

297

**GOVERNMENT OF ASSAM**

**FLOOD AND RIVER EROSION MANAGEMENT AGENCY OF ASSAM (FREMAA)**

Address: 4th Floor, Assam Water Center, Near Basistha Chariali, NH 27, Guwahati, Assam-781029  
Phone/Fax (0361) 2309896, Email: [ceo-fremaa@assam.gov.in](mailto:ceo-fremaa@assam.gov.in), Website: [www.fremaa.assam.gov.in](http://www.fremaa.assam.gov.in)

**E-Procurement Notice**

**REQUEST FOR QUOTATION (RFQ)**  
**(NON-CONSULTING SERVICES)**

Name of Project: Climate Resilient Brahmaputra Integrated Flood and Riverbank Erosion Risk Management Project (CRBIFRERMP) in Assam

E-Tender reference no: FREMAA(P)/TECH/05/ADB/2022/3848

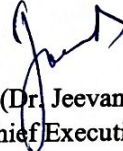
Date: 08.12.2022

Assignment Title: **Data Collection for Environmental Assessment.**

The Government of India has applied for financing from Asian Development Bank (ADB) towards cost of the **Climate Resilient Brahmaputra Integrated Flood and Riverbank Erosion Risk Management Project (CRBIFRESMP) in Assam**. Under the project, the Chief Executive Officer, Flood & River Erosion Management Agency of Assam (FREMAA), Govt. of Assam invites Request for Quotation (RFQ) through Open Competitive process from eligible Firm/Agency. Complete documents of the RFQ are available on website <https://assamtenders.gov.in> and [www.fremaa.assam.gov.in](http://www.fremaa.assam.gov.in) Intending Services Providers are required to register at e-tender portal of the Assam Govt. <https://assamtenders.gov.in> and participate through the e-tender portal only.

**A pre-bid meeting is scheduled to be held on 15.12.2022 at 1 pm (13:00 hours IST) in the Conference Hall of FREMAA, 4th Floor, Assam Water Center, Near Basistha Chariali, NH 27, Guwahati, Assam-781029.**

**The deadline for the online submission of the Quotation is on 23.12/2022 at 14:00 hours (IST).**



(Dr. Jeevan B, IAS)

Chief Executive Officer

Flood & River Erosion Management Agency of Assam  
Guwahati-781029

**Memo No. : FREMAA(P)/TECH/05/ADB/2022/3848**

Date: 08.12.2022.

Copy forwarded for favor of kind information to: -

1. The Director of Information and Public Relation, Government of Assam, Dispur, Guwahati-6 for arranging publication of the above notification in leading English local Daily & one Assamese Daily.
2. PA to Additional Chief Secretary, Water Resource Department, GoA for kind appraisal of the Addl. Chief Secretary.
3. For uploading in e-portal of Govt. of Assam viz. [www.assamtenders.gov.in](http://www.assamtenders.gov.in), & FREMAA website [www.fremaa.assam.gov.in](http://www.fremaa.assam.gov.in)
4. The Office Notice Board.



Chief Executive Officer

Flood & River Erosion Management Agency of Assam

**GOVERNMENT OF ASSAM**

**FLOOD AND RIVER EROSION MANAGEMENT AGENCY OF ASSAM (FREMAA)**

Address: 4<sup>th</sup> floor, Assam Water Centre, Basistha Near Chariali, NH-27, Guwahati-781029  
Phone/Fax-(0361)2309896, Email: [ceo-fremaa@assam.gov.in](mailto:ceo-fremaa@assam.gov.in), Website: [www.fremaa.assam.gov.in](http://www.fremaa.assam.gov.in)

**REQUEST FOR QUOTATION - SERVICES (RFQS)**

**(Through E Procurement using Single Envelope)**

Project Title: Climate Resilient Brahmaputra Integrated Flood and Riverbank Erosion Risk Management Project in Assam

Source of Funding: Asian Development Bank (ADB)

Contract Ref : FREMAA(P)/TECH/05/ADB/2022/3848 Date of Issue of Request: 8 .12.2022

1. The Chief Executive Officer, FREMAA (the Client) hereby requests you to submit price quotation for the performance of the Services described in the **Scope of Services** in **Appendix A** of these documents. If you, however, have been associated with the preparation of this **Scope of Services** subject of this request, you shall be disqualified.

To assist you in the preparation of your price quotation, we enclose the **Scope of Services**, the **Form of Quotation**, and the form of **Contract A**. A pre-bid meeting is scheduled on 15/12/22 at 1 pm (IST) in the Conference Hall of FREMAA, 4<sup>th</sup> Floor of Assam Water Centre (AWC), Near Basistha Chariali, Guwahati-781029. *Link will be shared to the intending bidders who would like to attend virtually. The bidder should send email request to the FREMAA by 14/12/2022 at 5pm.*

2. If you/your firm, however, falls under any of the following conditions, your proposal shall not be considered:
  - (a) you/your firm are/is not a citizen/national of an ADB member country, or
  - (b) you/your firm have/has been associated with the firm that prepared the terms of reference or engaged in the preparation of the Project for which the contract that is subject of this request for quotations was identified, or
  - (c) you/your firm are/is owned by the Client, or
  - (d) you/your firm are/is currently sanctioned or temporarily suspended by the Asian Development Bank for a violation of its Anticorruption Policy (1998, as amended to date), or
  - (e) the contracting of services from your country or any payment to persons or entities in your country is prohibited in compliance with a decision of the United Nations Security Council under Chapter VII of the Charter of the United Nations.
3. To be qualified, you must have qualification and experience as a Service Provider of the Services covered by this **Request for Quotation** as follows:
  - a) **Qualifications of the Service Provider.** The Service Provider needs to demonstrate that it has successfully carried out at least (i) 2 (two) environmental baseline collection and

analysis, and (ii) 5 (five) public consultations on environmental matters of the same nature and complexity as this Scope of Services in Assam or Northeast region of India.

As evidence, you must attach a document of your experience as Service Provider in at least two contracts in the last 5 years of nature similar to the requirements of this Contract.

**Similar nature means** experience in successful completion of Environmental surveys, baseline data collection on environment including environment monitoring, biodiversity assessment, GIS mapping etc. as service provider under a government funded infrastructure project or externally-aided infrastructure based projects funded by the Asian Development Bank, World Bank, New Development Bank, etc. in Assam or Northeast region of India.

**Documentary Evidence:** Work order, contract copy containing scope of services of the assignment & Completion certificate/100% payment receipt certificate in case of completed contract & minimum 90% payment receipt certificate (in case of ongoing contracts) issued by the authorized representative of the client shall be submitted to demonstrate claim of the similar nature of services successfully executed.

- b) The Curriculum Vitae (CV) of the following experts are to be submitted complying with the minimum education qualification & experience stated in the Scope of Services in Appendix-A. Only the CV of the key expert will be rated by the Client during the evaluation. The CVs are to follow the format in Appendix-E.

<b>Position</b>	<b>Qty (Nos)</b>
<b>Key Expert</b>	
Environment Specialist/ Team leader	1
<b>Non-key Expert</b>	
Junior Environment Officer	1
Biodiversity Specialist	1
GIS Specialist	1

- c) Letter of intent of association/memoranda of understanding (MoU)/Agreement with a State Pollution Control Board/Central Pollution Control Board /NABL accredited laboratories to undertake the environmental quality monitoring services required in the Scope of Services is to be submitted.

#### 4. Clarifications & Amendments

If FREMAA receives any request for clarification up to 5 days prior to the deadline of the submission of the quotations, FREMAA's response together with any amendment to this document will be uploaded on the e-procurement portal for information of all prospective services providers. Interested services providers should check regularly the e-procurement system for any clarifications or amendments related to this RFQ.

Your quotation should be submitted in accordance with the following instructions, procedures, and the terms and conditions of the **Contract**.

## 5. Preparation of Quotations

- (a) Your price quotation shall be for all the items as described in the **Scope of Services** and submitted only in the attached **Form of Quotation**. The currency of quoted prices and payment shall be Indian Rupees (INR).
- (b) You shall submit only one set of quotation for the above items. Your quotation must be typed or written in indelible ink and shall be signed by you or your authorized representative. Without a signature in your **Form of Quotation**, your quotation will not be considered further.
- (c) You shall submit the **Form of Quotation** through e procurement portal of the Government of Assam viz. [www.assamtenders.gov.in](http://www.assamtenders.gov.in) .
- (d) Your quotation should be valid for 30 days from the deadline for submission of the quotation indicated below. If you withdraw your quotation during the validity period and/or refuse to accept the award of a contract when and if awarded, then you will be excluded from the list of Service Providers for the Project for two years.

## 7. Submission and Opening

Your **Form of Quotation** with the required documents shall be submitted electronically through [www.assamtenders.gov.in](http://www.assamtenders.gov.in) only.

