SPREP
Secretariat of the Pacific Regional Environment Programme

PROE
Programme régional océanien de l'environnement

Request for Tenders

File: AP 3/12/7
Date: 8 September, 2010
To: Interested suppliers
Contact: Taito Nakalevu, PACC Regional Project Manager

Subject: **Request for tenders: A Geospatial Framework for Climate Change Adaptation in the Coastal Zone of Mangaia Island, Cook Islands.**

1.1. The Pacific Regional Environment Programme (SPREP) is an intergovernmental organization charged with promoting cooperation among Pacific islands countries and territories to protect and improve their environment and ensure sustainable development. It is currently executing the PACC project which involves 13 PICs including Cook Islands.

1.2 For Cook Islands, the need for adaptation to climate change has become increasingly urgent. Long-term climate changes, including the increasing frequency and severity of extreme events such as high rainfall, droughts, tropical cyclones, and storm surges are affecting the lives and livelihoods of people. There is a need to enhance resilience and adaptive capacity and through the SPREP and UNDP, Cook Islands and 12 other PICs had been able to access resources from the GEF to address climate change impacts they are currently facing.

1.3 Briefly, the Pacific Adaptation to Climate Change (PACC) Project is the first adaptation project to be implemented in the region that responds directly to this call for urgent action while supporting the systemic and institutional capacity to address adaptation across the Pacific islands region. The project addresses these key issues on three fronts:

i. Improving capacity in Pacific islands' governments to mainstream climate change adaptation into government policies and plans;

ii. Addressing the urgent need for adaptation measures through developing systematic guidelines for adaptation and demonstrating their use at a pilot scale in the coastal management, food security and water resources sectors; and

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iii. Laying the foundation for a comprehensive approach to address adaptation over the medium-long term at the regional level.

1.4. For more information see: www.sprep.org and www.sprep.org/climate_change/pacc

2. Specifications: statement of requirement

2.1. SPREP would like to call for tenders from qualified and experienced coastal geologists and/or coastal process experts and engineers who can offer their services to provide nearshore wave climate, nearshore bathymetry, coastal topography, shoreline positions, and coastal morphology for Mangaia Island, Cook Islands.

2.2. The successful applicant will need to provide comprehensive technical reports, maps and charts regarding the final products, as well as methods and techniques used in deriving the information by end of February 2011.

2.3. There is scientific consensus that increases in greenhouse gases in the atmosphere drive warming temperatures of the air and sea. Increasing sea surface temperatures cause rising sea-levels and are thought to contribute to more intense extreme weather events such as tropical cyclones. These drivers can in turn be expected to cause more extreme waves, coastal erosion, coastal inundation, and perturbations of marine, coastal and island ecosystems. Impacts of many of these hazards are already being experienced by coastal communities, but climate change trends cannot be expected to be uniform, and vulnerabilities will vary locally. This uncertainty is exacerbated by the fact that there is a poor knowledge base on nearshore wave climate, nearshore bathymetry, coastal topography, shoreline positions, and coastal morphology for Mangaia Island, Cook Islands.

2.4. These data form the critical baselines that are required to quantify risks in the coastal zone and are necessary to provide sound, objective, and evidence-based advice on climate change adaptation strategies. It is therefore intended that this study fills these identified data gaps and provides timely and actionable geospatial information for the coastal zone of Mangaia Island. Hence, the goal of this project is to enhance the capacity of the Cook Islands to adapt to climate change, including variability, in selected key development sectors. The specific objective is to provide baseline information to support a risk-based approach to climate change adaptation in the coastal zone of Mangaia Island, Cook Islands.

2.5. The consultant will be expected to undertake a comprehensive study and provide the following:

- Bathymetry. This includes the intertidal area of the fringing reef as well as the intermediate water depths offshore from the mean level of the sea to approximately several hundred metres water depth for the entire island. This data will be used for nearshore wave modelling.
- Topography. This includes transects at the airport, harbour, and Oneroa Village, at a spacing of approximately 50m, extending from the shoreline (mean sea level) to 150m inland, or more in built-up areas. This data will be used for cyclone wave inundation modelling. A temporary tide gauge shall also be deployed for a minimum of one month and registered into benchmarks on land. This data will provide a common vertical datum for the bathymetry and topography.
- Oceanography. This includes the deployment of a wave and current sensors in the nearshore environment at the airport and Oneroa Village for a minimum of two weeks. This data will be used to calibrate the wave model.
- Offshore wave climate. This includes an analysis of long-term (decadal) information on the wave height, wave period, and wave direction including variability. This data will come from numerical wave models since no observational data is available. The dataset will be used to estimate wave scenarios for inundation modelling.
- Extreme event analysis. This includes developing a statistical model on cyclone wave scenarios, based on historical cyclone data and extreme event analysis. This will be used to estimate return intervals of extreme cyclone waves.
- Coastal wave hazards. This includes deep water and nearshore wave modelling to estimate wave height, water velocities and inundation at the airport, harbour and along the coastline of Oneroa village. This data will be used to derive coastal inundation maps, which shall also incorporate the most recent climate change scenarios.

3. Conditions: information for applicants

3.1. To be considered for this tender, interested suppliers must meet the following conditions:

3.1.1. Attend pre-mission briefing and liaise with the Cook Islands Government and SPREP regarding in-country support during the mission; and

3.1.2. Liaise with Cook Islands Government to incorporate partner government priorities for the assessment.

3.2. The Consultant shall submit to the Cook Islands Government:

3.2.1. Comprehensive technical reports, maps and charts regarding the final products, as well as methods and techniques used in deriving the information. The limitations, accuracies and reliability of the predictions and products should be commented on in detail.

3.2.2. The products, namely maps and charts showing the bathymetry, topography, morphology and coastal inundation and hazards shall also be provided in a digital form to ensure easy integration into government GIS.

4. Submission guidelines

4.1. Tender documentation should demonstrate that the interested supplier satisfies the conditions stated above and is capable of meeting the specifications and timeframes, and provide supporting examples to address the evaluation criteria.

4.2. Tender documentation should outline the interested supplier's complete proposal: methods, personnel (and their skill sets / curricula vitae), timeframes and costs.

4.3. The maximum amount available for this work is USD189,000 including all fees and reimbursable disbursements.

5. Evaluation criteria

5.1. SPREP will select a preferred supplier in consultation with the Ministry of Infrastructure and Planning and on the basis of SPREP's evaluation of the extent to which their tender documentation demonstrates that they offer the best value for money, and that they satisfy the following criteria.

5.2. Technical Capacity: expertise in bathymetry, topography, oceanography mapping, offshore wave climate and extreme event analysis.

5.3. Quality Assurance and Control: demonstrated experience of the above capacity and timeliness of product delivery.

5.4. Familiarity with / comprehensive understanding of Cook Islands.

6. Deadline

6.1. The due date for submission of the tender is: 8th October,2010 at 4.00pm.

6.2. Late submissions will be returned unopened to the sender.

6.3. Please send all tenders clearly marked 'TENDER: A Geospatial Framework for Climate Change Adaptation in the Coastal Zone of Mangaia Island, Cook Islands" to:

mail: SPREP
Attention: Taito Nakalevu, PACC Regional Project Manager
PO Box 240
Apia, SAMOA
Email: taiton@sprep.org
Fax: 685 20231

Person: Submit by hand in the tenders box at SPREP reception, Vailima, Samoa.