

## TERMS OF REFERENCE FOR CONSULTANTS

### I. CONSULTING FIRM

#### A. Project background

1. Bangladesh, with a population of about 166 million in 2018 and a land area of 147,570 km<sup>2</sup>, is among the most densely populated countries in the world, and one of the countries most vulnerable to the impacts of climate change. Two-thirds of the country is less than 5 meters above mean sea level and located in the Ganges–Brahmaputra–Meghna Delta. Bangladesh has made steady economic progress over the past 6 years since 2012, with annual gross domestic product (GDP) growth exceeding 6% on average. In July 2015, Bangladesh surpassed lower-middle income threshold.<sup>1</sup> The government's Seventh Five Year Plan, FY2016–FY2020 is shaped to sustain the economic growth momentum, aiming to achieve a growth rate of at least 7% on average over the plan period.<sup>2</sup> It is on track to meet this target, having achieved an annual GDP growth rate of 7.1% in 2016, 7.3% in 2017, and 7.9% in 2018. Moving forward, the Asian Development Outlook 2019 report on global economic prospects forecasts that Bangladesh GDP growth is expected to edge up to 8.0% in FY2019 and FY2020.<sup>3</sup>

2. About 80% of the country's population lives in rural areas and depends on agriculture for their livelihood. The rural economy, through the farm and nonfarm sectors, substantially contributes to the national economy. Agriculture constituted about 15.5% of GDP in 2015, which is in the same range as that of South Asia as a whole. Although the share of agriculture in GDP has been declining gradually, the agriculture sector still employs, directly or indirectly, about 50% of the workforce and is a major contributor to reducing poverty because of rising wages. Annual growth in agriculture was less than 2% from 1972 to 1992, rose to 3.0% between 2000 and 2010 and 3.5% between 2011 and 2018. The country has achieved near self-sufficiency in cereal production with a strong emphasis on rice production, which is rising above the population growth rate. Agriculture development is necessary to further reduce the reliance on imported food and other agricultural products, which absorbs 29% of export earnings.

3. The Seventh Five Year Plan, FY2016–FY2020 focuses on increasing rural incomes and agriculture's contribution to economic development by: (i) maintaining self-sufficiency in cereal production; (ii) diversifying and improving the quality of crops; (iii) increasing productivity; and (iv) promoting agribusiness. Bangladesh's major agricultural challenges include: (i) the lack of modern production technologies; (ii) inadequate food quality; (iii) weak value chains; and (iv) food insecurity. Insufficient rural transport, inadequate market infrastructure, and the impacts of intensifying floods and cyclones related to climate change are major constraints to agriculture development in the country. The impact of climate variability is amplified by inaccessibility to markets and to processing and storage facilities. Accordingly, the plan has put forward specific strategies to overcome these challenges and constraints.

4. Rural connectivity underpins rural development in Bangladesh. Roads are the dominant mode of transportation, utilized by over 70% of passengers and 60% of freight traffic. Rural roads contribute significantly to generating increased agricultural incomes and employment opportunities while providing access to economic and social services to the entire rural population. The Seventh Five Year Plan, FY2016–FY2020 aims to expand the rural road capacity

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<sup>1</sup> World Bank. World Bank Country and Lending Groups (accessed 1 October 2018).

<sup>2</sup> Government of Bangladesh, Planning Commission. 2015. *Seventh Five Year Plan: FY2016–FY2020*. Dhaka.

<sup>3</sup> ADB. 2019. *Asian Development Outlook 2019 — Strengthening Disaster Resilience*. Manila.

to increase connectivity, provide greater access to social services and markets, and promote the agriculture sector. Bangladesh's total road network spans 374,245 km, of which 352,943 km (94%) are rural roads which were mainly constructed during 1990–2010 on earthen embankments. Since 1995, the government, with support from the international development community, has been expanding and improving the rural road network. However, rural connectivity in Bangladesh remains unfinished, impeding physical and economic access. At present, only about 40% of the rural population has access to all-weather roads, and these roads are only 28% of the total length of rural roads in the country. Guided by the Seventh Five Year Plan, FY2016–FY2020, the government has recently embarked on a sustained effort to improve the country's rural road network with the aim of increasing the percentage of rural roads classified as good from 43% in 2016 to 80% in 2020.<sup>4</sup> Improving the rural road network is key to support the country's agriculture value chain development zones, and the country partnership strategy for Bangladesh, 2016–2020<sup>5</sup> of the Asian Development Bank (ADB) intends to promote all-weather access to markets and agribusiness logistics.

5. The government's agricultural strategy under the plan also intends to increase agricultural productivity, encourage commercial agriculture and agribusiness development, increase employment opportunities for rural poor people, and reduce the poverty level.

6. ADB supports inclusive economic growth and poverty reduction in Bangladesh through the strategic priorities identified in the country partnership strategy, 2016–2020.<sup>6</sup> ADB's Strategy 2030 also advocates rural development and food security, and tackling climate change.<sup>7</sup> Recognizing the importance of rural infrastructure for economic growth and poverty reduction in Bangladesh, ADB and other development partners, including German development cooperation through KfW, have supported the government's efforts to develop rural infrastructure through several projects. Initially focusing on building rural roads, bridges, culverts, and the capacity of local government institutions (LGIs), ADB broadened its support to include the construction of growth center markets, flood shelters, union parishad offices, and small-scale water resources infrastructures. Subsequently, gender considerations and community participation in rural infrastructure planning, implementation, and operation and maintenance were included.