Quotations shall be opened online through the e procurement portal of the Government of Assam in public in the presence of participating Service Providers' representatives who choose to attend on <sup>23<sup>rd</sup></sup> December 2022 at 16.00 hours and at the following address:  
**Flood and River Erosion Management Agency of Assam**  
**4<sup>th</sup> Floor of Assam Water Centre (AWC), Near Basistha Chariali, Guwahati-781029**

## 8. Evaluation and Comparison

- (a) Quotations determined to be substantially responsive to this **Request for Quotation** will be evaluated by the Client by comparison of their offer prices. A quotation is not substantially responsive if it contains material deviations or reservations to the terms, conditions, and specifications in this **Request for Quotation**.
- (b) In evaluating the quotations, the Client will adjust for any arithmetical errors as follows:
  - (i) where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and
  - (ii) where there is a discrepancy between the unit rate (where applicable) and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

If you refuse to accept the correction/(s), your quotation will be rejected.

## 9. Award of Contract

The Client shall award the contract to the Service Provider whose quotation has been determined to be substantially responsive to this Request for Quotation and who has offered the lowest price quotation.

The Service Provider whose quotation has been accepted will be notified by the Client **within 15 days** from the date last of submission of quotation through the return of a copy of the **Form of Quotation with Acceptance** signed by the authorized representative of the Client.

The successful Service Provider shall sign the **Contract** governed by the annexed **Contract Terms and Conditions**. In addition to the quoted price, the contract price shall include Goods & Services Tax (GST) in India.

10. Further information till 5 days prior to proposal submission can be obtained from:

Deputy Chief Executive Officer  
4<sup>th</sup> Floor of Assam Water Center (AWC) Near Basistha Chariali, Guwahati-781029  
Telephone (+91)7086056499  
E-mail : [ceo-fremaa@assam.gov.in](mailto:ceo-fremaa@assam.gov.in), [eont-fremaa@assam.gov.in](mailto:eont-fremaa@assam.gov.in)

11. The Client intends to apply funds from the **Asian Development Bank (ADB)** for eligible payments under the **Contract** resulting from this **Request for Quotation**.

12. Under **ADB's Anticorruption Policy** (1998, as amended to date) Service Providers shall observe the highest standard of ethics during the procurement and execution of such contracts. ADB may reject a proposal for award, and may impose sanctions or other remedial actions on parties involved, if it determines that the Service Provider recommended for award or any other party, directly or through an agent, has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for, or in executing, the Contract. At the time of submission of your quotation, you should not be in ADB's sanctions list. A firm/individual shall not be eligible to participate in any procurement activities under an ADB-financed, -administered, or -supported project while under temporary suspension or debarment by ADB pursuant to its Anticorruption Policy, whether such debarment was directly imposed by ADB, or enforced by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions.

13. You/your firm, joint venture partners, associates, parent company, affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, are not, or have never been, temporarily suspended, debarred, declared ineligible, or blacklisted by the Client's country, any international organization, and other donor agency.

If so debarred, declared ineligible, temporarily suspended, or blacklisted, please state details (as applicable to each joint venture partner, associate, parent company, affiliate, subsidiaries, subcontractors, and/or suppliers):

(a) Name of Institution: \_\_\_\_\_

(b) Period of debarment, ineligibility, or blacklisting (start and end date): \_\_\_\_\_

(c) Reason for the debarment, ineligibility, or blacklisting: \_\_\_\_\_

14. You/your firms, joint venture partners', associates', parent company's affiliates or subsidiaries', including any subcontractors' or suppliers', key officers and directors have not been [charged or convicted] of any criminal offense (including felonies and misdemeanors) or infractions/violations of ordinance which carry the penalty of imprisonment.

If so charged or convicted, please state details:

(a) Nature of the offense/violation: \_\_\_\_\_

(b) Court/Area of jurisdiction: \_\_\_\_\_

(c) Resolution (i.e. dismissed; settled; convicted/duration of penalty):  
\_\_\_\_\_

(d) Other relevant details:

15. You/your firm understands that it is your obligation to notify FREMAA and ADB should you/your firm, joint venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers, be temporarily suspended, debarred or become ineligible to work with ADB or any other multilateral development banks, the client's country, international organizations, and other donor agencies, or any of your key officers and directors be charged or convicted of any criminal offense or infractions/violations of ordinance which carry the penalty of imprisonment.

16. Any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the quotation/bid or cancellation of the contract, if awarded, and may result in remedial actions, in accordance with ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015 as amended from time to time).

17. A bidder shall not have a conflict of interest. All bidders found to have a conflict of interest shall be disqualified

Faithfully,



(Dr. Jeevan B, IAS)  
Chief Executive Officer-FREMAA

**FORM OF QUOTATION  
(Services)**

\_\_\_\_\_ [date]

To: \_\_\_\_\_ [Client's Name]  
\_\_\_\_\_ [Client's Address]  
\_\_\_\_\_

We offer to execute the \_\_\_\_\_ [name and number of Contract] in accordance with the **Contract Terms and Conditions** and the **Scope of Services** accompanying this Quotation for the Contract Price of \_\_\_\_\_ [amount in words and numbers] ( \_\_\_\_\_ ) [name of currency] \_\_\_\_\_.

We propose to complete the performance of the services described in the **Contract** within the Completion Period indicated in the priced **Scope of Services**.

This Quotation and your written acceptance will constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Quotation you receive.

We hereby confirm that this Quotation complies with the Validity of the Offer condition imposed by the **Request for Quotation** document.

We: (a) are a national of an ADB member country; (b) have not been associated with the firm that prepared the terms of reference or engaged in the preparation of the Project for which the contract that is subject of this request for quotations was identified; (c) are not owned by the Client; (d) are not currently sanctioned or temporarily suspended by the Asian Development Bank; and (e) to the best of our knowledge, is not prohibited from being contracted in compliance with a decision of the United Nations Security Council.

Name of Service Provider: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Name of Signatory: \_\_\_\_\_

Title of Signatory : \_\_\_\_\_

Address : \_\_\_\_\_

Telephone Number : \_\_\_\_\_

Fax Number, if any : \_\_\_\_\_

Email address (optional) : \_\_\_\_\_

**ACCEPTANCE**

The Client accepts the Service Provider's offer to provide the service.

Name of Client : Flood and River Erosion Management Agency of Assam  
Authorized Signature : \_\_\_\_\_  
Name of Signatory : (Dr. Jeevan B, IAS)  
Title of Signatory : \_\_\_\_\_  
Date : \_\_\_\_\_



# CONTRACT

**Name of Country:**

**Project Name:**

Name of Contract: \_\_\_\_\_

Contract Number \_\_\_\_\_

This Contract is entered in to on \_\_\_\_\_ [date] day of [month], [year], between \_\_\_\_\_ [name of Client] (hereinafter called "the Client") on the one part, and \_\_\_\_\_ [name of Service Provider] (hereinafter called "the Service Provider") on the other part.

Whereas the Client has requested a quotation for **Data Collection for Environmental Assessment** to be performed by the Service Provider in accordance with the **Contract**, and has accepted the Quotation by the Service Provider in the amount of \_\_\_\_\_ [amount in words] [amount in figures] hereinafter called "the Contract Price".

The Client and the Service Provider agree as follows:

1. The following documents shall be deemed to form and be read and construed as part of this Contract, viz:
  - a) **Form of Quotation, with Scope of Services and Appendix and**
  - b) **Contract Terms and Conditions;**
2. Taking into account payments to be made by the Client to the Service Provider as hereinafter mentioned, the Service Provider hereby enters into this Agreement with the Client to execute and complete the performance of services under the Contract.
3. The Client hereby agrees to pay, in consideration of the successful performance of the services, the **Contract Price** as indicated and accepted in the **Form of Quotation**, under payment terms stipulated in the **Contract Terms and Conditions**

IN WITNESS whereof the parties hereto have executed the **Contract** under the laws of India on the date indicated above.

**Signature and seal of the Client:**  
For and on behalf of

**Signature and seal of the Service Provider:**  
For and on behalf of

\_\_\_\_\_  
Name of Authorized Representative

\_\_\_\_\_  
Name of Authorized Representative

## ● CONTRACT TERMS AND CONDITIONS

Project Name: Climate Resilient Brahmaputra Integrated Flood and Riverbank Erosion Risk Management Project in Assam

Client: Flood & River Erosion Management Agency of Assam

Contract No. \_\_\_\_\_

### 1. Definitions

- (a) "Contract" means the agreement entered into between the Client and the Service Provider, together with the Contract Documents referred to therein, including all attachments, appendixes, and all documents incorporated by reference therein.
- (b) "Contract Documents" means the documents listed in the Contract, including any amendments thereto.
- (c) "Contract Price" means the price payable to the Service Provider as specified in the Contract, subject to such additions and adjustments thereto pursuant to the Contract.
- (d) "Completion" means the fulfilment of the committed services by the Service Provider in accordance with the terms and conditions set forth in the Contract.
- (e) "Client" means the entity purchasing the Services.
- (f) "Services" means the services the Service Provider will perform as specified in the Scope of Services in Appendix A.
- (g) "Service Provider" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Client and is named as such in the Contract.
- (h) "ADB" is the Asian Development Bank.

### 2. Applicable Law

The Contract shall be interpreted in accordance with the laws of the Client's country.

### 3. Language

All communications and documents related to the Contract shall be in English.

### 4. Assignment

Any assignment of this Contract or of any rights hereunder, in whole or in part without the prior written consent of the Client shall be void.

### 5. Fraud and Corruption

This Contract shall be covered by the provisions of ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015, as amended from time to time) that requires Borrowers (including beneficiaries of ADB-financed activity), as well as Service Providers and Contractors under ADB-financed contracts, to observe the highest standard of ethics during the procurement and execution of such contracts.

