

Terms of Reference for

Feasibility Study for the Sustainable Coastal and Marine Fisheries Project (1) in Bangladesh

1. Background

Bangladesh lies within the Ganges-Brahmaputra-Meghna Delta—the world’s largest, most densely populated delta and one of the richest in aquatic resources. In 2014, Bangladesh crossed the threshold to become a low-middle income country (LMIC), and per-capita income reached US\$ 1,190 in 2015. Bangladesh’s remarkable development achievements notwithstanding, high levels of poverty and population density remain pressing development challenges, particularly in coastal areas and in the context of climate change.

Given the increasing population pressure the Government of Bangladesh (GOB) has recognized that the expansion of coastal and marine fisheries, both capture and culture, could offer an important pathway to sustainable economic development and poverty reduction. The fisheries sector is taking an increasing role in the economic performance of the country. It accounts for nearly a quarter of the agricultural GDP thus emerging as a major growth driver, in the last two decades, as compared to the livestock or the still-dominant crops sectors. In 2016, the fisheries sector reached 3.65 percent of total GDP and is also the second largest foreign exchange earner after garments, contributing more than USD 546.28 million in export earnings, with shrimps and prawns as the main species exported.^{1,2} In addition, two recent UN tribunal awards, including a Blue Economy Cooperation Agreement with India, extended Bangladesh’s Exclusive Economic Zone (EEZ) to 118,813 km² into the Bay of Bengal and the Indian Ocean. As a result, Bangladesh’s maritime area exceeds its land area, offering a new frontier to expand the country’s national aspiration toward deriving greater economic wealth from its maritime areas and in doing so, transitioning to a blue economy.

Bangladesh’s fisheries sector includes three main sub-sectors: aquaculture (55.93% of total production), inland capture fisheries (27.79%), and marine and coastal capture fisheries (16.28%), with the total sector value estimated at US\$ 3.6 billion in 2014-15.³ In 2014 and 2015, the country’s aquaculture sectors ranked 5th and in 2016 country’s inland capture fisheries ranked 4th in the world, respectively. With inland aquaculture accounting for nearly 80 percent of total aquaculture production, Bangladesh (in part as a result of WBG support over two decades to develop this sector) is well established as one of the world’s leading inland fisheries producers overall, delivering over 3 million tons of fish in 2014-15 (two-thirds from inland aquaculture), an increase of 1 million tons (67 percent) over the past decade alone. Meanwhile, the country’s total marine fish production for the same period was around 0.6 million tons (US\$515 million, first sale value), taken mainly from near shore areas (<40m depth) and far less than the 6 million tons harvested by Bangladesh’s neighbors in the Bay of Bengal. Hilsa accounts for nearly 42 percent of their catch and shrimp 8 percent of the overall catch, with other important commercial species including Bombay duck, Jewfish, and sardines. Both small- and large-scale fishing operations are linked to

¹ World Fish. (2016). Review on Current Situations and Future Prospects of the Fisheries Sector in Bangladesh.

² FAO Fishery and Aquaculture Country Profiles. Bangladesh Country Profile Fact Sheets, 2014. At <http://www.fao.org/fishery/facp/BGD/en>.

³ Ibid. 3

Bangladesh's national and international trade in seafood (US\$599.4 million in 2014-15), operated through a complex system of merchants and middlemen that often comes at a cost to the producer.

The fisheries sector also plays an important role in the food supply, food security, and livelihood security of the country's millions of fishers and other stakeholders. Fish provides 60 percent of all animal protein consumed in Bangladesh⁴.

The GOB recognizes the potential for the country to increase the value of its coastal and marine fisheries through more sustainable management and in doing so, improve the lives of poor, coastal inhabitants. Several key sector-wide challenges necessitate government intervention and investments to enable responsible private-sector-driven growth. These include (i) the absence of an effective regulatory framework for managing coastal and marine fisheries; (ii) limitations in the basic public infrastructure necessary to enable private sector investment; and (iii) limitations in both public and private sector capacity for improved fisheries management and optimal productivity.

To overcome these challenges and enable private sector investment, Bangladesh can learn from both regional and global experience and good practices for investing in marine capture fisheries governance reforms. Global experience highlights the need to first establish a core public sector governance framework, including an agreed sector vision, coherent policy, and enabling legal framework, to enable the design, piloting, and implementation of sustainable fisheries management systems supported by adequate institutional capacity building. The latter entails first and foremost building the DOF capacity to implement an effective management and monitoring, control, and surveillance (MCS) system to address the de facto uncontrolled, open access system for the artisanal fleet while improving the sustainability—and performance—of the industrial fleet.

Broader public sector reforms, in particular to support fishers to diversify their livelihoods in conjunction with the introduction of a functioning MCS, are necessary to incentivize sustainable fisheries management without negatively affecting livelihoods in the short term and to provide the foundation for responsible private sector finance and investment in the long term.⁵ In addition, enacting community-based approaches can address challenges faced by artisanal fishers and support those most disadvantaged, including the rural, coastal poor and women. Initiatives for expanding community access and management rights in inland fisheries could be replicated and scaled up in the coastal fisheries to better address user conflicts and IUU fishing and improve their overall governance.

The GoB, supported by the World Bank has launched the preparation of an investment program supporting the fisheries sector (Appendix-I). The proposed program goal is to increase coastal and marine fisheries' contribution to the economy, poverty reduction, and environmental stability. Taking into account the need for a long-term commitment and support to effectively strengthen the country's coastal and marine fishing sector and address rural poverty, a program of series of projects (SOP) has been under development since 2016.

⁴ Department of Fisheries, Ministry of Fisheries and Livestock (DOF, MOFL). National Fish Week 2014. Compendium (in Bengali). 144p.

⁵ Neiland, A., Cunningham, S., Arbuckle, M., Baio, A., Bostock, T., Coulibaly, D., Gitonga, N., Long, R., and S. Sei. (2016). Assessing the potential contribution of fisheries to economic development: The case of post-Ebola Sierra Leone. *Journal of Natural Resources*, 7 (356-376).

2. Proposed Project Development Objective(s)

The proposed Project Development Objective (PDO) of the first project of this program --BSCMF Phase I, is to improve the management of targeted coastal belt capture and culture fisheries.

The BSCMF Phase I project will have four components focusing on: (1) Enabling activities for sustainable fisheries sector investments and growth; (2) Improved infrastructure and production practices; (3) Community empowerment and livelihood transformation; and (4) Project management. It is further expected that BSCMFP Phase II will maintain the same 4-component structure but will significantly shift the focus and resource allocation (as compared to Phase I) from component 1 to components 2 and 3.

Table 1

Proposed Project Components	Proposed Sub-components
<p>1. Enabling Activities for Sustainable Fisheries Sector Investment and Growth</p> <p>Intermediate Objective: Build the capacity of the GOB and research agencies to conduct evidence-based stock management and implement MCS for the artisanal and industrial fisheries.</p>	<p>1.1. Stock Assessment and Development of National Fishery Management Plan</p> <p>1.2. Creating enabling conditions for investments in sustainable fisheries</p> <p>1.3. MCS development for IUU Reduction</p>
<p>2. Improving Infrastructure and Production Practices for Coastal Belt Fisheries (Capture and Culture)</p> <p>Intermediate Objective: Improve quality to ensure food safety and higher value capture from export-oriented fishery and mariculture.</p>	<p>2.1. Infrastructure Improvements for Capture and Culture Fisheries</p> <p>2.2. Fishery sector value chain and food safety development</p> <p>2.3. Boosting Aquaculture Survival and Growth Rates</p>
<p>3. Community Empowerment and Livelihood Transformation</p> <p>Intermediate Objective: Stabilize fish stocks and improve coastal communities and poor fishers' livelihoods</p>	<p>3.1. Fishing community institutions and alternative livelihood development</p> <p>3.2. Business development and market linkages for alternative livelihoods</p>
4. Project Management	

Key development results of BSCMFP Phase 1 will be measured by means of the proposed project level indicators (PDO indicators):

- I. Fisheries management plans adopted and under implementation (number)
- II. Share of artisanal and industrial vessels in targeted coast belt fisheries under monitoring, control and surveillance (MCS) (percent, disaggregated by registered and non-registered)
- III. Share of landed catch and aquaculture production in targeted coastal belt fisheries in safe handling according to defined criteria
- IV. Share of targeted coastal belt fishing communities with access to project-promoted livelihood activities outside of fishing (percent, disaggregated by gender)

- V. Aquaculture farmers with access to productivity boosting packages(percent, disaggregated by gender)
- VI. Share of targeted beneficiaries that express satisfaction with project interventions (disaggregate by gender, youth) (livelihood aspects, management)

3. Objective of the assignment

The Government of Bangladesh (GOB) through DOF is soliciting the services of a qualified Consultant Firm or Consultant Consortia for a Feasibility Assessment which will inform the preparation of the GoB's Development Project Proposal (DPP) of BSCMF Phase 1 project. Specifically, the Feasibility Study (FA) will provide the decision makers in the GoB and the World Bank with the necessary baseline and information to justify the proposed project from a technical, economic, environmental and social development point of view, including the proposed financing and implementation modalities. To this end, the FA will inform the design of project interventions and specific cost-effective investments towards achieving the project development results. This includes assessing and determining whether the identified BSCMFP Phase 1 activities are likely to produce the anticipated results, in an economically viable and socially acceptable manner. The consultant will further prepare BSCMFP Phase 1 Project Operational Manual (POM), terms of reference, and associated grant manuals, that will guide implementation in line with the World Bank's fiduciary and operational requirements.

