IDB Inter-American Development Bank

REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Selection # as assigned by e-Tool: RG-T3081-P002
Selection Method: Full Competitive Selection
Country: Barbados, Bahamas, Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Suriname, Trinidad and Tobago
Sector: Environment and Natural Disasters
Funding – TC #: ATN/OC-16455-RG
Project #: RG-T3081
TC name: Innovation in Climate-resilient Integrated Coastal Zone Management
Description of Services: At-scale demonstrations of coastal analysis tools on innovative interfaces and platforms, practical applications in ICZM data collection, and regional dissemination of results.

Link to TC document: https://www.iadb.org/Document.cfm?id=EZSHARE-1813519206-11

The Inter-American Development Bank (IDB) is executing the above-mentioned operation. For this operation, the IDB intends to contract consulting services described in this Request for Expressions of Interest. Expressions of interest must be delivered using the IDB Portal for Bank Executed Operations (http://beo-procurement.iadb.org/home) by: **April 12th, 2018, 5:00 P.M**. (Washington D.C. Time).

The consulting services ("the Services") include

a) Testing the feasibility and applicability of proposed ICZM data collection technologies in a pilot area (fourth quarter of 2018)
b) Demonstrating best practice, cost effective, open source and cutting edge coastal assessment and analysis tools, databases, data acquisition techniques and management systems and platforms (4Q 2019)
c) Conducting workshops, webinars, field surveys and pilot demonstrations in key institutions to practically apply the demonstrated technologies to existing national systems, which will be supplemented with a technical note (4Q 2020).

Eligible consulting firms will be selected in accordance with the procedures set out in the Inter-American Development Bank: *Policy for the Selection and Contracting of Consulting firms for Bank-executed Operational Work* - GN-2765-1. All eligible consulting firms, as defined in the Policy may express an interest. If the Consulting Firm is presented in a Consortium, it will designate one of them as a representative, and the latter will be responsible for the communications, the registration in the portal and for submitting the corresponding documents.

The IDB now invites eligible consulting firms to indicate their interest in providing the services described below in the draft summary of the intended Terms of Reference for the assignment. Interested consulting firms must provide information establishing that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Eligible consulting firms may associate in a form of a Joint Venture or a sub-consultancy agreement to enhance their qualifications. Such association or Joint Venture shall appoint one of the firms as the representative.

Interested eligible consulting firms may obtain further information during office hours, 09:00 AM to 05:00 PM, (Washington D.C. Time) by sending an email to Roberto Guerrero Compeán (rguerrero@iadb.org); Maja Schling (majas@iadb.org); Michele Lemay (michelel@iadb.org); and Elizabeth Chávez (elizabethc@iadb.org).

Inter-American Development Bank
Division: Environment, Rural Development and Disaster Risk Management Division
Attn: Roberto Guerrero Compeán (rguerrero@iadb.org), Economist

1300 New York Ave, NW, Washington DC 20577, USA
Tel: +1 (202) 623-1975
Fax: +1 (202) 623-1417
Web site: www.iadb.org

Draft Summary of Terms of Reference

Background

Established in 1959, the Inter-American Development Bank ("IDB" or "Bank") is the main source of financing for economic, social and institutional development in Latin America and the Caribbean (LAC). It provides loans, grants, guarantees, policy advice and technical assistance to the public and private sectors of its borrowing countries. Climate-resilient integrated coastal zone management (ICZM) is an ecosystem-based approach to the sustainable development of coasts that incorporates assessment, maintenance and restoration of coastal ecosystem services, which integrates disaster risk management, climate change adaptation - including physical solutions, behavioral, economic and financial tools for reducing risks.

For more than three decades, IDB has been the principal financial institution supporting the evolution of ICZM and has been at the forefront of policy development and public-sector investments in this sector throughout LAC. In general, ICZM public investments have combined: (i) data collection and analysis of coastal risks, particularly coastal erosion and flooding which have gained relevance light of climate change impacts such as Sea Level Rise; (ii) nature-based or green infrastructure to protect the coast from these risks and, where needed restore its ecosystems; and (iii) institutional strengthening to establish governance framework for coordinated decisions on resilient coastal development and use. IDB experience with preparing and executing the most recent generation of operations in ICZM has shown this integrated approach needs to be further applied at scale in a 'real world' LAC context, in order to demonstrate their cost-effectiveness and relevance to IDB member countries.