7. A core mandate of the Local Government Engineering Department (LGED)<sup>8</sup> in the Local Government Division of the Ministry of Local Government, Rural Development and Cooperatives is to improve the rural livelihoods by supporting rural infrastructure development and maintenance, developing stakeholder institutions, and promoting access to information and technologies to adapt to the changing natural environment and resource management practices. Since 1960, LGED has been involved in agricultural interventions through surface water management where small-scale water resources (SSWR) schemes<sup>9</sup> were initiated and implemented under several local development projects. From 1996 to 2002, LGED implemented the first Small-Scale Water

<sup>4</sup> ADB. 2018. *Asian Development Outlook 2018 Update—Maintaining Stability Amid Heightened Uncertainty*. Manila.

<sup>5</sup> ADB. 2016. *Country Partnership Strategy: Bangladesh, 2016–2020*. Manila.

<sup>6</sup> The country partnership strategy, 2016-2020 identifies, *inter alia*, two specific priority investment areas directly relevant to the proposed project: (i) improving rural livelihoods by increasing agriculture productivity, diversifying into high value-added products, and investing in all-weather access to markets and agribusiness logistics; and (ii) providing climate and disaster resilient infrastructure and services to sustain development achievements and reduce adverse impacts, especially on the poor.

<sup>7</sup> ADB. 2018. *Strategy 2030*. Manila.

<sup>8</sup> LGED, headed by a chief engineer who reports to the secretary of the ministry, is responsible for assisting local governments in the districts with civil engineering aspects, including construction. Its mandate includes planning rural roads, irrigation, river control and constructing bridges, houses, and buildings under the ministry in coordination with local authorities.

<sup>9</sup> Each with less than 1,000 ha service area.

Resources Development Sector Project financed by ADB, Netherlands, and International Fund for Agricultural Development (IFAD) which developed 280 subprojects. From 2002 to 2010, the second Small-Scale Water Resources Development Sector Project, financed by ADB and Netherlands, developed an additional 300 subprojects. The third phase, Participatory Small-Scale Water Resources Sector Project (PSSWRSP)<sup>10</sup>, financed by ADB, Netherlands, and IFAD, from 2010 to 2017, developed 265 new subprojects, enhanced performance of 148 existing ones, and introduced important elements of sustainability and poverty reduction through stakeholder-driven water resources management systems with special attention to the poorer population.

8. By developing community-based water management associations and community-managed small-scale infrastructure, rural incomes have increased, proving the effectiveness of this approach towards rural poverty reduction. Over the years, LGED has acquired vast experience in rural development projects through many externally financed projects (ADB, World Bank, IFAD, Netherlands, Japan International Cooperation Agency (JICA), etc.). Also, LGED and the Water Management Cooperative Associations (WMCAs) developed institutional capacities. Further to the successful implementation of the SSWR phases and the country high vulnerability to climate change and disasters triggered by natural hazards, LGED expressed interest for ADB to finance a new project encompassing enhanced climate and disaster resilience Climate and Disaster Resilient Small-Scale Water Resources Management Project.

9. Climate projections<sup>11</sup> for Bangladesh in a high emission scenario indicate an average of 1.8°C warming by 2050, and a slight increase in annual average precipitation of 53.6 mm, which may provide relief to drought prone areas. However, hot days increases could negate this advantage as the number of days with 35°C will increase by 35.8 days by 2050, increasing as well evapotranspiration processes, which could be disastrous to most crop production and also stresses water resource management in drought prone areas. For flood prone, low-lying coastal areas, the frequency of tropical cyclones in the Bay of Bengal may increase with “peak intensity increases of 5% to 10%, and precipitation rate increases of by 20% to 30%”. Cyclone-induced storm surges are likely to be exacerbated by a potential rise in sea level of over 27 cm by 2050. Water resources quality in these areas could be further lowered through saltwater intrusion. Runoff, a measure of water availability, is projected to increase and may exacerbate flooding to areas which are now subject to similar conditions in the current climate.

10. **Proposed investment project scope.** Subject to confirmation during the transaction technical assistance (TRTA), the proposed Climate and Disaster Resilient Small-Scale Water Resources Management Project will support investments in the SSWR sector, such as flood and drought management, drainage improvement, and command area development. It will draw lessons from previous investments, incorporate climate and disaster resilience features in infrastructure and facilities, promote climate and disaster tolerant crops and cropping practices, and introduce agricultural value chains. It will improve agricultural productivity through effective, participatory, and sustainable small-scale water management, and comprise some new subprojects to be developed and some enhancement subprojects. The latter, to be selected from existing subprojects developed under previous ADB-financed projects, will have generally satisfactory operating performance with potential for further enhancement of performance and benefits, and meet a set of selection criteria. Subject to confirmation during the feasibility study, the project will provide investment support for about 150 new subprojects and 400 enhancement

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<sup>10</sup> ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Loan to the People's Republic of Bangladesh: Participatory Small-Scale Water Resources Sector Project*. Manila.

<sup>11</sup> Rough assessment is based on information from the World Bank Climate Change Portal database.

subprojects. The overall impact will be increased food security and rural livelihoods resilience to climate change-induced disasters amongst project beneficiaries.

11. The proposed Climate and Disaster Resilient Small-Scale Water Resources Management Project is to be aligned with: (i) the government's current policies<sup>12</sup>; (ii) ADB's country partnership strategy for Bangladesh, 2016–2020; and (iii) ADB's Strategy 2030, especially the operational priorities on: (a) promoting rural development and food security; and (b) tackling climate change, building climate and disaster resilience, and enhancing environment sustainability.