4. Scope of services

The scope of the Consultant service covers a feasibility assessment which will further develop the activities under the proposed project components, sub-components, and activities summarized in Table 1 and described in Appendix I. To this end, the consultancy will first establish a baseline and describe the proposed interventions to sustainably manage the coastal and marine fisheries in Bangladesh; examine project alternatives; and identify ways of improving planning, design and implementation by recommending measures for preventing, minimizing, mitigating or compensating for adverse impacts and enhancing positive impacts. For activities envisaged for implementing during years 1 and 2 and based on feasibility assessment, the consultant will further prepare respective TORs and grant manuals with the level of details necessary to launch the activities according to project implementation timeline. As part of the feasibility assessment the Consultant will propose the technical, institutional, policy and regulatory measures that will collectively work towards preventing undue harm to people and their environment.

The scope of the proposed consultancy will include the following tasks:

Feasibility Assessment

1. Analyze, collect and describe the up-to-date technical socio-economic and biophysical information available to justify project rationale, geographic coverage, project beneficiaries, and the proposed PDO.
2. Following the proposed project design and interventions provide detailed technical description of project components and sub-components and individual investments, including recommendations on the selection criteria for identifying the geographic/location of these interventions in terms of beneficiary communities or other beneficiary units in the project areas;

3. Develop the scope and technical parameters of deploying the technology and carrying out the activities proposed for MCS for IUU reduction (Component 1) in conjunction with project objectives and actions/activities to achieve these objective and considering the social context in which they will be deployed, the proposed policy and regulatory measures, and project implementation arrangements;
4. For the proposed infrastructure investments (under Component 2) such as landing sites canals, small community infrastructure, hatcheries. etc., collect site specific information to inform the prioritization of public investments and their financial viability; describe the feasibility of project public investments aiming to leverage private sector capital and ensure sustainability of project outputs;
5. Review and assess the technical, financial and economic, institutional, environmental, and socio cultural feasibility of the proposed project activities;
6. In conjunction with project activities, develop the Project Implementation Framework (PIF) including institutional responsibilities, project resource utilization within the project envelope and timeline. The latter will include Grant Manual(s)for the proposed grant schemes for increasing Cluster Farming (CF) productivity and for research and innovation, describing targeted, prudent and transparent use and flow of project funds;
7. Develop a M&E Framework in conjunction with the proposed Results Framework for the project describing the metrics and process used for monitoring of project results; recommend further actions, including any additional data generation that will support the M&E and end of project results assessment; prepare terms of reference for the surveys for determining outstanding baseline data during year 1 of the project.
8. Prepare terms of reference (TOR) and tender documents for consultancy and non-consulting services, goods, and works to be contracted during year one of project implementation. This includes the TORs for the Project Management Consultant (a firm) and the Design and Supervision Consultant (a firm).
9. In line with the project's Environment and social Management Framework, prepare and initial assessment of the environmental social impacts of project activities indicating possible risks and mitigation measures;
10. Identify the capacity and implementation constraints in the existing institutional and procedural arrangements and prepare training plan recommending core training, including training delivering modalities, and information and technical assistance to also ensure the integration of effective mitigation measures for all potential significant adverse impacts into project design.
11. Carry out initial consultations with key project stakeholder and beneficiaries of project investments; provide record of stakeholder consultations;
12. Develop a project communications strategy for year 1 and 2 of the project with a plan of activities;
13. Justify any recommended changes, as needed, to the proposed project design to ensure its economic feasibility.

The FS will include mapping of activities to PDOs objective and results indicators as described in the proposed results framework. This should be done considering also that the precise locations on

some of the individual investments interventions are likely to be defined later in project implementation. The FA will provide GIS based maps to illustrate the analyses.

Project Operations Manual

The scope of the consultancy includes the preparation of POM in line with the world Bank project requirements to detail that project scope and components, implementation arrangements, oversight responsibilities, fiduciary provisions, procurement and implementation plans, processes, reporting requirements etc. The POM will include detailed project implementation plan for all activities. The POM will be prepared in consultations with Project Director (PD)/ Project Management Unit (PMU) and any other PD/PMU identified service provider. The POM will include manuals for implementation of the proposed grant schemes and revolving fund under Component 2 and 3 with the necessary level of details to ensure respective activities could start no later than year 1. The format of the POM will be guided by PMU (**ANNEX 3**).

5. Methodology

While covering the above tasks and in order to meet the objective of this consultancy, the Consultant will apply methodology that inter alia to incorporate the following aspects:

A. Technical due diligence

- a. Technical due diligence for all infrastructure investments, including long-term sustainability of operation and maintenance, and possible cost recovery provisions. This includes the technical due diligence for the renovation and upgrading of coastal landing centers and aquaculture post-harvest service centers, the rehabilitation of saline water inflow-outflow common canals through re-excavation, restructuring and reconstruction of polder/sluice gates in target locations, as well as the detailed due diligence of all infrastructure investments planned for year 1 and 2 of the project.
- b. Technical due diligence of the proposed detailed stock assessment work supported by BSCMFP in Bangladesh waters as well as proposed coastal and marine fisheries management measures, including development of a plan for production model based on available stock assessment results and the introduction of eco-friendly fishing gears, methods and techniques;
- c. Technical due diligence of the monitoring, control and surveillance (MCS) system, including boat registration and licensing, technology deployment, as well as identification of marine/coastal check posts that need to be established/strengthened. This includes assessment of the feasibility of measures for strengthening GOB marine stock survey capacity as well as for land-based catch data monitoring;
- d. Assess the viability and necessary measures for introducing and maintain a vessel monitoring system (VMS) and AIS for mechanized boats and vessels;
- e. Technical due diligence of coastal spawning and nursery ground, including assessment of the impacts of closed seasons and identification of target locations to develop management plans;

- f. Technical due diligence and identification of pilot locations for (1) aquaculture canal and associate polder sluice gates rehabilitation and (2) coastal landing site construction and/or rehabilitation.
- g. Technical due diligence of the development of coastal aquaculture and mariculture through hatchery establishment, domestication of coastal candidate species and demonstration (nursery and culture) for potential coastal and marine species, including the potential impacts. This will include support for the identification of recommended locations i.e., Districts and Upazilas, for such initiatives will be carried by the GoB based on agreed criteria and timetable and through a participatory process;
- h. Related to the above, technical due diligence analyzing the rate of intensification in coastal aquaculture, existing levels of use of hatchery v. wild-caught seed; and the feasibility for increasing the demand for hatchery seeds.
- i. Technical due diligence on the viability of sea weed farming and cage mariculture, including recommendation of targeted areas and impacts.
- j. Assess the capacity building and awareness needs among local project stakeholders in the fisher model villages targeted for improved livelihoods, including existing business development plans, extension, market, and financial services in the targeted locations;
- k. Assess the feasibility of establishing and operating a community savings scheme, revolving loan fund, and one-time grant for the most vulnerable to be managed by poor and extreme poor fisher households in the fishers' communities targeted for improved livelihoods (under component 3);
- l. Technical due diligence on viable models for expanding extension services and improving access to finance and markets in marine fisheries (capture and mariculture);
- m. Technical due diligence on the feasibility of implementing and scaling up community-based co-management of near-shore coastal fisheries, including existing rules and policies for managing coastal fisheries through co-management and any legal, regulatory, and institutional reforms needed to support and scale-up co-management (including but not limited to the recognition of coastal fishing communities' legal property rights to near shore fisheries). Formulate on this basis, viable incentives to encourage fishing communities to contribute to co-management, including a mechanism to cover the costs of co-management and ensure that communities participating in co-management benefit from improvements in the fishery;
- n. In conjunction with above, identify pilot locations for fishers model villages where co-management is likely to succeed based on objective criteria (e.g., coastal fishing communities have existing informal rights to a clearly defined near shore fishing ground, the community(-ies) have history of community organizations or

experience in sharing benefits derived from common use of resources; the fishing territory is reasonably closed and could be cost-effectively monitored and enforced); and the expected impact of co-management on coastal fisheries are identifiable;

- o. Technical due diligence on proposed analysis for enhanced nutrition outcomes and food security based on scaled-up cultivation, consumption, processing, and marketing of small fish cultivated by women in household ponds; and
- p. Assess gender needs, roles, and dynamics with attention to constraints, risks, and opportunities for women. Identify sectors where action should be taken and recommend activities to enhance women's economic participation and decision-making at all levels.

B. Financial feasibility assessment

In accordance with the Government of Bangladesh guidelines, *Financial assessment* will be carried out for the investments supported by the project for which the following parameters will be finalized:

- a. Net Present Value (NPV) considering a 15% discount rate;
- b. Benefit-Cost Ratio (BCR) considering a 15% discount rate; and
- c. Internal Rate of Return (IRR).

