



Technical Assistance Report

Project Number: 51294-002
Transaction Technical Assistance (TRTA)

June 2018

Republic of the Philippines: Preparing the Integrated Flood Risk Management Sector Project

This document is being disclosed to the public in accordance with ADB's Public Communications Policy 2011.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 25 May 2018)

| | | |
|---------------|---|----------|
| Currency unit | – | peso (₱) |
| ₱1.00 | = | \$0.0192 |
| \$1.00 | = | ₱51.9910 |

ABBREVIATIONS

| | | |
|--------|---|--|
| ADB | – | Asian Development Bank |
| CBDRRM | – | community-based disaster risk reduction and management |
| DPWH | – | Department of Public Works and Highways |
| FRM | – | flood risk management |
| IPIF | – | Technical Assistance Loan for Infrastructure Preparation and Innovation Facility |
| TRTA | – | transaction technical assistance |

NOTES

In this report, "\$" refers to United States dollars.

| | |
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TRANSACTION TECHNICAL ASSISTANCE AT A GLANCE

| | | |
|--|---|--|
| 1. Basic Data | | Project Number: 51294-002 |
| Project Name | Integrated Flood Risk Management Sector Project | Department/Division SERD/SEER |
| Nature of Activity | Project Preparation | Executing Agency Dept. of Public Works and Highways |
| Modality | Regular | |
| Country | Philippines | |
| 2. Sector | Subsector(s) | ADB Financing (\$ million) |
| ✓ Agriculture, natural resources and rural development | Rural flood protection | 0.80 |
| | Rural water policy, institutional and capacity development | 0.20 |
| | Total | 1.00 |
| 3. Strategic Agenda | Subcomponents | Climate Change Information |
| Inclusive economic growth (IEG) | Pillar 2: Access to economic opportunities, including jobs, made more inclusive | Climate Change impact on the Project |
| Environmentally sustainable growth (ESG) | Disaster risk management | High |
| 4. Drivers of Change | Components | Gender Equity and Mainstreaming |
| Governance and capacity development (GCD) | Organizational development | Effective gender mainstreaming (EGM) |
| Partnerships (PAR) | International finance institutions (IFI) Official cofinancing | ✓ |
| 5. Poverty and SDG Targeting | | Location Impact |
| Geographic Targeting | Yes | Rural |
| Household Targeting | No | High |
| SDG Targeting | Yes | |
| SDG Goals | SDG13 | |
| 6. Risk Categorization | Complex | |
| 7. Safeguard Categorization | Safeguard Policy Statement does not apply | |
| 8. Financing | | |
| Modality and Sources | | Amount (\$ million) |
| ADB | | 1.00 |
| Transaction technical assistance: Technical Assistance Special Fund | | 1.00 |
| Cofinancing | | 0.30 |
| Cooperation Fund for Project Preparation in the Greater Mekong Subregion and in Other Specific Asian Countries (Full ADB Administration) | | 0.30 |
| Counterpart | | 0.00 |
| None | | 0.00 |
| Total | | 1.30 |

I. THE ENSUING PROJECT

1. The proposed Integrated Flood Risk Management Sector Project (the project) will support the Government of the Philippines (the government) to reduce flood risk in six river basins (Apayao-Abulog and Abra in Luzon, Jalaur in Visayas, and Agus, Buayan-Malungon, and Tagum-Libuganon in Mindanao). It will include three outputs: (i) strategic flood risk management (FRM) planning improved; (ii) flood protection infrastructure in six river basins developed; and (iii) capacity for community-based FRM enhanced.

- (i) **Output 1. Strategic flood risk management planning improved.** The project will: (i) build capacity of Department of Public Works and Highways' (DPWH) staff and other relevant agencies involved in using the "Room for the River" approach in FRM; (ii) improve coverage of hydro-meteorological stations; (iii) operationalize the asset management information system for flood protection infrastructure to improve operation and maintenance; and (iv) strengthen early flood warning systems.
- (ii) **Output 2. Flood protection infrastructure in six major river basins developed.** The project will upgrade, rehabilitate and/or build structural measures such as flood retention, diversion channels, river channel alignments and nature-based solutions as identified in the six river basin FRM master plans developed under the technical assistance loan for Infrastructure Preparation and Innovation Facility (IPIF).¹ Infrastructure design will factor in changes in hazard patterns due to climate change. It will also enjoin women's involvement by requiring that 20% of the total workforce in the project's civil works are done by women.
- (iii) **Output 3. Community-based flood risk management implemented.** The project will support local government units, through the Department of Interior and Local Government, to develop an integrated approach to community-based flood risk reduction under the government's community-based disaster risk reduction and management (CBDRRM) framework. It will prepare building codes in flood-prone areas, mobilize vulnerable communities, raise their awareness, and build their capacity in FRM. It will prepare and implement CBDRRM plans in selected municipalities, which will be linked to local comprehensive land-use plans using the "Room for the River" approach. Women, youth, and marginalized groups will be engaged to support these participatory and gender-responsive CBDRRM plans.

2. These outputs will result in the outcome of reduced flood risk in the six river basins. The project will be aligned with the following impact: flood and climate change resilience enhanced.

3. The project cost is estimated at \$550.0 million, including \$400.0 million from ADB's ordinary capital resources lending, \$100.0 million from the Agence Française de Développement (AFD) as joint cofinancing (administered by ADB), and \$50.0 million from the Government of the Philippines as counterpart contribution.

4. **Strategic fit.** The proposed investment project is included in the country operations and business plan for the Philippines, 2018–2020.² It aligns with the inclusive economic and

¹ ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Technical Assistance Loan to the Republic of the Philippines for the Infrastructure Preparation and Innovation Facility*. Manila.

² ADB. 2017. *Country Operations Business Plan: Philippines, 2018–2020*. Manila. The transaction technical assistance is included under the title of Preparing the Mindanao River Basin Flood Control Project.

environmentally sustainable growth agenda in the Midterm Review of Strategy 2020.³ The proposed project also fully aligns with the ADB operational plans and framework for water, climate change, and integrated disaster risk management.⁴

II. THE TECHNICAL ASSISTANCE

A. Justification

5. The transaction technical assistance (TRTA) will help the government prepare the ensuing project as well as develop a preliminary roadmap and a long term investment program for FRM.⁵ The TRTA and the IPIF will complement each other. More specifically, the IPIF will directly support output 2 of the ensuing project by financing the preparation of (i) six FRM master plans of six target river basins; (ii) feasibility studies; (iii) detailed engineering design of priority infrastructure; (iv) procurement; and (v) social and environmental safeguard assessments. The TRTA will (i) prepare design of the project, particularly its outputs 1 and 3; (ii) support output 2 by reviewing technical soundness of the FRM master plans, feasibility studies, detailed engineering design of priority infrastructure and due diligence conducted under the IPIF, including the “Room for the River” approach and nature-based solutions; and (iii) prepare a preliminary roadmap and investment program for FRM in the Philippines. As a result, the proposed project will be classified as “high readiness”.

B. Outputs and Activities

6. The major outputs and activities are summarized in Table 1.

Table 1: Major Outputs and Activities of the Proposed Technical Assistance

| Major Outputs | Delivery Dates | Key Activities with Milestones |
|-----------------------------|----------------|--|
| 1. Project scope finalized. | Q4 2018 | <ul style="list-style-type: none"> • Prepare terms of references (TORs) for activities described under outputs 1 and 3. • Participate in the preparation of the flood risk management (FRM) master plans led by the Infrastructure Preparation and Innovation Facility (IPIF) consultants. • Review and confirm technical soundness of the FRM master plans. • Ensure that options for nature-based solutions are considered, and where appropriate, included in the FRM master plans. • Ensure that a rigorous consultation process is applied in the preparation of the FRM master plans. • Conduct consultations with river basins stakeholders to review and confirm proposed investments under the FRM master plans. • Ensure that activities proposed under outputs 1 and 3 are in line with the FRM master plans. • Review best practices in climate change adaptation relevant to the project and formulate activities to be part of the investment. |

³ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

⁴ ADB. 2011. *Water Operational Plan 2011-2020*. Manila.; ADB. 2017. *Climate Change Operational Framework: Enhanced Actions for Low Greenhouse Gas Emissions and Climate-Resilient Development*. Manila.; and ADB. 2014. *Integrated Disaster Risk Management Operational Plan 2014-2020*. Manila.