As defined, one of the key priorities of ICZM is to assess the health, trends and threats to coastal ecosystems. Member countries are making new international and national commitments to report losses in critical coastal ecosystems. In a parallel manner, probabilistic climate hazard and risk assessments are also increasingly being used to estimate damage and loss potentials as well as GDP impacts. The last five years have seen exponential growth in advanced cost-effective technologies for data collection, modelling as well as analytical platforms for measuring and understanding changes in coastal ecosystems (mangroves, coral reefs, soft-bottom benthic communities) and built coasts. What used to take years to accurately map and involved significant investments in oceanographic campaigns and field inventories of coastal ecosystems, can now be obtained at a fraction of the cost and time. Examples of cost-effective baseline data collection include satellite derived bathymetry and substrate type (which the Bank is financing in Belize), historical mapping of mangroves, drone-derived coastal asset inventories, post disaster damage assessment of natural capital, and ocean color remote sensing for climate and ecology data. Innovative applications in the analysis of coastal change are emerging with access to new analytical platforms (e.g., MIT Media Lab projects and Timelapse from Google Earth Engine).
All too often, coastal member countries are not aware of such advances and commission services based on outdated

approaches. If full advantage is to be taken of these emerging opportunities, then there is a need to demonstrate effective applications, disseminate awareness of their benefits and ensure sustainability through partnerships with national academic and research institutions in LAC. In turn, the potential efficiency gains in acquiring and analyzing data for ICZM can contribute to more robust economic analysis of public policy and long-term financial strategies for risk reduction.

State-of-the-art economic analyses estimate coastal and marine ecosystems benefits using multi-hazard risk assessments, cumulative impact mapping, and natural capital valuation. Moreover, novel tools that account for changes in social and economic factors are now available to assess trade-offs among services and to develop the "business case" for marine spatial planning. Given its recent experience in conducting ex-ante economic analysis and impact evaluations of ICZM investments programs in LAC's coastal countries, the Bank is well positioned to address the need to support the use of innovative platforms for the analysis of coastal data and dissemination of economic analyses and evaluations for ICZM as a foundation for evidence-based decision making.

Consultancy objective(s)

The primary objectives of this consultancy are:

1) To promote the use of cost-effective coastal data collection techniques and management approaches via the use of innovative platforms for the analysis of coastal ecosystem health, trends and threats in LAC as a key element of ICZM.
2) To provide a useful knowledge platform to support governments and relevant international, regional and local ICZM agencies wishing to apply advanced technologies for analyzing coastal change.

Activities will be conducted in a minimum of 3 (three) Bank member countries in LAC, at specific coastal sites, to be pre-identified by the consulting firm, taking into consideration the opportunity and potential for the effective application of advanced cost-effective data collection techniques and modelling for the analysis of coastal ecosystems (mangroves, coral reefs, soft-bottom benthic communities) and built coasts. The consultancy will work with key institutions and a list of organizations and networks to be considered for these technology sessions, and they will be agreed on with the Bank and the TAC.

Specific objectives of the consultancy include:

1) At scale demonstrations of coastal analysis tools on innovative interfaces and platforms.
2) Practical applications in data collection.
3) Regional dissemination of results.

Main activities

The selected consultancy will undertake/prepare the following:

a) **Workplan:** The consultancy will prepare a workplan to encompass activities b) to d). The work plan will include a proposed design (and application) for the pilot phase (see b below), and a full justification and preliminary methodologies for the at-scale demonstrations of data collection technologies in the 3 selected countries (c), analytical platforms for measuring coastal change and probabilistic risk assessment (d and e). The use of project management tools (Gantt charts, diagrams etc.) is encouraged.

b) **Pilot Phase:** Within the first six months, the consultancy will test the feasibility and applicability of its proposed data collection technologies at a smaller scale on at least one (1) of the selected coastal sites and prepare a report describing the results of this pilot phase. Lessons learned from this pilot phase will be incorporated into the large-scale demonstration.

c) **Demonstrating Technologies:** Incorporating the results of the pilot phase, the consultancy will identify, comparatively review, prepare, summarize and demonstrate best practice, cost effective, open source and cutting edge coastal assessment and analysis tools, databases, data acquisition techniques and management systems and platforms. Efforts should be made to identify technologies

relevant to the region and specific to each of the 3 (three) Bank member countries in terms of imminent needs, scale, cost and accessibility by utilizing successful case studies, lessons learnt and best practices in the LAC region. The consultancy will present demonstrations of the following to provide key institutions with sufficient information to inform to a deeper level and provide insight into requirements, uses and processes:

1) **Data Collection:** The consultancy will undertake applications in data collection which include (but are not limited to): historical mapping of mangrove coverage, beach dynamics (erosion and accretion) via remote sensing and other tools; assessing reef and seagrass health at a regional scale; detailed natural and man-made coastal asset inventories (pre- and post-disaster assessment) and ocean color remote sensing of climate data. The use of open source platforms like NASA SeaDAS, Google Earth Engine, USGS Landsat imagery, low-cost UAV technology and other remote sensing technologies are encouraged. Data validation, storage, maintenance and quality control (in accordance with international standards and best practices) should be conducted.

2) **Performing Analytical Methods:** Utilizing the collected data, the consultancy will apply analytical methods to local pilot sites in 3 (three) Bank member countries. They include (but are not limited to) forecasting of coastal sea level rise impacts on the extent of mangroves; measuring and modelling beach erosion and shoreline evolution; natural hazard mapping of coastal ecosystems (mangroves, coral reefs, seagrass beds and other soft benthic communities). Where available, the use of open-source modelling applications is encouraged.