C. Economic feasibility assessment

In accordance with the Government of Bangladesh guidelines *Economic assessment* will be carried out for the project investments with identifiable costs and benefits. The Consultant will do so by using economic valuation methods that can best demonstrate all expected consequences in costs and positive effects between the interventions and project beneficiaries within a time horizon which is long enough to justify the project interventions and derived development impacts. The Consultant will create a baseline scenario that allows to compare "with project investments" scenario. The following elements of the assessment will be included:

- a. Net Present Value (NPV) valuation considering a 15% discount rate;
- b. Benefit-Cost Ratio (BCR) valuation considering a 15% discount rate, to guide the most efficient way of meeting specified project goals; and
- c. Internal Rate of Return (IRR).

D. Institutional and management feasibility assessment

- a. Assess the capacity and capacity building needs of the project implementing agency(ies), the proposed project management unit and at all respective levels of

proposed implementing agencies as specified in Appendix II and in light of the proposed sector reforms as outlined in Annex I (Component 1 and 2).

- b. Review the capacity of Bangladesh organizations and institutions that can deliver capacity training needed for the project; map organizational capacity development needs with the themes of project capacity building plan.
- c. Assess institutional capacity for gender aware fisheries governance and management. Recommend relevant areas for gender integration and capacity building, and suggest optimum levels of female participation and staffing at the institutional level.
- d. Develop an outline of the capacity building plan for the project components with a timeline that meets the project implementation needs.
- e. Develop an outline of the curriculum for the capacity building program/ training courses for year 1 and 2 of the project implementation.

E. Environmental feasibility assessment

Building on the already on-going BSCMFP Environment and Social Management Framework (ESMF) preparation work, the Consultant will carry out an initial activity screening for environmental feasibility of the project. This constitutes a review of initial processes of planning and selection of project sites, considering the proposed locations and interventions. By way of site observations, the Consultant will determine the features of the sites and factors that can influence the selection of these sites and the ensuing positive or negative characteristics as a result of the project. The Consultant should be familiar with environmental conditions, norms and regulations, and effective land/coastal use in the zone demarcated for project interventions. The outcome of the environmental feasibility will allow to determine early on, if project interventions are feasible or not, if they will require modifications or adjustments to be carried out on the project sites.

- a. Carry out an initial EIA for infrastructure investments under Component 2, including landing sites, aquaculture canals and sluice gate rehabilitation, as prioritized under section 5.A.(f) and 5.A.(g) above for Year 1 and 2 project investments, in order to meet Bangladesh's requirements for upfront impact assessment prior to project activity approvals.

F. Social assessment

The purpose of the social assessment is to identify in what manner social aspects can be integrated into the project design. The Consultant will identify the indirect societal effects and changes occurring at the level of targeted project beneficiaries caused by the proposed project interventions.

Given the strong poverty reduction and livelihoods focus of the project the social feasibility study will have to tap in the results of the technical due diligence of the proposed alternative livelihoods linked sustainable fishing practices but also outside

the fisheries and aquaculture sector, for poor, extreme poor, and vulnerable artisanal fishers and shrimp post-larvae collectors in order to assess the likelihood of these groups to escape poverty in a 5-10 year time frame in the geographic areas of the project. Among others, the Consultant will include the following elements:

- a. Develop a gender disaggregated baseline to identify project beneficiaries mapped to proposed project interventions in the geographic area of the project, also in close coordination and building on the already on-going Livelihoods component (Annex I, Component 3) preparation work.
- b. Characterize key project beneficiaries (e.g., gender, income levels, occupation, skills etc.);
- c. Carry out due diligence of the political economy, gender, inclusion of vulnerable groups, and other socio-cultural factors, that are likely to affect the outcomes of the project activities.
- d. Develop a set of social indicators linked to project results indicators needed for regular monitoring of project results through entire project implementation.
- e. Recommend actions for gender mainstreaming in all components including gender-disaggregated data generation and M&E.

6. Project Area

The feasibility study will cover a geographic area located in the coastal belt of total 16 districts. These are Cox's Bazar, Chittagong, Feni, Noakhali, Laxmipur, Bhola, Barisal, Patuakhali, Jhalkathi, Barguna, Pirojpur, Bagerhat, Khulna, Satkhira, Narail and Jessore.

7. Study team composition

In order to complete the assignment, the Consultant will assemble a multi-disciplinary team of technical experts with substantial experience (no less than 8 years) and adequate educational backgrounds (Master's degree and higher) to will ensure the services are carried out in a professional and timely manner. *The team will include, but may not be limited to:*

Description of Input (list only core responsibilities)	Position
Lead and manage inputs of consultant team; responsible for overall product delivery and for timely and quality execution of services; primary contact point for contract execution	Team Leader (Key Position)*
Financial and Economic Analysis	Fisheries Economist (Key Position)
Fisheries stock assessment; TORs for Fisheries Stock Assessment; for national fishery management plan (FMP) preparation; and for the fisheries-specific FMPs	Marine Stock Assessment Specialist (Key Position)

Description of Input (list only core responsibilities)	Position
Aquaculture technical assessments and TOR preparation; input to the environment assessment	Coastal Aquaculture Specialist (Key Position)
Aquaculture infrastructure rehabilitation a capture fisheries landing site construction activities assessment, priority site selection, and TOR preparation; input to the environment assessment	Coastal and hydrological engineer
Capture and culture fisheries value chain technical assessments and investment activity and capacity-building definition	Value Chain Specialist (Key Position)
Environmental Feasibility; all aspects concerning project environmental assessment requirements	Environment and Climate Change Specialist (Key Position)
Social-cultural assessment; field surveys; poverty reduction aspects of assessment; Community development and inclusion aspects; Public Consultations	Social Development Specialist (Key Position)
Institutional assessment; contribute to interviews for capacity assessment needs; contribute to definition of training curriculums	Institutional Development Specialist (Key Position)
Fisheries sector reform technical assessment focusing on regulatory, including co-management, enforcement, and related reform actions; contribute to the Institutional assessment	Regulatory and Policy Specialist (Key Position)
Capacity needs assessment; Training plans for all project components	Organizational and Capacity-building Specialist (Key Position)
M&E aspects of project	Monitoring and Evaluation Specialist (Key Position)
Support all requires assessments, including activity site selection and prioritization.	RS and GIS Specialist (required prior experience in socio economic analysis)

(*) Key Positions that will be included in the Technical proposal evaluation (based on the detailed CVs of the proposed respective team members).

8. Deliverables, Schedule of Deliverables

I. Deliverables.

Following the document structures recommended by the Client (see Annexes 2, 3, and 4), the Consultant will produce the following deliverables (described further below):

1. Inception Report for Feasibility Assessment;
2. Feasibility Assessment Report;
3. Project Operations Manual (POM).

The preparation and delivery of the above documents will be organized in three steps, as follows:

1. **Inception Report submitted within in two (2) weeks of contract signing:** The Consultant will submit an Inception Report detailing the methodological approach for the entire assignment covering all items under “Scope of Services” and “Methodology” as outlined in this Terms of Reference. The Inception report will in detail describe the method of data collection including field work plan, verification, field work with project stakeholders and beneficiaries, and analysis. The Inception report will provide an outline of the team tasks and team members’ inputs and deliverables. The Inception report will provide a list of the available/collected information and timeline to fill in the gaps. This inception report will be subject to review and comment by the DoF, the WB. The Consultant will revise the inception report based on those comments. The final inception report will be submitted to the Client after incorporation of comments.
2. **Draft Feasibility Assessment (FA) Report and draft POM submitted 6 weeks after contract signing:** The Consultants will prepare a Draft FA Report covering all tasks under the assignment with specific recommendations on the feasibility of project interventions. It will be accompanied by a draft executive summary. The Draft POM will further include draft TORs and grant implementation manuals as per the requirements above. After submission of the draft reports, a presentation shall be disseminated to the Client for obtaining feedback. Client’s comments on draft final report will be incorporated in the final report. The relevant sections of the Feasibility Study will be included in the draft POM.
3. **Final Feasibility Assessment Report and POM submitted 12 weeks after contract signing:** This deliverable should include all the comments suggested by the client and other relevant stakeholders. It will include all relevant data in a tabulated format used by the Consultant for the baseline, raw and processed data, toolkits and questionnaires used for the social-cultural assessment, and other supplemental information that will constitute the project file. In addition to the POM documents as listed above, the final report should include the TORs listed under the relevant tasks for specific consultancies to be carried in year 1 and 2.

All files with data, analytical reports, and toolkits used in this assignment will be 14 weeks after contract signing.

The total duration of the consultancy services will be 14 weeks from the date of contract signing.

The report will be prepared in English and translated in the local language.

9. Institutional Arrangements

DoF represents the Client for this assignment. The Consultant will work under the direct supervision of the Project Director, Sustainable Coastal and Marine Fisheries Project, DoF, Dhaka. DoF will assist the study team as required, particularly with regard to fisheries data of the rivers and marine fisheries in the study area.