⁵ The technical assistance first appeared in the business opportunities section of ADB’s website in December 2017.

| Major Outputs | Delivery Dates | Key Activities with Milestones |
|--|----------------|--|
| 2. Design of ensuing project prepared. | Q2 2019 | <ul style="list-style-type: none"> • Participate in the preparation of feasibility studies from the IPIF for technical, environment, social, and economic perspectives to support output 2. • Review and confirm the feasibility studies. • Ensure that options for nature-based solutions are considered, and where appropriate, included in the feasibility studies of the projects in the six river basins. • Prepare costs estimates, financing plan, and implementation arrangements including fund flow mechanisms for the overall project. • Prepare the financial management, procurement, and institutional assessments. • Prepare project subcomponents including detailed description, implementation schedule, and related TORs. • Prepare the stakeholder communication strategy and the gender action plan. • Support the preparation of the report and recommendation of the President to the Board of Directors and its required linked documents. |
| 3. Readiness as per Asian Development Bank (ADB) standards complied. | Q3 2019 | <ul style="list-style-type: none"> • Review compliance of the resettlement framework, resettlement plans, indigenous peoples development framework, indigenous peoples plan(s), environmental review and assessment framework, and environment impact assessments with ADB Safeguards Policy Statement 2009. • Review quality and technical soundness of the detailed engineering designs (DEDs) for infrastructure subprojects prepared by the IPIF. • Ensure that climate change resilience measures are incorporated in the DEDs. • Ensure that options for nature-based solutions are considered, and where appropriate, included in the DEDs of the core subprojects. • Ensure that applicable requests for proposal, consultants' TORs are available for advance actions. |
| 4. Preparation of a preliminary roadmap and investment program for flood risk management in the Philippines. | Q4 2019 | <ul style="list-style-type: none"> • Review Japan International Cooperation Agency's report "The Study on the Nationwide Flood Risk Assessment and the Flood Mitigation Plan for the Selected Areas in the Republic of the Philippines" (2008) to assess the need for update. • Review of all River Basin Control Offices' river basin plans. • Prepare an overview and prioritization of all identified FRM projects in all 18 major river basins in the Philippines. • Prepare a preliminary roadmap and investment program for FRM in the Philippines. • Develop an investment program of FRM for the Philippines which includes a financing plan. • Conduct consultations with river basins stakeholders to review and confirm proposed investment portfolio in the investment program. |

Source: Asian Development Bank.

C. Cost and Financing

7. The TRTA is estimated to cost \$1.44 million, of which \$1.0 million will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-other sources), and \$0.3 million will be financed on a grant basis by the Cooperation Fund for Project Preparation in the Greater Mekong Subregion and in Other Specific Asian Countries⁶ to be administered by ADB. The key expenditure items are listed in Appendix 1. The Cooperation Fund for Project Preparation in the Greater Mekong Subregion and in Other Specific Asian Countries follows ADB's guidelines on eligible expenditures under a technical assistance. The government will provide counterpart support in the form of counterpart staff, office accommodation and other in-kind contributions, estimated at \$0.14 million. The government was informed that approval of the TRTA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

8. ADB through the Southeast Asia Department will administer the TRTA including evaluation and supervision of consultants. As the TRTA will be funded by two funds, the funds will be used on cost-sharing basis per specific contract. Activities will be coordinated with relevant agencies such as the DPWH, the Department of Interior and Local Government, the National Economic and Development Authority, and the Department of Finance. The TRTA consultants will organize and implement workshops, training, public consultations and community outreach, and provisions for those will be included in their contract as provisional sums.

Table 2: Implementation Arrangements

| Aspects | Arrangements | | |
|---|--|---|-----------|
| Indicative implementation period | June 2018 – June 2020 | | |
| Executing agency | Department of Public Works and Highways | | |
| Consultants | To be selected and engaged by ADB. | | |
| | QCBS selection (90:10) | 14 p-m (international) 22 p-m (national) | \$798,200 |
| | Individual consultant selection | 9 p-m (international) 8 p-m (national) | \$292,600 |
| Procurement | Office equipment and furniture will be procured by TRTA consultants. Method: Request for Quotation. Estimated cost: \$15,000 | | |
| | Survey | 1 contract | \$50,000 |
| Advance contracting | Advance contracting is recommended for the recruitment of the consulting service package and will be undertaken through the QCBS method. | | |
| Disbursement | The TRTA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time). | | |
| Asset turnover or disposal upon TA completion | Not applicable | | |

ADB = Asian Development Bank, p-m = person-months, QCBS = quality- and cost-based selection, TA = technical assistance, TRTA = transaction technical assistance.

Source: Asian Development Bank estimates.

9. **Consulting services.** ADB will engage consulting firms and individual consultants on an intermittent basis (over a period of 24 months) in accordance with ADB Procurement Policy and Procurement Regulations for ADB Borrowers (2017, as amended from time to time) and its

⁶ Financing partner: Government of France.

associated project administration instructions and/or TA staff instructions. The following consultants will be engaged:

- (i) A firm providing 14 person-months (p-m) of international and 22 p-m of national consultants will be recruited through quality-and cost-based selection method using a quality-cost ratio of 90:10 and a full technical proposal. International specialists must have a master's degree, extensive relevant experience in their area of expertise, and experience working in the Philippines; national specialists must have an undergraduate degree. The team will have an array of expertise in FRM, water engineering, building codes, CBDRRM, community outreach, land-use planning, economics, and financial management. Consultant contracts will be input-based contracts.
- (ii) Individual consultants to provide expertise on nature-based solutions, environmental and social safeguards, and social development and gender (9 p-m of international and 8 p-m of national consultants). Individual consultants are proposed for these positions because quality assurance of reports produced by the IPIF rather than collective responsibility is required; additional outside professional support is not required; and for these areas of expertise, the individual's experience and qualifications are paramount.

10. **Cofinancier requirements.** Additional reporting requirements from the Cooperation Fund for Project Preparation in the Greater Mekong Subregion and in Other Specific Asian Countries (footnote 6) includes: (i) financial statement of the fund by 28 February of each calendar year; (ii) semi-annual status report; and (iii) other reports as AFD may reasonably request including reports produced by the consultants under the project financed by the fund provided that the recipient of the TRTA has no objection to disclose such reports.

E. Governance

11. The TRTA will support assessment of financial management capacity, procurement capacity, and risk assessment and management of the executing and implementing agencies. Based on the assessments, measures to address the capacity gaps and risks will be suggested in three separate documents that will form part of the ensuing project documents.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

| Item | Total Cost |
|--|----------------|
| A. Asian Development Bank^a | |
| 1. Consultants | |
| a. Remuneration and per diem | |
| i. International consultants | 353.8 |
| ii. National consultants | 341.5 |
| b. Out-of-pocket expenditures | |
| i. International and local travel | 41.0 |
| ii. Office space rental and related facilities | 15.0 |
| iii. Surveys | 50.0 |
| iv. Training, seminars, and conferences | 100.0 |
| v. Reports and communications | 18.0 |
| 2. Contingencies | 80.7 |
| Subtotal (A) | 1,000.0 |
| B. Cooperation Fund for Project Preparation in the Greater Mekong Subregion and in Other Specific Asian Countries^b | |
| 1. Consultants | |
| a. Remuneration and per diem | |
| i. International consultants | 218.0 |
| b. Out-of-pocket expenditures | |
| i. International and local travel | 25.3 |
| ii. Training, seminars, and conferences | 20.0 |
| iii. Reports and communications | 4.0 |
| 2. Contingencies | 32.7 |
| Subtotal (B) | 300.0 |
| Total | 1,300.0 |

Note: The technical assistance is estimated to cost \$1,444,444, of which contributions from the Asian Development Bank and the Cooperation Fund for Project Preparation in the Greater Mekong Subregion and in Other Specific Asian Countries (administered by ADB) are presented in the table above. The government will provide counterpart support in the form of counterpart staff and other in-kind contributions. The value of government contribution is estimated at \$144,444 or 10% of the total technical assistance cost.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-other sources).