### 6. Performance of the Services

237

The Service Provider shall carry out the Services with due diligence and efficiency and shall furnish to the Client such information related to the Services as the Client may from time-to-time reasonably request. The Service Provider shall at all times cooperate and coordinate with the Client with respect to the performance of the Services.

**7. Required Performance Standards**

- (a) General Description attached as Appendix-B
- (b) Specific Standards attached as Appendix-C
- (c) PerformanceParameters attached as Appendix-D

The Service Provider confirms compliance with above standards and parameters.

**8. Service Completion Schedule**

The Services should be completed as per schedule indicated in the **Scope of Services** but not exceeding 4(four) months from the date of signing of contract.

**9. Fixed Contract Price**

The prices indicated in the **Form of Quotation** are firm and fixed and not subject to any adjustment during contract performance, subject to Clause 11 [Payment] below.

**10. Taxes and Duties**

The Service Provider shall be entirely responsible for all taxes, duties, license fees, etc., incurred until completion of the Services.

**11. Payment**

Upon submission by the Service Provider of claim and subsequent verification of the claim by the Client, payment of the contract price shall be made in the following manner:

- (a) Advance payment of 10% within 14 days of signing the contract, upon evidence of mobilization of the Service Provider and submission of the Bank Guarantee of equal amount of validity up beyond 28 (twenty-eight days) from the date of contract completion.
- (b) 10% on submission of the Inception Report accepted by the Client
- (c) 20% on submission of five Technical Notes and GIS files accepted by the Client
- (d) 20% on submission of the Draft Final Report accepted by the Client
- (e) 20% upon submission of the Final Report accepted by the Client
- (f) 20% upon finalisation of Environmental safeguard documents by the ADB.

**12. Resolution of Disputes**

The Client and the Service Provider shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute between them under or in connection with the Contract. In the case of an unresolved dispute, the dispute shall be settled in accordance with the provisions of the Arbitration and Reconciliation act 1991.

**13. Independent Service Provider**

Nothing contained in this Contract shall be construed as establishing or creating the

relationship of master and servant, employer and employee or principal and agent between the Client and the Service Provider, or his employees or agents or other persons engaged by the Service Provider to perform any of the services.

#### **14. Intellectual Property Rights**

Intellectual Property Rights: (a) The Service Provider shall indemnify the Client from and against any and all claims, liabilities, obligations, losses, damages, penalties, actions, judgments, suits, proceedings, demands, costs, expenses and disbursements of whatsoever nature that may be imposed on, incurred by or asserted against, the Client during or in connection with the Services by reason of: (i) infringement or alleged infringement by the Service provider of any patent or other protected right, or (ii) plagiarism or alleged plagiarism by the Service provider.

#### **15. Failure to Perform**

The Client may terminate the Contract if the Service Provider fails to perform the services, in accordance with the above terms and conditions, in spite of a 14-day notice given by the Client, without incurring any liability to the Service Provider. In the event of such termination, the amount due under the Contract shall be subject to equitable adjustment.

#### **16. Termination Due to Integrity Violation**

The Client may terminate this Contract, in whole or in part, if the Service Provider, in the judgment of the Client has engaged in integrity violations in accordance with Clause 5 [Fraud and Corruption], in competing for or in executing this Contract.

#### **17. Other Grounds for Termination**

The Client may also terminate this Contract, in whole or in part, if the Service Provider becomes insolvent, bankrupt or gives the Client reasonable evidence of its inability to complete the Services as specified, or fails to correct any non-conformity in the Services or performs in bad faith by willfully not observing the terms and conditions of this Contract.

#### **18. Force Majeure**

The Service Provider shall not be liable for penalties or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

(a) For purposes of this Clause, "Force Majeure" means an events beyond the control of the Service Provider and not involving the Service Provider's fault or negligence and not foreseeable. Such events may include, but not restricted to, act of Client in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

(b) If a Force Majeure situation arises, the Service Provider shall promptly notify the Client in writing of such condition and the cause thereof. Unless otherwise directed by the Client in writing, the Service Provider shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by Force Majeure event.

#### **19. Accounts and Records**

255

- (a) The Service Provider shall keep accurate and systematic accounts and records in respect of the Services in such form and detail as are customary in its profession and are sufficient to establish accurately that the costs have been duly incurred.
- (b) Notwithstanding anything to the contrary stated herein, the Service Provider shall maintain accounts and records, including original receipts, invoices and other supporting documents evidencing payments made by the Service Provider under this Contract, for the period of the Services and for a period no less than 3 years after the expiration or termination of this Contract.
- (c) The Service Provider shall permit ADB to inspect the accounts, records, and other documents relating to the submission of bids and contract performance of the Service Provider and to have them audited by auditors appointed by ADB.

**20. Suspension of ADB Loan or Credit.**

In the event that ADB suspends the Loan or Credit to the Client, from which part of the payments to the Service Provider are being made, the Client is obligated to notify the Service Provider, with copy to the Client's representative, of such suspension within 7 days of having received ADB's suspension notice.

**21. Termination Notice Due to Non-payment**

If the Service Provider has not received payments due within the 28 days as provided for in Clause 11[Payment], the Service Provider may immediately issue a 14-day termination notice.

## Appendix A

### SCOPE OF SERVICES

#### A. Project Background

1. Since the early years of the 21st century, the Government of India has given high priority to develop effective flood and river erosion management systems along major rivers. In Assam, the State Government of Assam (SGoA) is committed to manage floods and protect riverbanks from erosion in the Brahmaputra River valley with its strategic partner in this sector, the Asian Development Bank (ADB).
2. The proposed Climate Resilient Brahmaputra Integrated Flood and Riverbank Erosion Risk Management Project in Assam (CRBIFRERMP) of a total cost estimated around \$250 million is in preparation. The project is planned to be financed through a ADB loan of about \$200 million and SGoA's counterpart funds. The project is anticipated to start to be implemented before the end of 2023.
3. CRBIFRERMP will build upon the experience from the recently completed ADB-financed Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (2010-2020) (AIFRERMIP).<sup>1</sup> It will focus on the Main Stem of the Brahmaputra River in Assam and follow a climate-resilient holistic, integrated, systematic, and reach-wise approach to flood and riverbank erosion risk management.
4. Incorporating structural and nonstructural measures in selected river reaches in Assam, the proposed project aims to (i) reduce economic vulnerability and social disruption induced by flood and riverbank erosion in four selected flood-prone subproject areas along the main stem; (ii) strengthen the institutional capacity for climate change-oriented flood and erosion management; (iii) develop further the knowledge base for informed decision-making on preventive measures and preparation of river stabilization guidelines and plans; (iv) stabilize selected river reaches by integrating climate-resilient riverbank erosion and flood protection works to ultimately enhance navigation and recover lost floodplain land ('land and/or charland reclamation'); and (v) enhance the livelihoods of the most vulnerable of the riverine population.
5. In particular, the project will build cost-effective long-guiding geotextile sand-filled bag riverbank protection in a climate-resilient adaptive way to cope with the dynamic riverbank erosion, contributing to a more significant river stabilization enabling ultimately navigation. Also, climate-resilient modern flood embankments will be built and/or rehabilitated and will have openings (ie: sluice gates with fish passes) to enable river-floodplain interconnectivity and enhance biodiversity.
6. It is anticipated that CRBIFRERMP will have the following three broad outputs:
  - (i) **Output 1. Climate resilient flood and riverbank erosion risk mitigation measures in four subproject areas implemented and maintained.** The project will combine structural and nonstructural measures in four subproject areas to stabilize their respective river reaches by

<sup>1</sup> The multitranche financing facility to India for the Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program was approved by ADB in 2010 to increase the reliability and effectiveness of flood and riverbank erosion risk management systems in three priority flood-prone subproject areas in Assam, through structural and nonstructural interventions, policy strengthening, and institutional and knowledge bases. FREMAA was the executing agency of this investment program whose second and final project was physically completed in October 2020.

applying the integrated river stabilization approach initiated under AIFRERMIP. Specifically, the structural measures will include about (i) 90 km of long-guiding riverbank protection with innovative technologies, (ii) 50 km of pro-siltation measures (porcupines), and (iii) 5 km of climate-resilient flood embankment,<sup>2</sup> including sluice gates and fish passes to facilitate drainage and maintain river-floodplain interconnectivity, thus enhancing biodiversity. Nature-based solutions will be pilot-tested, including possible involvement of private sector. As a lesson from previous investments, monitoring, adaptive maintenance, and emergency works for five years after construction will be included to cope with the highly dynamic river system.