The Project Director, DoF, Dhaka will support to the Consultants that the objective of the study, as detailed in the ToR, would be achieved within the agreed time schedule, and that the contents of the report are acceptable to the GoB and the World Bank; (S) he will supervise the execution of the feasibility study and will monitor progress according to the objectives set in the ToR.

The Project Director; PMU, Dhaka will facilitate meetings between the consultants and DoF professional staffs to discuss technical issues. Any unresolved issues, either technical or otherwise, will be taken up with DoF's senior technical personnel or other GoB agencies as required.

Payments against approved deliverables will be authorized by the Project Director, DoF, Dhaka. The Project Director, DoF, will make its best efforts to make available the following data, services and facilities to the Consultant as per the existing rules of DoF:

- ✓ All available district wise fisheries data and records on river, khals, beels and ponds;
- ✓ Available reports and study related documents;
- ✓ Any other services, available with DoF for help the consultants to carry out the data collection project as per ToR.

10. Consultant Responsibilities

Data, personnel, facilities and services will be provided by the Consultant as detailed in this ToR. The Consultant will mobilize the necessary expertise for the effective delivery of the services as stipulated in the scope of works and ToR. The Consultant will carry out the services in the best interest of the Client, the GoB represented by DOF, with reasonable care, skills and diligence in line with sound professional, administrative and financial practices. Field surveys and field data collection will be carried out in coordination with field officers of DoF (District/Upazila Fisheries Officers). The Consultant will be responsible to the client for the execution of the contract according to the terms and conditions spelled out therein. Consultant will organize presentations and dissemination events to enable the monitoring of progress and study results by the relevant DoF officials.

11. Payment Schedule

Payment will be made according the following schedule

- (i) 15% after signing the Contract
- (ii) 30% after submitting the draft feasibility report and draft POM
- (iii) 30% after submitting the final report and POM
- (iv) 25% after submitting the translated version of the deliverables

All the payments would be made only after acceptance of the reports and deliverables by the Client.

APPENDIX I

Bangladesh Sustainable Coastal and Marine Fisheries Project - Project Description

The proposed Bangladesh Sustainable Coastal and Marine Fisheries Program's (BSCMFP) goal is to increase the coastal and marine fisheries' contribution to the economy and to contribute to poverty reduction, and environmental stability.

The BSCMFP will encompass two (2) phases, with an estimated budget envelope of up to US\$240 million for Phase I project. The parameters of Phase II will be defined based on the implementation results of the reforms undertaken under Phase I of the program. The program includes the following:

- Phase I. Institutional and policy reform, capacity development, and piloting (5 years) with the objective to support GOB and stakeholders' capacity to implement a shared approach for using fishery and mariculture resources sustainably, equitably, and more profitably.
- Phase II. Scaling up successful pilots to improve coastal communities and fishers' livelihoods, while addressing sector infrastructure needs and expanding sustainable private sector participation with the objective to provide for higher value capture from domestic and export-oriented fisheries and mariculture. Phase II is further envisioned to be developed and implemented with a significant IFC participation.

The proposed Project Development Objective (PDO) of BSCMFP Phase I Project is to improve the management of coastal and marine fisheries and aquaculture. Achieving this objective further entails identification and improvement of fishing communities' access to alternative livelihood activities

BSCMFP Phase I aims to develop an enabling institutional and policy environment for sustainable marine and coastal fisheries management and enhanced economic growth from export-oriented fisheries and mariculture, while also piloting alternative (sustainable) livelihood activities to support fishing communities during the transition from de facto open access to managed fisheries. Setting the foundation for future sector growth, it will build the capacity of government fisheries and research institutions and pilot innovative approaches for improved management of coastal fisheries, including through co-management and alternative livelihoods. The project will focus on bringing fisheries policies, regulations, and management capacity up to a level needed to enable stock recovery and opening the space for responsible private sector investments in the sector.

Proposed PDO-level results indicators (Phase I):

- I. Fisheries management plans implemented (number)
- II. Share of artisanal and industrial vessels in targeted coast belt fisheries under monitoring, control and surveillance (MCS) (percent, disaggregated by registered and non-registered)
- III. Share of landed catch and aquaculture production in targeted coastal belt fisheries in safe handling according to defined criteria
- IV. Share of targeted coastal belt fishing communities with access to project-promoted livelihood activities outside of fishing (percent, disaggregated by gender)
- V. Aquaculture farmers with access to productivity boosting packages (percent, disaggregated by gender)

VI. Share of targeted beneficiaries that express satisfaction with project interventions (disaggregate by gender, youth) (livelihood aspects, management)

The BSCMFP Phase I project will have four components focusing on: (1) Enabling activities for sustainable fisheries sector investments and growth; (2) Improved infrastructure and production practices; (3) Community empowerment and livelihood transformation; and (4) Project management. It is further expected that BSCMFP Phase II will maintain the same 4-component structure but will significantly shift the focus and resource allocation (as compared to Phase I) from component 1 to components 2 and 3.

Inputs for the definition of Phase II investments will be drawn on the outputs of Phase 1 activities. At the point of transition between SOP Phase I and Phase II, a set of milestones will determine the readiness to launch scaling-up of sector investments. Examples include completing large fishing vessel registration and fishermen IDs; deploying functional MSC system with 100 percent industrial vessel and 50 percent artisanal vessel coverage; updating the National Fisheries Sector Policy; and adopting regulations on co-management and preparing fishery plans in at least 30 communities]. The follow-up phase would be realized by bringing to scale the successes of Phase I and closing infrastructure and technology gaps.

Phase I project would be financed by a USD [200]⁶ million Investment Project Financing (IPF), using a mixture of standard investment and Disbursement-Linked Indicators (DLIs) to support project implementation. Phase I duration will be six years.

The project will support GOB in designing, establishing, and effectively operating fisheries management systems for sustainable utilization of coastal and marine fishery resources. Project financing will be provided for fisheries governance and management systems, infrastructure, and other value-chain investments aimed at increasing the sector's productivity. The BSCMFP Phase I project will focus on bringing fisheries policies, regulations, and management capacity up to a level needed to enable stock recovery and opening the space for responsible private-sector investments in the sector.

Component description in the following sections includes Phase I of BSCMF program. Phase I project will have four components focusing on: (i) activities necessary to enable sustainable fisheries sector investments and growth; (ii) improvements to infrastructure and production practices; (iii) community empowerment and livelihoods transformation; and (iv) project management. It is further expected that BSCMFP Phase II will maintain the same 4-component structure but will significantly shift the focus and resource allocation (as compared to Phase I) from component 1 to components 2 and 3.

Component 1: Enabling Activities for Sustainable Fisheries Sector Investments and Growth

1. Component 1 is aligned with the targets of PDO indicators 1 and 2. The component builds on the GOB commitment to update and expand the 2006 National Fisheries Plan to better account for the country's enlarged EEZ and enable critical public-sector infrastructure improvement and technology investments by supporting a set of policy, institutional, research, and MCS measures aimed at reducing overfishing. Activities to be carried out under this component are structured in three subcomponents to support the DOF in providing the enabling regulatory, institutional, and financial frameworks and incentive mechanisms for increased sector growth based on (1) more effective management of coastal fisheries with responsibilities shared between DOF and artisanal fishing communities and (2) improved sector transparency, integrity, and accountability. This will be anchored in a broad-based stakeholder engagement, namely within the artisanal and industrial fisheries and those involved in fishing, fish processing, and fish marketing. The project investment envelope will support preparation of management plans and background research, assessments,

⁶During the August 2017 preparation mission, the client has requested increasing the original project envelope of USD \$200 Million by an additional USD \$ 28 Million for community-level investments. This will be further discussed and finalized with the CMU at the upcoming pre-appraisal mission.

training, design and implementation of control and monitoring systems, as well as the procurement and installation of infrastructure and equipment for the DOF and other national fisheries research institutions. Specific activities include:

Subcomponent 1.1: Stock Assessment and Development of National Fishery Management Plan

2. *Stock Assessment*: Addressing a critical management gap, the subcomponent will invest in fishery-independent data collection and stock assessment for shrimp, demersal, and pelagic stocks. More specifically, leveraging earlier Islamic Development Bank and FAO preparatory work, support will be extended to DOF-led shrimp and demersal stock survey and capacity-building efforts as well as for completion of pelagic stock surveys in partnership with the FAO-Nansen program.

3. *Strengthening of catch monitoring systems*: Catch monitoring systems would be developed and implemented for both industrial and artisanal fisheries to help verify, track, and update stock data. These systems will cover: (i) on-board observers for industrial and semi-industrial vessels; (ii) catch measurement at landing sites for non-/mechanized artisanal fishers; and (iii) recording of catches in coastal areas. This outcome is linked to the strategy for Sub-component 1.3: MCS Capacity-Building for IUU Reduction (below).