^b Financing partner: the Government of France. Administered by the Asian Development Bank.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=51294-002-TARreport>

1. Terms of Reference for Consultants

TERMS OF REFERENCES FOR CONSULTANTS

I. OBJECTIVE AND PURPOSE OF THE ASSIGNMENT

1. The Asian Development Bank (ADB) is providing technical assistance to the Government of the Philippines (the government) to prepare the Integrated Flood Risk Management Sector Project (the project). The project will support the government to reduce flood risk in six river basins (Apayao-Abulog and Abra in Luzon, Jalaur in Visayas, and Agus, Buayan-Malungon, and Tagum-Libuganon in Mindanao).¹ The project will include three outputs: (i) strategic flood risk management (FRM) planning improved; (ii) flood protection infrastructure in six river basins developed; and (iii) capacity for community-based FRM enhanced.

II. SCOPE OF WORK

2. The transaction technical assistance (TRTA) will, in cooperation with the ADB-financed technical assistance loan for Infrastructure Preparation and Innovation Facility (IPIF),² support the Department of Public Works and Highways (DPWH), the project executing and implementing agency, and the Department of Interior and Local Government (DILG), one of the implementing agencies, to prepare the project. More specifically, the IPIF will finance the preparation of (i) six FRM master plans of the target river basins; (ii) feasibility studies; (iii) detailed engineering design of priority infrastructure; (iv) procurement; and (v) social and environmental safeguard assessments. The TRTA will provide support to (i) conduct consultations with DPWH, DILG, and river basins stakeholders to finalize the scope of the project, and to ensure that innovations such as the “Room for the River” approach and nature-based solutions are built into the investment; (ii) undertake due diligence of technical, social, financial, environmental, gender, and economic aspects of the project; (iii) ensure that subprojects designed under the project are in compliance with ADB’s technical, environment and social safeguards, and fiduciary requirements; and (iv) prepare a preliminary roadmap and investment program for FRM in the Philippines. The major outputs and activities are summarized in Table 1.

Table 1: Summary of Major Outputs and Activities

| Major Outputs | Delivery Dates | Key Activities with Milestones |
|-----------------------------|----------------|---|
| 1. Project scope finalized. | Q4 2018 | <ul style="list-style-type: none"> • Prepare terms of references (TORs) for activities described under outputs 1 and 3. • Participate in the preparation of the flood risk management (FRM) master plans led by the Infrastructure Preparation and Innovation Facility (IPIF) consultants. • Review and confirm technical soundness of the FRM master plans. • Ensure that options for nature-based solutions are considered, and where appropriate, included in the FRM master plans. • Ensure that a rigorous consultation process is applied in the preparation of the FRM master plans. • Conduct consultations with river basins stakeholders to review and confirm proposed investments under the FRM master plans. • Ensure that activities proposed under outputs 1 and 3 are in line with the FRM master plans. |

¹ While the whole country faces increasing flood risk, the government prioritize investing in six river basins due to the lack of FRM master plans, and limited flood protection infrastructure.

² ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Technical Assistance Loan to the Republic of the Philippines for the Infrastructure Preparation and Innovation Facility*. Manila.

| Major Outputs | Delivery Dates | Key Activities with Milestones |
|--|----------------|--|
| | | <ul style="list-style-type: none"> Review best practices in climate change adaptation relevant to the project and formulate activities to be part of the investment. |
| 2. Design of ensuing project prepared. | Q2 2019 | <ul style="list-style-type: none"> Participate in the preparation of feasibility studies from the IPIF for technical, environment, social, and economic perspectives to support output 2. Review and confirm the feasibility studies. Ensure that options for nature-based solutions are considered, and where appropriate, included in the feasibility studies of the projects in the six river basins. Prepare costs estimates, financing plan, and implementation arrangements including fund flow mechanisms for the overall project. Prepare the financial management, procurement, and institutional assessments. Prepare project subcomponents including detailed description, implementation schedule, and related TORs. Prepare the stakeholder communication strategy and the gender action plan. Support the preparation of the report and recommendation of the President to the Board of Directors and its required linked documents. |
| 3. Readiness as per Asian Development Bank (ADB) standards complied. | Q3 2019 | <ul style="list-style-type: none"> Review compliance of the resettlement framework, resettlement plans, indigenous peoples development framework, indigenous peoples plan(s), environmental review and assessment framework, and environment impact assessments with ADB Safeguards Policy Statement 2009. Review quality and technical soundness of the detailed engineering designs (DEDs) for infrastructure subprojects prepared by the IPIF. Ensure that climate change resilience measures are incorporated in the DEDs. Ensure that options for nature-based solutions are considered, and where appropriate, included in the DEDs of the core subprojects. Ensure that applicable requests for proposal, consultants' TORs are available for advance actions. |
| 4. Preparation of a preliminary roadmap and investment program for flood risk management in the Philippines. | Q4 2019 | <ul style="list-style-type: none"> Review Japan International Cooperation Agency's report "The Study on the Nationwide Flood Risk Assessment and the Flood Mitigation Plan for the Selected Areas in the Republic of the Philippines" (2008) to assess the need for update. Review of all River Basin Control Offices' river basin plans. Prepare an overview and prioritization of all identified FRM projects in all 18 major river basins in the Philippines. Prepare a preliminary roadmap and investment program for FRM in the Philippines. Develop an investment program of FRM for the Philippines which includes a financing plan. Conduct consultations with river basins stakeholders to review and confirm proposed investment portfolio in the investment program. |

Source: Asian Development Bank.

3. The following consultants will be engaged on an intermittent basis (over a period of 24 months) using the quality-and cost-based selection method with a quality-cost ratio of 90:10 and a full technical proposal in accordance with ADB Procurement Policy (2017, as amended from

time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time) and the associated project administration instructions and/or TA staff instructions.

Table 2: Consulting Services Inputs

| TRTA Firm Package | Person-Months Required | Input into Integrated Flood Risk Management Sector Project | Input into Preliminary Roadmap and Investment Program for FRM |
|--|-------------------------------|---|--|
| International | | | |
| 1. Integrated Flood Risk Management Specialist/Team Leader | 8.0 | X | X |
| 2. Flood Protection Asset Management Specialist | 3.0 | X | X |
| 3. Land-Use Planning Specialist | 3.0 | X | |
| Subtotal | 14.0 | | |
| National | | | |
| 4. Institutional Specialist/Deputy Team Leader | 8.0 | X | X |
| 5. Community-Based Disaster Risk Reduction Specialist | 6.0 | X | |
| 6. Financial Specialist | 4.0 | X | X |
| 7. Cost Engineer | 4.0 | X | X |
| Subtotal | 22.0 | | |
| Individual Consultants | | | |
| International | | | |
| 1. Eco-engineer/Nature-based Solution Specialist | 3.0 | X | |
| 2. Environmental Safeguards and Climate Change Specialist | 2.0 | X | |
| 3. Social Safeguards Specialist | 2.0 | X | |
| 4. Social Development and Gender Specialist | 2.0 | X | |
| Subtotal | 9.0 | | |
| National | | | |
| 5. Social Safeguards Specialist | 8.0 | X | |
| Subtotal | 8.0 | | |

FRM = flood risk management, TRTA = transaction technical assistance.

Source: Asian Development Bank.