- (ii) **Output 2. Flood and riverbank erosion knowledge base strengthened.** This output will enhance the various decision support tools initiated under AIFRERMIP. In particular: (i) the flood forecasting and warning system will be strengthened; (ii) flood mapping will quantify inundation extents, depths, and durations, enabling a determination of people and critical assets at risk of flooding; (iii) erosion prediction and embankment breach models will be enhanced; (iv) the asset management system will be improved to ensure operation and maintenance is financed and implemented according to a risk-based approach. Data will be systematically collected, including: (i) river surveys (bathymetry, gauging, and sediment measurements); (ii) topographic surveys to derive digital elevation models; and (iii) asset condition surveys.<sup>3</sup> Existing guidelines for design of flood and riverbank protections will be expanded to address climate impacts and resiliency, river stabilization principles, and successfully piloted nature-based solutions. This output will also include capacity building to enhance FRERM and disaster resilience of the state and riverine communities.
- (iii) **Output 3. Vulnerable people's livelihoods supported.** This output will address people living on the embankments or chars in the subproject areas who are poor and destitute and negatively affected by river erosion or floods. It will also specifically target women in these locations. Support will include: (i) training female headed households and female self-help groups on spinning, weaving, marketing the silk, establishing weaving centers with modern handlooms and sewing machines; (ii) increasing vegetable production by providing climate-resilient seeds, promoting improved agricultural practices, and extending marketing support; and (iii) providing vocational training for unemployed youth. Subsistence and small farmers will be supported with: (i) assistance in creating businesses around agriculture and fisheries; (ii) help in identifying opportunities associated with nature-based solution;<sup>4</sup> and (iii) improved roadside markets. Furthermore, complementing the various state-led initiatives, the graduation approach will be piloted to strengthen beneficiaries' wellbeing in a sustainable manner by providing livelihood assistance through agriculture, livestock, fisheries, industries, and vocational training activities.<sup>5</sup>

7. CRBIFRERMIP will be implemented in four priority subprojects, namely Dibrugarh, Palasbari-Gumi/Guwahati West, Morigaon and Goalpara (Appendix 1). The main project benefits comprise: (i) reduced riverbank erosion; (ii) mitigation of flood damage; (iii) increased agricultural production; (iv) land reclamation and development; and (v) improved access to ferry ghats.

8. Similar to the recently completed ADB-financed AIFRERMIP (2010-2020), the Flood and River Erosion Management Agency of Assam (FREMAA) will be the executing agency of the proposed project. The Water Resources Department (WRD) and Assam Agroforestry

<sup>2</sup> The new or rehabilitated embankments will be designed to accommodate: (i) multi-purpose use, (ii) a 100-year water level, and (iii) sufficient freeboard for potential climate change related increases in flood discharges.

<sup>3</sup> FREMAA will share data as appropriate with stakeholders such as Assam Inland Water Transport Development Society (to support construction of ferry-crossing ghats and navigation) and the Brahmaputra Board.

<sup>4</sup> New livelihood opportunities will arise from nature-based solutions along embankment slopes and reed plantations on charlands as well as from the revival of beels resulting in new fishing opportunities and planting.

<sup>5</sup> Graduation combines cash transfers with an asset transfer, financial inclusion, tailored skills training, livelihood development, social inclusion, and life-skills coaching and psychosocial support. Robust evidence worldwide confirms the sustainability of impacts of this approach to promote economic development for the alleviation of poverty.

Development Board (AADB)<sup>6</sup> (under the Forest Department) will be the implementing agencies of the proposed project. AADB will bring their expertise on nature-based solutions (such as nature-based anti-erosion solutions, phytoremediation, biodiversity enhancement measures).

9. FREMAA is the Client for these nonconsulting services.

## B. Objective of the Services

10. The main objective of the Services is to provide the information and data required for due diligence and environmental assessment of the proposed project interventions. The Service Provider will conduct meaningful public consultations with beneficiaries, affected people and stakeholders within the proposed subprojects.<sup>7</sup>

## C. Scope of the Services

### 1. Preparatory Tasks

11. In close consultation with FREMAA and WRD staff, the Service Provider will undertake the following preparatory tasks:

- Review the proposed project interventions with respect to: (a) riverbank protection, (b) flood embankment, (c) land reclamation via channel closure; (d) sluice gates; and (e) other infrastructure relevant to the project and associated facilities;
- Acquire an understanding of the design and scale of subproject interventions described in the Detailed Project Reports (DPRs) to be provided by FREMAA to the Service Provider at the start of the Services;
- Acquire relevant geographic information system (GIS) files;
- Prepare questionnaires for use in the field survey; and
- Develop a schedule to visit the villages during the field survey.

12. The Service Provider will define the project area of influence such as (i) primary subproject sites and related facilities that the proposed project will develop or control, such as access roads, borrow pits, disposal areas, etc.; and (ii) areas and communities potentially affected. The Service Provider will consider 1 km radius from the main infrastructure in each of the four subprojects as area of influence (GIS mapping will be useful to determine the extents of each subproject study area).

### 2. Data Collection and Analysis

13. **Environmental Quality Monitoring.** Information from environmental quality monitoring will be used to understand conditions of the environment prior to infrastructure development in the subproject areas. The Service Provider will conduct primary environmental quality monitoring

<sup>6</sup> SGoA created the Assam Agroforestry Development Board in June 2022 to increase the people's livelihood options through various agroforestry models and support nature conservation.

<sup>7</sup> Meaningful consultation is a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.



through tools and techniques that identify, analyze, and quantifiably assess environmental conditions. Environmental quality monitoring will include at a minimum the types listed in the following table with corresponding parameters and policies providing prescribed standard methods of measurements.

**Table 1: Environmental Quality Monitoring Types, Parameters and Policies**

Types	Parameters	Policies
Noise	dB(A)Leq	Noise Pollution (Regulation and Control) Rules, 2000 and its amendments
Ambient Air Quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> , NO <sub>x</sub> , and CO	National Ambient Air Quality Standards 2009 and its amendments
Water Quality	pH value, temperature, electrical conductivity, turbidity, total dissolve solids, total suspended solids, total solids, dissolved oxygen, chemical oxygen demand, biochemical oxygen demand, oil and grease, and fecal coliform.	Water (Prevention and Control of Pollution) Act, 1974 and its amendments

14. The selection of stations for the environmental quality monitoring will be based on the areas where there are villages and other receptors. The Service Provider will conduct monitoring at a minimum 40 stations nearby villages and other sensitive areas, with approximately 10 stations within each of the four subproject areas. The Service Provider will provide an overview of the location of the stations, including (i) location map with GIS coordinates of each station, (ii) background information on the location, and (iii) community activities.

15. With the overview of the location of the monitoring stations, the Service Provider will prepare a Technical Note that will include the results of the environmental quality monitoring. The Service Provider will interpret the results and compare them with India's standards on noise, air quality and water quality. Also, results will be compared for applicable parameters of ambient air quality<sup>8</sup> and noise levels<sup>9</sup> with the World Bank Group's Environment, Health and Safety Guidelines. The Service Provider will provide information of how ambient air quality, noise levels and water quality may be affected by the construction and operations within each of the subproject areas.

16. Due to the complexity and need for authenticity of the environmental quality monitoring required, the Service Provider will engage the services of a Central or State Pollution Control Board recognized laboratory to fully undertake the environmental quality monitoring described above.<sup>10</sup>

17. **Wildlife and Habitat Survey.** The Service Provider will ensure to perform the following

<sup>8</sup><https://www.ifc.org/wps/wcm/connect/4e01e089-ad1a-4986-b955-e19e1f305ff0/1-1%2BAir%2BEmissions%2Band%2BAmbient%2BAir%2BQuality.pdf?MOD=AJPERES&CVID=nPtqvbS>

<sup>9</sup><https://www.ifc.org/wps/wcm/connect/4a4db1c5-ee97-43ba-99dd-8b120b22ea32/1-7%2BNoise.pdf?MOD=AJPERES&CVID=nPtqwZY>

<sup>10</sup>Any environmental laboratories (government, semi-government, private, or educational institutes) with currently valid certifications from the Central Pollution Control Board, National Accreditation Board for Testing and Calibration Laboratories.

● surveys at subproject areas.

- (i) **Floral Survey.** Primary and secondary data will be collected by the Service Provider for the baseline information of terrestrial and aquatic flora. For the primary data collection, the Service Provider will use sampling technique (i.e. quadrat method or other appropriate technique) to determine existing plants within 1 km from the subproject sites. The Service Provider will identify classification of each species based on IUCN Red List and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as CR, endangered EN and VU under IUCN Red List, the Service Provider will determine the estimated population found within 1 km from the subproject sites. Available data from the government, online sources and publications can be used by the Service Provider to supplement information related to plant species, population and conservation classification.
- (ii) **Terrestrial Fauna Survey.** Primary and secondary data will be collected by the Service Provider for the baseline information of terrestrial animals (i.e. mammals, birds, reptiles and insects). For the primary data collection, the Service Provider will use survey questionnaires designed for locals, non-government organizations, and government offices to determine the occurrence of animals within 1 km from the subproject sites. Similarly, the Service Provider will identify classification of each species based on IUCN Red List and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as CR, endangered EN and VU under IUCN Red List, the Service Provider will determine the estimated population found within 1 km from the subproject sites. Available data from the government, online sources and publications can be used by the Service Provider to supplement information related to species, population and conservation classification.
- (iii) **Aquatic Fauna Survey.** Primary and secondary data will be collected by the Service Provider for the baseline information of animals occurring along reaches and channels within the subproject sites. For the primary data collection, the Service Provider will use traditional field observations and/or electro-shocking methods along the Brahmaputra River and channels nearby the subproject sites. The Service Provider will use survey questionnaires designed for locals, non-government organizations, and government offices to determine the occurrence of river animals in rivers and channels. The Service Provider will identify classification of each species based on IUCN Red List and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as CR, endangered EN and VU under IUCN Red List, the Service Provider will determine the estimated population found within 1 km from the subproject infrastructures. Available data from the government, online sources and publications can be used by the Service Provider to supplement information related to species, population and conservation classification.
- (iv) **Ecologically Sensitive Areas.** The Service Provider will determine any sites and buffer zone within or nearby the subproject sites (1 km radius) through liaising with relevant government offices and non-government organizations. The Service Provider will cover legally protected and officially proposed for protection of the government and relevant international conventions.<sup>11</sup>

<sup>11</sup> Areas that meet the criteria of the World Conservation Union classification, the Ramsar List of Wetlands of

(v) **Technical Note.** The Service Provider will prepare a technical note on the habitat survey covering all wildlife on land and water and ecologically sensitive areas, where there are details on the method and results of the survey. The report must include as a minimum information on the details of how species and their habitat may be affected by the interventions in each subproject areas. The Service Provider will ensure proper taxonomy of species such as local names with scientific names, family names and order. Also, detailed maps showing the location of the subproject sites, study area, and the location of all surveys undertaken is to be included in the report. Photographs of sites and wildlife will be essential to provide visual information in the report. The weather conditions at the time of surveys and all personnel involved in the field surveys must be included in the report.