4. *Preparation and update of national fisheries management plans*: The project will support DOF to prepare participatory national fisheries management plans (zonal and/or species-based) and to implement them based on the 'precautionary principle', to be refined by stock assessments and in consultation with the different fishers' and boat-owners' associations (industrial, non-/mechanized artisanal). Development of fisheries management plans will enable DOF to revise the nation's fisheries policies and regulations based on scientific evidence so that they can address the current context and requirements – e.g. fleet control, MCS, legal enforcement, co-management, and conflict resolution among stakeholders in the sector. The management plans will include appropriate guidelines on gears to be used, fishing locations, catch sizes, species and by-catch. Plan preparation will be supplemented by training for expanding the knowledge of DOF in coastal fisheries management, community outreach and extension, and ecosystem-based fisheries management.

Sub-component 1.2: Creating enabling conditions for investments in sustainable fisheries

5. *Strengthening fishery policies, legal and regulatory framework*: The proposed project will support the DOF to review and update national fisheries policies, legal acts, and rules. This will be done in consultation with the different fishers' and boat-owners' associations (industrial and artisanal) and relevant government entities, such as the Coast Guard, Navy, Police, Chittagong Port Authority and Customs, and other stakeholders. The supporting regulations to be developed under the upcoming new Bangladesh fisheries law (currently under legislative review) will provide clear and necessary measures for: (i) vessel registration and fleet capacity management; (ii) licensing management system, (iii) stock monitoring; (iv) MCS enforcement, including joint coordination (e.g. information-sharing and division of responsibilities) with other government entities; (v) co-management by small-scale fishers' associations; and (vi) conflict resolution among different fishers (e.g. to address illegal trawler entry into coastal waters) and regulatory powers for responding to fisheries management needs as they arise.

6. *Reducing investment risks due to regulatory and enforcement gaps*: The proposed project will improve the DOF's law enforcement capacity to ensure leveled and predictable investment environment. DOF will receive project support for establishing a legal team and training for functional assessment to determine and carry out the steps necessary for improving its organizational effectiveness in enforcement and prosecution of both domestic and international IUU fishing cases. Assistance will be provided to clarify and institutionalize independent regulatory and law enforcement functions. Project support will be provided for consultation with the Ministry of Law, Justice and Parliamentary Affairs; Law and Justice Division; and judges in the judiciary on new legislations and law enforcement. Training on marine fisheries management and mariculture, co-management,

international fisheries negotiations, and licensing and enforcement will be provided to respective DOF staff as well as actors from other institutions involved in maritime domain management. In addition, specialized training for judges and court staff in the Law and Justice Division of the Ministry of Law, Justice and Parliamentary Affairs will be provided to cover the new legislation for higher levels of prosecution with greater penalties. This will be supplemented by awareness-raising programs on fisheries control issues for effective law enforcement and prosecution. In parallel, DOF's capacity for conflict resolution will be strengthened, including through the establishment of a functional grievances redress mechanism for both artisanal and industrial fishermen.

Sub-component 1.3: MCS development for IUU Reduction

7. *Strengthening of fishers and boat registration:* The proposed project will support the expansion of the current fishermen ID card system to all artisanal fishers. This includes scaling up the monitoring and reporting conducted by the DOF and other GOB entities on industrial and artisanal fleet regarding sizes, catch, location of vessels, gears, and other aspects. This monitoring serves to verify or update information, control fishing, and achieve sustainability in fisheries. The DOF fishing craft database will be linked to a GIS display and produces visual reports on the locations of vessels by size and gears used. The DOF Fisher's ID Card database will also be linked to GIS coordinates to show locations of artisanal fishermen. The project will further support improving coordination and effectiveness of the registration responsibilities currently split between DOF and MMD.

8. *Development of information systems for MCS:* The project will invest in design, implementation and training for an integrated information system for effective MCS that will include: (i) introducing AIS coverage to the artisanal vessels and universal VMS for the industrial fleet; (ii) implementation of the current Fisher ID system; (iii) a land-based catch monitoring system; and (iv) an on-board observer program for industrial vessels. The investment package will include technical assistance to respective authorities to use the MCS systems (namely the DOF, Coast Guard, Navy, Chittagong Port Authority, Bangladesh Police, and Bangladesh Customs) and enhance coordination and information-sharing in enforcement. A Joint Command Center (JCC):JCC coordinated by the DOF and involving the other policing and enforcement authorities in the marine and coastal sectors (Coast Guard, Navy, Police, and others), will be established to coordinate VMS and AIS monitoring, patrolling, information-sharing, enforcement and reporting activities. The project support to JCC will include physical and communications infrastructure, as well as development of protocols and guidance manuals for information-sharing, division of responsibilities, and lines of command among the entities. A major portion of the investments will be allocated for procurement and installation of the JCC's physical infrastructure and MCS equipment (e.g. for the DOF, Coast Guard, and River Police and in close coordination with the Navy). This package will be in conjunction with training for fishers' and boat-owners' associations on the use of the MCS information system technologies. With the help of Automatic Identification System (AIS), the zones proposed for management can be monitored at low cost and with fewer staff. Selected fishers can be given access to the AIS, and those guards can report any vessel that is in the wrong place or is using illegal nets. This activity will benefit from the experience of the small-scale co-management activities at the level of sub-district multi-local governmental committees supported by the World Fish-funded ECO -Fish project.

Component 2: Improving Infrastructure and Production Practices for Coastal Belt Fisheries (Capture and Culture)

9. *This component* is aligned with the targets of PDO indicator #3. It will address the need for investments in multidimensional and integrated support for value chain development by supporting improved immediate post-harvest handling and sanitary practices for reduced post-harvest losses, productivity increases, higher product quality, and improved food safety. The component will finance investments for improving compliance to standards; establishment of appropriate

infrastructure, including cold chain, intermediary handling, and storage facilities (landing sites, depots, collection centers, processing facilities, wholesale markets); use of transport boxes (plastic, polystyrene) during distribution; training on international requirements to meet export standards; facilitating contact with buyers; and support in capacity development along the value chain to follow good practices, among others. The project will support the necessary infrastructure, such as roads and electricity where needed, to sustain the value of investments. The current state of enforcement practices suggests that both market management and fish/food inspection processes are not optimal, especially in terms of controlling quality and safety. The component will support measures for improving genetic quality, bio security, and disease control in shrimp hatcheries that are expected to significantly reduce exposure of coastal aquaculture to devastating disease outbreaks and production crashes, while generating further productivity increases of up to 20 percent. In parallel, this will enable additional economic gains by scaling up the cultivation of the higher-market-value tiger shrimp (*Penaeus monodon*). To this end, the project will also build upon and coordinate closely with the on-going NATP-II complementary work on promoting technology innovation and quality in development of inland fisheries and fresh water shrimp aquaculture.

10. Infrastructure investments will be implemented in partnership with the private sector where feasible, and will be phased-in in conjunction with the progress of sector management reforms supported by the project, including reducing incentives for additional overfishing by increasing the sector's value. In capture fisheries, the initial efforts will focus on the semi-industrial and motorized artisanal fleet and will be extended to the industrial fleet in sync with the progress of the management reforms.

Subcomponent 2.1: Infrastructure Improvements for Capture and Culture Fisheries

11. *Infrastructure Improvements Capture:* The project will finance infrastructure improvements of landing sites to create the enabling conditions for enhancing the value added in fish processing and marketing chains. For instance, potable water will be necessary for making ice and handling marine or aquaculture species and quality road and/or rail infrastructure and access to reliable electricity are essential for access to markets and operation of export chains. Ice made of potable water will be made available at all points along the value chain -- i.e. production, intermediary nodes (collection centers/depots/landing sites), markets and processors, where fish is handled or changes ownership.⁷ Furthermore, chill stores⁸ will be constructed at different nodes to store iced fish at cool temperatures, as this increases the fish value and helps prevent cross-contamination.

12. *Capture fishery landing sites and market infrastructure.* The project will finance works and engineering for: auction hall building for auctioning fresh water and marine fish; small-scale fish packing facilities for marine fish to be auctioned off in different localities; small-scale traditional fish landing facilities for fish to be retailed locally; and rehabilitation of selected Bangladesh Fisheries Development Corporation (BFDC) facilities. Demonstration investments under BSCMFP Phase I will target selected sites (e.g., six capture fisheries landing sites that include the new Chittagong wholesale market landing site, Cox's Bazar, and two semi-industrial fishery landing sites in each of the southeast, central, and western coastal regions) aiming at improving the landing site/port access, fish handling, food safety, and marketing. If these efforts are successful, BSCMFP Phase II will further scale up this work to other locations in the central and western coastal regions.

13. *Infrastructure Improvements, Culture:* Financing will be provided for works for desilting and rehabilitating of canals -- essential for restoring the hydrological infrastructure (dated back to the 1983 World Bank project) in the Southwest coastal belt. The economic impact is estimated to result

⁷At the processing end of the export chain, the EU approved factories will have appropriate flake ice-making equipment and storage facilities.

⁸Chill stores hold product at 0-4°C, with fish normally stored in ice in plastic bins. Cold stores hold product at below -18°C, with fish normally wrapped in plastic inside cardboard cartons. Cold stores should not be used to freeze products – blast, plate or IQF freezers should be used for this purpose, before placement in cold stores.

in potential increase of farm incomes by 25 percent in the short term. Rehabilitation of canals will increase the technical capacity of SMEs to scale commercial Bagda farming and increase survival and growth rates of three key species (Bagda, Golda and Mud crab) throughout the coastal zone. Support will be provided to expand access to basic utilities, overcoming one of the major obstacles for aquaculture to increase the yield per unit area due to limited availability of 3-phase electricity for pond aeration.