III. TRTA CONSULTING FIRM PACKAGE

A. Integrated Flood Risk Management Specialist/Team Leader (International, 8 person-months [p-m])

1. Detailed Tasks

For the integrated flood risk management sector project:

- (i) Lead a team of international and national consultants to carry out the TRTA;
- (ii) In coordination with the IPIF consultants, identify gaps and areas of complementarities that the TRTA team need to provide to deliver the project design (refer to Table 1);

- (iii) Based on the gap analysis, prepare a TRTA implementation plan that includes timeline for the TRTA deliverables, and coordinate and oversee all technical activities of the TRTA team;
- (iv) Ensure that inputs provided by the TRTA consultants are fully coordinated and organized with the IPIF consultants' input for a coherent project design;
- (v) Provide quality assurance for the deliverables of all TRTA team members;
- (vi) Ensure coordination, consultation, and participation of stakeholders in the preparation of the project;
- (vii) Closely coordinate with the IPIF consultants to ensure the project preparation is timely delivered;
- (viii) Be responsible for the delivery of the project preparation by preparing and/or reviewing the report and recommendation of the President to the Board of Directors (RRP) and all its linked documents as per the TRTA implementation plan;
- (ix) Conduct consultations with stakeholders to review and confirm proposed investments in all target river basins;
- (x) Review FRM master plans, feasibility studies and detailed engineering designs for infrastructure subprojects prepared under the IPIF and provide timely comments and revisions to improve the design;
- (xi) Identify best practices (climate adaptation, nature-based solutions, Room for the River, etc.) relevant to the project and formulate additional activities to be part of the ensuing project;
- (xii) Include technical advice on specific strategic, institutional, and practical project design and implementation issues to maximize the impact of the ensuing project's outcomes;
- (xiii) In consultation with the proposed executing and implementing agencies, and with input by the TRTA consultants team and IPIF consultants, review and help prepare (a) detailed activities, logical frameworks, and cost estimates for each project output; (b) detailed implementation plans; (c) output profiles; and (d) terms of reference (TOR) for consulting services and procurement packages; and
- (xiv) Provide other support to DPWH and ADB project officer as reasonably requested.

For the preliminary roadmap and investment program for FRM:

- (i) Ensure coordination, consultation, and participation of stakeholders in the preparation of the preliminary roadmap and investment program for FRM;
- (ii) Review relevant policies, strategic directions, and experience in FRM in the Philippines;
- (iii) Assist DPWH in preparing a 10- to 15-year roadmap for FRM. The roadmap will include the following:
 - sector performance and its importance to growth, poverty reduction, gender and development, and inclusiveness (or the extent to which it is a binding constraint);
 - key problems and opportunities;
 - success factors for better performance; and
 - strategic context and strategic directions.
- (iv) Assist DPWH in analyzing the policy framework for FRM. The policy framework will include the following:
 - summary of the strategic vision for the sector, its principles and targets for change;

- main challenges and operating conditions in FRM to ensure efficiency, cost recovery, sustainability, and competition; and
 - recommended reforms over the short, medium, and long term that help create the right environment for public and private investment. The reforms should address financial, economic, commercial, legal, regulatory, and institutional matters.
- (v) Assist DPWH in developing an investment program for FRM. The investment program will:
- specify the physical and nonphysical investments, which can be organized into a set of projects. The investments may be split into medium-term and long-term investments;
 - identify preferred projects to be included in the upcoming 10-to-15 years and gauge the investment readiness, level of government (and other donors) support, etc.;
 - specify the corresponding resources needed of the investments; and
 - indicate potential source of funding for each investment.
- (vi) Consult relevant stakeholders including government agencies, academe, local government units, civil society organizations, bilateral and multilateral development partners in the development of the preliminary roadmap, policy framework, and investment program. While the approval of the roadmap and investment program is subject to the relevant government agencies, the specialist will address comments and concerns raised by stakeholders to assist DPWH in obtaining necessary approval of the roadmap, policy framework, and investment program.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the project:

- (i) Monthly progress reports;
- (ii) Technical reviews of master plans, feasibility studies and detailed engineering designs prepared under the IPIF;
- (iii) Quality-assured RRP and all its linked documents;
- (iv) Preliminary roadmap for FRM in the Philippines;
- (v) Draft policy framework for FRM in the Philippines;
- (vi) Draft investment program, including a financing plan for FRM in the Philippines; and
- (vii) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have a higher degree (MS or equivalent) in civil engineering, water resources or equivalent. The specialist must have at least 10 years of relevant experience in developing infrastructure projects and leading international teams in integrated FRM related projects. Experience in dealing with climate adaptation, nature-based solutions, and “Room for the River” approaches is an asset. Knowledge of the Philippine government planning cycle, procurement procedures and financial management mechanisms is essential. He/she must have excellent written and oral communications skills. Proven track record as a team leader for preparation of at least two projects financed by multilateral or bilateral donors is required.

Minimum General Experience: 12 years
 Minimum Specific Experience (relevant to assignment): 10 years
 Regional/Country Experience: Required

B. Flood Protection Asset Management Specialist (International, 3 p-m)

1. Detailed Tasks

- (i) In collaboration with the IPIF (in particular the Geographical Information System/Management Information System [GIS/MIS] Specialist and the Document Controller), prepare asset registers of each type of flood protection infrastructure assets for the six target river basins to be funded by the ensuing project, and work with the IPIF consultants on using their management information system to include:
 - key description and details of the assets;
 - date of construction and cost;
 - dates of repair or renewal including cost;
 - frequency of breakdowns in a given period and need for replacement;
 - current depreciated value;
 - identify methods for routine collection, and recording data, including staff and materials and equipment requirements, and asset valuation, to maintain a good system to prepare and maintain asset registers; and
 - develop strategies and recommendations to determine appropriate opportunities to leverage assets for various purposes;
- (ii) Review the existing flood protection asset management systems and procedures in the Philippines and provide recommendations to improve the systems and procedures to support, among others, operation and maintenance (O&M);
- (iii) Prepare TOR and cost estimates for improving the nation-wide flood protection asset management systems and procedures for DPWH. The systems should be geographic information system (GIS) based and the TOR should consider capacity building for sustainable operation of the systems, including development of the user manual, training materials, methodology and guidelines;
- (iv) Provide input to the preliminary roadmap and investment program for FRM in the Philippines, especially with regards to O&M of the flood protection infrastructure;
- (v) Inputs to the RRP and all its linked documents as required by the TRTA team leader and ADB project officer; and
- (vi) Perform other tasks reasonably requested by the TRTA team leader and ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the project:

- (i) A recommended asset management system for flood protection infrastructure in the six target river basins;
- (ii) Technical review of DPWH's existing flood protection asset management systems and procedures, and O&M systems and procedures, and recommendations for improvement based on international best practices;
- (iii) TOR and cost estimates for nation-wide flood protection asset management systems and procedures, and O&M systems and procedures to be supported by the project for DPWH;

- (iv) Input to the preliminary roadmap and investment program for FRM in the Philippines, especially with regards to O&M of the flood protection infrastructure;
- (v) Inputs to the RRP and all its linked documents as required by the TRTA team leader and ADB project officer; and
- (vi) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have a higher degree (MS or equivalent), in GIS, management information system, civil engineering, water resources or equivalent. The specialist must have at least 10 years of relevant experience in developing infrastructure projects. The specialist must have a robust knowledge base on asset management, and O&M and must have experience in GIS-based flood protection asset management systems in at least two projects. The specialist will also have demonstrated skills to operate GIS to generate maps and mapping interface, using online platform. Knowledge of the government planning cycle, procurement procedures, and financial management mechanisms is essential. He/she must have excellent written and oral communications skills.

Minimum General Experience: 10 years

Minimum Specific Experience (relevant to assignment): 10 years

Regional/Country Experience: Required

C. Land-Use Planning Specialist (International, 3 p-m)

1. Detailed Tasks

- (i) Review existing Philippine land-use planning guidelines to identify the needs for land-use planning guidelines in flood-prone areas (new development or revisions);
- (ii) In close cooperation with stakeholders and the IPIF consultants, link the six FRM master plans to existing spatial plans and regional development plans to scope land-use planning related activities and players to be supported by the project;
- (iii) Provide input on land-use planning to the FRM master plans of the six target river basins;
- (iv) Develop selection criteria for municipalities and/or barangays in the six target river basins where support to implement land-use planning guidelines can be provided by the project and consult these criteria with ADB and the government;
- (v) Based on the agreed criteria, select municipalities and/or barangays in the six target river basins where land-use planning support will be provided by the project;
- (vi) Prepare TOR for land-use planning activities in the project. These activities should include adoption and implementation of land-use planning guidelines at the local level and capacity building and engagement of civil society organizations to assist with gaining a deeper understanding of local land-use issues where appropriate;
- (vii) Review the existing National Building Code of the Philippines;
- (viii) Review international best practices for building codes in flood-prone areas to provide recommendations for building codes activities in the project, with a focus at the local level;
- (ix) Review government planning and design guidelines for river infrastructure and recommend improvements in building codes for complying with international best practices on climate resilience, eco-engineering, and seismic risk proofing;