**a. Physical and Socio-economic data**

18. The Service Provider will collect secondary data of physical environment, which may affect or being affected by (i) climate, (ii) physiography and drainage, (iii) water resources, (iv) river morphology, (v) seismology, and (vi) geology. Details of the required information are provided under the "Specific Standards" stated in the contract for these Services.

19. The Service Provider will use GIS mapping and relevant computer programs to produce information related to (i) topography, (ii) sediment transport, and (iii) land use. Available publications, journals and other literature from online sources and government records can be used by the Service Provider to supplement information on these subjects.

20. For avoiding any duplication of efforts between the several Service Providers to be engaged for project preparatory activities, the Service Provider will liaise closely with FREMAA to obtain information related to Economic Benefits such as information on (i) flooding behavior, (ii) flood inundation in the subproject areas, (iii) land-use (Land Use Land Cover details for each reaches/ locations under all the four subprojects with supporting GIS based maps shall be provided with Area of Influence as 1 km radius and 5 km radius.) and (iv) existing flood control and erosion work.

21. To collect secondary data and information relevant with socio-economic aspects through government records and other sources, the Service Provider will collect up to date information on (i) demography, (ii) education status, (iii) dependence on local resources, (iv) manufacturing industries, (v) transportation and connectivity, (vi) power facilities, (vii) water supply, (viii) sanitation facilities, (ix) medical and health facilities, (x) sources of income, (xi) common property resources, (xii) physical cultural resource, and (xiii) intangible culture.

22. Details of the required information for physical and socio-economic data are described under the "Specific Standards" stated in the contract for these Services. The Service Provider will verify information in the field and acquire more information by communicating with government institutions, private entities, local people, and actual observations. The Service Provider will prepare a Technical Note on the findings of the data collection which will include maps, photographs, tables/matrices. and other supporting information.

**3. Environmental Risks Identification and Analysis**

23. The Service Provider will include identification of environmental risks induced by the

International Importance, and the United Nations Educational, Scientific, and Cultural Organization's world natural heritage sites.

subprojects and will apply the concept of Source-Pathway-Receptor model to determine the potential environmental impacts during construction and operations activities against the environment and nearby communities. Based on the information from field surveys and data collection and analysis, the Service Provider will determine direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic, and physical cultural resources.

24. For each environmental risk, the Service Provider will analyze and determine the level of risk accordingly to the method described in Appendix 2 that the Service Provider may improve by modifying the classifications and definitions of risks; however, the procedure is to remain the unchanged. The Service Provider will prepare a Technical Note to present and discuss the results of environmental risks identification and analysis.

**4. Government Requirements**

25. The Service Provider will consult relevant government offices for any requirements that the project needs to fulfill and comply under national/SGoA laws and standards. The Service Provider will include these requirements in the Draft Final Report and Final Report.

**5. Public Consultations**

26. The Service Provider will plan with FREMAA, WRD, and AADB to conduct at least 2 public consultations in each subproject site, and make arrangements to invite people in all villages living in the affected areas.<sup>12</sup> In each subproject site, the Service Provider will carry out meaningful consultations with affected people and facilitate their informed participation and will ensure women's participation during consultations. The consultations will involve stakeholders, including affected people and concerned nongovernment organizations, and the Service Provider will ensure that their views and concerns are made known and understood by decision makers and taken into account.

27. The Service Provider will solicit insights from affected people and stakeholders that can be incorporated into decision making for project design, development of mitigation measures, and implementation issues. The Service Provider will document and discuss with FREMAA, WRD, and AADB any potential issues raised during the public consultations. The Technical Note to be prepared by the Service Provider for the public consultation is to include (but not limited to) detailed background, discussion of key results, minutes of meetings, attendance sheets (with contact details and signature of each of the participants), photographs, etc.

**D. Minimum Required Qualifications and Experience and Staff Inputs**

28. **Qualifications of the Service Provider.** The Service Provider needs to demonstrate that it has successfully carried out at least (i) 2 environmental baseline collection and analysis, and (ii) 5 public consultations on environmental matters of the same nature and complexity as this Scope of Services in Assam or Northeast region of India during the last 5 years (starting from the day this Request for Quotation is received).

---

<sup>12</sup> It is important to note that there are subproject areas with more than one subproject site. The Service Provider will conduct at least 2 public consultations in each subproject site in the local language of the local people. The first public consultation will include (i) presenting the proposed interventions, (ii) collecting views from people on potential environmental impacts and mitigation measures, and (iii) gathering insights that may be incorporated in the design of the infrastructures. The second public consultation (after the Service Provider would have prepared the technical notes) will comprise the presentation of the key results of these Services and additional inputs from community.

29. Fifteen person-months are estimated to be required for the Service Provider to undertake the Services.<sup>13</sup> The CV of the key expert will be rated in the evaluation while the CV of the non-key experts will be assessed on a pass-or-fail basis. Qualifications and experience required for each position are outlined in Table 2.

**Table 2: Summary of Staff Inputs (National experts)<sup>14</sup>**

Position	Person-Months
<b>Key Expert</b>	
Environment Specialist/ Team leader	4
<b>Non-key Expert</b>	
Junior Environment Officer	4
Biodiversity Specialist	4
GIS Specialist	3
<b>Total person-months</b>	<b>15</b>

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

Position (National)	Minimum Qualifications and Experience
Environment Specialist/ Team leader	<ul style="list-style-type: none"> <li>• Master's degree in environmental science or closely related field;</li> <li>• 10 years of relevant professional experience in environmental assessment of development projects, including water resources, flood and erosion control, and agricultural development projects in Assam;</li> <li>• Extensive proven experience as a team leader conducting environmental baselines characterization and assessments, environmental quality monitoring, liaising with stakeholders and conducting public consultations.</li> </ul>
Junior Environment Officer	<ul style="list-style-type: none"> <li>• Bachelor's degree in environmental science or closely related field;</li> <li>• 5 years of relevant professional experience in conducting environmental baselines collection and public consultations;</li> <li>• Specific experience in (i) environmental quality monitoring of ambient air quality, water quality, and noise levels, (ii) analysis, and (iii) reporting.</li> </ul>
Biodiversity Specialist	<ul style="list-style-type: none"> <li>• Master's degree in environmental science, biodiversity or closely related field;</li> <li>• 5 years of relevant professional experience in wildlife surveys and habitat assessments;</li> <li>• Specific experienced in survey data collection, analysis, and reporting.</li> </ul>
GIS Specialist	<ul style="list-style-type: none"> <li>• Bachelor's degree in geodetic engineering or any relevant fields of engineering, environmental sciences or closely related field;</li> <li>• 3 years of relevant professional experience in conducting GIS mapping analysis;</li> </ul>

<sup>13</sup> The Service Provider will use the services of an external accredited laboratory to establish the baseline of the ambient air quality, water quality and noise levels. Then, the Service Provider will synthesize the results from the external laboratory and produce a Technical Note on the environmental quality of each of the subproject areas.

<sup>14</sup> The estimated staff inputs are exclusively for the Service Provider staff. For costing purposes, the sampling, testing and reporting services to be provided by Central or State Pollution Control Board recognized laboratory(ies) to establish the baseline of the environmental quality are not included in this table but entirely included (including all related expenses) in the provisional sum stated in Section G.

276

	<ul style="list-style-type: none"> <li>• Specific experienced in survey data collection, analysis, and maps preparation for reports.</li> </ul>
--	---

**E. Implementation Arrangements**

30. FREMAA will administer the contract and supervise the Service Provider's outputs. The Service Provider will be based in Guwahati with field work being conducted within the four subprojects areas. Over the whole duration of the Services, the Service Provider will work closely on a daily basis with Deputy Chief Executive Officer (Dy. CEO) of FREMAA, FREMAA staff as well as with the implementation and partners agencies involved in the preparation of the proposed project. The Environment Specialist/Team leader will report to the CEO of FREMAA.

32-31 **Completion schedule.** The Services are expected to start by the 2<sup>nd</sup> week of January 2023 and will be implemented over a 4-month period.

33-32 The Service Provider is expected to implement a methodology and workplan that will enable all expected tasks of this Scope of Services to be accomplished within the completion schedule.

