review of past development policies, strategies, programmes/projects of the sector/sub-sector

##### 1.1 Context

Bangladesh is one of the world's leading fish producing country with a total production of 42.77 lac MT, where aquaculture production contributes more than 56 percent of the total production. Fisheries sector contributes 3.50% to the national GDP and 25.71% to the total agricultural GDP of the country (BER, 2019). Last 10 years average growth performance of this sector is 5.26 percent. More than 11% of populations are directly or indirectly engaged in various activities under fisheries sector for their livelihood. Bangladesh achieved self-sufficiency in fish production with a per capita fish consumption of 62.58 g/day against set target of 60 g/day (BBS 2016).

According to FAO report *The State of World Fisheries and Aquaculture 2018*, Bangladesh ranked 3<sup>rd</sup> in inland open water capture production and 5<sup>th</sup> in world aquaculture production. Currently Bangladesh ranks 4<sup>th</sup> in tilapia production in the world and 3<sup>rd</sup> in Asia. National fish hilsa as a single species has been making the highest contribution (around 12 percent) to the country's total fish production. **Geographical Indication Registration Certificate (GI)** has been achieved for our national fish hilsa.

In the recent year fish production was satisfactory. If this growth of fish production continues, the fish production in the country is expected to be 45.52 lac MT by 2020-21. Department of Fisheries received prestigious **Bangabandhu National Agriculture Award-1423**, the highest state recognition in agriculture sector for its outstanding performance during the recent past years. These achievements have been possible through implementation of government fisheries policies and regulations.

##### 1.2 Brief implementation review of past development policies (last five years), strategies, programmes/projects of the sector/sub-sector.

The most relevant GOB policies regarding fisheries sub sector was the **National Fisheries Policy (NFP) 1998**, which aims to:

- a. Enhance fisheries production

- b. Alleviate (or at least reduce) poverty through creating self-employment and improved socio- economic conditions of the fishers and fish farmers
- c. Fulfill the demand of animal protein
- d. Achieve economic growth through earning foreign currency by exporting fish/shrimp and its by-products
- e. Maintain ecological balance and conserve biodiversity.

On the basis of NFP 1998, **National Fisheries Strategy 2006** was formulated with a number of building-block strategies and action plans. This strategy constitutes area specific 8 different sub-strategies which include-

- a. Aquaculture sub-strategy
- b. Aquaculture Extension sub-strategy
- c. Inland Capture Fisheries sub-strategy
- d. Marine Fisheries sub-strategy
- e. Shrimp sub-strategy
- f. Monitoring and Evaluation sub-strategy
- g. Human Resource Development sub-strategy
- h. Quality Control sub-strategy

Department of Fisheries has taken different policies and action plan to achieve the targets of Sustainable Development Goals (SDGs), Vision 2021 as well as perspective plan to achieve four strategic objectives, which includes:

- a. **Social development:** To enhance the health and well-being of the people through the production of nutritious food and the development of productive and secure livelihoods.
- b. **Economic development:** To stimulate more economic activities in rural communities, create more rural employment opportunities, increase incomes of rural households, and save or earn foreign exchange through import substitution or more export earnings.
- c. **Ecological health:** To promote the conservation of aquatic biodiversity, enhancement of genetic resources, conservation of natural resources, and ecological resilience.
- d. **Strong Institutions:** To establish an enabling environment and develop the capability to effectively manage the sector, provide the support services needed for sustainable and responsible development and help facilitate an equitable and fair allocation of resources and distribution of benefits.

### **1.3 Overall achievement of fisheries sector**

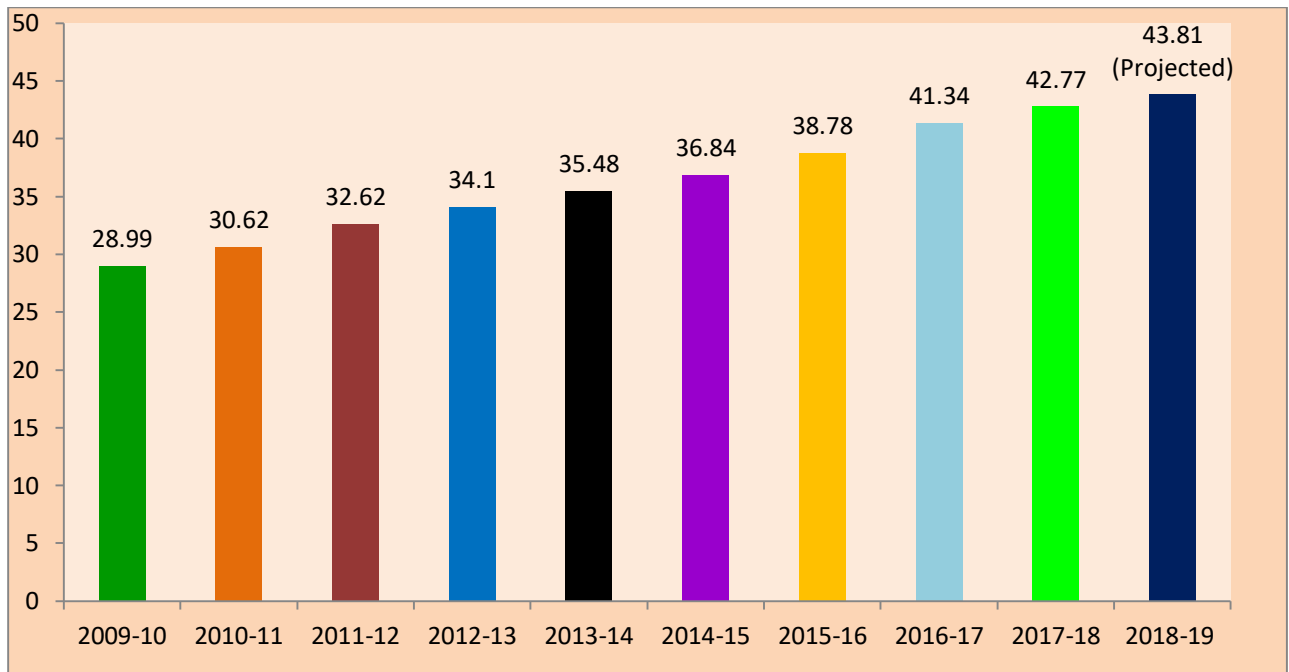
Over the last 15 years, since formulation of the National Fisheries Policy 1998, Bangladesh has progressed a lot in terms of increased production of fish and shrimp,

mainly by aquaculture while inland capture fisheries and marine fisheries experienced not satisfactory. Inland aquaculture of indigenous and exotic carp species, tilapia, pangas and Thai/Vietnam koi expanded massively. Besides, new interest grew in farming of indigenous species like koi, singh, magur, pabda, gulsha, mola etc. because they are getting scarce on open water areas but have high market demand and better contribution to household level nutrition supply. Coastal aquaculture, both shrimp/prawn and finfish farming is expanding complying good aquaculture practices (GAP). Now-a-days eco-friendly integrated farming is also getting more emphasis.

