Ministry of Fisheries and Livestock, Bangladesh
Department of Fisheries (DoF)

Sustainable Coastal and Marine Fisheries Project (SCMFP)

Terms of Reference
for
Marine Fisheries Management Expert (National)

Individual Consultant (Package No.: SD 31)

1. Background

Bangladesh's physical and cultural characteristics and the livelihoods of nearly 165 million people are defined by the Ganges-Brahmaputra-Meghna delta—the world's largest, most densely populated delta, and one of the richest in aquatic resources. Bangladesh has progressed in reducing extreme poverty and boosting shared prosperity, with poverty incidence (based on international US$ 1.90 per capita/day poverty line and measured using the Purchasing Power Parity exchange rate) declining from 44.2 percent in 1991 to 13.8 percent in 2016. GDP has grown above the average for developing countries, averaging 6.5 percent per year since 2010, and reaching 7.24 percent in 2017,[1] driven mainly by the manufacturing and service sectors.

Recognizing the country's land resource limits and in the face of increasing soil salinity and other climate-related threats, the Government of Bangladesh (GoB) regards coastal and marine fisheries as a new source of growth. Fisheries are vital for Bangladesh's food supply and food security and are central to the livelihoods of millions of fishers' and stakeholders along the production chain. The sector comprises three subsectors: aquaculture (56 percent of total production), inland capture fisheries (28 percent), and marine and coastal capture fisheries (16 percent), with total sector value estimated at US$ 3.68 billion. As in most other developing countries, Bangladesh's coastal and marine fisheries economic model continues to be driven by targeting ever-increasing volumes, despite the current lack of stock data to back up the expansion.

With these background and challenges, and also taken into consideration of the positive results from DoF efforts to improve management of the iconic Hilsa fishery, the Ministry of Fisheries and Livestock proposes Sustainable Coastal and Marine Fisheries Project to implement through ten-twelve-year fisheries program with the support of the World Bank in two phases. These programs offer a significant opportunity to contribute to targets of Vision:2021, 7th Five Plan (2016-2020), Country Partnership Framework's (CPFs) Focus Areas: growth and competitiveness, social inclusion and climate and environment management. SCMFP has provision for building fishing community institutions, facilitate business development and promote market linkages for alternative livelihoods to support livelihoods transformation of 54,000 fishers' households including 25% of women in 450 coastal villages spread over in 45 Upazilas of 13 districts.

For the First Phase of the project, the Government of Bangladesh has received an IDA Credit of US$240 million equivalent for a period of 5 years. The Department of Fisheries (DoF) under the Ministry of Fisheries and Livestock (MoFL) is the lead program implementation agency with overall project implementation responsibilities and direct implementing functions for the project activities under Components 1 and 2 (see project component matrix below) estimated at US$188 million. In addition, the Social Development Foundation (SDF), which is specialized in implementing Community Driven Development (CDD) approach, will implement Component 3 as a co-implementing agency with close cooperation and coordination of DoF in order to build community institutions that can help diversify fishers' livelihoods while supporting co-management approaches for improved fisheries resource sustainability.

As per the Project implementation arrangement, a Project Management Unit (PMU) has been established at the DoF, headed by a Project Director, and staffed with DoF officers and technical consultants. The PMU will also establish its presence in the three regions of DoF, namely Barishal, Chattogram and Khulna. The program is the first re-engagement of GoB with the World Bank in the

fisheries sector after two decades, necessitating significant project management, policy and planning, investment design and supervision, capacity building, and monitoring and evaluation supports during the implementation of the current phase of the Project.

Project Objectives and Components

The overall objective of the project is to explore *greater economic opportunity from coastal and marine fisheries resources, while promoting sustainable management of fisheries stocks and environment to reduce poverty and improve livelihoods of the coastal community.*

Specific objectives

a) To strengthen stock surveys and assessment program for shrimp, demersal and pelagic stocks in the EEZ;

b) To build and enhance capacity of DoF and relevant public research agencies to conduct science-based stock conservation and management to promote Blue Economy;

c) To develop mechanisms for effective implementation of Monitoring Control and Surveillance(MCS) for the artisanal and industrial fisheries;

d) To develop infrastructure and create production facilities for coastal belt fisheries (capture and culture);

e) To up-scale cluster farming for shrimp to disseminate best lessons learned from cluster farming approaches;

f) To strengthen community led fisheries management and transform livelihoods in poor fishing communities by access to recovering fish stocks and reducing dependence on fishing;

g) To develop National Marine Fisheries Management Plans for sustainable harvest of fisheries resources.