34-33 Using Central or State Pollution Control Board recognized laboratory(ies) for the environmental quality monitoring is required.

**F. Outputs (Deliverables)**

35-34 **Deliverables.** The Service Provider will submit to FREMAA the following reports:

- Inception Report (0.5 month after contract signing date, with softcopies and hardcopies) which will include survey questionnaires, list of sampling stations selected for environmental quality monitoring, survey schedule, public consultation strategy, and an overall workplan;
- Five Technical Notes (3 months after the contract signing date, with softcopies and hardcopies) documenting respectively the results of (i) environmental quality monitoring, (ii) wildlife and habitat surveys, (iii) physical and socio-economic data, (iv) environmental risks identification and analysis, and (v) public consultations;
- Maps and GIS files with all layers (3 months after the contract signing date, with softcopies and hardcopies) used for the Technical Notes;
- Draft Final Report (3 months after the contract signing date, with softcopies and hardcopies); and
- Final Report (3.5 months after the contract signing date, with softcopies and hardcopies) incorporating all comments received from FREMAA and ADB.

The Draft Final and Final Reports will comprise: (i) study objectives, (ii) survey method and approach for each of the five Technical Notes, (iii) national and/or state policy requirements for the subprojects, (iv) analysis of findings with respect to the Technical Notes on (a) environmental baseline information (i.e. environment quality, wildlife and habitats, and physical and socio-economic), (b) environmental risks identification, and (c) public consultations, (v) summary and conclusions, and (vi)

complete data and information from the Technical Notes.<sup>15</sup>

36-35. In addition, the Service Provider will provide survey questionnaires, data analysis tables (including Excel spreadsheets), and any other relevant information related to the Services.

37-36. Also, the Service Provider will provide FREMAA with fortnightly, short (2 pages maximum) progress reports of the Services, including (i) work completed in the previous 2 weeks, (ii) work planned in the next 2 weeks, (iii) potential issues and recommendations, and (iv) any other relevant information related to the Services.

38-37. The Service Provider will be accountable to FREMAA for all the tasks and deliverables stated above. All reports will be prepared in English and will cover all the tasks of this Scope of Services.

**G. Provisional Sum**

39-38. A provisional sum of \$10,000 (including all taxes and duties) is included in this Scope of Services for the Service Provider to engage Central or State Pollution Control Board recognized laboratory(ies) to undertake the environmental quality monitoring which will enable to determine the environmental baseline in the four subproject areas.

---

<sup>15</sup> The Service Provider will provide key information from the Technical Notes to highlight results of surveys, monitoring, public consultations, and reviews of literature.

**Appendix 1. List of proposed subproject sites with details on locations and length**  
**Appendix 1(a): Locations Map.**



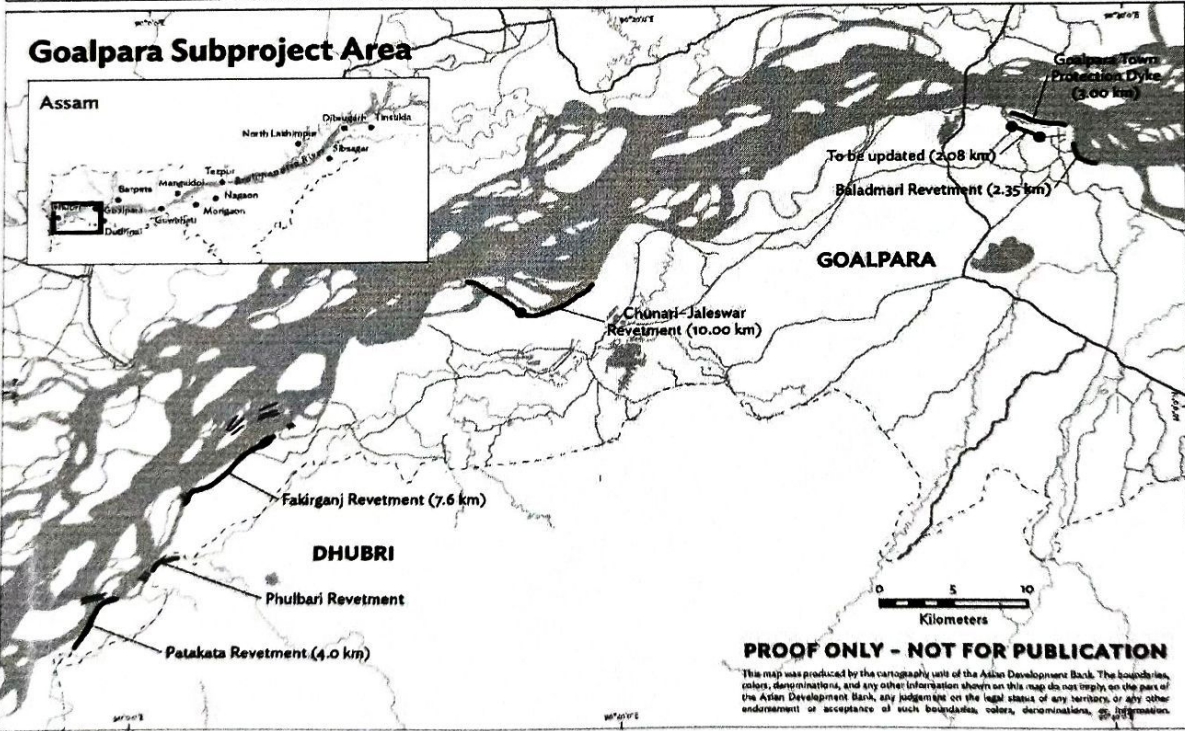
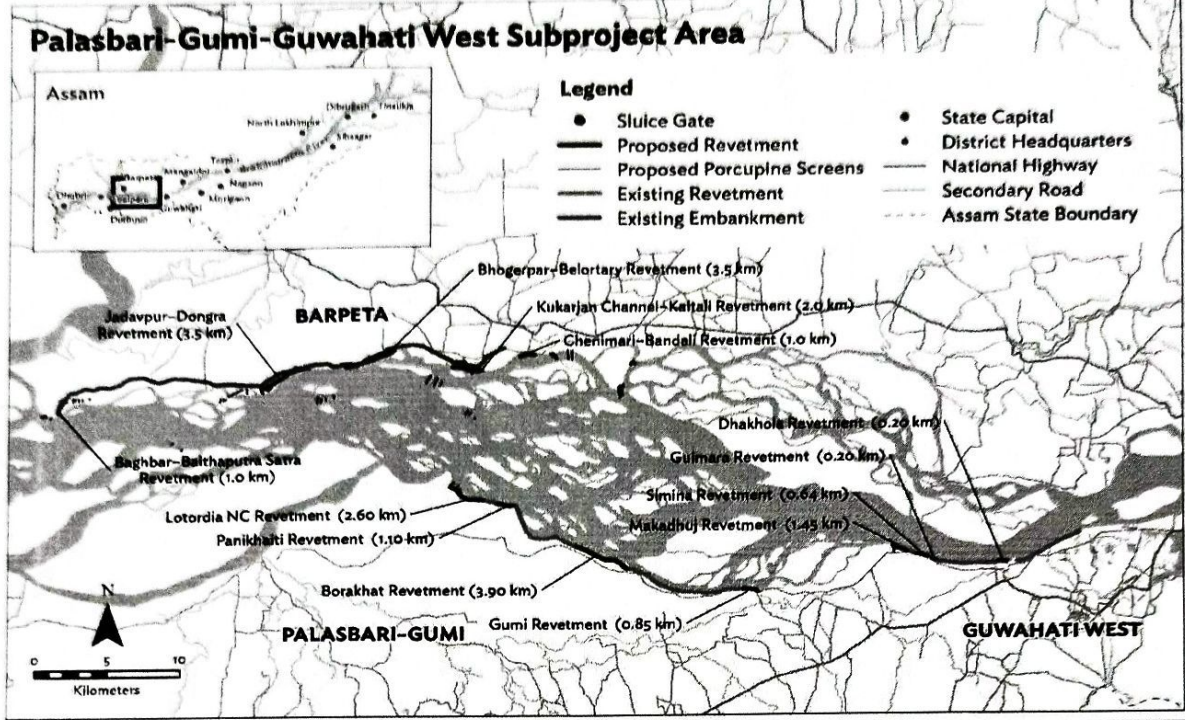