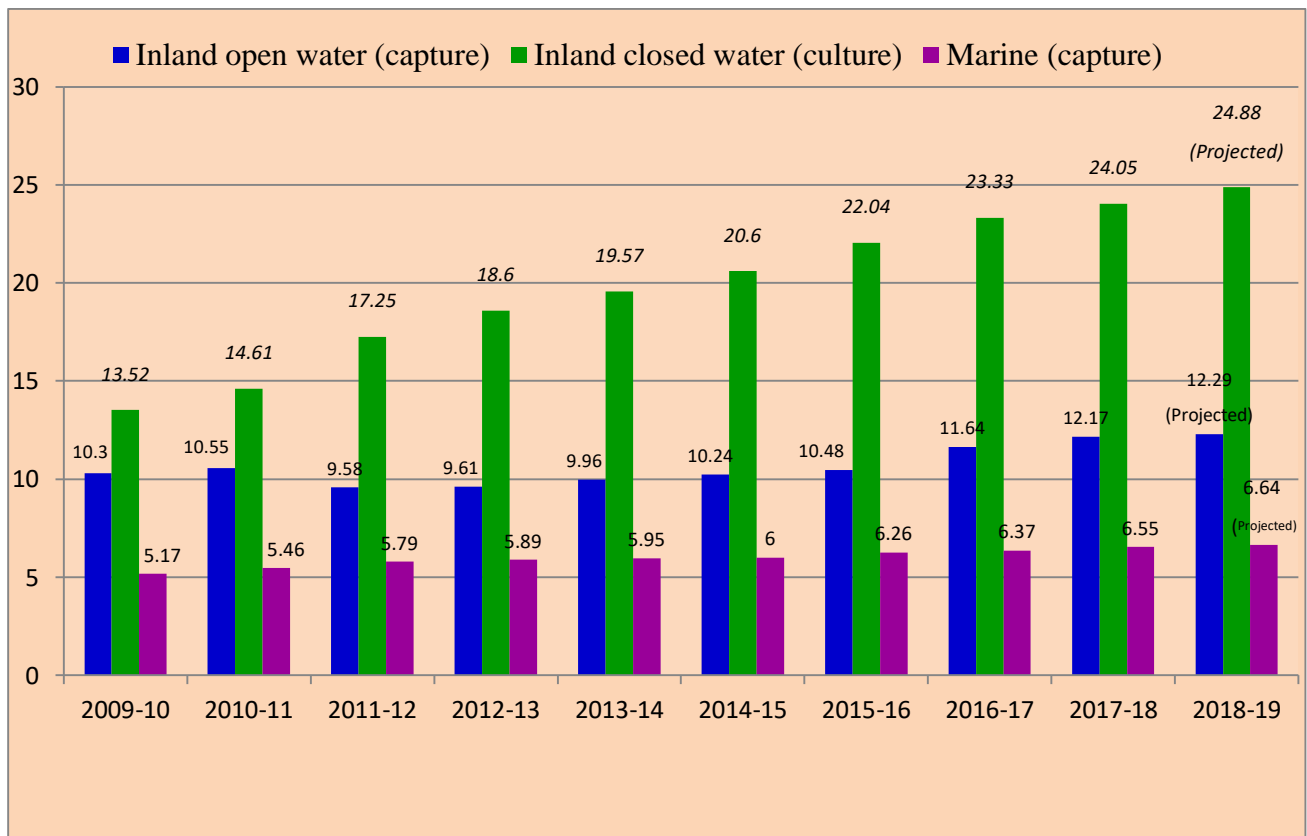
Another development in the recent years is the expansion of small-scale floodplain aquaculture. During the recent past decades, hatchery and nursery developed very rapidly which helped commercializing aquaculture. But the seed quality of both finfish and shrimp/prawn is now a major threat for aquaculture expansion. Fish seed deteriorated mainly because of inbreeding and scarcity of quality brood stock, while shrimp seed quality deteriorated due to scarcity of virus-free mother shrimp. Open water capture fishery has been shrinking as availability of fish on open waters viz. rivers, canals, haor, beel, etc. declined rapidly. In many areas, fishing has become unrewarding as catch per unit effort is extremely low. But poor fishers still try to catch whatever they can and thus destroying the natural resource.

### **1.3.1 Fish production scenario**

Increment of fisheries production for last decade was satisfactory and upscaling. The overall growth performance from inland aquaculture shows a moderate increased trend due to need-based extension services at farmer's level and implementation of development projects. In the year 2017-18 total fish production was 42.77 lac metric ton. Recently Bangladesh has become self-sufficient in fish production. Increased trends in fish production from different resources over last 10 years (2009-10 to 2018-19) is shown in the Fig 1 and fig 2.



**Fig 1. Increased trends in fish production over last 10 years (in lac metric ton)**



**Fig 2. Increased trends in sector-wise fish production over last 10 years (in lac metric ton)**

### **1.3.2 Fingerling stocking programme and Beel nursery activities**

Ministry of Fisheries and Livestock through the Department of Fisheries has initiated regular programme from revenue and development budget to release fingerlings of major carp in open water bodies, floodplains and closed water bodies throughout the country. DoF has continued the programme 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. As a result natural fish species in the waterbodies have become increased.

In the last five years, a total of 3560 MT of fish fry have been released in the open water and 3967 of bills nursery have been established under the development and revenue budget. In the meantime, a total of 266 MT of fry have been released and 367 bills nursery have been established in the financial year 2018-19 . As a result, fish production have been increase and many extinct species have recurred. Moreover 2050 MT of additional fish is being produced annually in the open water of the country and the supply of animal protein have increased at the local level along with increasing the income of the fishermen and beneficiaries dependent on the open waterbodies.

### **1.3.3 Establishment of fish sanctuaries**

Establishment of aquatic sanctuary is one of the effective tools for conserving fish stock, protecting biodiversity and increasing fish production. At present, total of 432 fish sanctuaries are operating by the local beneficiaries established by DoF in different selective waterbodies. Among those 426 sanctuary were established in Inland water containing area of 848.73 hector (including 547.61 ha. Halda river sanctuary) and sixHilsa sanctuary containing total length of 432 km. There were found abundance of endangered species like chital, foli, kalibaosh, air, tengra, meni, rani, swarputi, pabda, kajoli, gojar, tarabaim etc. for the establishment of fish sanctuary. As a result, fish production have increased up to 145 percent in all the areas of the sanctuary.

### **1.3.4 Protection and conservation programme for hilsa**

Hilsa (ilish) is the national fish of Bangladesh. About 12 percent of the country's total fish production comes from hilsa. Hilsa's contribution to the GDP of the country is more than one percent. To achieve the increased target of hilsa production, the government is being implementing a unique coordinated management programme to protect jatka and brood hilsa. A comprehensive programme has also been executed for the protection of the renewable natural resources ensuring the participation of all stakeholders including local public representatives, DoF officials, local administration, Coast Guard, Bangladesh Navy, fishers and mass people residing the hilsa rich river system. Jatka or hilsa fishers were provided with food-grains to live with and inputs to start alternative income generating activities. Regarding this to ensure the target Hilsa production, Government has adopted following policies for the protection and conservation of Hilsa fishes:

- ✚ During the ban period (November to June) the Jatka fishers receive an annual allowance so that their livelihood do not hampered.
- ✚ Provides incentives and distributes trade materials to the enlisted Jatka fishers as Alternative Income Generation (AIG) activities.
- ✚ Apart from increasing public awareness to stop jatka fishing “The Jatka Protection Act” has been incremented from November to June.
- ✚ For the protection of mother Hilsa in peak spawning season (total 22 days) different public awareness programme and enforcement of law has adoped to stop capture, transportation and marketing of Hilsa.
- ✚ Celebrating “The Jatka conservation week” to create social movement every year.
- ✚ To destroy Illegal fishing net “Special Combing Operation” has been operating every year.

Under the social safety net programme, at the rate of 40 kg per family, 39 thousand 788 metric tons rice grains were distributed among 2 lac 48 thousand 674 fishermen families of 85 upazilas under 17 districts during the Jatka ban period of 2018-19. Prior to the time of taking power of honorable Prime Minister, only 6 thousand 906 metric tons rice grains was distributed from 2004-05 to 2007-08 year to the jatka fisher. However, in the last 11 years of this government from 2008-09 to 2018-19, this assistance has been increased to 3 lac 14 thousand 333 metric tons. Beside these at the rate of 20 kg per family 7 thousand 914 metric tons rice grains were distributed among 3 lac 95 thousand 709 fishermen families of 127 upazilas under 29 districts during conservation of Brood Hilsa in peak spawning period of 22 days. Hilsa has produced 5 lac 17 thousand metric tons in the last 2017-18 year whereas in the year 2008-09, the total production of Hilsa was 2 lac 99 thousand metric tons.

### **1.3.5 Management of marine fisheries resources**

By the virtue of solemnity and sincere leadership of Honorable Prime Minister Sheikh Hasina Bangladesh established her legitimate right in 1,18,813 sq km area of the Bay of Bengal resolving dispute over maritime boundary with Myanmar and India during 2012 and 2014 respectively settled by International Tribunal on the Law of the Sea (ITLOS) and International Court of Arbitrations. This verdict ensures the sovereign right to explore, exploit and manage living and non-living resources in the EEZ of Nation. This verdict also open the opportunity for Bangladesh to harness the potential from the sea to promote and strength her blue economy for wellbeing of the nation.