Project Components

The SCMFP Phase I project components will support GoB in designing, establishing, and effectively operating fisheries management systems for sustainable utilization of coastal and marine fisheries resources. Phase I project has four components as outlined below.

Proposed Project Components	Proposed Sub-components
COMPONENT 1: Enabling Sustainable Fisheries Sector Investments and Growth	▪ Subcomponent 1.1: Stock assessment and development of national fisheries management plans ▪ Subcomponent 1.2: Enabling sustainable fisheries sector investment and growth ▪ Subcomponent 1.3: MCS development for IUU reduction
COMPONENT 2: Improving Infrastructure and Production Practices	▪ Subcomponent 2.1: Infrastructure improvements for coastal belt capture and culture fisheries ▪ Subcomponent 2.2: Value chain and food safety ▪ Subcomponent 2.3: Boosting coastal aquaculture productivity
COMPONENT 3: Community Empowerment and Livelihoods	▪ Subcomponent 3.1 Fishing community institutions and alternative livelihoods development ▪ Subcomponent 3.2 Business development and market linkages for alternative livelihoods.
COMPONENT 4: Project Management and Monitoring	

SCMFP Component 1

Recognize in supporting the GoB commitment to sustainably develop the country's sovereign marine waters settling dispute over maritime boundary with neighboring countries through ITLOS and PCA over an enlarged EEZ of 118,813 sq. km. Fisheries are vital for Bangladesh's food supply and food security and are central to the livelihoods of millions of fishers and stakeholders along the production chain. The sector has emerged as a major growth driver, consistently contributing close to 4 percent of gross domestic product for the last decade. Moreover, fish contributes up to 60 percent of all animal protein consumed in the country, making Bangladesh one of the highest fish consumers in the world.

As in most other developing countries, Bangladesh's coastal and marine fisheries economic model continues to be driven by targeting ever-increasing volumes, despite the current lack of stock data to back up the expansion. In the marine sector, the volumes in catch are increasing as both industrial and semi-industrial artisanal fleets have switched to lower-value small pelagic fish. However, even with catch volumes rebounding, the catch per unit of effort (CPUE) has continued to decline except for the Hilsa fishery, where enforcement of strict seasonal controls helped stabilize the stock while improving economic performance.

The marine fishing sector includes two major fleets. The industrial fleet includes more than 200 vessels, mostly trawlers using bottom/demersal trawls, mid-water trawls, and shrimp trawls. They harvest fish and shrimp resources from deeper waters (mostly within 40-100 m depths). The industrial fleet has continued to grow despite concerns about the increasing numbers and increasing fishing pressure on resources. Attempts are being made to shift fishing effort from bottom or demersal fish trawling into pelagic trawling. Exclusive Economic Zone (EEZ) boundary delimitation settlements have finalized the Bangladesh EEZ with Myanmar (2012) and India (2014). In both cases, Bangladesh attained control over substantial areas with some potential for the industrial sector to expand their areas of operation for exploiting demersal resources. The artisanal fleet consists of about 68,000 small-scale mechanized and non-mechanized fishing boats and beach-based fishing and gleaning; exploiting coastal and marine fisheries resources in waters less than 40 m in depth. The artisanal sector uses predominantly estuarine and marine set bag nets, gill nets of different mesh sizes and seine nets. Most of these thousands of vessels operate in very restricted areas, i.e. shallow waters, near shore.

The GoB has recognized that the multispecies and multi gear fisheries of Bangladesh need appropriate long term management plans in order to ensure the sustainable exploitation of these resources. The GoB also acknowledged that the knowledge of the status and trends in capture fisheries resources needed for long-term management is hampered by limited information of variable quality. Such information is essential for assessing the validity of fisheries policy. Tracking the performance of fisheries management, including socio-economic aspects, is key to sound policy-development, better decision making and responsible fisheries management. Currently, data collected are more focused on catch monitoring rather than on marine stock assessment and identification of fishing areas according to type of fish present, they are not systematized and management actions taken (e.g. fishing ban periods) are not based on up-to-date information. Indeed, the last data on marine stock assessment date back to the 1970s and 1980s. Ideally, a fisheries monitoring system for both artisanal and industrial fishing will need to be instituted, taking into account that the two fleet sectors operate very differently and different methods to obtain data and information from them are necessary. This recognition, and the planned development of new fisheries in the EEZ, led the government to implement Sustainable Coastal and Marine Fisheries Project (SCMFP) with IDA credit for assistance to develop national capacity for assessing their fisheries resources in marine waters for responsibly extending their fishing effort in the EEZ, and establishing effective fisheries management in their jurisdictional waters. The lack of access to finance in marine capture fisheries points a major challenge to improving the

subsector's performance, including in terms of increased postharvest value added in the domestic market. Climate change further increases sector challenges by affecting the abundance, distribution, recruitment, and migration of various fish species.