3) **Conducting Probabilistic Risk Assessments:** The consultancy will conduct a probabilistic risk assessment in each Bank member country and will quantify potential economic and environmental losses in relation to key sectors of the economy due to erosion and flooding in key pilot coastal areas for defined return periods.

c) **Capacity Building:** The consultancy will conduct relevant and engaging techniques such as workshops, webinars, field surveys and pilot demonstrations with key technical staff in each of the key institutions to practically apply the demonstrated technologies to existing national systems. The consultancy should also collect information on any historical and existing data and data acquisition practices and quality control methods. At the end of these capacity building exercises, the consultancy will produce a report that outlines the quality and extent of existing local and national resources (e.g. equipment, software, hardware, infrastructure, staff, etc.) and provide recommendations for improvement and integration of modern technologies into existing national systems. They will identify next steps to streamline national information and management systems, and any required policy framework amendments that may be required to move forward.

d) **Regional Disseminations of Results:** The firm/consortium will present the results of the exercises to the key national agencies in the region, including the regional TAC via an effective communications platform (e.g. regional conference, webinars etc.) that will be supplemented by a technical note. Demonstrations on where effective practices were relevant and useful to existing local systems in each of the 3 (three) Bank member countries should be undertaken.

Reports / Deliverables

The consulting firm will submit the following reports to the Bank. Every report must be submitted to the Bank in an electronic file (e.g. Word, PDF). The report should include cover, main document, and all annexes.

a) **Work plan**, including details of proposed outline for the technical note and the selection of the three (3) Bank member countries and specific coastal sites, to be submitted ten (10) working days after signing of contract.
b) **Pilot phase report** that details the results and lessons learned from an initial pilot phase on at least one (1) of the selected coastal sites, to be submitted within six (6) months after signing of contract.

c) **Summary report** on demonstrating technologies, to be submitted within eighteen (18) months after signing of contract.
d) **Capacity building report** (for each Bank member country), to be submitted within twenty-four (24) months after signing of contract.
e) **Regional technical note**, including comments and recommendations from IDB, to be submitted within thirty (30) months after signing of contract.

Payment Schedule

- 10% on contract signature
- 10% on completion of deliverable a
- 25% on completion of deliverable b and c
- 25% on completion of deliverable d
- 30% on completion of deliverable e

All payments are subject to the approval of the delivered documents by the responsible IDB specialist.

Qualifications

- *Languages:* Fluency in English is required. Knowledge of Spanish and/or French is desirable.
- *Areas of Expertise:*
  - The preferred consulting firm/consortium should have over 5 years of demonstrated experience and in-depth expertise in coastal data acquisition and analytical technologies. Experience with ecosystem-based approaches and ecosystem services preferred.
  - The consultancy firm/specialized institution should possess at least 10 years of experience in executing similar assignments, with demonstrated knowledge of coastal zone management, environmental assessment and management of development projects, nonmarket valuation and cost-effectiveness analyses of ecosystem and recreation services integrating disaster risk management and climate change adaptation.
  - The team leader nominated by the firm/specialized institution for this consultancy should possess a doctoral degree or equivalent in environmental sciences or natural resource economics and a minimum of 10 years of relevant professional experience, or the equivalent combination of education and experience.
- Previous experience working in projects financed by multi-lateral and bilateral organizations in the Caribbean is desirable.
- Previous experience in performing assessment and management programs in countries within (or like) LAC, including aspects related to: the implementation of coastal and oceanographic baseline surveys; monitoring and information systems; integrated coastal zone planning and shoreline management; comprehensive (disaster risk management) DRM and stakeholder training and engagement.
- The CVs of central team members must be an integral part of the firm's technical proposal. If the members of the central team have worked together on successful past projects, that will be considered positively.
- Excellent analytical, writing and communication skills and effective ability to work in interdisciplinary teams.

Characteristics of the Consultancy

- **Consultancy category and modality:** Consulting firm/consortium
- **Contract duration:** 30 months
- **Place(s) of work:** 3 (three) Bank member countries and firm/consortium location
- **Division Leader or Coordinator:** The contractual will report to the IDB project Team Leader, Michele Lemay, Lead Natural Resources Specialist (michelel@iadb.org), CSD/RND, and Roberto Guerrero, Economist (rguerrero@iadb.org), and will work in close coordination with the country offices in the 3 (three) member countries with respect to stakeholder outreach and engagement.

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

Consanguinity: Pursuant to applicable Bank policy, candidates with relatives (including the fourth degree of consanguinity and the second degree of affinity, including spouse) working for the Bank as staff members or Complementary Workforce contractuals, will not be eligible to provide services for the Bank.

Diversity: The Bank is committed to diversity and inclusion and to providing equal opportunities to all candidates. We embrace diversity on the basis of gender, age, education, national origin, ethnic origin, race, disability, sexual orientation, religion, and HIV/AIDs status. We encourage women, Afro-descendants and persons of indigenous origins to apply.