Ministry of Fisheries and Livestock has already taken different pragmatic initiatives like short term, midterm and long term “Action plan” to ensure conservation sustainable development and harness the potentials of the marine resources. On the basis of the

formulated Plan of Action, the following initiatives have been taken by Department of Fisheries under the direction of Ministry of Fisheries and livestock

- ✚ The Research and Survey vessel “RV Mean Sandhani” have already conducted 24 survey crews in the Bay of Bengal. Through these 457 species of fish & crustacean have been identified till now. All the data collected by the survey vessel have preserved for further biological analysis. From these survey 373 species of fin fish, 24 species of shrimps 21 species of crabs; 12 species of shark and ray; 3 species of lobster; 1 species of mantis and 14 species of mollusks have been recorded.
- ✚ With the assistance of Food and Agriculture Organization (FAO) of the United Nations and Institute of Marine Research Under the programme of Ecosystem based Approach to Fisheries (EAF\_ Nansen), an Acoustic survey has been conducted in the Bay of Bengal with the Research Vessel R.V. Dr. Fridtjof Nansen during 2- 17 August 2018 to collect data on stock of fish and shrimp.
- ✚ A Project “Technical Support for Stock Assessment of Marine Fisheries Resources in Bangladesh” has been implemented by FAO to conduct a result based survey in the Bay of Bengal.
- ✚ 133 Vessel Tracking Monitoring System (VTMS) has been installed in industrial trawlers by Department of Fisheries through the assistance of Bangladesh Marine Fisheries Capacity Building Project (phase-II) to ensure monitoring, controlling and Surveillance (MCS). Database of 67,669 mechanized and non-mechanized boats have also completed under this project.
- ✚ With financial assistance of the World Bank, “Sustainable Coastal & Marine Fisheries Project in Bangladesh” has been implementing for the development of coastal and marine fisheries. The project will be continued till 30 June, 2030 with the estimated cost of 186,886.55 lac taka.
- ✚ One Marine Surveillance Check Post is working in Chattogram. Another 16 Marine Surveillance Check post will be constructed under the “Sustainable Coastal & Marine Fisheries Project in Bangladesh” during the project period.
- ✚ To harness the potential of blue economy, initiatives have been taken to exploit Tuna and Tuna like fish species from the area beyond National Jurisdiction (ABJN). The Ministry of Fisheries and Livestock has issued permission against 10 long liners fishing and 7 purse seiners for deep sea fishing in the Bay of Bengal.
- ✚ Since 2015 the Government has imposed a 65 days ban period from 20 May to 23 July every year to ensure the breeding and protection of all fish species in the Exclusive Economic Zone. During this ban period fishing of any kind of Fish and crustacean by all type of mechanized vessel in the Bay of Bengal is prohibited. Hilsa fishing is being prohibited in the 4 major breeding grounds comprising of area about 7000 sq km during the peak breeding season of Hilsa. Besides this by the

amendments of Fish Conservation Rules-1985, six (6) area have declared as Hilsa Sanctuary in order to conservation and protection of Hilsa fisheries.

- ✚ In the meantime, Bangladesh has achieved the membership of the Indian Ocean Tuna Commission (IOTC).
- ✚ A GoB funded pilot Project on “Tuna Fishing and other Pelagic Fishing at Deep Sea” in under the process to explore the blue economy potentials.
- ✚ Food and Agriculture Organization of the United Nations (FAO) is going to implement a regional Technical Cooperation Project on “Support to countries to address Illegal Unreported and Unregulated Fishing (IUU)” with joint collaboration of Bangladesh, Cambodia, Myanmar, Thailand and Vietnam .
- ✚ As the bottom trawlers destroy the breeding and nursery ground so the provision of new license for bottom trawler is being stopped as well as bottom trawler is converting into mid water trawler. In this regard till now 67 bottom trawler has been converted into mid water trawler. To reduce the fishing pressure and ensure sustainable management of fisheries resources ban has been imposed on fishing with set bag net (BehundiJal) and others destructive gears at coastal areas of Bangladesh.
- ✚ In order to develop skill manpower on marine Fisheries exploitation, management and survey 1140 personnel have been trained up in home and 106 in aboard since 2014. The total trained up personnel are 1256.
- ✚ Declaration of Marine Protected Area (MPA): Under the SDG goal 14.5 Ministry of Fisheries and Livestock has been declared 3188 sq. km Marine Protected Area in the Nijhumdweep which cover 4.73% of the marine territorial waters. Establishing this MPA would be a major step towards achieving Bangladesh’s national goal and international obligation to protect 10% of its marine territorial waters which cover 3188 sq.km.

### **1.3.6 Distribution of Fishermen ID card**

In order to identify the actual fishermen and provide registration and identity card, a development project implemented by the Department of Fisheries has completed the registration and database of 16 lac 20 thousand fishermen and delivery of identity cards between 14 lac 20 thousand fishermen, till June 2017. Besides, financial aid was provided to the family of the fishermen who died due to natural disasters (storms, cyclones, tidal bores) and pirate attacks, tigers, crocodiles and bites of snakes. During the tenure of the project from 2012-13 to 2016-17, a total of 2 crore 90 lac taka were provided to 587 fishermen. Code of revenue tax has already been created to keep the activities of the project running.



### **1.3.7 Shrimp production activities**

Shrimp is one of the most important exportable merchandise in Bangladesh. With the increasing demand in the international market the number of shrimp farm in coastal area is expanding. In the 2001-02 financial years 6400 hectares area were used for shrimp farming. But in the year 2017-18 the shrimp farming area increased 258 thousand hectore. As a result the shrimp production increased approximately 0.98 Lack MT (2001-02) to 2.54 Lack MT (2017-18). Motivational programme and training has been conducted to increase the awareness about products quality and safety and to comply with HACCAP and international obligations.

Besides this traceability in aquaculture and processed products are being implemented and taskforce activities related to develop HACCAP system in every stage from Hatchery to consumers. To increase shrimp production using advanced culture management technology in 587 plots at Chokoria of Cox's Bazar. Efforts have been taken to expand of shrimp and Prawn culture through contact farmers. Bangladesh Aquaculture Association (BAA) is formed to develop Eco-friendly Shrimp Culture. Besides this Good Aquaculture practice (GAP) activities is going on involving private sectors. Already shrimp zoning activity is running through survey of coastal area by a National Committee. Farmers are advised to maintain water depth minimum 1 meter in their ghers, stocking virus free post larvae (PL), before stocking PL nursing at least 14 days for profitable shrimp culture. In the shrimp sector to implement traceability about 2.07 lac shrimp farms were registered.

In the year 2014 Bangladesh imported and introduced Specific Pathogen Free (SPF) broods first time from Hawaii of America. Government approved MKA Hatchery, Cox's Bazar and Desh Bangla hatchery in Khulna were producing SPF PL from 2014. In the year 2015 about 3.1 crore SPF PL were produced. But in the year of 2018 about 17.14 crore disease free PL produce which are supplied among the farmers of Bagerhat, Khulna, Satkhira and Cox's Bazar districts. To increase galda and Bagda shrimp culture 46 golda shrimp Hatchery and 49 Prawn Hatchery are established in both govt. and private sector. In 2017-18 financial years 1417.25 crore shrimp PL were produced both govt. and private Hatcheries. Bangladesh earned foreign currencies equivalent to about 3088.85 crore taka (365.54 Million USD) during 2018-19 exporting by 33,362.52 MT frozen shrimp.

### **1.3.8 Export of Fisheries Products and Supply of Healthy and Safe Fish**

Fish and Fisheries product is one of the major export products of Bangladesh. In order to ensure healthy and safe food in the international market, fish quality control programmes are being organized in three international standard labs in Dhaka, Chattogram and Khulna. These 3 laboratories operated by Department of Fisheries (DoF) have been accredited by Bangladesh Accreditation Board (BAB) and achieved International Standard. Hazard Analysis & Critical Control Point (HACCP) system has been ensured at every level of production of fish & fishery products. As the part of implementing the

traceability system in the shrimp sector, the registration of nearly 2 lac 7 thousand shrimp farms and 9 thousand 651 commercial fisheries farms has already been completed.

Bangladesh achieves, noteworthy advancement in exporting fish and fishery products through training of farmers on Good Aquaculture Practice (GAP), implementation of National Residue Control Plan (NRCP) and rules & regulation, modernization of Fish quality control laboratories, etc. In the Fiscal Year 2018-19 Bangladesh earned 4250.31 crore taka by exporting 73171.32 metric tons fish and fishery products.

**Table-1. Year wise export of fish and fisheries products with foreign earning**

<b>Financial year</b>	<b>Amount (MT)</b>	<b>Export Income (Crore BDT)</b>
2009-2010	77643.29	3408.51
2010-2011	96469.23	4603.67
2011-2012	92479.18	4703.95
2012-2013	84904.5	3412.61
2013-2014	77328.86	4898.22
2014-2015	83524.37	4662.6
2015-2016	75337.93	4282.82
2016-2017	68305.68	4287.64
2017-2018	68935.45	4309.94
2018-2019	73171.32	4250.31

### **1.3.8 Fisheries Policy/Acts/Rules**

In order to accelerate the development activities of the fisheries sector, the government has already formulated a number of policies, laws, regulations. Among them Fish Hatchery Act 2010 and Fish Hatchery Rules, 2010; Fish and animal Feed Act, 2010; Government water management policy, 2009; National shrimp policy, 2014; Fisheries Quarantine Act 2017 are mentionable.