12. **Proposed project indicative outcome and outputs.** Subject to confirmation by the consulting firm during the feasibility study, the indicative project outputs could be as described below. However, these statements and activities, as well as the corresponding design and monitoring framework of the project will be continuously developed until loan approval.

13. **Indicative output 1: Participatory subproject development.** Under this output, 150 new WMCAs will be formed in the four geographical hotspots of the project. The project will support skills development of WMCAs for efficient use of water management infrastructure, including disaster resilience aspects, to improve the productivity of agriculture activities, and for ensuring gender and social inclusion in all aspects of water resource management. The support will be linked to other income-generating activities of WMCAs and extended to training and capacity development of WMCAs for civil works monitoring, preparing operation and maintenance manuals, undertaking minor routine maintenance of infrastructure, and effectively using WMCA operation and maintenance funds.

14. **Indicative output 2: Small scale water resources infrastructures with climate and disaster resilient features developed or enhanced.** Based on subproject selection criteria to be agreed, it is envisaged that the project will: (i) develop up to approximately 150 new small-scale water resources subprojects with climate and disaster resilient features; and (ii) enhance about 400 (out of 845) existing subprojects with climate and disaster resilient features to improve the system functionality by maximizing benefits through low-cost investments. Depending on specific characteristics in the four broad geographical areas prone to climate and natural hazards risks targeted by the project, interventions in the following themes can be envisaged, with overall emphasis on climate proofing and climate-smart investment, to promote adaptation/mitigation and disaster resilience: (i) flood management; (ii) water logging management; (iii) drainage improvement; (iv) drought management; (v) water conservation; and (vi) command area development.

15. **Indicative output 3: Upazila- and WMCA-level value chain development activities prepared and implemented.** This output will focus on increasing income of WMCAs by developing their agricultural production based on market demands and requirements. The value chain activities will be either developed as independent subprojects at Upazila-level or integrated into wider WMCAs' subprojects. Upazila-level investment will consider market location, private sector's operations (existing and potential processing capacity) and sectoral investment priorities. WMCA-level investment will be based on business advisory services and subsequent participatory investment plan developed by WMCA. Envisaged activities will include: (i) to establish producer associations/companies for focus subsectors or key commodities, such as fisheries, spice, vegetables, oil seed, pulse, potato, rice, and mango; (ii) to establish business advisory and extension services and extend them to WMCAs and producer

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<sup>12</sup> Including Seventh Five Year Plan: FY2016–FY2020, Bangladesh Delta Plan 2100, Bangladesh Climate Change and Disaster Strategy and Action Plan 2009 and related guidelines issued by ministries and agencies concerned, and the LGED Business Plan 2019-2021 (currently being finalized).

associations/companies in order to inform farmers of the good practices, market demand, market requirements and support cropping pattern planning, marketing and branding; (iii) to build post-harvest management infrastructure at Upazila-level and WMCA-level, such as processing facilities, storage, pack houses, and cold chain facilities, and to operationalize their management; (iv) to provide value chain development credit line to WMCAs and producer companies and ensure sound financial management; and (v) to develop food safety measures, such as training and certification of Global Good Agriculture Practices.

16. **Proposed project geographical coverage.** The project is proposed to be implemented in four of the six hotspots of the Bangladesh Delta Plan 2100, namely: (i) the Barind and drought prone areas; (ii) the coastal zone; (iii) the Haor and flash flood areas; and (iv) the river systems and estuaries.

17. **Indicative investment plan.** The total project cost will be approximately \$180 million of which ADB may finance \$100 million and IFAD \$40 million; government's contribution of \$40 million will cover any applicable taxes and duties.

18. **Implementing arrangements.** The proposed project is tentatively planned for six years. The executing agency will be LGED under which a project management unit will be established, to be supported by a project implementation consultant and possibly by a project management consultant to coordinate with implementing agencies such as Department of Agricultural Extension (Ministry of Agriculture), Department of Agricultural Marketing (Ministry of Agriculture), Department of Fisheries (Ministry of Fisheries and Livestock), Department of Disaster Management (DDM) (Ministry of Disaster Management and Relief) and private sector.

19. **Project design issues and opportunities.** The following issues and opportunities were identified:

- (i) **Geographical overlap.** LGED implements the Small-Scale Water Resources Development Project (Phase-2) financed by JICA (2017–2023) which covers Dhaka, Sylhet, Mymensingh and Rangpur divisions. Therefore, the subprojects for the proposed project will be selected in a way that prevents from any geographical overlap;
- (ii) **Synergies.** Opportunities: (a) between ADB and JICA through LGED; and (b) LGED implements since February 2019 the ADB-financed Rural Connectivity Improvement Project which aims at improving the road network connecting rural population to agriculture value chain development zones by upgrading 1,700 km of rural roads in 34 districts. The subprojects for the proposed project will be selected to benefit from improvements to rural road network;
- (iii) **Procurement strategy.** Works will be scattered over a large geographical area, so the project needs an efficient planning and procurement strategy aiming at minimizing the number of civil works contracts, using well-elaborated guidelines, design criteria, and adequate and well-trained staff in the project management unit and project implementation units to timely meet readiness filters; and
- (iv) **Research and innovation.** A few research and innovation aspects need to be recommended in the proposed project.

20. This TRTA, financed on a grant basis by ADB and the Netherlands Trust Fund under the Water Financing Partnership Facility, is to help the government to prepare the ensuing Climate and Disaster Resilient Small-Scale Water Resources Management Project.