14. All infrastructure investments will be subject to detailed screening against environmental, social, and disaster risk reduction criteria, including rehabilitation of silted water supply canals and repair of sluice gates to improve water quality and circulation. Where feasible the project will promote green infrastructure technologies for seafood production that also support broader ecosystem services and improve coastal defenses, such as mangrove rehabilitation and artificial sea grass and oyster beds. Services for design and supervision and works will be financed under this subcomponent.

Subcomponent 2.2: Fishery sector value chain and food safety development

15. This subcomponent will support measures to increase the post-harvest value of catch. The economic effect of infrastructure improvements of aquaculture landing sites would diminish without a significant boost of the knowledge on hygiene and safety practices of key value chain actors, which in turn will directly impact the quality of marketable catch and fishermen's livelihoods. Therefore, project investments will promote compliance with food safety standards and adoption of good aquaculture practices that are critical to sustain the value of capital infrastructure improvements.

16. *Bridging the regulatory skills gap:* Based on a skills gap assessment, a full cadre of inspectors will benefit from learning opportunities offered through a 'Training of Trainers' (ToT) model on best-practices for the enforcement of handling and safety regulations. The model will help train fishers, port and landing site and market operators in best practices for handling and food safety. In parallel, a longer-term capacity solution will be sought in partnership with the MFA and University of Chittagong. A wide range of skills will be needed in the post-harvest sector to maintain quality and ensure food safety, such as: fish handling skills (on boats, in markets, depots, landing centers, at farms and depots, etc.); good hygiene prerequisites and practice relevant to all parts of the chain; hazard analysis and critical control point (HACCP) approach to ensure food safety; good aquaculture practices including food safety; traceability in the value chain; use of ice and refrigeration engineering (practical levels); cold store management; trading in fish to ensure quality and safety and management of fish markets. Augmenting its training, and technology- and infrastructure-improvement investments, the subcomponent will further support a national multi-year health consumer-awareness campaign on the importance of hygiene and food safety in the fish and aquaculture sector. This will help drive the demand for hygiene and safety changes in the sector, thus contributing to improved public health and stimulating national-market oriented economic growth from the fisheries sector.

17. *Support to Research and Innovation.* The activities under this subcomponent will boost innovation and will be instrumental to build Bangladesh's applied marine science and technology capacity by strengthening the government—academia—industry interface. Advanced technologies are available at commercial scale in neighboring countries, but the GOB has not been able to use funds for risky experiments. Projects, mostly donor-funded, are the main vehicle for innovation. The initial costs of innovations can be large, and the time needed to establish and scale up the technologies may go beyond five years – the maximum duration of most development projects. In conjunction with research organizations and universities, this subcomponent will pilot technologies that can offer environmentally sustainable growth in the fisheries sector and generate significant employment. The project will facilitate partnerships and support R&D through the National Skills Development Council and other national capacity development institutions and universities that

have capacity for delivery of vocational training programs on priority topics, such as on good practices in aquaculture, fishing, post-harvest practices (including food safety and quality), and in marketing, environmental safeguards, and social and business skills of direct relevance to the long term interests of the fisheries and aquaculture sectors.

Subcomponent 2.3: Boosting Aquaculture Survival and Growth Rates

18. There is large scope for boosting export earnings from aquaculture through implementing a discrete set of aquaculture investments that will increase the productivity of aquaculture in the coastal zone. To this end, BSCMFP Phase I will support pilot solutions to address the low survival and poor growth performance attributable to poor genetic quality of brood stock and high disease burden in the seed sold to farmers for stocking, by investing in: a) policy and regulatory reform to permit the importation of specific pathogen free (SPF) *P. monodon* brood stock and their use by private hatcheries; b) establishment of a centralized brood stock management and breeding program for cultured crustaceans; and c) development of a hatchery certification system so quality brood stock released to private sector hatcheries are properly handled and managed to maximize benefits and minimize risks. The three species⁹ (Bagda, Golda, and Mud crab) that are most likely to generate significant positive impacts for low-income coastal communities are those with the highest prices and greatest export market demand. The three species have different markets and producer groups, and the project interventions and support can assist a wide range of users and employ a diverse range of people in the value chains.

19. In conjunction with these reforms, the project will finance investments aimed at addressing the poor genetic quality of brood stock and high disease burden in the seed sold to farmers for stocking. These will further strengthen the government regulatory and oversight capacity in the monitoring and control of infectious crustacean diseases and include: a) upgrading of laboratory facilities for polymerase chain reaction (PCR) and other relevant testing; b) training of laboratory and field staff in sampling protocols and handling; c) establishing a routine visiting and monitoring system; d) establishing an early warning system for disease outbreaks; e) establishing a functioning private hatchery certification program; and f) establishing or participating in breeding programs for faster growth and disease resistance in Golda, Bagda and Mud crab. Successful pilot work from BSCMFP Phase I will be brought up to scale across the coastal belt under Phase II.

Component 3: Community Empowerment and Livelihoods Transformation

20. This component is aligned with the targets of PDO indicators #4, 5 and 6. It will use a CDD approach to support fishers' livelihoods transformation through a holistic support package including financial resources, investments in infrastructure, assets, and capacity building to help poor fisher households break out of the poverty cycle and transform their livelihoods and communities. The package will involve asset transfer and one-time cash grant through which the fishing community can secure their livelihoods outside of fishing. An upfront detailed feasibility assessment will be carried out to inform community-specific interventions learning from previous donor support to alternative livelihoods for fishermen that ultimately proved unsustainable due to a failure to assess the business, finance, and/or market feasibility of proposed livelihood activities. A household approach will enable the gender equitable distribution of resources to enhance coping capabilities for both men and women. Ultimately, this holistic transformation will be critical not only to achieve poverty reduction in fishing communities, but also to reduce fishing effort and

⁹*P. monodon* (Bagda) – a commercial export product that can generate quality jobs and taxable revenues to support broader economic growth. ROI = 200%.

M. rosenbergii (Golda) – integrated into medium scale farming systems, these generate significant farm revenues by serving mostly local markets and supporting domestic value chains. ROI = 150%.

P. serrata (Mud Crab) – produced from hatchery seed by very low income, small-scale operators and amenable to women's and other vulnerable groups needing to generate family support revenues through production of a high value per weight product that can be produced with local materials. ROI = 79.2%.

destructive fishing practices and thereby enable more sustainable fisheries management. Component 3 comprises two sub-components: (i) Sub-component 3.1 – Fishing Community Institutions and Alternative Livelihood Development; and (ii) Sub-component 3.2 –Business Development and Market Linkages for Alternative Livelihoods.

Sub-Component 3.1 Community Institutions and Alternative Livelihood Development

21. This sub-component will provide support to poor fishing communities to establish community institutions and strengthen their capacity to benefit from project resources such as grants, savings groups, and loans, and to work with DOF on co-management of near-shore coastal fisheries resources (under Component 1). The following activities will be implemented to attain the component objectives:

22. *Development and Strengthening of Fishing Community Institutions:* Project funds will be directed to fishing communities to establish and build capacity of village institutions. The process will begin with a participatory identification of poor fisher households through which the community members will use objective and clearly verifiable criteria to identify the poor and extreme poor fishing households--the primary beneficiaries of this component. To ensure that the livelihood support targets the poor and extreme poor fisher households, technical assistance will be provided for a detailed livelihood needs assessment to determine their current income from fishing and livelihood needs/capacities/skills.

23. *Operation of Fishing Village Group (FVG):* FVG sub-committees will manage the day-to-day affairs of the FVG. These will include an Executive Committee that will implement the decisions of the FVG; a Fishers Committee¹⁰ that will contribute to co-management; a Fisher Credit Group (FCG) to manage a revolving loan fund for fisher livelihoods; sub-committees on Procurement, Finance, and Infrastructure to manage grant funding for basic public infrastructure; and a Social Audit Committee that will independently monitor the FVG activities and verify the use of village funds. All committees will be led by elected members of the FVG, with priority given to the poor and extreme poor fisher households. Resources from an Institution Development Window (IDW) will be granted to support these institutions, including for core training of members on the Community Operations Manual (COM).

24. *Basic Community Infrastructure and Transformed Livelihood:* Project support in the form of a grant will be directed to each FVG to build basic community infrastructure. The resources will be directed from a Community Infrastructure Support Window (CISW), which FVG will use to procure, build, and manage their priority infrastructure investments. The FVG will first conduct a participatory infrastructure needs assessment to identify critical basic community infrastructure (e.g. small roads, tube wells, small labor-saving devices to improve fish/crop processing). The Infrastructure sub-committee will then work with the Procurement and Finance sub-committee to prepare a procurement plan and operations and maintenance plan for the priority community infrastructure.