A final draft of National Marine Fisheries Policy 2018 has been submitted to the ministry on October 2019. Apart from this, the legislative activities of the Fisheries Inspection and Quality control Act 2018 are underway. In addition, the policy of providing financial assistance to the families of the dead fishermen or permanently disabled fishermen, 2019 has been approved by the Government.

### **1.3.9 ICT in Fisheries**

Dynamic website has been formulated by the Department of Fisheries for the purpose of building digital Bangladesh by 2021 ([www.fisheries.gov.bd](http://www.fisheries.gov.bd)). In addition DoF has launched four mobile apps for culture and disease management in fish and shrimp.

With the above mentioned increased productivity in aquaculture, the sub sector's contribution to economic growth, employment, poverty reduction and protein supply has been positive although still remaining far below potentials. The private sector, including aquaculture farmers, hatchery and nursery operators playing very important role in this arena.

Public sector also trying to ensure quality seed and feed at affordable price; maintaining brood stock, conservation of resources, product quality assurance, need-based extension service, Result and demonstration etc. for sustaining sectoral growth performance.

## **2. Lessons learned from past development interventions and key constraints**

### **2.1 Inland capture fisheries**

Considering the enormous potentials of the inland capture fisheries, GoB has taken up programmes to supplement fish stock in natural water bodies by release of fish fingerlings of various indigenous species and selected exotic species. GoB has also taken up programmes to enhance natural stock by establishing beel nurseries, maintaining sanctuaries, habitat restoration by re-excavation of canals, constructing fish passes reopening the important migratory routes, etc. Maintaining sanctuaries combining banned seasons, gear restrictions and protected areas is hindered by inability of the government to provide alternative livelihood support to fishes particularly during banned seasons. During the last decades, visible positive impacts due to Social Safety Net programme is evident in hilsa fishery management. So, enhancing Social Safety Net support to vulnerable fisher-folk will be helpful for sustaining capture fishery.

In spite of its potential, this segment is not flourishing (as evident from fish species generally available in the market) mainly because of overfishing, use of destructive gears, silting up of water bodies, closure of natural fish passes, non-fishers' control of the jalmohal by mal-practices in lease and by encroachment; and pollution of water bodies by agro-chemicals, industrial wastes and urban sewers etc. The result is sharp decline of inland capture fisheries which was a main source of livelihoods of the poor fishers and a source of free protein supply for many rural households. Particularly, fish availability in the rivers, estuaries, beel, haor, baor, Kaptai lake and Sundarbans remained static or a very discouraging growth trend.

### **2.2 Inland aquaculture**

Among various segments of the sub sector, the inland aquaculture experienced fastest growth mainly through the introduction of new technologies, species and intensification and improvement of farming particularly in pond aquaculture, all over the country. This has been accompanied by some new challenges, such as the following:

- Poor brood stock management,
- Inadequacy of the supply of fish, shrimp/prawn, crab/cuchia (mud eel) spawn and fries of desired quality and from reliable source at reasonable price
- Low availability of reliable and quality fish feed/aqua-medicine at reasonable cost
- Spread of infectious diseases of both fish and shrimp
- Lack of institutional capacity to assist with the needed extension service, ensure supply of quality inputs and quality of the produce and supply chain development
- Water quality management
- Scale up the fish production by farm mechanization

- Supply chain development
- Introduction of insurance in aquaculture
- Incentive to promote aquaculture
- Impacts of climate change on aquaculture.

The main support needed and provided for sustainable development of inland aquaculture is nation wide extension service by DoF presently down to Upazila level. Inadequacy of field level manpower is the main constraint in this regard. Another constraint is scarcity of quality fish fry and fingerling. Private hatcheries have developed all over the country and they produce more than enough fish fry. But, due to lack of proper supervision and monitoring from the GoB side, the quality cannot be ensured. The same applies to quality of shrimp fry and feed quality for both fish and shrimp farms.

The Fish Seed Multiplication Farms (FSMF) down to district and some of the important Upazilas, in the past produced and supplied fish seed and fish fry to nurseries and farmers. Increasingly, the private hatcheries have taken over this role, now producing about 99% of fish fries. Now the FSMFs should take different role of training the private hatchery and nursery operators as well as fish farmers, motivate them to improve quality, and maintain brood stock rather than production and distribution of fish fry. An industry lead input quality assurance through public private partnership would be more efficient and is the need of the day. Towards this direction, the GoB has developed infrastructural facilities in 33 government farms and is raising brood stock by collecting fries from the natural stocks.

Regarding extension support, the DoF has appointed community based extension delivery called Local Extension Agent for Fisheries (LEAF) under the the World Bank funded nation wide National Agricultural Technology Project and GoB funded Expansion of Aquaculture Technology Services up to Union Level.

Besides pond aquaculture and converting crop land to fish ponds, seasonal flood plain aquaculture expanded particularly in Daudkandi area of Cumilla and from there it spread to many other areas. This has contributed to rapid increase of fish production and will expand many folds from currently, 7 million MT annually. This has however some risk of reducing aquatic biodiversity already under threat. To mitigate this, floodplain aquaculture should combine maintaining sanctuaries in the important beel and haor areas and natural flow of water should not only be hampered but also further enhanced. This must include maintaining sanctuaries in parts of the beel covered by flood plain aquaculture, rearing fries of various indigenous species in nurseries and supplementing natural stock.

### **2.3 Coastal aquaculture**

Coastal aquaculture, mainly brackish water shrimp and finfish aquaculture, expanded massively during last two to three decades, but it experienced several threats. One is food

safety issues along the entire value chain and the other is inadequacy in social compliance, both affecting export. Another important constraint is the scarcity of virus-free shrimp fry (PL). Private entrepreneurs operating most of the shrimp hatcheries and all processing plants are highly organized and influence both market mechanism and policy support, while the farmers are least organized and scattered. To better manage the sector, community level organizations of farmers federated to higher level deserve support in order to ensure better extension service delivery, traceability, enhanced productivity and quality.

While our processors and hatcheries have created excess capacity, shrimp production could not reach the desired and potential level. One reason is that our shrimp farms, particularly the brackish water bagda farms, use very traditional and extensive method, hence yield remains very low. Although intensive shrimp farming is not suitable in our technological and socio-economic condition, there is potential to move one step up, the improved traditional or semi intensive method (rational stocking density, provided limited amount of supplementary feed, natural water exchange, only green manure but no hazardous chemicals used and not using sophisticated equipment); which can quadruple yield and at the same time maintain ecological condition. In this context, GoB has taken necessary initiatives harness its potentials through introducing good aquaculture practices (GAP).

Shrimp farming in Bangladesh basically evolved from traditional bheri farming. Later, in the late seventies to eighties, supplementary stocking of shrimp fries was added to this system which gradually turned into shrimp gher. Initially, 100% shrimp fries were caught from the natural sources- the estuarine rivers, Sundarbans and sea shore. Indiscriminate killing of fish fries of various species while shrimp fry collection contributed to resource depletion and therefore the government imposed ban on shrimp fry collection from the natural waterbodies. Enforcement of the ban was however constrained due to inability to provide alternative livelihood support to the fry collectors.

Massive growth of hatcheries supplying both golda and particularly bagda PL at a very low price, to a great extent displaced the fry collectors. Still, several hundred thousand fry collectors depend on it as a main source of livelihoods. In this context, it is important to provide community level alternative livelihoods support, social safety nets programme, mass awareness and employment programmes are needed to be incorporated to the gradual elimination of fry collection. The eco-sensitive areas should be protected first followed by sanctuaries in the relatively accessible areas where enforcement can be better administered. It is also well understood to take necessary initiatives to flourish the enormous fisheries resource potentials of the Sundarbans, one of the world richest breeding and nursery grounds of potential aquatic animal.

#### **2.4 Marine fisheries resource management**

The marine fisheries resources of Bangladesh imparts crucial role in the economy of Bangladesh contributing about 18% of the total fisheries production of 3.41 million MT

during 2012-13. The entire industry of shrimp aquaculture depends upon on marine sector for steady supply of berried penaeid shrimp to ensure supply of post larvae. The Bay of Bengal is one of the world's 64 Large Marine Ecosystems that generates wealth for the wellbeing of the surrounded eight maritime nations. A number of confronting issues like overcapacity of fishing effort, infringement of rules and regulations, entry of illegal fishing vessels and pouching in the EEZ, long gap exploratory survey on stocks assessment, intense and overfishing deploying destructive and illegal gears, shift in climate change paradigm, IUU-fishing, destructive fishing, pollution, catching of juveniles, degradation of highly productive coastal and near-shore marine habitats like coral reefs, mangroves, estuaries, spawning and nursing grounds seriously impacts our marine fisheries productivity disrupting ecosystem function. If overfishing continues at an alarming rate then a time will come when important fishery will reach a point of no return jeopardizing the whole industry.