The project supports to sustainably develop the country's enlarged EEZ through (a) more effective management of coastal fisheries, with responsibilities shared between the DoF and artisanal fishing communities; (b) improved sector transparency, integrity, and accountability; and (c) gender-balanced institutional development as included in component 1 with synergy to component 3 of the project. Component 1 aims to strengthen the enabling environment for infrastructure improvements and technology investments through support to policy and institutional development, research, and measures for strengthening the MCS, improving safety of life at sea (SOLAS), and enabling effective fisheries management. Recruitment of qualified female staff will be prioritized for new technical positions as part of the MCS, vessel monitoring, and data management systems, alongside the provision of capacity building for women's enhanced leadership and decision making in fisheries management.

The project will also support in (i) carrying out stock surveys and assessments for shrimp, demersal, and pelagic stocks; (ii) strengthening the catch monitoring systems for both industrial and artisanal fisheries; and (iii) preparing updating and implementing national fisheries management plans on a participatory manner and following international principles and standards, including the "precautionary principle". Financing will be provided for design, supply, and installation of equipment and recruitment of extension agents for catch data collection and calibration of existing monitoring systems. The project will provide technical assistance for updating and participatory preparation of national FMPs (zonal and/or species based). Plan development and implementation will be carried out based on the 'precautionary principle' in conjunction with stock assessments and in consultation with key stakeholders. The development of FMPs will inform the nation's fisheries policies and regulations based on scientific evidence and will address existing gaps in fleet control, MCS, legal enforcement, co-management, and conflict resolution among stakeholders in the sector. Technical assistance will be provided for preparation of the management plans, capacity training for expanding the DoF's expert base, community outreach, and stakeholder engagement.

The project supports for strengthening the fishery policies, regulatory framework, and institutional capacity following international principles and standards, to reducing investment risks due to regulatory and enforcement gaps; and conducting awareness-raising programs. Activities under this component will be carried out in consultation with different fishers' and boat owners' associations (industrial and artisanal) and relevant government entities, such as the Bangladesh Coast Guard (BCG), Bangladesh Navy (BN), Police, Chittagong Port Authority and Customs, and other stakeholders. Establish enable system in improving (a) vessel registration and fleet capacity management; (b) licensing management system; (c) stock monitoring; (d) MCS, including joint coordination (e.g. information sharing and division of responsibilities) with other government entities; (e) co-management by small-scale fishers' associations; and (f) enforcement and conflict resolution among different fishers (e.g., to address illegal trawler entry into coastal waters). The DoF's capacity for citizen engagement and conflict resolution will be strengthened, including through the establishment of a functional grievances redress mechanism for fishers.

The project supports in (i) expansion and strengthening of fishermen identification and fishing boat registration and (ii) development and deployment of integrated MCS capabilities. It will support DoF for expansion of the current fisher ID card system and improved vessel registration and licensing. It will also support linking a fishing craft database to a geographic information system (GIS) platform to produce visual reports on the size and location of vessels as well gear used. The fisher ID card database will be similarly geo-referenced to show locations of artisanal fishermen.

Project-supported measures will further help improve the coordination and effectiveness of the registration responsibilities currently split between the DoF and MMD.

A Joint Monitoring Center (JMC), managed by the DoF and connecting other relevant marine and coastal authorities exclusively for civilian purposes, will be established to coordinate domestic MCS functions, including patrolling and information sharing, for improved reporting, search and rescue, and enforcement. The project will support the design, purchase, and installation of physical and communications infrastructure; provision of licenses; and technical assistance and services for capacity development and training, as well as development of protocols and guidance manuals for information sharing and division of responsibilities among the DoF and the other partners for JMC functional. Project funds for (b) will be further directed for design, deployment, and training for the integrated MCS coverage aimed at improving safety of life at sea and effective fisheries management. This will allow upgrading and providing 100 percent coverage to the industrial fleet's vessel monitoring system (VMS), including software, hardware, and transponders, and will introduce the automatic identification system (AIS) or compatible units for the artisanal fleet. It will further support integration of the AIS and VMS with the fisher ID and vessel databases, and with the land-based catch monitoring system.

Moreover, attention to environmental sustainability and climate change impacts in the fisheries sector is limited and has not been translated into practical adaptation and livelihood transformation solutions. Yet, climate change can adversely impact the productivity of marine and coastal fisheries, affecting future catch levels and rates of recovery for fisheries, due to shifts in the availability of food, habitat, and appropriate ocean conditions for fish stocks. Given these potential impacts, sector growth models should incorporate climate change variables into management and financing priorities. In parallel, climate adaptation and resilience measures are needed to support the most vulnerable communities in their transition from the highest risk areas and unsustainable fishing practices into alternative, more resilient livelihoods.