21. ADB will engage an international consulting firm in accordance with the ADB Procurement Policy (2017, as amended from time to time) to implement this TRTA through a quality-and cost-based selection (QCBS) with a quality-cost ratio of 90:10. A simplified technical proposal will be used for the selection of a firm.

22. The government will provide counterpart support in the form of staff and their operating costs, administrative support, available and necessary information, detailed design drawings of small-scale water infrastructure, studies, surveys, reports, data access and analysis, office space and amenities. Also, the government has confirmed that they will support the TRTA consultants during field visits, with organizing and convening meetings or workshops with stakeholders when required, and provide timely feedback on the TRTA outputs.

## **B. Objectives of the assignment**

23. The main objective of the TRTA is to support the government in preparing the proposed Climate and Disaster Resilient Small-Scale Water Resources Management Project for possible financing by ADB and IFAD.

24. The TRTA will define the scope including climate and disaster resilient aspects, procedures to identify subprojects, cost and financing plan, implementation arrangements, procurement, technology and innovation aspects, capacity development, maintenance arrangements, and adherence to ADB Safeguard Policy Statement 2009.<sup>13</sup> It will also provide advance action support to the executing agency to enhance project readiness, such as advance procurement of civil work packages and recruitment of consultants. The TRTA draft final and final reports to be prepared by the consulting firm will include the set of ADB-required loan approval documents listed in Section F of these terms of reference.

25. The study will follow this following broad approach wherein: (i) sector issues, constraints, and development potentials will be assessed; (ii) a list of potential new subprojects will be drawn; and (iii) 30 subprojects representative of the project area diversities will be prepared up to the level considered good for implementation. Similarly, 100 enhancement subprojects will be prepared and comprised activities to enhance operating performance, agricultural productivity and profitability, resilience to climate change and disaster, and adding value chain to farm produce.

26. Also, the consultants will be responsible for the procurement of computers, printers, and other office equipment<sup>14</sup>, organization of all tripartite workshops, and engagement, management and outputs of survey teams for the participatory rural appraisals (PRAs) surveys<sup>15</sup>, topographic survey and geotechnical investigations survey. The surveys outputs will be used to develop the subproject feasibility study described below in the Scope of services. The surveys may be subcontracted by the firm. All procurement under this TRTA shall be governed by ADB's Procurement Regulations (2017) and as amended from time to time.

## **C. Scope of the services**

27. The scope of the services comprises designing the proposed project and assessing project feasibility in various aspects required by ADB and the government. In close consultation with the Focal Person within LGED, LGED field offices, other government agencies as required,

<sup>13</sup> <https://www.adb.org/sites/default/files/institutional-document/32056/safeguard-policy-statement-june2009.pdf>

<sup>14</sup> Equipment purchased with ADB financing will be handed over to the government upon completion of the TA.

<sup>15</sup> For budgetary purposes, it is estimated that PRAs will be undertaken by 10 teams each comprising of a water resources engineer, and environment, gender and social safeguard specialists, and that each team can carry out 2 subprojects within a month (field visit, deliverables preparation, submission and discussions).

the WMCAs, ADB staff and consultants, IFAD staff and consultants, the consulting firm will be responsible for undertaking and delivering all following main tasks:

- (i) Policy and regulatory frameworks for water resources management in Bangladesh and lessons learnt from the three previous ADB-financed projects in the small-scale water resources subsector.
  - a. Review the policy and regulatory frameworks for management of water sector in general, including a comparison with governance principles and standards developed by international organizations and other entities, and small-scale water resources in particular;
  - b. Review the current status of small-scale water resources management, its role in rural economy and food security, and conservation of biodiversity;
  - c. Review the government's development plans and strategies in the short-, medium- and long-terms related to the climate change, disaster risk management and water sectors in general and small-scale water resources in particular, and resources allocated in the government development plans;
  - d. Assess the conformity of the proposed project with the government's overall sector policies, strategies, and institutional and fiscal arrangements;
  - e. Assess the adequacy of the water sector policy and regulatory frameworks and institutional arrangements for the development of small-scale water resources subsector; and make specific recommendations if there are any needs for any changes/adjustments to these policy/regulatory frameworks/institutional arrangements to enhance sustainability of subsector development.
  - f. Review the project completion reports of the previous three ADB-funded small-scale water resources projects in Bangladesh, the Project Performance Evaluation Report on Loan 1381-BAN (ADB, 2007), the Validation Report of Loan 1831-BAN (ADB, 2014) and the 2018 Agriculture and Natural Resources and Rural Development (ANRRD) sector evaluation (ADB, 2018), in particular the previous small-scale water resources projects examined. Summarize the lessons learnt, identify opportunities and challenges on the part of ADB, and make recommendations for the design of this project.
- (ii) Given the proposed project's high climate risk, a detailed climate change assessment (CCA or climate risk and vulnerability assessment [CRVA]) is to be undertaken by the consultants. Findings from the CRVA will be important inputs into the project design and the feasibility study of each subproject. A template with the outline of a CRVA report will be provided by ADB to the winning firm.
- (iii) Subproject Feasibility Study.
  - a. Develop a workplan for undertaking comprehensive feasibility study of 30 new potential subprojects and 100 enhancement subprojects. These subprojects would be selected for feasibility study from an initial review, including field visits, of 40 new subproject proposals and 120 enhancement subproject proposals in prescribed format already received by LGED Focal Person from the local governments at Union level.
  - b. Prepare subprojects typology and selection criteria.
  - c. Select sample subprojects for appraisal (30 new subprojects and 100 enhancement subprojects) and the proposed long list of remaining subprojects to be considered under the project.

