

**Strengthening Flood Modeling Capacity in WRD, Bihar**

**Request for Expression of Interest**

**No: WRD/FMISC/EOI/SAWI/01/2016-2017**

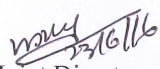
**Dated: 23<sup>rd</sup> June 2016**

The Flood Management Improvement Support Centre (FMISC), Water Resources Department, Govt. of Bihar, Patna has received a 'Grant' under the South Asia Water Initiative (SAWI) Trust Fund of the World Bank and intends to apply part of the proceeds of this 'Grant' for payments for consultancy for **"Developing, implementing and operationalizing a customized Meteorological Framework in Bagmati-Adhwara (B-A) and Kosi basins in Bihar State"**.

2. The objective is to equip Flood Management Improvement Support Center (FMISC) under Water Resources Department, Govt. of Bihar with comprehensive and customized **Meteorological Framework** to generate prioritized ensembles of satellite based rainfall estimates and short-to-medium range rainfall forecasts for direct ingest into WRD Bihar's flood forecasting system.
3. The Consultant's services will consist of the following:
  - i. Understand and assess the requirements of monitoring (real and near-real time) and forecast rainfall data with particular reference to the Bagmati-Adhwara and Kosi river basins. The key benchmarks for prioritization will be the data availability for operational use in flood forecasting with minimal latency time, high spatial and temporal resolution, and the suitability (before and after bias correction and calibration) of NWP forecast data for hydrological applications.
  - ii. Evaluate utility of the rainfall estimate and forecast products developed under the India-World Bank study covering the Ganga river basin, and develop and validate re-gridded and downscaled products for the B-A and Kosi basins.
  - iii. Evaluate available standard near-real time HRPP from global, regional and national in-situ and remotely sensed monitoring networks/platforms for the Bagmati-Adhwara and Kosi river basins.
  - iv. Evaluate the skill in available forecast data for hydrologic applications from global and mesoscale NWP models covering lead times from 3hr to 15 days for the selected river basins
  - v. Apply appropriate down-scaling, bias correction, and calibration approaches to be applied to both monitoring and forecast products to enhance the confidence and skill of the products over the basin.
  - vi. Based on the confidence and suitability level, prioritize a list of monitoring and forecast rainfall products at specified grid and sub-basin level
  - vii. Develop an automated system that can gather required data sets and generate the prioritized rainfall monitoring and forecast products in real-time in a format compatible for direct ingest into WRD Bihar's flood forecasting system.
  - viii. Implement the automated meteorological framework system with customized interfaces in FMISC, conduct hands-on training for operational use, and provide operational manual.
4. The draft Terms of Reference (TOR) is uploaded on the websites <http://fmis.bih.nic.in> & <http:// wrd.bih.nic.in>
5. The FMISC, Patna invites eligible Consultants to indicate their interest in providing the Consultancy Services for the above assignment.
6. Interested Consultants must provide the following information indicating that they are qualified to perform the Services: - Brochures, description of similar assignments, availability of skills among key staff etc.
7. Consultants may associate to enhance their qualifications. [The "Association" may take the form of a **Joint Venture** (with joint and several liabilities) or of a **Sub-Consultancy**. This should be **clearly stated** in the EOI submission.]
8. The criteria for short listing of the Consulting firms shall be as follows:
  - The firms should have been in similar business since five years;
  - The firms shall be financially sound with an average annual turnover of more than INR 2,00,00,000 during the last five years (2011-12 to 2015-16), should be mentioned separately for each year;
  - The firms should have at least two similar experiences in developing meteorological framework and customized tools for downloading, down- and upscaling, calibration and packaging of ensemble weather forecasts and rainfall estimates for flood model during last five years;
  - Availability of skills among key staff (Team Leader / qualified professionals ranging from atmospheric science, hydrologists, meteorologist, Remote Sensing expert, and GIS expert).

9. A consultant will be selected in accordance with Quality and Cost Based Selection (QCBS) procedures set out in the World Bank's "*Guidelines: Selection and Employment of Consultants Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers - January 2011, Revised July 2014*". The Guidelines are available at [www.worldbank.org/procure](http://www.worldbank.org/procure).
10. Interested Consultants may obtain further information at the address given below from 10.00 – 17.00 hours (IST) on all working days. This notice for Expression of Interest has also been posted on websites <http://fmis.bih.nic.in>, <http://wrd.bih.nic.in>, <http://www.prdbihar.gov.in> and <http://tenders.bih.nic.in>.
11. FMISC, WRD, Patna reserves right to accept or reject whole process of procurement of consultancy services at any stage without assigning any reason whatsoever.
12. Expression of Interest with all relevant information and documents must be submitted and subscribed "Expression of Interest for **Consultancy for developing, implementing and operationalizing a customized Meteorological Framework in Bagmati-Adhwara (B-A) and Kosi basins in Bihar State**" on top of a closed envelope and be delivered to the address below by not later than 15:00 hours (IST) on **Friday, 15<sup>th</sup> July, 2016**. In event this last date being declared as holiday by the State Government, due date for submission of EOI will be the next working day up till the same appointed time.

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