Project Beneficiaries

The primary target group of direct project beneficiaries are the fishers' and poor fisheries-dependent households and smallholder aquaculture producers in 16 coastal districts. The project will support the establishment and empowerment of community co-management associations that can make decisions on fisheries management and enable the fisheries-dependent poor to adopt supplementary and alternative livelihoods. The project will also directly benefit GoB agencies that will use the MCS systems financed by it (DoF, Coast Guard, Chittagong Port Authority, Bangladesh Police, and Bangladesh Customs). Dedicated attention is given to supporting women and youth empowerment as a precondition for the interventions' success and sustainability. Increased institutional capacity and sector investments are designed to enable gender sensitive and socially inclusive growth.

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2. Objective of the Assignment

The overall objective of this assignment is to provide expert technical and operational support in the planning, management, co-ordination for successful implementation of the marine capture fisheries-related SCMFP project activities in achieving the project objectives as stipulated in the SCMFP project document. Under the management of the PD, PMU/DOF, the Marine Fisheries Management Expert (MFME) will support and advise the PD,PMU, and DOF with specific responsibility for the overall delivery of marine fisheries-related project activities under the SCMFP Component 1 and 2 as outlined below, making synergy with the SDF-led work under component 3 in achieving the project's goal.

3. Scope of services, and Tasks

General:

- Provide technical and expert support to PMU/DoF in formulating terms of reference and specification of all SCMFP marine fisheries-related procurement activities. Provide technical input and oversee delivery of related SCMFP training and capacity-building activities.
- Coordinate the technical and scientific work of concerned consultants and national counterparts, providing scientific inputs and technical assistance in performing the envisaged marine fisheries-related activities of components 1 and 2, synergized with component 3;

Fisheries Legislation

- Advise PMU/DoF on the content of the revised Fisheries law and Rules to provide for a modern fisheries management framework capable of supporting the fisheries management measures, fisheries management plans, fisheries research and community management of fisheries required for the marine fisheries to become sustainable.

Fisheries Management Plans

- Work closely with DoF, national and international consultants in identification of coastal fishery for development of fisheries management plans and provide technical and expert support in the development of draft comprehensive coastal and fisheries management plan as provided for by the SCMFP including TACs and specifications of fishing gear for the commercial species in the marine fisheries based on precautionary principles in accordance with the fisheries law. Provide for follow on annual fisheries management plans to be increasingly based on the outputs of analysis of fisheries data output from the developing data collection systems.
- Provide technical support in conducting baseline survey and awareness campaigning in finalizing report reflecting environmental, socio-economic and governance situation of fisheries.
- Provide technical and expert support to PMU/DoF with the procurement of Marine Spatial Plan (MSP) consultants. Support capacity building and provide expert assistance in sea-use zoning/MSP, including conservation areas/Marine Protected Areas(MPAs) planning
- Undertake analysis to assess the effects of fisheries on marine ecosystems.

MCS

- Support PMU/DoF in the establishment of the MCS center and Joint Maritime Committee (JMC) lead by DoF and including Coastguard, Navy, Mercantile Marine department, Chittagong

Port Authority, Customs and with representation from all other authorities in the maritime domain.

- Provide technical and expert support PMU/DOF finalizing procurement specifications and completing the procurement VMS systems on Industrial fishing vessels (245) and AIS systems on mechanized fishing fleet (1800) above 40 HP. Prepare detailed implementation action plan (IAP) for vessel registration and AIS deployment for the mechanized fishing fleet. Advise on and support institutional arrangements and staff training for DoF marine department staff in operations of the JMC and fisheries management systems in support of fisheries management plans.

Data Collection and Vessel licensing

- Support PMU/DoF in the design, specification and tender of fisheries data collection and analysis systems for industrial and mechanized fishing fleets, artisanal fish landing centers and community fisheries centers. Assist DoF with standard methodology development, required questionnaires/formats, and institutional arrangements for data collection by observers on board industrial vessels, enumerators at fish landing sites and community centers with training at all levels by contractors through the procurement process.

- Support PMU/DoF review and improve current vessel registration and licensing system and develop the computerized on-line fishing vessel register and licensing application in line with DoF requirements; trains selected staff on operating and maintaining the new fishing vessel register;
- Assist Mercantile Marine Department in their relationship with DoF and the two institutions cooperation in surveying and registration of mechanized fishing craft with data flow to central data bases as defined above.