- (i) For each of the new subprojects:
  - a. Conduct PRA with active participation of stakeholders and document the findings in a prescribed format;
  - b. Conduct, with ADB/LGED approved methodology and questionnaire, a socioeconomic survey;
  - c. Assess local interest, motivation, skills, and group spirit in organizing a WMCA that would participate in subproject development and have the primary responsibility for mobilizing group actions for sustained operation and maintenance of subproject infrastructure and for accessing value chain support and facilities. Identify local weaknesses, if any, in organizing into an effective WMCA and recommend remedial measures;
  - d. Assess opportunities for better management of local land and water resources for higher fam income with interventions that are, on a prima facie basis, technically feasible and economically viable, and are either unlikely to have any adverse environmental impact or may have some adverse impact(s) which can be mitigated with appropriate measures;
  - e. Conduct rigorous feasibility study of the potentially economically viable subproject following: (i) technical procedures, practices and specifications currently recommended by the lead sector institution/agency concerned for land and water resources development, with due regard to the Bangladesh Climate Change Strategy and Action Plan 2009 and international best practices on climate and disaster resilience; and (ii) most recent ADB guidelines for economic analysis of projects<sup>16</sup>, and ADB Safeguards Policy Statement (2009).
- (ii) For each of the enhancement subprojects:
  - f. Validate technical feasibility of enhancement proposals through participatory field visits;
  - g. Assess the works, institutional development and supports needed to incorporate enhancement proposal and climate and disaster resilience into the existing subprojects;
  - h. Conduct a rigorous analysis of incremental benefits justifying the proposed interventions.
- (iv) Develop further / refine the indicative implementing arrangements mentioned in paragraph 17.
- (v) Draft ADB loan documentation.
- (vi) Prepare bid documents for each sample subproject in close collaboration with the executing agency.

28. IFAD, a long-standing partner of ADB during previous phases of small-scale water resources sector project in Bangladesh, expressed interest in cofinancing the proposed project. To enhance joint project design, IFAD and ADB will provide additional consultant support to the

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<sup>16</sup> ADB. 2017. *Guidelines for the Economic Analysis of Projects*. Manila.  
<https://www.adb.org/sites/default/files/institutional-document/32256/economic-analysis-projects.pdf>

consulting firm, specifically for the preparation of output 3.<sup>17</sup> The consulting firm, ADB and IFAD consultants will work jointly under a 'TRTA team' with clear understanding of shared responsibilities and outputs. ADB and IFAD consultants' outputs (after approval by IFAD/ADB) will be integrated by the consulting firm into the overall outputs listed in paragraph 33.

#### D. Consultant inputs and required qualifications

29. About 17 person-months of international and 37 person-months national consultants are estimated to be required for this assignment. Details of inputs are provided in Table 1.

**Table 1: Summary of Consulting Services**

<b>Position</b>	<b>Person-Months International</b>	<b>Person-Months National</b>
<b>Key Experts</b>		
Small-Scale Water Resources Development Specialist – Team leader	9	
Project Economist	4	
Environmental Safeguards Specialist	3	
Social Safeguards and Gender Specialist	1	
Small-scale Water Resources Development Engineer – Deputy Team leader		9
Hydraulic Structure Design Engineer		5
Climate change and Disaster Risk Management Specialist		5
Financial Management Specialist		2
Procurement Specialist		3
<b>Non-key Experts</b>		
Agriculture and Rural Development Economist		4
Environmental Safeguards Expert		5
Social Safeguards and Gender Expert		4
<b>Total person-months</b>	<b>17</b>	<b>37</b>

30. Only key experts will be rated in the evaluation while non-key experts will be assessed on a pass-or-fail basis. Those who do not meet the qualifications will be requested for replacement. Proposing unqualified non-key experts will also be considered in the technical proposal evaluation. The minimum qualifications and experience required for each position are outlined in Table 2.

**Table 2: List of Positions and Minimum Qualifications and Experience**

<b>Position</b>	<b>Minimum Qualifications and Experience</b>
<b>International</b>	
Small-Scale Water Resources Development Specialist – Team Leader	<ul style="list-style-type: none"> <li>Bachelor's degree in civil engineering or water resources engineering, Master's degree is preferred.</li> <li>Minimum 15 years of relevant professional experience in water resources and rural development, including climate change adaptation aspects and several years leading a multidisciplinary team of international and national experts on project preparatory studies of similar nature.</li> </ul>

<sup>17</sup> ADB will provide consultant support with expertise in (i) fisheries (international); (ii) cold chain/ logistics (international); (iii) agriculture value chain (national); and agriculture market and business (national). IFAD will provide (international) consultant support with expertise in (i) agriculture and agronomy, including food safety; (ii) rural financial services; and (iii) social and poverty issues.