12

Climate Resilient Brahmaputra River Erosion Risk Management Project in Assam Barpeta (Zone-D)	Barpeta	Barpeta	Chitga	Chitga Revenue circle	26 15 24.64 N 91 11 11.67 E	26 15 20.68 N 91 10 36.83	1000		PSC PORCUPINE SCREENS
		In between Ch 33200m to 34700m Chemman to Kukaran)	Chitga	Chitga Revenue circle	26 14.45.79 N 91 00.05.41 E	26 14 52.18 N 91 07 52.37	2000		PSC PORCUPINE SCREENS
		In between Ch 43000m to 47200m (Bhagecpur to)	Barpeta	Barpeta Revenue circle	26 15 33.07 N 91 05 26.98 E	26 14 56.43 N 91 03 29.29	3500		PSC PORCUPINE SCREENS
		In between Ch 50950m to 55000m (Jadavpur to Dongra )	Barpeta	Barpeta Revenue circle	26 14 54.08 N 91 01 53.04 E	26 13 54.66 N 90 59 57.30	3500		PSC PORCUPINE SCREENS
		A1 Ch 69th km (samka kabara 11 Noshet to baghbar)	Barpeta	Barpeta Revenue circle	26 13 29.80 N 90 51 52.67 E	26 12 59.43 N 90 51 33.57	1000		PSC PORCUPINE SCREENS
		Baladman Char to paharnali	Goalpara East	Maia	26 9 36.78 N 90 19 1.45 E	26 0 22.92 N 90 18 5.42	2350		
		Goalpara Town Protection spur to Natumbesti	Goalpara East	Balljana	26 11 8.30 N 90 37 44.49 E	26 11 11.49 N 90 17 19.69	3000		
		Chuman to Joleswar	Goalpara West and Joleswar	Lakhipur	26 4 36.58 N 90 18 25.27 E	26 4 39.78 N 90 3 18.31	1000		
		Embankments Goalpara Town	Goalpara East	Balljana	26 0 55.46 N 90 36 43.82 E	26 1 4 55 N 90 35 31.42		2075	1 SHUTTER
		Sluice 1	Goalpara East	Balljana	26 0 56.53 N 90 36 30.09 E				4 SHUTTER
		Sluice 2	Goalpara East	Balljana	26 11 5.36 N 90 15 32.77 E				4 SHUTTER
		Sluice 3	Jaleswar	Lakhipur	26 3 6.80 N 90 15 15.17 E				TOTAL REACH 8500 M.
		Fakraganj area (Sunderpara to Sujjomoni)	South Salmara	South Salmara	25 58 20 N 90 05 32 E	25 56 01 90 02 06	7600	NIH	REACH LENGTH=35 00 M
		Patalata area(Monichar to Katdanga	South salmara	South Salmara	25 51 51 N 89 59 27 E	25 49 43 89 57 07	4000	NIH	REACH LENGTH=20 00 M

INDIA

## CLIMATE RESILIENT BRAHMAPUTRA INTEGRATED FLOOD AND RIVERBANK EROSION RISK MANAGEMENT PROJECT IN ASSAM



## Appendix 2. Method for Environmental Risk Analysis

Environmental risk is a function of (i) magnitude of potential consequence (i.e. levels of magnitudes) and (ii) likelihood of these consequences to occur (i.e. levels of probability of occurrence). To quantify the environmental risks, the formula is:

$$\text{Likelihood} \times \text{Consequence}$$

First, ratings need to be assigned for different levels of likelihood and consequence to determine the level of environmental risks. Each risk should be given ratings for likelihood and consequence. Examples of ratings are presented below, however they can be modified by the Service Provider as appropriate.

**Table 1: Likelihood or level of probability**

Likelihood	Definition	Rating
Likely	Potential to occur more than twice during construction and/or operations	3
Unlikely	May occur once or twice during construction and/or operations	2
Rare	Highly unlikely to occur during construction and/or operations	1

**Table 2: Consequence or levels of magnitude**

Consequence	Definition	Rating
Major	Significant damage or impact on the natural environment or communities.	3
Moderate	Limited adverse impact on natural environment or communities.	2
Minor	No or minimal adverse impact on natural environment or communities.	1

When all environmental risks are assigned with likelihood and consequence ratings, then the formula is to be applied and results stated. An example of computation is in the following table.

**Table 3: Sample computation of environmental risks**

Environmental Risks	Likelihood	Consequence	Rating
Damage on wildlife habitats due to removal of natural riverbanks	2	3	6
Increase of dust generation at construction sites	2	2	4
Disruption of livelihood activities along affected reaches	1	1	1

From the table above, ratings show the quantifiable environmental risks. These risks are then to be classified based on the levels of risk. The table below shows the categories of environmental risk based on the formula above.

Table 4: Quantifiable environmental risk matrix

Likelihood	Likely	3	3	6	9
	Unlikely	2	2	4	6
	Rare	1	1	2	3
High: 6 and above			1	2	3
Medium: 3 - 5			Minor	Moderate	Major
Low: 0 - 2			Consequence		

Table 5: Definition of environmental risk levels

Levels	Definition
High	<p>Significant damage or impact on natural environment or communities. For example;</p> <ul style="list-style-type: none"> <li>✓ Major loss of soil, water resources &amp; water quality due to storm water runoff</li> <li>✓ Significant pollution of soil &amp; water resources including major contamination from hazardous materials</li> <li>✓ Significant effects on eco systems with isolated deaths of non-vulnerable fauna</li> <li>✓ Major nuisance or annoyance to communities</li> <li>✓ Major damage to archaeological or historical sites.</li> </ul>
Medium	<p>Limited adverse impact on the natural environment or communities. For example;</p> <ul style="list-style-type: none"> <li>✓ Localized short-term noticeable changes in storm water quality</li> <li>✓ Localized &amp; contained pollution of soil resources</li> <li>✓ Short-term minor changes in ecosystem (no death of fauna)</li> <li>✓ Isolated or partial damage to archaeological or historical sites</li> </ul>
Low	<p>No or minimal adverse impact on natural environment or communities. For example;</p> <ul style="list-style-type: none"> <li>✓ No measurable or noticeable change in storm water runoff and quality remains within tolerable limits</li> <li>✓ Undetectable effects on soil resources from material storage</li> <li>✓ Minimal effects on modified habitat</li> <li>✓ No or only isolated few complaints from the community</li> <li>✓ No or minimal damage to archaeological or historical site</li> </ul>

As result, the Service Provider will generate information of environmental risks that need to be prioritized and given attention in the environmental assessment (i.e. IEE or EIA).

## **Appendix B**

**General Description.** The Service Provider will provide information and data required for due diligence and environmental assessment of the proposed CRBIFRERMP interventions which will be implemented within four priority subprojects. The Service Provider will gather information from (i) certified data in the Detailed Project Reports (DPRs) to be provided by FREMAA at the start of the Services, (ii) data to be collected during field survey and desk works for each of the four subproject areas, and (iii) public consultations with beneficiaries, affected people, and stakeholders (government and private entities).

## Appendix C

**Specific Standards:** The Service Provider will conduct data collection in the four subproject areas. The scope of the project interventions includes the riverbank protection (revetment) works and flood embankments. The Services will include (i) any associated facilities that are not financed by ADB but part of the project<sup>16</sup>, (ii) areas and communities potentially affected by cumulative impacts<sup>17</sup>, and (iii) areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location.

1. During the field survey, public consultations representing a wide range of local households and women headed households will be held at subproject sites.
2. For each subproject area, the Service Provider will collect, analyze, and provide reports (with maps, tables, and figures), as a minimum, of the following data from primary and/or secondary sources:
  3. Physical environment. The Service Provider will analyze the physical environment onto which the proposed project infrastructures will be built. The characteristics of the physical environment will serve as baseline information prior to any influence of the project's construction methods and operations.
    - a. *Climate.* Historical records of temperature and rainfall, extreme weather events, seasons of the year and other climatic parameters within at least the last 20 years.
    - b. *Physiography and Drainage.* Characteristics of the landscape, floodplains and drainage pattern of respective subproject site's reaches within at least 5 years.
    - c. *Topography.* Description of topographical characteristics of watersheds and reaches of the proposed sites.
    - d. *Water Resources.* Description of existing tributaries, streams, man-made channels, wetlands, and marshy areas, and providing survey highlights on water resources that will be directly affected by each subproject.
    - e. *Flooding behavior.* To refer onto the study by non-consulting services on "Data Collection for Assessment of Economic Benefits".
    - f. *River Morphology.* Description of the changes in reaches with respect of shape and direction, which are being influenced by natural phenomenon and man-made activities.
    - g. *Sediment Transport.* Key sources of solid particles in reaches and estimations of sediment yield on monthly, seasonal and/or annual basis.

<sup>16</sup> Financing may be provided separately by government and/private entities, and whose viability and existence depend exclusively on the proposed ADB-financed project. Consequently, the goods or services of the associated facilities are essential of the successful operation of the ADB-financed project.

<sup>17</sup> Impacts from further planned development of the ADB-financed project, other sources of similar impacts in the geographical area, any existing project or condition, and other project-related developments that are realistically defined at the time the assessment is undertaken.

- h. *Flood Inundation in the Subproject Area.* To liaise with FREMAA regarding the non-consulting services on "Data Collection for Assessment of Economic Benefits" in the same subprojects.
- i. *Seismology.* Historical records of large earthquakes (over 5.5 of magnitude on Richter scale).
- j. *Geology.* Analysis of bedrock and superficial geology and groundwater environment.
- k. *Land-use.* To liaise with FREMAA regarding the non-consulting services on "Data Collection for Assessment of Economic Benefits" in the same subprojects.
- l. *Water Quality.* Primary data measurements of water quality parameters (i.e. pH, temperature, conductivity, turbidity, total dissolved solids, total suspended solids, total solids, dissolved oxygen, chemical oxygen demand, biochemical oxygen demand, oil and grease, and fecal coliform) at least 10 stations within each subproject area.
- m. *Air Quality.* Primary data measurements of ambient air quality parameters (i.e. PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub>, and CO) at least 10 stations within each subproject area.
- n. *Noise Levels.* Primary data measurements of ambient noise level (i.e. average decibel) at least 10 stations within each subproject area.

