Centre Régional de Télédétection des Etats de l'Afrique du Nord (CRTEAN)

Regional Coordination on Improved Water Resources Management and Capacity Building – Tunisia (TF10253)

Consulting & Services

Request for Individual Consultant for Technical Assistance

Expert in Hydrology

The Centre Régional de Télédétection des Etats de l'Afrique du Nord (CRTEAN) has received a grant from the World Bank toward the cost of the Regional Coordination on Improved Water Resources Management and Capacity Building and it intends to apply part of the proceeds of this loan to payments under the contract for the Water/Climate sector developed within the project.

Services include the use of new techniques to develop mathematical models for flood forecasting in real time the main hydrometric stations Medjerda, upstream dam Sidi Salem (please refer to the detailed terms joints references).

Expected consultants qualifications are the following:
(1) Have the rank of Professor of Higher Education.
(2) Specialized in hydrology in all elements related to mathematical recovery and forecasting models for flood.
(3) At least 15 years of professional experience in the above issues.
(4) Experience in hydrological study of Medjerda.
(5) Has relevant publications in international journals (at least 05 publications).
(6) Strong modeling skills especially in the fields of hydrology.
(7) Strong research and analytical skills.
(8) Knowledge of computational tools such as numerical analysis, programming and data visualization is preferred.
(9) Ability to conduct site visits/travel when necessary.
(10) Proficiency and good writing and communication skills in Arabic and English/French.
(11) Holds the Tunisian Nationality.

The CRTEAN now invites eligible consultants to indicate their interest in providing the services.

Interested consultants must provide (**in both French and English versions**):
(1) Information indicating that they are qualified to perform the services (experience in the field of flood forecasting, updated CV, etc.).
(2) A technical proposal.

Expression of interest may be submitted by individual consultants. The best qualified consultant will be invited for negotiation of the contract which is expected to be conducted in **October 29th, 2014**. The contract will **start on November 1st, 2014**.

A consultant will be selected in accordance with the selection of individual consultants and the procedures set out in the World Bank's Guideline: Selection and Employment of Consultants by World Bank Borrowers.

Interested eligible Consultants for the assignment may obtain further information from CRTEAN at the address given below.

Proposals must be delivered to the address below by **October 10th, 2014.**

Request for Expert in Hydrology
Centre Régional de Télédétection des Etats de l'Afrique du Nord
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For any further clarifications please contact:

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Flood Mapping and Modeling leader
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Component: Flood Modeling
Description: Use of new remote sensing techniques and GIS to develop mathematical models for flood forecasting in real time of Medjerda main hydrometric stations

Terms of Reference of an Individual Consultant for Technical Assistance
Title: Regional Coordination on Improved Water Resources Management and Capacity Building – Tunisia (TF10253)

A. Context

Tunisia has a dense hydrographic network in the north, whose river basins account for 81% of the national surface water potential. Oued Medjerda, which rises in Algeria, is the biggest river, with an annual water potential of around 0.8 billion m^3. This region is prone to flooding events.

Since these regions encompass a high socio-economic interest for the country, flood mitigation efforts are important to minimize loss of human lives and property.

B. OBJECTIVES

The general objectives of the consultancy are the following:

(1) Establishing a database of the Medjerda River.
(2) Developing flood modeling and flood forecasting maps to provide in a timely manner to the Tunisian organizations involved in the field of emergency management and disaster a response to their needs. The floods maps will be generated in near real time and provide the information on which geographic areas are impacted due to flooding. The forecast maps will provide early warning indication about areas which may be under flood risk.

C. ACTIVITIES

Expected tasks are the following:
(1) To enforce the Flood team knowledge with advanced application of flood modeling and forecasting and to exchange experiences and ideas.
(2) To establish a database of meteorological, evapotranspiration, soil, vegetation and dams data.
(3) To gather and analyze all data collected.
(4) To conduct site visits/travel when necessary
(5) To exploit field devices and other in-situ measurements for better and for effective results.
(6) To choose and apply recovery and flood forecasting models, analyze and discuss results.
(7) To contribute to develop a flood forecasting model of Medjerda main hydrometric stations.
(8) To contribute to develop a real time flood forecasting model of Medjerda main hydrometric stations.
(9) To organize training sessions for Flood team.
(10) To present the activities at the workshops planed by the project.

D. DATA TO BE PROVIDED BY THE CLIENT

The Client will be responsible of providing the following data:
(1) Satellite images with different spatial and temporal resolution on Medjerda basin.
(2) Topographic data on Medjerda basin.

E. MODALITIES, DELIVERABLES AND DURATION

The consultant will develop all reports in close collaboration with the Flood axis champion. In addition and for monitoring purposes, drafts will be shared with the Project Management Unit (PMU) prior to submission of final report. The consultant will meet regularly with all concerned decision makers (names will be identified later on).

It is expected that the assignment would take a total of almost two hundred twenty-five (225) days divided as follows (the timing is indicative only and is modifiable depending on identified priorities):

Task	Deliverable's Title	Duration [days]
Task 1	Literature Review : - Bibliographical research of different models of flood propagation - Methods used for flood forecasting in real time by organizations in Tunisia (INM, DGRE, DGGTHB,…)	30
	Subtotal 1	**30**
Task 2	Analysis of historical floods : - To collect rainfall and hydrometric data flood at the Medjerda study and analysis of data quality - To establish a database of meteorological, evapotranspiration, soil, vegetation and dams data. - analyze all data collected	60
	Subtotal 2	**60**
Task 3	- Application of the methods of flood forecasting in the upstream of Medjerda Sidi Salem dam (main hydrometric stations : Jendouba, Bou Salem Dam Sidi Salem) : analysis and discussion of results. - Contribute to develop a real time flood forecasting model of Medjerda main hydrometric stations.	90
	Subtotal 3	**90**
Task 4	conduct site visits/travel	30
	Subtotal 4	**30**
Task 5	Training and Workshops - Organize training sessions for Flood team. - Present the activities at the workshops planed by the project.	15
	Subtotal 5	**15**
	Total	**225**

F. QUALIFICATIONS OF THE CONSULTANT

The consultant should have the following qualifications:
(1) Have the rank of Professor of Higher Education.
(2) Specialized in hydrology in all elements related to mathematical recovery and forecasting models for flood.
(3) At least 15 years of professional experience in the above issues.
(4) Experience in hydrological study of Medjerda.
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Contact Information on Advertisement

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