	<ul style="list-style-type: none"> <li>• Broad-based work experience recognized as an expert either in a broad area of specialization or in a limited specialized field relevant to the assignment.</li> <li>• International assignments in similar geographic area, experience in ADB- and/or the World Bank- financed projects in South Asia is preferred.</li> </ul>
Project Economist	<ul style="list-style-type: none"> <li>• Bachelor's degree in economics/agriculture economics, Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience in financial and economic analyses in feasibility studies of water resources and rural development projects, including using for several years COSTAB for development projects.</li> <li>• Broad-based work experience recognized as an expert either in a broad area of specialization or in a limited specialized field relevant to the assignment.</li> <li>• International assignments in similar geographic area, experience in ADB- and/or the World Bank-financed projects in South Asia is preferred.</li> </ul>
Environment Safeguards Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in environment, natural resources, engineering, or agriculture. Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience in environmental safeguards of water resources or rural development projects in developing Asia.</li> <li>• Broad-based work experience recognized as an expert either in a broad area of specialization or in a limited specialized field relevant to the assignment.</li> <li>• International assignments in developing Asia, experience in ADB- and/or the World Bank-financed projects in South Asia is preferred.</li> </ul>
Social Safeguards and Gender Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in sociology or social science. Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience in social safeguards of water resources or rural development projects in developing Asia.</li> <li>• Broad-based work experience recognized as an expert either in a broad area of specialization or in a limited specialized field relevant to the assignment.</li> <li>• International assignments in developing Asia, experience in ADB- and/or the World Bank-financed projects in South Asia is preferred.</li> </ul>
<b>National</b>	
Small-scale Water Resources Development Engineer – Deputy Team Leader	<ul style="list-style-type: none"> <li>• Bachelor's degree in civil engineering or water resources engineering, Master's degree is preferred.</li> <li>• Minimum 15 years of relevant professional experience in water resources and rural development, including several years leading a multidisciplinary team of national experts for similar project preparatory studies and/or for implementation of donor-financed development projects.</li> <li>• Experience of coordination and quality control of contributions of specialists in other disciplines to timely complete a joint project.</li> </ul>
Hydraulic Structure Design Engineer	<ul style="list-style-type: none"> <li>• Bachelor's degree in civil engineering or water resources engineering, Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience in design and construction of hydraulic structures.</li> </ul>
Climate Change and Disaster Risk Management Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree highly relevant to the position, e.g. climate science, disaster risk management, hydrology, water resources engineering, agriculture, or environmental science, Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience in climate change adaptation aspects or disaster risk management.</li> <li>• Experience in donor-financed projects is preferred.</li> </ul>
Financial Management Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in accounting, finance, or a related field, and a recognized professional accountancy qualification. Master's degree in financial management or business administration or equivalent is preferred.</li> </ul>

	<ul style="list-style-type: none"> <li>• Minimum 10 years of relevant professional experience in financial management assessment, financial due diligence for international organizations/agencies.</li> <li>• Prior experience in financial management assessment to ADB standards, guidelines and methodologies is preferred.</li> <li>• Prior experience with LGED is preferred.</li> </ul>
Procurement Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree highly relevant to the position, e.g. procurement, engineering, law, management or business, Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience including 7 years in procurement practices of development projects, country procurement assessments, or national procurement reform programs.</li> <li>• Prior experience in procurement practices following ADB's Procurement and Consulting Guidelines is preferred.</li> </ul>
Agriculture and Rural Development Economist	<ul style="list-style-type: none"> <li>• Bachelor's degree in economics/agriculture economics, Master's degree is preferred.</li> <li>• Minimum 10 years of relevant professional experience in feasibility studies of rural development projects of similar nature, including using COSTAB.</li> <li>• Experience in ADB- and/or the World Bank-financed projects is preferred.</li> </ul>
Environment Safeguards Expert	<ul style="list-style-type: none"> <li>• Bachelor's degree in environment, natural resources, engineering, or agriculture, Master's degree is preferred.</li> <li>• Minimum 7 years of relevant professional experience in environmental safeguards of water resources or rural development projects.</li> <li>• Experience in ADB- and/or the World Bank-financed projects is preferred.</li> </ul>
Social Safeguards and Gender Expert	<ul style="list-style-type: none"> <li>• Bachelor's degree in sociology or social science, Master's degree is preferred.</li> <li>• Minimum 7 years of relevant professional experience in social safeguards, social development, including gender aspects of water resources or rural development projects.</li> <li>• Experience in ADB- and/or the World Bank-financed projects is preferred.</li> </ul>

## E. Implementation

31. ADB will administer the TRTA<sup>18</sup> and supervise the consultants' outputs. The consulting services will be implemented over nine months and are expected to start in early February 2020 and end in November 2020. The consultant team will be based in Dhaka while its work is also expected to involve field work outside of Dhaka. It is expected that each of the international experts of the firm will carry out at least 85% of their respective person-months in Bangladesh. LGED will be the executing agency. The Dhaka-based Focal Person for this assignment within LGED will support the TRTA implementation and supervise the day-to-day activities of the consultants. During the whole duration of the assignment, the firm will work closely under the direction of the Team leader with the Focal Person within LGED, other government agencies involved in the project as required, the WMCAs, ADB staff and consultants, and IFAD staff and consultants. The Team leader will report to ADB Project Officer while all other experts will report to the Team leader.

32. To ensure a smooth implementation of the services and the successful achievement of the objectives, the consulting firm will carry out all its duties and responsibilities with due diligence and efficiency and deliver to ADB such information related to the services as ADB may reasonably request.

<sup>18</sup> The TA proceeds will be disbursed in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

## F. Outputs and Deliverables

33. **Outputs.** The expected outputs from the consulting firm are listed below.