4. Biological environment. The Service Provider will collect information on the occurrence of flora and fauna within each subproject area. The following information will be key to understand potential threat to wildlife and habitats.

a. *Terrestrial Wildlife.*

- i. Terrestrial Flora. Species of plants found within 1 km radius of the subproject sites through literature review, government records and/or actual sampling surveys. To identify classification of each species based on International Union for Conservation of Nature Red List of Threatened Species (or IUCN Red List) and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as critically endangered (CR), endangered (EN) and vulnerable (VU) under IUCN Red List, to provide population of every plant within the 1 km radius.
- ii. Terrestrial Fauna. Species of animals found within 1 km radius of the subproject sites through literature review, government records and/or actual sampling surveys. To identify classification of each species based on IUCN Red List and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as CR, EN and VU under IUCN Red List, provide population of every animal within the 1 km radius.

b. *Aquatic Wildlife*

- i. Aquatic Flora. Species of plants found from upstream to downstream of each of the subproject areas through literature review, government records and/or surveys. To identify classification of each species based on IUCN Red List and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as CR, EN and VU under IUCN Red List, to provide population of plants within the study area.



- ii. Aquatic Fauna. Species of animals found from upstream to downstream of each of subproject areas through literature review, government records and/or surveys. To identify classification of each species based on IUCN Red List and wildlife schedule under Indian Wildlife (Protection) Act 1972 and other relevant government rules. For species classified as CR, EN and VU under IUCN Red List, to provide population of animals within the study area.
  - c. *Ecologically sensitive areas*. Sites and buffer zone within or nearby the subproject sites (1 km radius) that are legally protected or officially proposed for protection of the government and relevant international conventions.
5. Socio-Economic Information. During the environmental assessment, the social and economic impacts of the project are to be considered.<sup>18</sup> The definition of environmental impact goes beyond impacts on the physical and biological environmental components. It includes impacts on various social and economic components. The Service Provider will collect information of the following.
- a. *Demography*. Size, structure (i.e. age and sex), ethnicity, movements of populations and number of households based on recent census. The Service Provider will determine the growth of population and household based on projections of the census. The Service Provider will determine the number of people and households within 100 m from each of the subproject sites.
  - b. *Education Status*. List of existing schools and colleges, literacy rate of people and types of language(s) being spoken.
  - c. *People's Dependence on Local Resources*. Types of resources utilized by local people for daily sustenance and household use.
  - d. *Existing Flood Control and Erosion Works*. To liaise with FREMAA regarding the non-consulting services on "Data Collection for Assessment of Economic Benefits" in the same subprojects.
  - e. *Manufacturing Industries*. Types and number of operational industries nearby each of the subprojects.
  - f. *Transportation Connectivity*. Road network and other forms of transportation of people and for socio-economic activities. Sectors and number of populations benefiting from using particular mode of transport.
  - g. *Power Facilities*. Sources of power supplied to households and other sectors.
  - h. *Water Supply*. Information on the sources of water for accessible for households, agriculture and other users.
  - i. *Sanitation Facilities*. Existing sewerage infrastructures in the vicinity.
  - j. *Medical and Health Facilities*. Available information on the health care facilities within districts or local areas.

---

<sup>18</sup> An environmental impact is any change that activities associated with a project may cause in the environment, including impact of any such change on (i) health and socio-economic conditions, (ii) physical or cultural heritage, (iii) current use of lands and resources for traditional purposes by Indigenous Peoples, or (iv) any structure, site, or thing that is of historical, archaeological, paleontological, or architectural significance.

- k. *Land use.* To liaise with FREMAA regarding the non-consulting services on "Data Collection for Assessment of Economic Benefits" in the same subprojects.
- l. *Sources of Income.* Types of occupations, livelihoods, and average income of people at the community level.
- m. *Common Property Resources.* Resources freely consumed or enjoyed by anyone such as stock of fish in an open river fishery, firewood/fuel for household cooking and others.
- n. *Physical Cultural Resources.* Any movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance within 1 km from each of the subprojects.
- o. *Intangible Culture.* Ways and means of behavior in the community towards traditions, religious beliefs, language and other aspects of human activity.

6. For each subproject area, the Service Provider will conduct public consultations with the local community to<sup>19</sup>:

- 1. include participation of people nearby the actual locations of infrastructure developments, which is extended to involve neighboring communities;
- 2. document local community and stakeholder environmental and social concerns, both with and without the proposed project;
- 3. determine environmental and social issues from a range of stakeholder interests in relation with the project's objectives; and
- 4. solicit views from affected people and stakeholders, and incorporate into decision making, for project design, development of mitigation measures, and implementation issues.

---

<sup>19</sup> Gender-inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups.

## Appendix-D

**Performance Parameters:** The Services are expected to start on the end week of December 2022 and will be implemented over a 4-month period. The Service Provider is expected to complete all tasks specified in the Scope of Services within this period. The study outputs (deliverables) will comprise:

- Inception Report (0.5 month after contract signing date) which will include survey questionnaires, list least sampling stations selected for environmental quality monitoring, survey schedule, public consultation strategy and overall workplan;
- Five Technical Notes (3 months after the contract signing date, with softcopies and hardcopies) documenting respectively the results of (i) environmental quality monitoring, (ii) wildlife and habitat surveys, (iii) physical and socio-economic data, (iv) environmental risks identification and analysis, and (v) public consultations;
- Maps and GIS files with all layers (3 months after the contract signing date, with softcopies and hardcopies) used for the Technical Notes;
- Draft Final Report (3 months after the contract signing date, with softcopies and hardcopies); and
- Final Report (3.5 months after the contract signing date, with softcopies and hardcopies) incorporating all comments received from FREMAA and ADB.

**Appendix-E**

**FORMAT OF CURRICULUM VITAE (CV) FOR KEY & NON-KEY EXPERTS**

1. **Proposed Position:** *[As per Scope of Services]*
  
  2. **Name of Firm:** *[Insert name of firm proposing the expert, if applicable]*  
*(Do not abbreviate or use symbols in any portion of the firm or individual name)*
  
  3. **Name of Expert:**  
*(Do not abbreviate or use symbols in any portion of the firm or individual name)*
  
  4. **Current Residential Address:**  
  
**Telephone No.:**  
  
**Fax No.:**  
  
**E-Mail Address:**
  
  5. **Date of Birth:**  
  
**Citizenship<sup>20</sup>:**  
  
**Type of government ID and ID Number.**  
  
*(please attach a copy of the ID to this form)*
  
  6. **Education:** *[Indicate college or university and other specialized education of expert, giving names of institutions, degrees obtained, and dates of obtainment]*
  
  7. **Membership in Professional Associations:**
-

**8. Other Trainings:**

**9. Countries of Work Experience:** *[List countries where expert has worked in the last 10 years]*

**10. Languages:** *[For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing]*

**11. Employment Record** *[Starting with present position, list in reverse order every employment held by expert since graduation, providing for each employment (see format here below): dates of employment, name of employing organization, positions held.]*

From *[Month/Year]*: \_\_\_\_\_

To *[Month/Year]*: \_\_\_\_\_

Employer: \_\_\_\_\_

Positions held: \_\_\_\_\_

**14. Certification:**

I, the undersigned, certify to the best of my knowledge and belief that

- (i) This CV correctly describes my qualifications and experience;
- (ii) I am not a current employee of the Executing or the Implementing Agency;
- (iii) In the absence of medical incapacity, I will undertake this assignment for the duration and in terms of the inputs specified for me in the scope of services provided team mobilization takes place within the validity of this proposal;
- (iv) I was not part of the team who wrote the terms of reference for this scope of services assignment;
- (v) I do not have conflict of interest in accordance with ADB Procurement Framework 2017;
- (vi) I am not subject to any national or international sanctions, temporary suspension or debarment by ADB or other multilateral development banks (MDB);
- (vii) I certify that I have been informed by the firm that it is including my CV in the Proposal for the *[insert name of project and contract]*. I confirm that I will be available to carry out the assignment for which my CV has been submitted in accordance with the implementation arrangements and schedule set out in the Proposal.
- (viii) I have not been found guilty or convicted of any violation of law that is not a minor traffic violation.
- (ix) I can accept payments through the international banking system or otherwise discharge ADB's obligation upon initiation of wire transfer.
- (x) I understand that it is my obligation to notify the Client and ADB should I become subject to any national or international sanction, including becoming ineligible to work with ADB or other MDBs, cannot accept payments through the international banking system, should integrity issues including conflict of interest arise and/or should we or the proposed

consultant be convicted of an offence excluding minor traffic violations

If the answer to any of the declarations above is NO, please provide details:

---

*If the CV is signed by the firm's authorized representative, insert:*

- (xi) I, as the authorized representative of the firm submitting this Proposal for the *[insert name of project and contract]*, certify that I have obtained the consent of the named expert to submit his/her CV, and that s/he will be available to carry out the assignment in accordance with the implementation arrangements and schedule set out in the Proposal, and confirm his/her compliance with paras (i) to (v) above.

I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

\_\_\_\_\_ Date: \_\_\_\_\_  
*[Signature of expert or authorized representative of the firm]<sup>21</sup> Day/Month/Year*

Full name of authorized representative

---