- (x) With assistance by the national institutional specialist/ deputy team leader, outline the approval authority and approval process for the revisions of the local building codes;
- (xi) Identify building codes related activities and outputs for incorporation into the project design;
- (xii) Prepare TOR and cost estimates for building codes activities in the project; and
- (xiii) Perform other tasks reasonably requested by the TRTA team leader and ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the project:

- (i) Technical reviews on land-use planning implications for the project;
- (ii) Input on land-use planning to the FRM master plans of the six target river basins;
- (iii) Selection criteria for municipalities and/or barangays in the six target river basins where land-use planning support will be provided by the project;
- (iv) Final list of selected municipalities and/or barangays in the six target river basins where land-use planning support will be provided by the project based on agreed selection criteria;
- (v) TOR and cost estimates for all land-use planning related activities to be supported by the project;
- (vi) Technical review of the existing National Building Code of the Philippines in flood-prone areas and international best practices for recommendations of local building codes activities to be supported by the project;
- (vii) TOR and cost estimates for all building codes activities to be supported by the project;
- (viii) Inputs to the RRP and all its linked documents as required by the TRTA team leader and ADB project officer; and
- (ix) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have a higher degree (MS or equivalent), in land-use planning, spatial planning or equivalent. The specialist must have at least 10 years of relevant experience in land-use planning projects including the development of land-use planning guidelines and building codes. He/she must have excellent written and oral communications skills.

Minimum General Experience: 10 years

Minimum Specific Experience (relevant to assignment): 10 years

Regional/Country Experience: Required

D. Institutional Specialist/Deputy Team Leader (National, 8 p-m)

1. Detailed Tasks

- (i) Undertake institutional analysis for FRM for the project and its linkages with other national and regional level initiatives;
- (ii) Based on the FRM master plans of the six target river basins prepared by the IPIF, and the overall project design, develop a management framework for the overall institutional strengthening component with clear outputs and outcomes, activities

- and timelines, quality assurance and control mechanisms, monitoring procedures and risks, and a risk management plan;
- (iii) Undertake institutional readiness assessment, based on established readiness assessment tools, to ensure clarity of organizational roles and responsibilities (including budgetary resource implications, needs, and gaps) of participating agencies and/or institutions, national and local governments, and other stakeholders vis-à-vis the problem tree and objectives;
 - (iv) Undertake review of these agencies and/or institutions' operating environment (including regulatory practices, ordinances, etc.) and other criteria³ that may impact on successful delivery of output 3;
 - (v) Prepare Institutional Assessments and Action Plan for Flood Risk Management;
 - (vi) Provide input on institutional analysis and strengthening to the preliminary roadmap and investment program for FRM as requested by the TRTA team leader;
 - (vii) Assist the land-use planning specialist to outline the approval authority and approval process for the revisions and/or update of the local building codes;
 - (viii) Serve as a liaison officer between the IPIF consultants, ADB, DPWH, DILG, and local government units, and establish and maintain contact with relevant agencies, nongovernment organizations and community-based organizations in the six target river basins and mobilize them to synergize the project implementation;
 - (ix) Troubleshoot any implementation concerns and suggest solutions and ensure timely approvals or comments on the TRTA consultants' reports and outputs related to the project preparation;
 - (x) Take the role of deputy team leader and coordinate the work of team members;
 - (xi) Assist in the preparation of the draft RRP and its linked documents and the feasibility study of the flood protection infrastructure prepared by the IPIF;
 - (xii) Facilitate a multi-stakeholder process to identify long-term and medium-term expected results, in line with the project design and monitoring framework, and aligned with and drawing from results statements in applicable government planning documents. Work with stakeholders to determine their specific alignment with, and contribution to medium-term results statement(s). Produce graphical representations of these results relationship and supporting narrative documentation; and
 - (xiii) Perform other tasks as reasonably requested by the TRTA team leader and ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports and output:

- (i) Input to the monthly progress reports;
- (ii) Report on the institutional framework in flood risk management per river basin for all six target river basins;
- (iii) Institutional readiness assessment of participating agencies and/or institutions, national and local governments, and other stakeholders vis-à-vis the Problem Tree or Objectives;
- (iv) Report on the Institutional Assessments and Action Plan for Flood Risk Management in the Philippines;
- (v) Proposed implementation arrangements for the project;

³ Other criteria include: (i) clarity of results, mandate, and organization purpose; (ii) adequacy of resources; (iii) management (strategies, structure, and systems); and (iv) monitoring mechanisms.

- (vi) Input on an institutional strengthening component with clear outputs and outcomes, activities and timelines, quality assurance and control mechanisms, monitoring procedures and risks;
- (vii) Report on approval authority and approval process for the revisions and/or update of the local building codes;
- (viii) A risk management plan;
- (ix) Input to the sector preliminary roadmap and investment program for FRM in the Philippines;
- (x) Monitoring of the institutional strengthening activities under IPIF and input to the TOR for institutional strengthening activities in the ensuing project;
- (xi) Graphical representations of the results relationship between the results statements in applicable government planning documents and the project design and monitoring framework, with supporting narrative documentation;
- (xii) Inputs to the RRP and all its linked documents as required by the TRTA team leader and ADB project officer; and
- (xiii) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The Institutional Specialist/Deputy Team Leader must have at least 15 years experience in working with the government in the water sector, particularly in flood risk management. He/she should have the following competencies: results-oriented; excellent analytical skills; excellent managerial skills; excellent presentation and facilitation skills; strongly developed problem-solving and decision-making skills; planning and organization skills and proven experience in teamwork. Experience as a team leader or deputy team leader in at least two multilateral or bilateral donor funded projects is a must. Experience as a team leader or deputy team leader in a project preparatory technical assistance is an asset. Excellent communication and writing skills in English are required.

Minimum General Experience: 15 years

Minimum Specific Experience (relevant to assignment): 15 years

Regional/Country Experience: Required

E. Community-Based Disaster Risk Reduction Specialist (National, 6 p-m)

1. Detailed Tasks

- (i) Identify civil society organizations (CSOs) with the technical expertise and institutional capacity which can be engaged in community outreach and community participation activities;
- (ii) Prepare the TOR for engagement of CSOs, using a performance TOR model if appropriate, during project preparation to include awareness raising about the project, and community consultation and participation during the project design;
- (iii) Assist with the engagement of CSOs for community consultation and participation in the project design;
- (iv) Oversee the engaged CSOs as they lead community consultation and participation in the project design;
- (v) Develop selection criteria for municipalities and/or barangays in the six target river basins where community-based disaster risk reduction and management (CBDRRM) support will be provided by the project and consult these criteria with ADB and the government;

- (vi) Based on the agreed criteria, select municipalities and/or barangays in the six target river basins where CBDRRM support will be provided by the project;
- (vii) Coordinate with local government units to prepare TOR for implementation of output 3 of the project, including engagement of CSOs where appropriate. The TOR will include the tasks to, among others:
 - establish or, where appropriate, strengthen CBDRRM groups in the selected municipalities and/or barangays;
 - provide capacity building and support the development and implementation of CBDRRM plans for selected municipalities and/or barangays; and
 - support local government units to build long-term resilience, especially at the local level, to develop an integrated approach to CBDRRM that covers plans, budgets, governance systems and practices, and mobilization of vulnerable communities.
- (viii) Develop a monitoring program for effective community participation throughout the project;
- (ix) Prepare the stakeholder analysis and stakeholder communication strategy with emphasis on community and civil society engagement for the project; and
- (x) Perform other tasks as reasonably requested by the TRTA team leader and ADB project officer.

2. Output/Reporting Requirements

- (i) TORs of CSOs (using performance TOR is deemed appropriate) to support awareness raising about the project, and community consultation and participation in the project design;
- (ii) CSOs in point (i) recruited;
- (iii) Technical support to the recruited CSOs provided to ensure community consultation and participation in the project design;
- (iv) Selection criteria for municipalities and/or barangays in the six target river basins where CBDRRM support will be provided by the project;
- (v) Final list of selected municipalities and/or barangays in the six target river basins where CBDRRM support will be provided by the project based on agreed selection criteria;
- (vi) TOR for implementation of output 3 of the project, including engagement of CSOs where appropriate;
- (vii) A stakeholder analysis;
- (viii) A stakeholder communication strategy with emphasis on community and CSO engagement;
- (ix) A monitoring program for effective community participation; and
- (x) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have a higher degree (MS or equivalent), in stakeholder engagement and disaster risk management or equivalent. The specialist must have at least 7 years of relevant experience in working with community implementation programs in the Philippines. He/she must have excellent oral communications skills in relevant regional languages in the Philippines.