- (i) Technical, economic, financial and social feasibility study report, including feasibility designs of all infrastructure subprojects and their due diligence based on other outputs;
- (ii) Agriculture and natural resources sector assessment summary (i.e., updating the sector assessment if needed);
- (iii) Project administration manual;
- (iv) Development coordination (i.e.: updating a recently approved document);
- (v) Economic analysis;
- (vi) Financial due diligence documents in full compliance with ADB requirements, guidelines and methodologies<sup>19</sup> (i.e., financial management assessment of the executing/implementing agencies, financial evaluation, and financial analysis);
- (vii) Procurement capacity assessment of the executing agency (following ADB Procurement Policy (2017), Procurement Regulations for ADB Borrowers for Goods, Works, Non-consulting and Consulting Services (2017), and Guidance Notes)<sup>20</sup>;
- (viii) Summary poverty reduction and social strategy;
- (ix) Gender analysis, collection of baseline data, and gender action plan;
- (x) Safeguard documents on the environment (following ADB Safeguard Policy Statement (2009));
- (xi) Safeguard documents on involuntary resettlement, and indigenous peoples (following ADB Safeguard Policy Statement (2009));
- (xii) Climate risk vulnerability assessment (CRVA);
- (xiii) Bidding documents of civil works and goods for open competitive biddings<sup>21</sup>;
- (xiv) Support LGED in drafting the government development project proposal (DPP); and
- (xv) TRTA completion report.

34. **Deliverables.** The firm will submit the following reports: (i) inception report (within one month after the contract signing date); (ii) interim report (within 5 months after the contract signing date); (iii) draft final report (within 7 months after the contract signing date); (iv) a final report incorporating comments by the government and ADB within 20 days after the tripartite review meeting with government, ADB, IFAD, and the consultants; and (v) a completion report (within 9 months after the contract signing date).

35. In addition, the firm will provide ADB with a brief monthly progress report of the assignment, including work completed and planned, potential issues and recommendations, and any other relevant information related to the assignment.

<sup>19</sup> Available at <http://www.adb.org/projects/operations/financial-management-resources>, especially, but not limited to, the following documents: 'Financial Due Diligence: A Methodology Note', 'Guidelines on the Financial Management and Analysis of Projects', 'Financial Management, Cost Estimates, Financial Analysis, and Financial Performance Indicators. Operations Manual. OMG2/BP'.

<sup>20</sup> The policy is available at <https://www.adb.org/documents/adb-procurement-policy> while the guidance notes are available at <https://www.adb.org/documents/guidance-notes-on-procurement>. While preparing the procurement risk assessment and mitigation plans, the methodology and templates provided in the guidance notes for 'procurement risk framework' and strategic procurement plan will be used.

<sup>21</sup> The procurement plan and bidding documents will need to be precleared by ADB before proceeding for advertising.

36. The firm will be accountable to ADB for the deliverables outlined in the present terms of reference. All reports will be prepared in English and will cover all the tasks of the scope of the services. Latest draft of all outputs will be included in each report, except the inception report.

37. Additionally, tripartite review workshops will be organized and conducted by the consultant team at key milestones (inception, interim, draft final report, final report) to present their work to the government, ADB and IFAD.

## G. Proposal evaluation

38. The consulting firm will be engaged through a quality-and cost-based selection with a quality-cost ratio of 90:10 with simplified technical proposal. The consulting firm is expected to propose an approach, methodology and workplan that will enable all expected tasks of the scope of work to be accomplished within the implementation period of this TRTA. ADB expects the firm to take full charge of the management of the team of specialists and describe its management and quality assurance processes in the approach and methodology section of the technical proposal. It is anticipated that the evaluation criteria/score will be 300 points for the approach and methodology, and 700 points for the personnel.

## II. INDIVIDUAL CONSULTANTS

39. Two international and two national individual consultants will be recruited by ADB. The minimum qualifications and experience required for each position are outlined in Table 3.

**Table 3: List of Positions and Minimum Qualifications and Experience**

Position	Minimum Qualifications and Experience
<b>International</b>	
Fisheries specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in natural resource management, fisheries science or a relevant field. Master's degree is preferred.</li> <li>• Minimum 10 years of professional experience in rural development, including at least 5 years of professional experience in fisheries resource management including policy research, investment project development, and/or for implementation of donor-financed development projects relevant to fisheries.</li> <li>• Experience in the design and/or implementation of projects in South Asia financed by international financial institution is preferred.</li> </ul>
Cold chain/Logistics Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in business, agribusiness, agriculture, rural development or a relevant field. Master's degree is preferred.</li> <li>• Minimum 10 years of professional experience in supply chain and/or agribusiness including at least 3 years of direct experience in cold chain development</li> <li>• Experience in the design and/or implementation of projects in South Asia financed by international financial institution is preferred.</li> </ul>
<b>National</b>	
Agriculture value chain specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in agriculture, agribusiness, business, rural development or a relevant field. Master's degree is preferred.</li> <li>• Minimum 15 years of relevant professional experience in rural development and agricultural sector development including at least 7 years of experience in agricultural value chain analysis and/or development.</li> <li>• Experience in the design and/or implementation of projects in South Asia financed by international financial institution is preferred.</li> </ul>

Position	Minimum Qualifications and Experience
Agriculture Market and Business Analyst	<ul style="list-style-type: none"> <li>• Bachelor's degree in agriculture, agribusiness, business, marketing or a relevant field.</li> <li>• Minimum 10 years of relevant professional experience in agricultural sector development, agribusiness companies/consulting firms including at least 5 years of experience in agriculture marketing/branding/business advisories.</li> <li>• Experience in the design and/or implementation of projects in South Asia financed by international financial institution is preferred.</li> </ul>

13. The terms of reference of each specialist are outlined below.

**a. Fisheries Specialist**

The consultant's responsibilities include, but are not be limited to, the following:

- (i) Review constraints to and opportunities for fisheries and aquaculture in Bangladesh, particularly focusing on target districts of the project.
- (ii) Analyze stakeholder roles, capacities and caps in the implementation of existing policies, regulations and practice of good fisheries and aquaculture practices, including gender analysis.
- (iii) Assess the previous project interventions on the supply of fingerings for aquaculture programs, including water retention structure managed by WMCAs and any other on-going fisheries management and investment programs.
- (iv) Assess the training program conducted by previous ADB-IFAD projects in collaboration with the Department of Fisheries (DOF) and Bangladesh Fisheries Training Institute (BFTI).
- (v) Recommend an action plan including possible partners, drawn from across the government, private sector, fisheries groups/associations, NGOs/CSOs, research institutes.
- (vi) Describe the risks and benefits of the proposed program including challenges in over-fishing and water management interventions and risks that pose challenges to fishers who reside within a given subproject area (disruption beyond project interventions).