25. *Financial support to poor and extreme poor fishing households.* Three types of financing will be provided to help the transition out of capture fishing to alternative livelihoods (e.g., livestock production or small businesses), or practice more sustainable and legal fishing: (1) a one-time grant (OTG) to the poorest and most vulnerable fisher households to allow them to purchase or rent key household and/or livelihood assets, such as fishing nets or livestock, and to help them break out of the vicious cycle of debt to fish wholesalers and informal moneylenders; (2) members of the poor and extreme poor fishing households will be supported to establish community savings groups, with priority given to women's savings groups to ensure that both women and men benefit from

¹⁰Where existing fishers associations or other community-based fisheries management organizations exist, these will form or be integrated into the Fishers Committee under this project to avoid duplication and ensure legitimacy.

livelihood support even though most fishers are men, and (3) loan funds through the Livelihood Finance Window (LFW)– a revolving loan fund to support fisher households in adopting either livelihoods outside of capture fishing or sustainable capture fishing practices using legal and non-destructive technologies.

26. *Training on fisheries management, nutrition, climate change, and agriculture:* Core skills supporting village institutions and community members in the transition process will be organized through extension agents and trainers to train community members on a variety of topics essential for improving community fisheries, livelihoods, and health, as well as fisheries resilience to climate change and natural disasters. Training topics could include fisheries laws and regulations, including sanctuaries, bans, etc.; basic accounting to help fishers maintain their own loan and production records; behavioral change communication and nutrition activities for women related to fish, and agricultural production practices and technologies. Awareness-raising and behavioral change interventions will promote the adoption of improved dietary practices during critical stages of the life cycle, including pregnancy, breastfeeding, early childhood, and adolescence, when nutrition plays a formative role in determining health and developmental outcomes. These interventions will increase household knowledge of nutritional needs and locally available nutrient-rich foods/ supplements.

27. *Community contribution to fisheries co-management:* Support to the foundation for community-based fisheries co-management will include a prototype of model fishing villages where fishers have clearly defined near-shore fishing territories and community cohesion is high. Model fishing villages will be established (e.g., 1 per upazila) where interventions and support will be prioritized. Fishers Committee members will complete a participatory mapping of their fisheries resources and will establish Fisheries Co-Management Committees (FCMC) comprising members from several adjacent villages to work with DOF on fisheries management plans and fisheries policy dialogue supported under Component 1.

28. *Gender-equitable and sustainable growth:* The project will support generation of data and knowledge to advance the productive and inclusive engagement of workers in the transitioning process, especially women who have a higher likelihood of working on the margins. Activities will include (i) expanding the collection and availability of gender-disaggregated sector data, (ii) filling knowledge gaps crucial to understanding the constraints and opportunities women and men face in various fisheries and mariculture value chains, and (iii) a skills assessment to identify vocational and training needs to meet the future growth needs of the sector. Moving into BSCMFP Phase II, this knowledge work will be essential for validating investments priorities, ensuring inclusiveness and job creation, value chain development, and overall sectoral growth.

Sub-component 3.2 Business Development and Market Linkages for Alternative Livelihoods

29. This subcomponent will support fisher households, and especially youth in fishing households, to transition out of fishing, by providing a holistic package that facilitate access to job-related training and employment in conjunction with business development, market and financial support. It will empower fisher households and link them to producers with resources and organizations outside their home villages. Specific activities include:

30. *Build and strengthen producer organizations and market access in fishing communities:* Project support will be provided to FVG members to establish producer groups (e.g. fish producers, vegetable producers, poultry producers, etc.) and acquire skills to enhance their ability to obtain competitive prices for their inputs and produce. Facilitation of market linkages with producers will include interaction between FVG members and traders/processors of products in the down- and up-stream value chains. This will benefit entrepreneurs whose financing needs exceed the capacity of the LDF loans to access affordable finance from outside financial institutions.

31. *Expand vocational training and employment opportunities:* Project support will be directed to enhance the opportunities of youth in fishing households to access wage employment. While it will take time to improve the low average literacy rates and school graduation rates in fishing villages, this activity aims to jump-start this process by providing youth in poor households with a comprehensive package of training, social support, and access to employers to help them successfully transition out of fishing into self- and wage employment, including outside their village. Remedial training and skills development will be provided to unemployed and underemployed youth in FVG member households to start their own businesses. The activity will also develop partnerships with private firms and associations in e.g. the service sector, telecommunications, technology, garments, and agribusiness sectors and with vocational training institutions and skills development/job creation initiatives to benefit youth in FVG member households.

32. Component 3 will be implemented in a targeted set of villages, initially targeting up to 550 villages across up to 6 districts to ensure that recipients benefit from technical and facilitation support backed by sufficient resources and capacity building. Priority districts and upazilas have already been identified by DOF based on their relative incidence of poverty, proportion of fishers out of the total population, average proportion of total household income from fishing, and proximity to the coast. Unions and villages will be selected by a site selection committee at the outset of the project implementation phase based on the same criteria, in addition to the presence of existing micro-finance institutions and communities' expressed interest in participating in the project.

Component 4: Project Management and Monitoring

33. The component will provide funds for establishing and operation of project management, monitoring and evaluation structure within the DOF that is fully integrated within the institutional capacity assistance under Component 1. Specifically, this will include staffing and recurrent costs of the project management unit (PMU); establishment of financial management and procurement management systems acceptable to the World Bank; implementation of the communication plan and the activities related to Access to Information (AI); implementation of governance and accountability actions; monitoring and evaluation (M&E) and third-party audits; stakeholder coordination; and special evaluation studies.

34. The PMU will operate based on approved POM and implementation schedule, which will be updated as necessary during mid-term implementation review. To retain and build on the capacity developed through the project, DOF divisions' technical knowledge will be tapped on a regular basis. The PMU will work with other organizations as service providers for the implementation of Component 3 based on agreed implementation protocols. The PMU will operate within the staffing plan and budget limits determined by annual plans approved at the level of Project Committee. A system for M&E of project results will be established at the outset of the project implementation, which will produce semi-annual reports on project implementation and funds utilization.

Some indicative activities across the above Components 1-3 may include (but are not limited to):

Indicative activity	Component 1	Component 2	Component 3
Stock Assessment and Development of a Production Model;	x		
Rationalization of the fishing capacity and effort control;	x		
Reduction of destructive/illegal gears	x		x
Assessment of viable mechanisms for increasing use of eco-friendly fishing gears, methods and technologies;	x		

Study on Coastal spawning and Nursery Ground and impacts on fisheries and coastal fishing communities of closed seasons and areas to develop;	x		x
Training and awareness raising to facilitate pelagic fishing (tuna and tuna like fishes in the EEZ of Bangladesh) subject to the findings of the stock assessment;	x		
Piloting of post-harvest handling and management of sardine by-catch in industrial trawlers;		x	
Renovation and upgrading of Post-Harvest Service Centers and depots;		x	
Promotion of business-friendly supply chain (Cool chain vehicle, dryer, etc.);		x	
Adoption of code of practice complying CCRF & IUU; and	x		
Development of a comprehensive coastal and marine Fisheries Management Plan.	x		
Development, approval and implementation of legislation that will require installation of real time VMS/AIS on all industrial and artisanal fishing vessels, will enable DOF to require prepaid guarantee sums to be charged in case of any infraction, will include regulation for exclusive zones for co-management community based organizations.	x		
Establishment and strengthening of marine/coastal check posts (20 nos.);	x		
Strengthening Resource Survey & Monitoring system with Research & Survey Vessel and land based	x		
Survey and assessment of artisanal fisheries and development of an inventory (fishers, boats, gears, catch composition, etc.);	x		x
Promotion of VMS/AIS for mechanized boats and vessels; and	x		x
Development of a comprehensive monitoring plan for all fishing boats and vessels.	x		
Establishment of hatchery for potential coastal and marine species (Sea bass, mullet, crab, etc.);		x	
Demonstration (hatchery, nursery and culture) of potential coastal and marine species, both finfish and shrimp;		x	x
Up-scaling of cluster farming of shrimp and prawn and setting up of collection centers for shrimp marketing directly to shrimp processors;		x	x
Development of water supply system through construction/renovation of sluice gates;		x	x
Introduction of sea weed farming, including development of seed production technology (sea weed hatchery); if a profitable market can be identified		x	x
Trial on cage aquaculture of sea bass, mullet, oyster, green mussel culture;		x	

Piloting of sea urchin aquaculture including development of value chain; after identification of a market		x	
Study on the climate change impacts (CCI) on Coastal and Marine Fisheries Resources and development of adaptation measures	x		
Identification of viable alternative livelihoods for vulnerable fishers and the fisheries-dependent poor, particularly artisanal fishers and shrimp PL collectors;			x
Development of model fishers' village which includes (i) co-management, (ii) revolving fund, (iii) alternative livelihoods which compensate loss of income from reduced fishing, (iv) compliance with all fishery regulations.;			x
On the basis of model village, expand co-management to all coastal fisheries communities.			x
Identification of viable models for expanding extension services and improving access to finance and markets in coastal and marine fisheries (capture and mariculture);			x
Identification, economic feasibility study and piloting of livelihood diversification options (including linked to more sustainable fishing practices but also outside the fisheries and aquaculture sector);			x
Design and operationalize pilot schemes for enhanced nutrition outcomes and food security based on scaled-up cultivation, consumption, processing, and marketing of small fish cultivated by women in household ponds and small brackish water fish cultured in poly culture with shrimp.			x
Support capacity building and awareness raising among local stakeholders on livelihood opportunities, including existing business development services available to assist them; Build CBOs' capacity to manage a revolving fund (development of modalities for raising and operation of revolving fund); and			x
Revisit existing rules and policies.	x	x	x
Development of online database on coastal and marine fisheries stock linked to fishing and boat license with fisher ID and boat identification number, artisanal fisheries (fishers, boats, gears, etc.), training and Alternative Income Generating Activity programs;	x		x
HRD through training, study tour, exchange visits, etc.;	x	x	x
Institutional capacity building through recruiting project personnel, experts/consultants and ensuring necessary logistic supports;	x		
Development of extension materials.		x	x