Minimum General Experience: 7 years

Minimum Specific Experience (relevant to assignment): 7 years

Regional/Country Experience: Preferred

F. Financial Specialist (National, 4 p-m)

1. Detailed Tasks

The specialist will conduct a financial due diligence in accordance with ADB's requirements. The specialist shall use the guidance from ADB's Financial Management Resources webpage.⁴ In particular, the specialist shall make use of the (i) Financial Management Technical Guidance Notes on (a) Financial Management Assessment (2015), (b) Project Financial Reporting and Auditing (2015), and (c) Preparing and Presenting Cost Estimates for Projects and Programs Financed by the Asian Development Bank (2014); (ii) eLearning module on Cost Estimates Preparation; (iii) only for other financial due diligence not covered by the specific Financial Management Technical Guidance Notes listed here, Financial Management and Analysis of Projects (2005); and (iv) Financial Management Starter Kit on ADB's website. Making use of the existing governance and risk assessments in the areas of public financial management, procurement, and corruption in the current country partnership strategy, as well as any updates from other ongoing projects, the specialist will:

- (i) Prepare project cost estimates and financing plan following ADB's Financial Management Technical Guidance Notes: Preparing and Presenting Cost Estimates for Projects and Programs Financed by the Asian Development Bank (2014).
- (ii) Review and conduct a financial management assessment of the executing and implementing agencies, including:
 - assess capacity for planning and budgeting, management and financial accounting, reporting, auditing, internal controls, and information systems;
 - design fund flow and disbursement mechanisms for the ensuing project and identify needs of the advance fund and statement of expenditures (SOE) procedures. In case the advance account and SOE procedures are applicable for the project, also include assessments of the executing and implementing agencies capability to manage the advance fund and SOE procedures without specific ceilings, in line with ADB's Midterm Review of Strategy 2020 Action Plan (2014); and
 - conclude the financial management risk rating, and identify and confirm measures for addressing identified deficiencies.
- (iii) Support the preparation and agreement of cost estimates and a financing plan, which are based on verifiable data and are sufficient to support project implementation;
- (iv) Where significant risks should be identified to project financial sustainability or viability, proposing relevant financial performance indicators to be incorporated in financial covenants;
- (v) Identify infrastructure investments suitable for public-private partnership and performance-based operations and maintenance (O&M) and prepare related documentation;
- (vi) Assess and reach agreement on financial reporting, auditing and public disclosure arrangements for the project and as appropriate, identify and agree on arrangements for receiving financial statements from executing and/or implementing agencies;

⁴ ADB. [Financial Management Resources](#).

- (vii) Prepare standardized costing templates to be used for the project;
- (viii) Prepare the overall project cost estimates as per ADB's requirements and guidelines;
- (ix) Review O&M expenditures for river basin infrastructures, fiscal capacity of river basin organizations, and recommend actions to align O&M budget allocation with needs and prepare an assessment of expenditures for O&M, including review of planned, allocated, and utilized O&M budget;
- (x) Prepare the project implementation arrangement, funds flow, procurement, and auditing arrangements that reflect appropriate linkages at national and local level with other government agencies and stakeholders participating in the project, and describe using the format in the project administration manual;
- (xi) Provide inputs to ensure ADB and the government can finalize all loan documents of the proposed project;
- (xii) Prepare procedure and templates for financial management reports during loan implementation;
- (xiii) Assist in the preparation of the financing plan to support the investment program for flood risk management in the Philippines; and
- (xiv) Perform other tasks as reasonably requested by the TRTA team leader and ADB project officer.

2. Output/Reporting Requirements

- (i) Financial management assessment;
- (ii) Overall project cost estimates in Excel format;
- (iii) Quality-assured cost estimates of the infrastructure projects prepared by the IPIF;
- (iv) Input to the project administration manual (i.e., cost and financing, financial management, and others related to financial management) and government readiness documentation;
- (v) Procedure and templates for financial management;
- (vi) Input to the financing plan to support the investment program for FRM in the Philippines; and
- (vii) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have a post-graduate degree in accounting, financial management or economics, or equivalent, and must have a recognized professional accountancy qualification with at least 7 years of professional experience in supporting financial management preferably within the water resources management sector. Experience in ADB or other externally assisted project preparation will be taken as an advantage. Knowledge of the government planning cycle, procurement procedures, and financial management (including financial reports) mechanisms is essential. He/she must have excellent written and oral communications skills.

Minimum General Experience: 12 years

Minimum Specific Experience (relevant to assignment): 7 years

Regional/Country Experience: Required

G. Cost Engineer (National, 4 p-m)**1. Detailed Tasks**

- (i) Provide estimating and cost engineering support required in the planning and execution of flood protection infrastructure projects prepared by the IPIF;
- (ii) Review detailed cost estimates and quality assurance support for the flood protection infrastructure projects as prepared by the IPIF;
- (iii) Prepare the cost estimates for each project listed under the investment program for FRM in the Philippines;
- (iv) Prepare the financing plan for the investment program for FRM in the Philippines; and
- (v) Perform other tasks as reasonably requested by the TRTA team leader and ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the project:

- (i) Contribution to the report on cost estimates and financing options for the proposed flood protection infrastructure projects prepared by the IPIF;
- (ii) Cost estimates for each project listed under the investment program for FRM in the Philippines;
- (iii) Financing plan for the investment program for FRM in the Philippines; and
- (iv) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have a higher degree (MS or equivalent), in civil engineering or equivalent. The specialist must have at least 10 years of relevant experience in cost engineering projects for Philippine infrastructure projects.

Minimum General Experience: 10 years

Minimum Specific Experience (relevant to assignment): 7 years

IV. INDIVIDUAL CONSULTANTS**A. Eco-engineer/Nature-based Solutions Specialist (International, 3 person-months)****1. Detailed Tasks**

- (i) Following the FRM master plans, identify all potential nature-based solutions to incorporate in the design of flood protection infrastructure;
- (ii) Determine the technical feasibility and cost effectiveness of bio-environmental design components of the engineered infrastructure proposed by the IPIF consultants;
- (iii) For technically feasible and cost-effective options, develop an initial business case to incorporate in the project design, including the social and environmental cost benefits of such options, for further discussion with government and ADB;
- (iv) Present and discuss options to be assessed and the initial business case with ADB, the government, and other stakeholders;

- (v) For agreed bio-environmental components, further refine the business case to incorporate in the feasibility studies, and develop outline designs and costing for agreed bio-engineered components;
- (vi) Present the refined business case and outline designs to ADB and the government;
- (vii) Incorporate ADB and the government's feedback to finalize the business case and outline designs;
- (viii) Inform the assessment and conduct field visits to the participating municipalities and/or barangays;
- (ix) Prepare TOR for infrastructure construction supervision (where relevant) and cost estimate for the agreed bio-engineered components;
- (x) Prepare a report on capacity building needs assessment for nature-based solutions for DPWH and recommendations to move forward;
- (xi) Organize at least one nature-based solution workshop for DPWH and other stakeholders (e.g., decision- and policy-makers, national and subnational-level implementors, and/or community) to create on-the-ground buy-in for the nature-based solutions concept; and
- (xii) Perform any other tasks as may be reasonably requested by the ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the proposed investment project:

- (i) Draft technical notes and a presentation on nature-based solution options for consideration in the feasibility studies of six target river basins in the Philippines;
- (ii) Updated technical notes on nature-based options and business case, including the social and environmental cost benefits of such options, based on consultation with ADB, the government, and other stakeholders to incorporate in the feasibility studies of six target river basins;
- (iii) Agreed bio-environmental components incorporated in the feasibility studies and detailed engineering designs of six target river basins;
- (iv) TOR for infrastructure construction supervision (where relevant) and cost estimate for the agreed bio-engineered components;
- (v) A report on capacity building needs assessment for nature-based solutions for DPWH and recommendations to move forward for inclusion in the project design;
- (vi) At least one capacity building workshop on nature-based solutions;
- (vii) Consultation meeting and/or workshop minutes;
- (viii) Input to the RRP, project administration manual, and other linked documents as required by ADB project officer; and
- (ix) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist will have an undergraduate or graduate degree in environmental management, engineering, water resources management, hydraulic and hydrological analysis or relevant areas. He/she will have at least 10 years experience in the field of bio-environmental engineering and integrating physical, biological and environmental sciences with engineering skills to develop bio-

engineering design options in flood protection structure. He/she will have experience in working with other consultants in multi-disciplinary flood risk assessment and integrated FRM team to incorporate nature-based solutions and bio-environmental engineering design components into similar project design. The specialist will ideally have experience on capacity building in relation to bio-environmental engineering design in developing countries at a similar development stage for the Philippines. Experience in Southeast Asia especially in the Philippines is an asset. Experience in working with ADB will be an advantage. Strong report writing skills in English is required.