The recent verdict given by the International Tribunal for the Law of the Sea (ITLOS) and International Arbitration Tribunal over dispute of maritime boundary with Myanmar and India legitimately settles the EEZ of Bangladesh up to 200 nautical miles from the baseline comprising 118,813 sq. km of maritime waters. In order to establish a comprehensive plan for sustainable conservation, management and exploitation of resources from the sovereign marine waters the present status of fisheries resources and its future potential for the national economy needs to be framed out. For judicial and sustainability of the maritime resources short, mid and long term efforts could be undertaken.

The strategies and actions shall include but not limited to stock assessment in conjunction to explore new fishing grounds, stock assessment shall be undertaken in conjunction to explore new fishing grounds by Research Vessel, formulation of National Marine Fisheries Policy, rapid assessment of fisheries stocks by species in recently resolved South-West waters of EEZ (19,467sq.km), immediate moratorium on entry of new trawlers/fishing boats to the existing fishing fleet, strict control on pouching of resources and illegal entry of foreign trawlers, initiate collaborative research programmes to address biodiversity, climate change, strengthening of marine unit of DoF, equip VTMS/AIS to all industrial fishing vessels, explore economics of tuna and large pelagics beyond 200 m depth contour of EEZ and ABJN, enhance capacity of relevant agencies to implement MCS, introduce air surveillance system to control pouching by illegal entry of foreign fishing vessels.

## **2.5 Fish marketing and quality assurance**

**2.5.1 Marketing:** Bangladesh Fisheries Development Corporation (BFDC) is involved in the processing, transportation and marketing of fish and fisheries product. Their role is now decreasing, with the private sector expanding fast and has substantially taken over the role. The challenge will be for the public sector to provide regulatory oversight and quality assurance and play a more facilitative role providing appropriate extension and technology

dissemination services, so that private sector continues to innovate and invest in the supply chain

**2.5.2 Quality Assurance:** Concerns remain in quality assurance. It will be highly essential that the laboratory capacity of DOF and other GoB agencies are enhanced, not only by procuring equipment, but also with trained manpower and provision of operating expenses. Besides GoB laboratories, the processing plants should be compelled to establish and manage own QC labs and an international accreditation system should be established networked to both GoB, industry-operated and NGO-promoted QC labs. This strategy has been proven successful in China and is likely to yield good result in Bangladesh. These should include adequacy of policies, appropriateness of institutional framework and human resource needs and capabilities.

In view of above, the Department of Fisheries has emphasized to reverse the trend of deteriorating open water capture fisheries and underlined a number of needed actions including the following:

- Consider environmental carrying capacity
- Improve brood stock management and quality seed production
- Conserve genetic diversity
- Rationalize fish species and technology for aquaculture
- Improve food safety issues and bio-safety measures
- Maintain minimum water depth and water flows
- Establish and rehabilitation of fish sanctuary
- Operate beel nursery and stocking of endangered species
- Develop and implement fisheries management regulations
- Promote integrated coastal resource management
- Maintain ecosystem
- Control pollution

### **3. Development vision, goals, objectives and targets for 8FYP of the sub-sector**

#### **3.1 Constitutional obligation**

Article 15 of the constitution of Bangladesh says that- it shall be a fundamental responsibility of the State to securing citizens- with

- (a) Provision of the basic necessities of life, including food .....; and
- (b) Right to work .... or right to guaranteed employment at a reasonable wage .....

In view of (a) noted above, it is a fundamental responsibility of the state to ensure availability of required quality and quantity of fish for the citizen and the fisheries sector contributes to (b) through creation of employment opportunities.

### **3.2 Vision, mission and objectives of the sector**

#### **Vision**

Meet the demand of animal protein, poverty alleviation and promote foreign earnings.

#### **Mission**

To support sustainable growth in fish and shrimp production with other aquatic resources for domestic consumption and exports, and management of open-water fisheries resources through community participation leading to equitable distribution of the benefits for optimal economic and social growth in Bangladesh.

#### **Strategic objectives**

The key objectives for the sector were established as:

- a. Enhancement of the fisheries resources and production;
- b. Poverty alleviation through creating self-employment and improvement of socio-economic conditions of the fishers;
- c. Meet the demand for animal protein;
- d. Achieve economic growth and earn foreign currency by exporting fish and fisheries products;
- e. Maintain ecological balance, conserve biodiversity and improve public health.

#### **Target**

- a. Increased 21% aquaculture and 17% fish production by 2025
- b. Increased 20% hilsa and 9% marine fisheries production by 2025
- c. Raise per capita protein intake to 64 g/day from domestically produced fish and fisheries product by 2025
- d. Raise export to 0.85 MT. by 2025 from frozen shrimp, fish and value added fish products
- e. Ensure quality seed and feed at growers level
- f. Reappear at least 85% of endangered fish species in sanctuary area by 2025 from baseline
- g. Creation of more (20%) employment opportunity for unemployed youths
- h. Fish farmers/ fishers income raise by 30% by 2020.
- i. Participation of women in aquaculture production, fisheries CBOs/Co-management and fish/ shrimp processing industries increase to 30%
- j. Identifying potential areas for proclamation of marine protected areas by 2030
- k. Good Aquaculture Practice (GAP) and Good Manufacturing Practice (GMP) at all stages of fish/shrimp supply chain to comply international market.
- l. Food safety measures for domestic markets



#### **4. Current and future challenges for the sub-sector**

Current and future challenges of the sub sector include the following:

- a. The inland open water capture fishery is threatened by gradual resource depletion, which if cannot be reversed by effective conservation measures may further deteriorate.
- b. The inland aquaculture has been flourishing. But this is now facing challenge of deteriorating brood stock, scarcity of good quality spawn, fries, feed and other inputs.
- c. Flood plain aquaculture is expanding now. But it has a risk of increasing water-logging, blocking migratory routes of indigenous fish species, disturbing biodiversity and creating social conflicts.
- d. Shrimp and coastal aquaculture has been growing over the last three decades but productivity remains low. To a great extent, the bagda farming still follows extensive method which is unlikely to increase yield. Golda farming is facing scarcity of feed while bagda farming is facing scarcity of good quality and virus-free shrimp fry called post larvae (PL).
- e. Coastal aquaculture (shrimp, finfish, crab, etc.) is not flourishing as per its potential due to poor investment.
- f. Export of frozen food and fish, in some cases, particularly of shrimp and prawn is affected by international concerns for quality and social compliances while the GOB Quality Control measures remained inadequate to meet the growing needs.
- g. Source of brood stock for shrimp hatcheries is shrinking because of disturbing the life cycle, shrimp juveniles and adults are almost fully caught and rarely any stock going back to the marine environment.
- h. Indiscriminate killing of fish and other aquatic lives during shrimp PL collection even in the eco-sensitive areas like Sundarbans are increasingly threatening the ecosystem.
- i. Reduced water flow and increased silt deposit on the river channels are causing salinity intrusion in estuarine rivers and obstructing the migratory routes. As a result breeding, spawning, nursery and natural grow-out areas of major species like shrimp, Hilsa and carps as well as of hundreds of other species are adversely affected.
- j. Key challenges in line with marine sector are- entry of illegal fishing vessels and pouching, lack of exploratory survey on stocks, licensing of mechanized fishing boats and control of effort at sustainable level, intense fishing deploying destructive and illegal gears, IUU fishing, address adaptation to climate change paradigm, etc.
- k. Enforcement of regulatory measures is quite inadequate due to poor institutional capacity as well as serious infringement of rules and regulations.

- l. Research in fisheries in the past was largely limited to identifying and releasing breeds for aquaculture. Only recently emphasis has been directed to protection of indigenous species and improved farming practices.
- m. Attention given to knowing the field condition and update on a regular basis remains low mainly because of manpower constraint.
- n. Extension service provided to the aquaculture farmers remains inadequate because of scarcity of field level officials at the Upazila level.
- o. The fishers lack secure lease and access to public water bodies. These are often leased to elite or elite-dominated somities. This constrains community level participatory and sustainable management of fisheries resources causing further depletion of resources.
- p. Alternative livelihoods support to fishers during banned fishing seasons and sanctuary maintenance remained low and therefore ineffective. Without such support and Social Safety Net assistance for the poor fishers sanctuary management and resource conservation may remain ineffective.