ANNEX 1: Proposed Results Framework

Bangladesh Sustainable Coastal and Marine Fisheries Program (BSCMFP) -Phase I

Need to be assess feasible quantity/ numbers against each following indicators ranging from baseline to end of the project:

Project Development Objective Phase 1 (PDO): *Improve management of targeted coastal belt capture and culture fisheries, and fishing communities' access to alternative livelihoods activities*

PDO Level Indicators :

- 1: Fisheries Management Plans (FMP) adopted and under implementation (number)
- 2: Share of artisanal and industrial vessels in targeted coast belt fisheries under monitoring, control and surveillance (disaggregated by registered and non-registered) in number
- 3: Share of landed catch and aquaculture production in targeted coastal belt fisheries in safe handling according to defined criteria (Rephrase) in percentage
- 4: Share of targeted coastal belt fishing communities with access to livelihood activities outside of fishing (number disaggregated by gender) – move to intermediate
- 5: Aquaculture farmers with access to productivity boosting packages (*number disaggregated by gender*) No. of aquaculture farmers organized under cluster production arrangement
- 6: Share of targeted beneficiaries that express satisfaction with project interventions (disaggregate by sex, youth) (livelihood aspects, management (number)

Intermediate results

Component 1: Enabling Activities for Sustainable Fisheries Sector Investments and Growth

- 1.1: FMP prepared according to defined criteria
- 1.2: Institutional and enforcement capacity of Department of Fisheries
- 1.3: Artisanal vessels with valid registration with safety of life at sea and MCS equipment
- 1.4: Share of industrial fishing vessels with on-board observers
- 1.5: Issuance of new industrial fishing licenses in line with precautionary principles
- 1.6: Key data on Bangladesh fisheries publicly accessible

Component 2: Improving Infrastructure and Production Practices for Coastal Belt Fisheries (Capture and Culture)

- 2.1: Share of coastal aquaculture production with disease controls according to defined criteria (percentage)
- 2.2: Landing sites with basic services supported under the project (number)
- 2.3: Manual on standard operating procedures for fish quality prepared and or revised(number)
- 2.4: Awareness campaign on sanitary conditions and quality of seafood products conducted (number)
- 2.5: Proportion of each group (harvesting, processing and marketing) that have adopted improved hygienic practices at selected sites (percentage)
- 2.6: Volume of fish products certified by Competent Authority (MT)

Component 3: Community Empowerment

3.1: Fishing community institutions functioning in transparent, gender inclusive and accountable manner, as per project guideline (Percentage)

3.2: Targeted fisher households benefited from improved community basic infrastructure(number)

3.3: Targeted fisher households accessing fund from the Livelihood Finance Window (LFW) (disaggregated by gender) in number

3.4: Number of business partnership established through public/private partnerships with Producers Groups/Fisher communities (number)

3.5: Number of youth employed through project facilitation after completion of vocational/skills development training (disaggregated by gender (number)

ANNEX 2: Feasibility Assessment Report Outline

The Feasibility Assessment Report will include at a minimum the following elements:

- i. Summary
- ii. Sector background
 - a. Policy, legal and administrative framework
 - b. Socio-economic status of coastal fishing communities
- iii. Project design description
- iv. Methodology
- v. Description of data used for the assessment and data validation
- vi. Results of the assessment
 - a. Technical Feasibility
 - b. Financial Feasibility
 - c. Economic Feasibility
 - d. Institutional and Management Feasibility
 - e. Environmental Feasibility
 - f. Socio cultural Feasibility
- vii. Recommendations
 - a. Changes to the project design with justification
 - b. Project implementation arrangements and flow of funds
 - c. Risks Assessment
 - d. Project coverage and selection of targeted locations for all activities as specified, and criteria used for selection
 - e. Any further actions needed to secure project financing and implementation, such as tender documents for consultancy services
 - f. Sustainability of project results
 - g. Monitoring and Evaluation of Project results
- viii. Summary of results of public consultations
- ix. Conclusions
- x. Annex DPP
- xi. Annex POM
- xii. Annex M&E
- xiii. Annex Grant Manual
- xiv. Annex Result Framework
- xv. Draft TORs for project investments to be implemented during year 1 and 2

ANNEX 3: POM Outline at least but not limited to the following contents :

I. OBJECTIVE AND STRUCTURE OF PROJECT OPERATIONS MANUAL.....

II. PROJECT DESCRIPTION

1. Project Objective.....

2. Project geographical location (regions and districts) and selection criteria.....

3. Scope of Project and Components.....

a. Component 1: Enabling activities for sustainable fisheries sector investment and growth.....

(i) Stock assessment and development of National Fishery Management Plan

.....

(ii) Creating enabling conditions for investment in sustainable fisheries.....

(iii) MCS development for IUU Reduction

.....

b. Component 2: Improving infrastructure and production practices for coastal belt fisheries ...

(i) Infrastructure improvements for capture and culture fisheries.....

(ii) Fishery sector value chain and food safety development.....

(iii) Boosting Aquaculture survival and growth rates

.....

c. Component 3: Community empowerment and livelihoods transformation.....

(i) Community institutions and alternative livelihood development.....

(ii) Business development and market linkages for alternative livelihoods.....

d. Component 4: Project management and monitoring.....

4. Implementing Institutions and Partners

a. DoF.....

b. SDF

c. BFRI

b. Others: MMO; BN; RP; BMFA; MFA; BOA

5. Implementation arrangements and oversight.....

a. Project Steering Committee

b. Project Management Unit [and PMU General Consultant]

(i) Project Director

(ii) Project Technical and Fiduciary staff

(iii) Communication Specialist

(iv) Environment & Safeguards Specialist

(v) M&E Specialist

c. [District Implementation Units(administrative level, functions, structure, staffing, reporting)]

d. Project Service Provider (functions, structure, responsibilities, reporting, and coordination with PMU for Component – 3)

e. Implementation Support from the World Bank

f. Project Agreements [list and attach]

6. Project Cost and Financing Budget.....

III. SEQUENCE AND IMPLEMENTATION PROCESSES [Gantt Charts including].....

1. Component 1 Enabling activities for sustainable fisheries sector investment and growth

2. Component 2 – Improving Infrastructure and Production practices for coastal belt fisheries

3. Component 3 – Community Empowerment.....	
4. Component 4 – Project Management and Monitoring.....	
5. PMU Annual Report and Work Plan Preparation	
6. Decision Tree for Project Steering Committee.....	
IV. FINANCIAL MANAGEMENT AND REPORTING.....	
1. Organization of project accounts	
2. Flow of Project Funds and Eligibility	
3. Accounting System	
4. Financial Reporting	
5. Audits	
6. Project closure arrangements	
V. PROCUREMENT GUIDELINES AND PROCUREMENT PLAN	
VI. SAFEGUARDS: ENVIRONMENT AND SOCIAL FRAMEWORK	
VII. MONITORING AND EVALUATION.....	
1. Project M&E system.....	
2. Monitoring & Evaluation Responsibilities.....	
3. Institutional Monitoring.....	
4. Objective of the M&E of Investment Component.....	
5. Objective of the M&E.....	
6. Disbursement-linked Indicators M&E	
7. Budget Monitoring and Burn Rate.....	
8. Results Based Monitoring (RBM) Indicators and Tracking of Monitoring Data flow system.....	
9. M&E Framework focuses on PDO level indicators	

Annexes:

Annex 1. Procurement Plan	
Annex 2 Staffing Plan	
Annex 3 PMU General Consultants and PMU Annual Budget	
Annex 4 Format of Semi-annual Reports and Implementation Completion Report	
Annex 5. Implementing Institutions / Organigram	
Annex 6. Capacity Training Plan for Year 1 and 2	
Annex 7. Activity Schedule for Project Component – 1	
Annex 8. Activity Schedule for Project Component – 2	
Annex 9. Infrastructure Site Selection and Climate Risk Screening Criteria for Project Component – 2	
Annex 10. Guidelines for Implementation of Component – 3	
Annex 11. Service Provider Project Agreement, Component – 3	
Annex 12. Guidelines for Managing and Monitoring of Community Grants, Component – 3	
Annex 13. Community Mobilization Principles, Component – 3	
Annex 12. Gender Integration Plan	
Annex 14. Project Stakeholder Engagement and Communication Plan	