Minimum General Experience:15 years

Minimum Specific Experience (relevant to assignment): 10 years

Regional/Country Experience: Preferred

B. Environment Safeguards and Climate Change Specialist (International, 2 p-m)

1. Detailed Tasks

- (i) Prepare an environmental assessment and review framework (EARF) for the ensuing project in compliance with ADB Safeguard Policy Statement (SPS) (2009) and Philippine national law;
- (ii) Coordinate with the IPIF consultants in preparing safeguard related documentation (climate risk and vulnerability assessment [CRVA]; environmental impact assessment [EIA] and/or initial environmental examination [IEE]) and prepare a gap analysis and/or guide the IPIF consultants in preparing safeguard documents in compliance with ADB SPS (2009) and Philippine national law. The scope of the environmental assessment will be consistent with ADB SPS 2009's Appendix 1 and the recommended IEE and EIA format will follow Annex to Appendix 1;
- (iii) Ensure that the EIA includes qualitative and quantitative data for baseline conditions, impact assessment and mitigation for various aspects (where applicable) such as those related to (but not limited to) issues during construction and/or operation phases. Such issues pertain to noise levels, air quality (particulate matter and gaseous pollutants), surface water quality, hydrology (flooding, etc.), aquatic biota, groundwater quality and flow, ground subsidence, spoils disposal (location, method, volume, etc.) for excavated materials and other construction activities, seismic hazards, solid waste, sanitation, use of hazardous materials (fuel, oil, etc.), soil erosion, flora and fauna, critical habitats, greenhouse gases emissions (as applicable), CRVA, cumulative impacts, physical cultural resources, traffic, public and/or community access, occupational and public health and safety, community utilities and facilities (water supply, irrigation, power, communication, etc.), access roads, borrow and quarry sites, concrete and asphalt batching plants, construction and workers' camps, fabrication yards, materials storage sites, and other project-related facilities and activities during construction and operation;
- (iv) Identify gaps between the IPIF-prepared EIA and IEE and the ADB SPS (2009) requirements and prepare a time-bound and costed work plan to address such gaps. Ensure timely completion of the EIA and IEE based on the work plan to be reviewed and approved by ADB;
- (v) If the project is Category A, present the results of the EIA study to ADB's Environment Thematic Group for peer review at ADB Headquarters (Manila, Philippines) and address comments and/or issues raised;

- (vi) Finalize the EIA and IEE to incorporate feedback from all relevant stakeholders including ADB, the executing agency, cofinanciers, affected persons, local government units, nongovernment organizations, etc.
- (vii) Provide quality assurance for the CRVA prepared by the IPIF consultants;
- (viii) Provide quality assurance to the environmental monitoring plan prepared by the IPIF consultants;
- (ix) Provide quality assurance to ensure that climate resilience measures are incorporated in the design of flood protection infrastructure projects prepared by the IPIF;
- (x) Undertake safeguards analysis of each subproject under the ensuing project to identify risks and flag up issues which may affect decisions to proceed;
- (xi) Prepare any additional safeguard documents for the subprojects (to be determined);
- (xii) Participate in or conduct public consultation events, as necessary, to ensure ADB SPS (2009) compliance;
- (xiii) Prepare consultants' TORs on environmental safeguards and climate change to support implementation of the ensuing project;
- (xiv) Support ADB team in preparing relevant sections of project documents including RRP, project administration manual, etc.;
- (xv) Ensure that all final reports are in compliance with the ADB SPS (2009); and
- (xvi) Perform any other tasks as may be reasonably requested by the ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the proposed investment project:

- (i) work plan;
- (ii) gap analysis based on coordination with IPIF consultants;
- (iii) EARF;
- (iv) quality-assured CRVA;
- (v) quality-assured EIA and/or IEE;
- (vi) quality-assured environmental monitoring program;
- (vii) environmental safeguards and climate change inputs to the RRP, project administration manual, and other linked documents as required by the ADB project officer;
- (viii) relevant TORs; and
- (ix) responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist should have at least 20 years of experience on environmental safeguards work preferably with extensive experience in the Philippines. The specialist must have a degree (preferably post-graduate) in environmental management and/or science, engineering, natural science or any other related field. Excellent communication and writing skills in English are required. The specialist should have a good knowledge of ADB SPS (2009) and Philippine Environmental Impact Statement System (PEISS) and related national legislations, policies, and regulations. Ideally, the specialist should have prior work experience with ADB and/or any other international development organization in the areas of environmental safeguards and proficient in carrying out environmental safeguards assessment consistent with ADB SPS (2009) and PEISS.

Minimum General Experience: 20 years
Minimum Specific Experience (relevant to assignment): 20 years
Regional/Country Experience: Required

C. Social Safeguards Specialist (International, 2 p-m)

The specialist will conduct a preliminary safeguards review on involuntary resettlement and indigenous peoples in compliance to the ADB SPS (2009) to assess impacts of the project. The specialist will coordinate with the IPIF consultants to ensure that the safeguard documents prepared under the IPIF are in compliance with ADB SPS (2009), the ADB Public Communication Policy (2011) and Philippine national law. As part of the safeguards requirement, the specialist, to be assisted by a national social safeguards specialist, will be required to prepare a resettlement framework and an indigenous peoples development framework for the ensuing project to guide future preparations of the resettlement plans and indigenous peoples plans under the ensuing project. He/she will also finalize and prepare resettlement plans and indigenous peoples plans for subprojects under the ensuing project.

1. Detailed Tasks

- (i) Prepare a resettlement framework and an indigenous peoples framework for the ensuing project in compliance with ADB SPS (2009) and Philippine national law. The resettlement framework and an indigenous peoples framework will guide the IPIF consultants to prepare the resettlement plans and indigenous peoples plans;
- (ii) Coordinate with the IPIF consultants in preparing safeguard related documents (indigenous peoples and involuntary resettlement) and prepare a gap analysis and/or guide the IPIF consultants in preparing safeguard documents in compliance with ADB SPS (2009) and Philippine national law;
- (iii) Review the following to be prepared by the IPIF consultants: socioeconomic profiles of the project-affected communities in the project areas in terms of household sizes, demographic trends, income sources and levels, occupations, socioeconomic conditions, social service infrastructure, ethnic minority groups, and social organizations, in accordance with ADB SPS (2009) and carry out any further surveys as necessary or coordinate with IPIF consultants to address any gaps;
- (iv) Guide and support the IPIF consultants in undertaking an inventory of lost assets (homes, agricultural and other lands; or loss of access to current income-generating activities, including impacts caused by permanent or temporary acquisition) of affected people and a baseline socioeconomic survey of the affected population; determine the scope and magnitude of likely resettlement and indigenous peoples impacts; and list likely losses of households, agricultural lands, business and income opportunities;
- (v) Undertake safeguards analysis of each subproject under the ensuing project to identify risks and flag up issues which may affect decisions to proceed;
- (vi) Guide the national social safeguards specialist together with the executing agency in conducting required additional surveys for the preparation of the safeguard plans;
- (vii) Assist the executing agency in obtaining clearances from the National Commission on Indigenous Peoples and participate in free, prior, and informed consent consultations;
- (viii) Prepare any additional safeguard documents for the subprojects (to be determined);