## **5. Sectoral /sub-sectoral development strategies and policies for 8FYP**

### **5.1 Inland capture fisheries**

The availability of fish in the rivers, canals, beel, haor, baor and floodplains is decreasing because of over-fishing and contaminating the environment with pollutants like agro-chemicals, industrial wastes and urban sewers. The massive infrastructure of roads and embankments, urbanization and housing projects has blocked many water bodies. This has adversely affected breeding and spawning of many indigenous fish species. Therefore, in many areas, previously rich in fisheries, fish became scanty. Particularly the rivers like Buriganga, Turag, Balu and part of Sitalokhya have become biologically dead.

Therefore main strategies in this regard will be:

- Control of pollution of the rivers in which the main actor will be the Ministry of Environment in collaboration with other concerned agencies.
- Prevent further deterioration of water-logging, blockade of water-flows and shrinkage of water-bodies by infrastructures like embankment, roads, urban housing projects and industrialization. Such projects must follow the environmental rules and regulations (including EIA, SIA, etc.) and incorporate adequate mitigation measures in consultation with the MoFL.
- In the case of such problems created by existing infrastructure, projects and programmes will be implemented to construct and maintain fish-passes, fish-friendly regulators, re-excavate canals and rivers restoring and conserving productivity as much as possible.

- Establish and maintain fish and wetland sanctuaries which will comprise complete ban on fishing in certain eco-sensitive areas like Sundarbans, parts of Kaptai Lake, and several sections of the river Halda, selected beels in haor areas and certain sections of the Bay of Bengal etc. Similarly, along the major rivers having parallel channels, selected ones will be preserved.
- The conservation strategy will specially include seasonal ban, gear restriction, identifying genuine fishers by providing ID Cards, species restriction, and alike.
- Besides strict implementation of the Fish Act, 1950; GOB will assist the fisher folk accessing Social Safetynets programme like VGD and VGF and alternative livelihoods support.
- The fishers will be organized in sustainable community based organizations and such organizations will be given management responsibility of khas jolmohal on long term basis so that they conserve rather than just exploit resources. Present short term leasing system, often benefiting the influential elite and the leaseholder not taking any effort to conserve, will gradually be replaced by the long term lease to organizations of genuine fisher who will be trained in sustainable management and provided other support.
- Community based fisheries management of floodplain aquaculture will be further promoted to expand all over the country but with added emphasis to combine maintaining sanctuaries in the important beel and haor areas; keeping enough opportunities to free flow of water between rivers and beels; rearing fries of various indigenous species in nurseries and supplementing natural stock.

## **5.2 Inland aquaculture**

Inland aquaculture production is constrained mainly by three problems- seed, feed and extension service. Therefore, the strategies in this segment shall include the following:

- Maintain purity of brood stock of indigenous carp and other indigenous fish species conserving the natural breeding, spawning, nursery and grow-out areas to complete the whole lifecycle and natural reproduction process.
- Purebred brood fish of commercially important indigenous fish species will be maintained in the selected Fish Seed Multiplication Farms of the DOF, research stations of the BFRI, other GoB establishments and important private and NGO hatcheries with facilitation and monitoring support by the DOF and BFRI.
- Brood fish from the above source will be distributed to the GOB hatcheries and selected private and NGO hatcheries to produce good quality fish seed and fries of commercially important and endangered species.
- Operation of hatcheries, nurseries and supply of spawn and fry, in which private sector is the key player, will be constantly monitored by GO-NGO collaboration and public private partnership. Compliant hatcheries will be awarded quality certification. Advertising in the printed and electronic media must contain such reference of quality

certification. Gradually, marketing of fish fry and spawn without holding quality certificate will be banned, initially in the selected districts and then all over the country.

- Capacity development of hatchery personnel for Proper brood stock management as well as renovation of existing hatcheries with modern equipments. Prohibition of indiscriminate inbreeding in hatcheries for getting desired quality fish seed.
- Ensure quality feed at reasonable price
- Production, import and marketing of fish and shrimp feed, feed ingredients, minerals and vitamin premix, and other inputs, in which private sector is the key player, will be constantly monitored by GO-NGO. Compliant feed mills and other enterprises will be awarded quality certification. Advertising in the printed and electronic media must contain such reference of quality certification. Gradually, marketing of fish fry and spawn without holding quality certificate will be banned, initially in the selected districts and then all over the country.
- Aquaculture and conservation will be restructured to reinforce the strengths of each other, sustainable and community based flood plain aquaculture will be combined with maintaining sanctuaries and restocking of indigenous species
- Pen culture and Cage culture will be further promoted but guided and monitored for species selection, location, target group identification, and feed and input use etc. Special care will be taken to restrict pen and cage culture of exotic carnivorous species like piranha. Species promoted for cage and pen culture will include all indigenous carp species, mono-sex tilapia, shorputi, shrimp, prawn, and selected exotic carps etc.
- Vertical expansion of aquaculture. In this regard bioflock technology, Recycling Aquaculture System should be expanded in the field level.

### **5.3 Coastal aquaculture**

Main constraints to the expansion of sustainable shrimp farming and coastal aquaculture are: (a) inadequacy of proper water management infrastructure, (b) scarcity of good quality/ virus-free shrimp and prawn post larvae, (c) inadequate technology support, (d) social conflicts on competing water and land uses and the benefits and cost sharing, and (e) failure to maintain quality between harvest to processing and tracing the sources of contamination.

Therefore main strategies in this regard will be-

- Government will define shrimp farming zones in the coastal region based on natural advantages of shrimp and prawn farming and rehabilitate water management infrastructure in each zone to optimize production and environmental sustainability. Different methods of aquaculture and farming system will be promoted in different zones depending on suitability- such as shrimp with salt limited to south eastern Cox's Bazar district, shrimp with paddy in Khulna and

Satkhira districts, mono-crop improved extensive shrimp farming in limited areas of both southeast and southwest regions, improved traditional golda farming in areas like Bagerhat, northern Khulna and banning extensive shrimp farming in low-saline and non-saline areas.

- Introduction of SPF shrimp by private sector, which is duly facilitated by the government.
- Production of virus-free shrimp PL requires availability of virus free mother shrimp which is becoming scarce. Conservation of shrimp and prawn parent stock and their harvest by stress-free trawling, transportation and rearing in the hatcheries will be facilitated. To ensure supply of virus-free shrimp PL, all hatcheries will ensure PCR test of both mother shrimp and shrimp PL and DoF will provide certification of PL quality of both golda and bagda hatcheries.
- Import of both golda and bagda PL will be controlled, including illegal border trading.
- Extension support and research extension linkage will be strengthened regarding crab and cuchia farming in coastal area.
- Community originations of shrimp farmers and other primary stakeholders will be supported with technology, input, financing and market linkage by contract growing system run by the processing plants and monitored by the DoF and partner NGOs.
- Traceability of supply source will be ensured by contract growing and marketing system which will also ensure supply of virus-free PL, good quality and contamination-free feed and other inputs at reasonable price.
- Trail of e-Traceability and subsequently screening throughout the supply chain.
- Premium price will be provided for quality output.

#### **5.4. Marine fisheries resource management**

Constraint to the sustainable exploitation of marine fishery resources include (a) lack of knowledge of the species wise current stock, location of the breeding ground and the grow out areas, and the potential maximum sustainable yields by species, season and location; (b) alleged over-fishing; and (c) encroachment by trawlers of neighboring countries.

Strategies to overcome these will comprise:

- A comprehensive survey of marine fisheries resources followed by regular updating of data and monitoring
- Rapid assessment of fisheries stocks by species in recently resolved South-West waters of EEZ (19,467sq.km)

- Maximum sustainable yield by species, location and season should be Determined/ re-estimate
- Formulation of National Marine Fisheries Policy
- Moratorium on entry of new trawlers/fishing boats to the existing fishing fleet
- Registration of all mechanized fishing boats and providing fishing license
- Restrict and control poaching of resources and illegal entry of foreign trawlers
- Promote mariculture especially in sea weed, seabass, mugil mollusks.
- Identify conservation needs and methods that can be effectively administered and regularly monitored
- Cooperate with the Coast Guard and Navy on the control of encroachment and breach of regulation, also by local vessels.
- Institutional capacity building of the concerned agencies.
- Strengthening of Monitoring, Control and Surveillance System (MCS) in the Bay of Bengal.
- Joint research programmes to address confronting issues- biodiversity, climate change impacts.
- Strict surveillance should be continued for fishing complying all relevant Acts, Rules and Regulations
- Impose seasonal ban to exploit fish and shrimp to protect spawn and juveniles.
- Equipping VTMS/AIS to all industrial fishing vessels
- NPOA to eliminate IUU fishing in maritime boundary in response/compliance to FAO-CCRF
- Marine Fisheries Surveillance Check Posts at strategic locations in coastal/estuarine rivers
- Collaborative effort for distant water fishing (beyond 200m of EEZ and ABNJ) to explore and exploit tuna and large pelagic fishes.