**b. Cold Chain / Logistics Specialist**

The consultant's responsibilities include, but are not be limited to, the following:

- (i) Analyze domestic consumption and trade patterns of fresh produce and other processed products.
- (ii) Identify key stakeholders in cold-chain in Bangladesh, including farmers/farmer groups; street vendors; grocery stores; transport service providers; reefer vehicle providers; operators of ripening chamber; pack house; cold storage; and high value crop traders/wholesalers.
- (iii) Develop a survey questionnaire for stakeholder analysis and needs assessment.
- (iv) Assess cold storage status based on the available data and information on the existing capacity of production and/or originating units (food processing units and fresh produce pack-houses).
- (v) Assess the current status and capacity of refrigerated transportation available in cold chain
- (vi) Identify demand for cold-chain facilities, basis production of raw materials and market growth trends for both fresh produce and processed food products, based on the existing market demand and linked to distance from identified producing Upazilas, categorized by temperature range and segmented by long-term storage or short transitory supply chain.

- (vii) Identify institutions and stakeholders (public and/or private) that can manage and/or operate cold chain facilities, and evaluate their current capacities.
- (viii) Recommend appropriate business models to operate cold chain infrastructure at different levels, and
- (ix) Develop cold chain options with detailed description of requirements and technical capacity as well as estimated investment costs.

**c. Agriculture Value Chain Specialist**

The consultant's responsibilities include, but are not be limited to, the following:

- (x) Analyze the agriculture sector in the project areas. Assess small farmers' access to factors of production (soil quality, inputs, irrigation/drainage, technology, financing, advisory services).
- (xi) Define agricultural commodities that have comparative advantage, market demand, growth potential, backwards linkages to small farmers, and job creation effects. Seek to prioritize commodities which also have positive nutritional benefits for producers and consumers.
- (xii) For the defined commodities, analyze the respective value chains, covering all value chain actors and linkages (advisory service providers, input suppliers, producers, traders, financiers, transporters, certifiers, agribusinesses).
- (xiii) Identify core transactions in the project's target subsectors and map out value chains of selected commodities through developing flow charts
- (xiv) Create an inventory of direct and indirect market players within the value chains and illustrate opportunities and constraints at each value chain level
- (xv) Identify different markets for a product or service, most importantly noting on which of the market segment is growing or has growth potential, and allocate them to a specific end market/product and identify characteristics of specific market channels including and develop a market database for key commodities through quantitative analysis of field data on overall national and local agricultural markets in collaboration with Agriculture Market and Business Analyst.
- (xvi) Define project investments in the selected value chains that are resilient to climate change impacts, and that can enhance small farmer productivity, market access, and incomes.
- (xvii) Define project investments to enhance the capabilities of farmers' groups (such as Water Management Groups) for group access to inputs, advisory services, technology and markets.
- (xviii) Define project investments in advisory services (public and/or private) and in organizing compliance with food quality and safety standards (GGAP for producers and HACCP/ISO for processors).
- (xix) Identify modern processing technologies for the selected commodities and define how they will be financed and owned/operated by Water Management Groups under the project.
- (xx) Identify institutions and stakeholders (public and/or private) that can provide services to farmers and processors (technical, financial) under the project. Define implementation arrangements for the proposed agricultural investments.
- (xxi) Develop crop models and farm models (technical and financial) that will contribute to the analysis of the project's financial internal rate of return (FIRR), economic internal rate of return (EIRR), cost-benefit analysis, and net present value.
- (xxii) Describe the overall benefits of the project investments on small farmers' production, incomes, food security and nutritional status.

**d. Agriculture Market and Business Analyst**

The consultant's responsibilities include, but are not be limited to, the following:

- (i) Identify and assess institutional systems of agricultural marketing in Bangladesh.
- (ii) Research on international, national and state policies which are influential on pricing, marketing, competition and food safety. This will also consider financial and political commitment of public and private institutions.
- (iii) Interview identified customer groups and market players, and research (i) gaps and emerging challenges with the current market systems for key commodities, (ii) present and forecasted competition, potential to improve productivity, and increased value addition, and (iii) interaction between regulators and commercial agents.
- (iv) Research on and analyze current market trends in terms of market demand and supply, price-scheduling mechanisms, market determinant factors, supply chains and government market regulatory and control mechanisms.
- (v) Identify performance gaps from the perspective of taxes, tariffs and non-tariff barriers, infrastructure/utility service quality and price, regulatory barriers and enforcements, administrative barriers, market structure and competition policy, factor market rigidities, price restrictions/subsidies, product quality and standards.
- (vi) Analyze possible potential risks the project beneficiaries may face in market and suggest possible mitigation measures.
- (vii) Prepare market research paper focusing on assessing what people want to buy, and which customer demands have the potential for business to justify development costs.