- Advise DoF and Mercantile Marine on management of contractors establishing data collection hardware and software, installation and operation of data bases and production of management reports.

- Capacity development and training strengthening DOF capacity in monitoring of fisheries catch and other marine resources

Fisheries Science, Research, and Training

- Support DoF in the implementation of the research programs to be financed by SCMFMP, inputs to the DoF research vessels and terms of reference for specific studies to be undertaken by the scientific community procured through the project.
- Provide technical advice on and support the the preparation of adaptive training and extension materials and training delivery for DOF Staff, and marine and coastal fishermen, including in-country and overseas training/capacity-building of GoB officials;
- Support DoF in the implementation of the research programs to be financed by SCMFMP, inputs to the DoF research vessels and terms of reference for specific studies to be undertaken by the scientific community procured through the project.
- Reviews and assesses gaps in current management practices and technologies, identifies and promotes sustainable and efficient best fishing management practices in small-scale capture

fisheries and sets up sites for practical demonstration of improved fisheries management practices;

Community co-management

- Advised and assist PMU/DOF and SDF with community fisheries co-management activities under the project (Components 1, 2 and 3), including policy, legislative, and field implementation aspects, including establishment specific sites with improved fisheries landing infrastructure as well as for practical demonstration of improved fisheries management practices and technologies to small- scale fishers and their cooperatives through wide consultation at community level;
- Advise and assist DoF staffs on stakeholder engagement and grievances redress management.
- Carryout any other relevant tasks assigned by PD/PMU as and when required.

4. Profile of the Expert

(i) Required qualifications:

- Minimum Master Degree in Fisheries Science / Marine Fisheries/ or any other relevant discipline.
- Preference will be given to candidates having PhD degree.
- 15 years working experience in coastal and marine fisheries resources appraisal and fisheries management plan development in tropical waters.
- 10 years' Experience in fisheries governance, policies, regulations, EAFM, best practices in stock management concept, approach and execution of MCS.
- Interpersonal skills, including the ability to manage scientific and support staff in a team environment and to manage relationships critical in achieving targeted outputs;

(ii) Preferred qualifications

- Very good inter-personal skills and demonstrated ability to engage and work with local communities;
- Excellent working knowledge of English & Proficiency in computer application and information technology;
- Experience of implementing GoB/donor/World Bank funded projects will be preferred;
- Computer literacy skills (MS Word, Excel, and other statistical software & PowerPoint).

4. Other contribution in deliverables:

- Draft and prepare required procurement specifications, technical, training, review, and communication materials in consultation with international Fisheries Management Specialist, communication specialist and/or other PMU and DOF staff;

Provide technical and operational input to the project's training and M&E activities

- Prepare required training materials (module, log sheets, formats etc.) for On-board Observer and enumerator (data collector) for catch and effort monitoring;
- Lead a group of trainers from marine wing of DoF to deliver training and organize seminars/workshops/awareness campaign with support from PMU, DoF and project's field

offices.

- Arrange effective communications between international experts and Bangladeshi recipients of specialized training/assistance (on aspects such as ocean science, marine fisheries, marine ecosystem, computer programming, specialized software use, etc.)

5. Selection Method

The Expert will be selected following the Selection of Individual Consultants method as set forth in the World Bank Procurement Regulations for IPF Borrowers, July 2016 revised November 2017.

6. Duration of Assignment

The duration of the contract will be 45 months. However, the duration of the assignment may be increased or reduced according to the availability of the expert, project needs and budget.

7. Data, Personnel, Facilities and Local Services to be provided by the Client

The consultant is responsible to familiarise her/himself with all project document and project implementation arrangements and processes immediately upon commencement of the assignment and work with the Project Director, PMU, DOF, SDF, WB supervision team, and any other relevant partners to generate all necessary information fulfil this assignment. Office space and necessary local, domestic and international travel and other logistical supports will be provided from the project.

8. Institutional Arrangement

The Fisheries Management (FMA) will be based at the PMU, SCMFP in Dhaka and will report directly to the Project Director. The incumbent will work closely with other consultants working at the PMU and departmental officials. The consultant is expected to undertake the activities (scope of services) mentioned in the ToR in order to achieve the stated objectives. This consultancy is expected to involve local and/or international travels. However, travels necessary for the exigencies of services to achieve the SCMFP implementation objectives, may be undertaken but with prior permission of the PD, PMU and in such cases daily subsistence allowance (DSA) as per contract signed and the actual costs for travel will be reimbursed.

The deliverables will be submitted on time by the consultant to the PD, SCMFP Project, DoF, Matshya Bhaban, Dhaka-1000, Bangladesh.