## 5.5 Projected Production and Demand under 8FYP

#	Source	Baseline (2020-21)			Projection (2024-25)		
		Water area ('000 ha)	Total production ('000 MT)	Production (kg/ha)	Water area ('000 ha)	Total production ('000 MT)	Production (kg/ha)
1	2	3	4	5	6	7	8
1	River and estuaries	854.00	331.00	0.388	854.00	395.70	0.46
2	Sundarbans	177.00	19.20	0.108	177.70	20.00	0.11
3	Beel	114.16	105.40	0.923	114.16	110.4	0.97
4	Kaptai Lake	69.00	10.60	0.154	69.00	11.00	0.16
5	Floodplain/Haor	2617.00	818.40	0.313	2617.00	825.06	0.32
	<b>Total open water</b>	<b>3831.86</b>	<b>1284.60</b>		<b>3831.86</b>	<b>1362.16</b>	
6	Pond/Dighi	371.00	2032.20	5.478	371.00	2333.30	6.29
7	Baor	5.00	8.50	1.700	5.00	8.84	1.77
8	Seasonal cultured water-body	131.00	230.90	1.763	131.00	252.26	1.93
9	Shrimp/prawn Farm	275.00	271.40	0.987	275.00	295.60	1.07
10	Crab	98.54	12.80	0.130	98.54	14.00	0.14
11	Pen culture	5.29	10.60	2.004	5.29	11.08	2.09
12	Cage culture	0.013	4.30	330.769	0.013	4.60	353.85
	<b>Total aquaculture</b>	<b>885.84</b>	<b>2570.70</b>		<b>885.84</b>	<b>2919.68</b>	
13	Marine Artisanal		569.4			583.00	
14	Marine Industrial (Trawler)	0.00	127.7			130.16	
	<b>Total marine</b>		<b>697.10</b>			<b>713.16</b>	
	<b>Grand total</b>		<b>4552.40</b>			<b>4995.00</b>	
	<b>Total Demand</b>		<b>4552.40*</b>			<b>4995.00*</b>	

\* Including other uses fish (export + fish meal + wastage)

\*\* Considering 60 gram per capita consumption and BBS projected population growth

**6. List of policies/programmes/projects for achieving the targets of the 8FYP including indicative costs (*Attachment I*).**

**7. Institutional mechanism for monitoring progress of 8FYP implementation and list of indicators (covering input, output and impact indicators (*Attachment II*)).**

**8. Mechanism for improving implementation capacity of the public sector policies/programmes/ projects.**

**8.1 Human Resources Development (HRD):** Manpower shortage is a major constraint, specially at field level like division, district and Upazila. Vacancies are quite high and filling up of vacancies are constrained by procedural delays. Field staff positions are very limited constraining need-based service delivery. HRD programme for upgrading current knowledge and ideas of the existing staffs is also important. Therefore, emphasis will be given to enhanced efficiency and engaging local/community extension agents in DoF. Training Need Assessments (TNA) are inadequate and in some cases improper. Database of past training is not properly maintained which constrains objective decision making. Adequate and proper steps would enhance the skills of the staffs.

While training is considered is to increase skills, it does not guarantee improved attitude or motivation. These are more dependent on work environment, remuneration, likelihood of career building and satisfaction of providing a good service. Although basic condition like remuneration cannot be changed by individual agency or ministry, several other determinants of attitudinal change can be influence internally by organizations and these should be addressed - like nomination for higher training and proper posting etc. In addition career planning should be include in Human Resources Development

**8.2 Institutional capacity development:** Institutional capacity enhancement projects often comprise new building, equipment and other facilities such as laboratory, computer, MIS. Some of them are of high priority like laboratory, computer hardware and software etc. But more important than such facilities are their operation and maintenance which is often overlooked. Very often than not, facilities are created about the end of the project life, leaving little or no time to start operation and attain sustainability. Operating funds are rarely allocated or are delayed. Hence, emphasis in the new plan will be O & M and sustainability rather than creation of new facilities, unless it is very essential.

**8.3 Transport:** Mobility is often reported a main constraint to render required field services. But, vehicles procured are often not properly maintained and cannot be efficiently utilized for lack of adequate fuel and maintenance cost. Vehicle procurement can to a great extent be minimized and money saved on this account if more operating fund can be provided. Providing transport on subsidized loan/ hire purchase basis and adequate allowance for fuel, driver and maintenance can reduce cost of the government and at the same time the entitled officer can benefit more.

**8.4 Operating expenses:** Many GOB farms and establishments do not function effectively in the absence of operating fund. A revolving fund advance to the concerned establishments which can be replenished by settlement of expenses can be very helpful.

**8.5 Horizontal linkage between Institutions/ Agencies:** Very often it is alleged that various agencies involved in research, extension, training, education, input supply and marketing do not coordinate each other and directives for cooperation even in the field level must be approved centrally. This problem can be and will be more efficiently addressed by enhancing field level and horizontal cooperation between agencies. The GO-NGO cooperation, public-private partnership, capacity building of CBOs, partnership with LGBs and networking will be enhanced to reduce burden of the GoB agencies, developing sense of ownership among the primary stakeholders and widen the coverage and quality of services.



## Eight Five Year Plan (FY2021-2025)

### Goals, Targets, Activities and Indicative Costs

**Ministry/Division :** Ministry of Fisheries and Livestock

**Executing Agency:** Department of Fisheries

Sl. No.	Name of the Activities (Policy/ Programme / Project/Action)	Indicative Cost (Lac BDT at FY 2019-20 prices)	Linked to	
			SDGs Target	BDP 2100 Measures
1	2	3	4	5
2	National Agricultural Technology Programme Phase II Project (NATP-2)	38828.00	1.1; 1.2; 1.3; 2.1; 2.3	Comply with Goal 1; 6; Cover six geographical hotspot
3	Greater Jessore District Fisheries Development Project	3916.44	1.1; 1.2; 1.3; 2.1; 2.3	Comply with Goal 1; 6
4	Brood Bank Establishment Project (3 <sup>rd</sup> phase)	6225.58	1.1; 1.2; 1.3; 2.1	Comply with Goal 4 and 6
5	Enhancement of Fish Production Through Restoration of Water-bodies Project	29215.09	1.1; 1.2; 1.3; 1.5; 2.1; 2.3	Comply with Goal 4 and 6
6	Greater Comilla Fisheries Development Project	21131.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3	Comply with Goal 1 and 6 geographically the project also comply with haor and flash flood areas hotspot.
7	Expansion of Aquaculture Technology Services up to Union Level Project (Phase-II)	27058.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3	Comply with Goal 1 and 6 Cover six geographical hotspot
8	Enhanced Coastal Fisheries (ECOFISH) Project	3022.00		Comply with Goal 1; 5; 6. In geographically the project also comply with coastal zone hotspot.
9	Fisheries Development Project in Rangpur Division	6997.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3	Comply with Goal 1; 6 Geographically the project also comply with the hotspot-Barind and Drought Prone Areas
10	Fisheries Resources Development Project in Rajshahi Division	4747.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3	Comply with Goal 1; 6 Geographically the project also comply with the