- (ix) Review and finalize the public information booklet, entitlement matrix, grievance mechanism and appeal procedures, project budgets, and implementation arrangements;
- (x) Participate or conduct public consultation events;
- (xi) Prepare consultants' TORs on social safeguards during implementation of the ensuing project;
- (xii) Support ADB team in preparing relevant sections of project documents including RRP, project administration manual, summary poverty reduction and social strategy, etc.;
- (xiii) Ensure that all final reports are in compliance with ADB SPS (2009); and
- (xiv) Perform any other tasks as may be reasonably requested by the ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the proposed investment project:

- (i) work plan;
- (ii) gap analysis based on coordination with IPIF consultants;
- (iii) resettlement framework;
- (iv) indigenous peoples development framework;
- (v) quality-assured resettlement plans, and indigenous peoples plans;
- (vi) social safeguards inputs to the RRP, project administration manual, and other linked documents as required by the ADB project officer;
- (vii) relevant TORs; and
- (viii) responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist must have at least 20 years of experience on social safeguards work (indigenous peoples and involuntary resettlement) preferably with experience in the Philippines. He/she must have a degree (preferably post-graduate) in sociology, anthropology, scientific land management, and/or any other related field. The specialist should have a good knowledge of involuntary resettlement and indigenous peoples safeguards for watershed related projects in the Philippines and ideally prior work experience with ADB and/or any other relevant international development organization in the areas of resettlement and indigenous peoples safeguards. He/she should be proficient in carrying out safeguards assessment, training needs assessment and capacity building to government agencies on social safeguards. Excellent communication and writing skills in English are required.

Minimum General Experience: 20 years

Minimum Specific Experience (relevant to assignment): 20 years

Regional/Country Experience: Required

D. Social Development and Gender Specialist (International, 2 p-m)

1. Detailed Tasks

- (i) Review and supplement substantively where needed the outputs of the IPIF social

development and gender team,⁵ to ensure that:

- The outputs comply with ADB's requirements for gender mainstreaming such as Policy on Gender and Development (1998), Operations Manual C2 on Gender and Development in ADB Operations (2010), and Guidelines for Gender Mainstreaming Categories of ADB Projects (2011);
 - A gender-sensitive stakeholder analysis and consultation and participation plan was prepared;
 - As part of the poverty and social analysis, a detailed gender analysis in each of the selected project areas was conducted consistent with the Philippine Harmonized Gender and Development Guidelines, and its Gender and Development (GAD) Checklist for Designing Disaster Risk Reduction and Management Projects and GAD Checklist for Infrastructure Projects, and the DPWH Gender Mainstreaming Guidelines, where applicable;
 - Sex-disaggregated baseline data and gender-specific information was collected and included in the gender analysis, to be used to measure potential project gender benefits and impacts;
 - A review of the related policy and legal framework was conducted as part of the gender analysis;
 - A consolidated gender analysis report for the project was prepared;
 - Based on the gender analysis, a gender action plan (GAP) was developed that mirrors the design and monitoring framework (DMF) outputs and includes gender-inclusive design features, gender targets and indicators, timelines, assigned responsibilities, and implementation arrangements;
 - A cost estimate was provided for GAP implementation;
 - The subprojects identified (a) include gender design features and gender targets; (b) followed gender mainstreaming guidelines; and (c) include 40% women among the DPWH staff trained staff in project planning and preparation (as per the DMF of the IPIF loan);
 - The summary poverty reduction and social strategy was prepared, and gender inputs were provided in all relevant project documents, including: (a) RRP; (b) sector assessment; (c) project administration manual; (d) loan agreement; (e) environmental assessment and review framework (EARF); (f) resettlement framework; (g) indigenous peoples development framework and action plan (IPDFAP);
 - A comprehensive TOR for the social development and gender specialist for GAP or project gender design features implementation support was prepared;
- (ii) Identify the gaps in the delivery of the expected outputs in terms of data, information and processes as mentioned above, and coordinate with the Senior Sociologist/Gender Specialist of the IPIF to fill up the gaps and provide the needed data and/or information, and/or undertake the required processes. The international social development and gender specialist will provide substantive inputs wherever needed and will be responsible for and ensure that the final delivered outputs are at par with the requirements as enumerated above;
- (iii) Provide technical guidance on social development and gender mainstreaming to other members of the TRTA due diligence team, to ADB, and/or to the government, as needed;

⁵ Two person-months of an international consultant's input and 14.5 person-months of national consultants' input will be provided by the IPIF on social development and gender.

- (iv) Write all the final reports and other documents above-stated, and work closely with the TRTA team to fulfill all the requirements of the TRTA; and
- (v) Perform any other tasks as may be reasonably requested by the ADB project officer.

2. Output/Reporting Requirements

The specialist will prepare the following formal reports, in addition to any necessary working papers or reports required for the preparation of the proposed investment project:

- (i) Gender sensitive stakeholder analysis report and consultation and participation plan;
- (ii) Poverty and social analysis and detailed gender analysis reports including data disaggregated by sex and other relevant factors whenever possible;
- (iii) Summary poverty reduction and social strategy up to quality standards;
- (iv) GAP up to quality standards with clear indicators and/or targets and baseline or reference points used to set the gender targets;
- (v) Quality gender inputs to the stakeholder communication strategy;
- (vi) Quality social and gender inputs to the feasibility studies of the flood protection infrastructure projects;
- (vii) Social and gender inputs in the RRP (including relevant key gender indicators in the DMF) and related linked documents (EARF, IPDFAP, initial environmental examination, land acquisition resettlement framework, and land acquisition resettlement plan);
- (viii) Draft TOR of the social development and gender specialist for project GAP implementation, and inputs to TORs of other relevant consultants;
- (ix) Inputs to the project administration manual as required, especially Section VIII; and
- (x) Responses to government and ADB comments as required.

3. Minimum Qualification Requirements

The specialist will have a master's degree in social sciences or equivalent and at least 8 years of relevant professional experience in social development, gender or related areas. He/she will have experience in conducting poverty and gender assessments and mainstreaming gender at project design and preparation stage and/or designing gender specific projects funded by multilateral or bilateral donors. Excellent oral and written communication skills in English.

Minimum General Experience: 8 years

Minimum Specific Experience (relevant to assignment): 8 years

E. Social Safeguards Specialist (National, 8 p-m)

1. Detailed Tasks

- (i) Guide the executing agency and implementing agencies in conducting required surveys;
- (ii) Participate if possible when IPIF consultants undertake surveys (socio-economic, census, inventory of loss and replacement cost) in preparation of safeguard documents and identify which surveys are incomplete;
- (iii) Based on above analysis, coordinate with the international social safeguards specialist to address the gaps;

- (iv) Together with the IPIF consultants and under the guidance of the international social safeguards specialist, conduct site visits and assess the existing social (involuntary resettlement and indigenous peoples) conditions at the project sites;
- (v) In cooperation with the IPIF consultants and executing agency, conduct meaningful public consultation with affected people and other concerned stakeholders, including civil society and facilitate their informed participation. The consultation process and its results are to be documented and reflected in the resettlement plans and indigenous peoples plans;
- (vi) Participate and assist in social impact assessments with the indigenous people community that are affected by subprojects;
- (vii) Support the poverty, social, and gender analysis;
- (viii) Lead and conduct dialogue with local government officials on social development;
- (ix) Lead or participate in the various sub-teams under the IPIF and provide inputs to social development issues as related to flooding issues and flood control projects;
- (x) Lead and conduct economic, thematic and sector work in the context of sustainable economic development and poverty reduction;
- (xi) Coordinate with the executing agency for consistency of approach, exchange of experiences, and continuous improvement of practices and integration of social development to the management of projects;
- (xii) Coordinate and liaise with the executing agency, local authorities, and concerned groups in arranging meetings, workshops, needs assessment, trainings, etc.;
- (xiii) Translate relevant documents and discussions when and if necessary from Filipino to English language (or vice versa); and
- (xiv) Perform any other tasks as may be reasonably requested by the ADB project officer.

2. Output/Reporting Requirements

The specialist will assist the international social safeguard specialist to deliver outputs listed under the international social safeguards specialist's TOR, and provide responses to government and ADB comments as required

3. Minimum Qualification Requirements

At least 8 years of relevant professional experience in social development or related areas. Excellent oral and written communication skills in English.

Minimum General Experience: 8 years

Minimum Specific Experience (relevant to assignment): 8 years