Sl. No.	Name of the Activities (Policy/ Programme / Project/Action)	Indicative Cost (Lac BDT at FY 2019-20 prices)	Linked to	
			SDGs Target	BDP 2100 Measures
1	2	3	4	5
				hotspot-Barind and Drought Prone Areas
11	Sustainable Coastal and Marine Fisheries Project In Bangladesh	186887.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3; 2.5; 14.2; 14.4; 14.5; 14.7; 14.c	Comply with Goal 1; 5; 6. In geographically the project also comply with coastal zone hotspot.
12	Hilsa Fisheries Development and Management Project	21483.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3; 2.5	Comply with Goal 3; 4; 5. Geographically the project also comply with the hotspot-Coastal zone; River system and estuaries
13	Development and Management of the Natural Breeding Ground of Halda River	7787.00	1.1; 1.2; 1.3; 1.5; 2.1; 2.3; 2.5	Comply with Goal 3;4; 6. Geographically the project also comply with the hotspot-River system and estuaries
14	Chattogram Hill Tracts Fisheries Resources Development Project	15056.00	1.1; 1.2; 1.3; 2.1; 2.3;	Comply with Goal 1; 3;4; 6. Geographically the project also comply with the hotspot-Chattogram Hill Tract
15	Conservation and Development of Indigenous Fish and Snail Project	31260.94	1.1; 1.2; 1.3; 2.1; 2.2; 2.5	Comply with Goal 1;3; 6. Geographically the project also comply with the hotspot-River system and estuaries
16	Promoting Safety Compliance of Fish and Fishery Products in Bangladesh)	21735.00	1.1; 1.2; 1.3; 2.1; 2.3; 8.2; 12.3	-
17	Development of Fisheries Resources in Inland Open Waterbodies Project	148571.50	1.1; 1.2; 1.3; 2.1; 2.2; 2.5	Comply with Goal 1;3; 6. Geographically Cover six geographical hotspot
18	Aquaculture and Fisheries Management Project in Haor Area (Phase-II)	34090.00	1.1; 1.2; 1.3; 2.1; 2.2; 2.5	Comply with Goal 1;2; 4;5; 6. Geographically the project also comply with the hotspot-Haor and flash

Sl. No.	Name of the Activities (Policy/ Programme / Project/Action)	Indicative Cost (Lac BDT at FY 2019-20 prices)	Linked to	
			SDGs Target	BDP 2100 Measures
1	2	3	4	5
				flood areas
19	Infrastructure Development for increasing Safe Fish Production	158095.00	<b>1.1; 1.2; 1.3; 2.1; 2.2; 2.5</b>	Comply with Goal 1; 6; Cover six geographical hotspot
20	(Pilot Project on Tuna and Similar Pelagic Fishing in Deep Sea)	14007.00	<b>1.1; 1.2; 1.3; 2.1; 2.2; 2.5; 14.2; 14.4; 14.5; 14.7; 14.c</b>	Comply with Goal 5; 6. In geographically the project also comply with coastal zone hotspot.
21	(Management of Shrimp and Finfish Aquaculture in the Coastal Area)	57893.00	<b>1.1; 1.2; 1.3; 2.1; 2.2; 2.5</b>	Comply with Goal 5; 6. In geographically the project also comply with coastal zone; River system and estuaries hotspot.
22	Community-based Climate Resilient Fisheries and Aquaculture Development in Bangladesh	12500.00	<b>1.1; 1.2; 1.3; 2.1; 2.2; 2.5</b>	Comply with Goal 1; 3; 4; 6. Geographically the project also comply with coastal zone; River system and estuaries hotspot.
23	Climate Smart Agricultural Water Management Project (DoF Part)	10125.00	<b>1.1; 1.2; 1.3; 2.1; 2.2; 2.5; 14.2; 14.7</b>	Comply with Goal 2; 5; 6. Cover six geographical hotspot
24	(Fisheries Development Project in Mymensingh Division)	17000.00	<b>1.1; 1.2; 1.3; 2.1; 2.2; 2.5</b>	Comply with Goal 2; 5; 6. Geographically the project also comply with Haor and flash flood areas.

## Eight Five Year Plan (2021-2025)

### 8FYP Implementation Progress Monitoring Indicators

**Ministry/Division :** Ministry of Fisheries and Livestock

**Executing Agency:** Department of Fisheries

Sl. No.	8FYP target to attain	Input indicators (resources/policy changes etc.)	Output indicators	Impact indicators
1	2	3	4	5
i	Attain self-sufficiency in aquaculture and fisheries production and generate surplus for export	<ol style="list-style-type: none"> <li>1. Number of farms and area under aquaculture, such as pond, shrimp gher, floodplain, baor, pen culture, cage culture etc.</li> <li>2. Number of farmers trained</li> <li>3. CBOs assisted, number of benefited members</li> <li>4. Marketing of quality fish fry, shrimp PL, feed and other inputs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Production and yield (kg/ha) by production system, species, location and trend.</li> <li>2. Export quantity by major species and export value, trend over the years</li> <li>3. Per capita fish consumption</li> </ol>	<ol style="list-style-type: none"> <li>1. Increased income of fish farmers/ fishers</li> <li>2. Poverty reduced among fish farmers/ fishers</li> <li>3. Increased employment in aquaculture &amp; fisheries</li> </ol>
ii	Improve conservation of aquatic biodiversity in inland open water-bodies	<ol style="list-style-type: none"> <li>1. Number and area of <i>Jolmohal</i> under long term lease and sustainable co-management approach</li> <li>2. Number of CBOs and fisher households assisted and direct assistance per fisher</li> <li>3. Species wise quantity of fingerling stock</li> <li>4. Number and area under sanctuary and habitat restoration.</li> <li>5. Number of fish passes and fish friendly regulators established and functional</li> </ol>	<ol style="list-style-type: none"> <li>1. Species wise fish caught by season, area and trend over the years.</li> <li>2. Catch per unit effort by season, area and trend</li> <li>3. Income of fisher households improved</li> </ol>	<ol style="list-style-type: none"> <li>1. Species diversity improved</li> <li>2. Endangered species reappear</li> <li>3. Poverty reduced among in the fishing communities</li> <li>4. Fisheries CBOs attain sustainability</li> </ol>
iii	Enhance coastal and marine fisheries production	<ol style="list-style-type: none"> <li>1. Area under sustainable management approach</li> <li>2. Number of CBOs/fisher-folk households assisted and direct assistance per fisher</li> <li>3. Stock assessment of resources</li> </ol>	<ol style="list-style-type: none"> <li>1. Species wise fish caught by season, area and trend over the years.</li> <li>2. Catch per unit effort by season, area and</li> </ol>	<ol style="list-style-type: none"> <li>1. Species diversity improved</li> <li>2. Poverty reduced among in the fishing communities</li> </ol>

Sl. No.	8FYP target to attain	Input indicators (resources/policy changes etc.)	Output indicators	Impact indicators
1	2	3	4	5
		4. Area coverage under mariculture.	trend 3. Income of fisher households improved	4. Fisheries CBOs attain sustainability
iv	More income and equitable distribution of benefits	1. Number of fisher and fish farmer households assisted particularly female-headed and other distressed households. 2. Number of CBOs assisted, number of women members in CBOs 3. Number of CBO members trained, provided inputs and benefits	1. Increased income-% increase 2. Number of self and employment created by sex and IGA category	1. Poverty reduced in the target communities 2. Target water bodies have increased biodiversity
v	Improve food safety	1. Restrict the use of hazardous chemicals in fish and shrimp feed, hatcheries, nurseries, farms, processing and preservation. 2. Number of drives to enforce such restriction, offences identified, punished, penalty amounts realized and number imprisoned. 3. Number of CBOs, farms, fisher groups, depots, ice plants, processing plants, hatcheries, nurseries, feed mills, traders etc in the supply chain linked to Quality Control and Traceability System.	1. Number of rejection in the foreign ports reduced 2. Number of exporter and processors complying international standards increased and their share in export increased. 3. Percentage of sample tested for quality in the local markets increase over the years	1. Country Image improved for exporting quality product 2. Local consumers' have better access to safe fish and fish products
vi	Strengthen implementation capacity of the concerned GoB agencies, NGOs, LGBs and CBOs	1. Number of vacancies in the professional level and in the districts, Upazila, research stations, training institutes etc. below 10 percent. 2. Laboratory, offices, projects etc. have required equipment, logistics, operating fund and authority to execute	1. Average time (month) needed to prepare/ revise TPP/DPP, briefing reports, proposal for creating new posts, revenue programme; monthly and	1. Decision making smoother, faster and transparent 2. Services delivered more efficiently. 3. Extension service delivery

<b>Sl. No.</b>	<b>8FYP target to attain</b>	<b>Input indicators (resources/policy changes etc.)</b>	<b>Output indicators</b>	<b>Impact indicators</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
		<p>project/programme without fear.</p> <p>3. Number of officers and support staff are trained, have needed skills, understanding of rules and procedures, delegation of authority etc. so that are comfortable to work without hesitation and fear.</p> <p>4. Number of GOB agency officer/ staff reoriented to added role in facilitation, GO-NGO collaboration, public-private partnership, CBO and NGO capacity building and networking; rather than direct implementation or control of anything and everything.</p>	<p>quarterly progress report etc.</p> <p>2. Average time (days) needed to process and approve proposals in the ministry and agency level.</p> <p>3. Average time needed to prepare procurement plan and procure goods, works, services (months).</p> <p>3. Physical and financial progress of projects and programmes improved, 90-100% by year end.</p>	<p>(number of fish farmers and fishers served) increase at least 10% annually.</p>