

Government of the People's Republic of Bangladesh
Office of the Project Director, PIU
Agro-Meteorological Information Systems Development Project
Department of Agricultural Extension
Khamarbari, Farmgate, Dhaka-1215

Request for Expressions of Interest (REOI)
for
Consulting Firm
for
Needs Assessment, Design of BAMIS Portal and Methodology to deliver and obtain feedback for Agro-Meteorological Information Products under "Agro-Meteorological Information Systems Development Project"
(Component C of Bangladesh Weather and Climate Services Regional Project)
(Contract Package No...SD-2)

Memo: 12.01.000.018.01.001.17.31

Date: 12/11/2017

The People's Republic of Bangladesh has received a credit in the amount of USD 113million as from the International Development Association (IDA) towards the cost of Agro-Meteorological Information Systems Development Project [Component –C of Bangladesh Weather and Climate Services Regional Project (BWCSR)]to be implemented by Department of Agricultural Extension (DAE) and it intends to apply part of the proceeds to payments for the provision of consultancy services for the project by hiring of a Consulting Firm for Needs Assessment, Design of BAMIS Portal and Methodology to deliver and obtain feedback for Agro-Meteorological Information Products.

2. Scope of Task /Service:

The services, among others, include the following:

The consulting firm will design the BAMIS through a review of project documentation, field visits, analysis of existing workflow, and discussions with relevant agencies (such as DAE, BMD, research agencies –BARI, BJRI, BRRI, BSRI and extension officers at the district, upazilla and union parishad levels), farmers and relevant stakeholders. It will develop the design for the BAMIS portal by an analysis of the information gathered in the user needs, and development of that information into the requirements of BAMIS project both in IT and agriculture sector. It will cover the farmers' requirements as well as the methodology to deliver and obtain feedback for BAMIS portal, advisories and other products relevant for the agricultural community.

The scope of work will include, but not be limited to, the following:

- Conduct a User Needs Assessment: Develop a methodology for assessing, and complete the assessment for weather and climate related information needs and requirements of farmers and farming communities in different agro-ecological and agro-climatic zones in Bangladesh. Farmers in different agro-ecological regions of Bangladesh face different climate related risks and hazards and their information needs vary depending on various factors such as of crop grown, nature of soil, weather and climate risks faced, etc. While including adequate attention to the agriculturally productive areas and key crops of the country, the needs assessment should also capture the needs of the different agro-ecological zones. The assessment will also consider the needs of highly vulnerable communities beset by severe weather hazards. Based on the assessment, recommendations will be made to be reflected in the design of the BAMIS portal and products.
- Design BAMIS Portal and Products: Develop a design for the BAMIS portal that considers user needs, is technically feasible, and allows provision of information services to farmers and reception of feedback from the user communities (two-way communication). The system would also include monitoring of service provision, both in terms of quality of products, tracking of feedback and the numbers of users served, through different dissemination mechanisms. Use the different aspects of the design to complete TORs and Technical Requirements for the BAMIS web portal and mobile applications. These will include linkages to be developed with BMD for agro-advisory production, agromet data management, etc.
- Develop an Implementation Plan and Prepare Tender Documentation: Develop an implementation plan with sequencing of various activities and timelines (including a beta phase and Go Live date) needed to complete them for the development of the BAMIS portal and its content. Provide support for the procurement of hardware and application development services, including but not limited to EOI development and preparation of all technical and commercial parts of tendering documentation for hardware (goods) and software services packages, pre-bid conference, bid evaluation review etc.
- Supervise the installation and implementation of the BAMIS portal: Supervise¹ the integration of the entire system (software, hardware, products) and ensure functionality of the Portal, supervision of application development, according to agreed design; and integration across various features. Activities for supervision include, but are not limited to, evaluation of Application Development and Installation Consultant (ADIC), inception report, inspection and acceptance of equipment, application development and fine-tuning and final commissioning.



The tasks are elaborated as follows:

Task 1: Stocktaking, Needs Assessment and Information Requirements for designing BAMIS

- Task 1.1 Identify key institutions at national and district levels (eg. DAE, BMD, Research organizations, extension staff at district and upazila offices, and others) relevant for developing disseminating agro-meteorological information to farmers. Provide an organizational map of information flow and process and identify strengths and weaknesses of the current system. Assess types of weather/climate/water related data/forecasts that are currently accessed by DAE from BMD and other sources/agencies. Assess the institutional capacity of DAE and key actors for providing agro-meteorological information and advisories to farmers and identify institutional gaps. Review agromet related indicators/parameters for which data are being collected, stored, and used by DAE as well as other agencies. Assess the quality of data and identify data gaps where monitoring requires strengthening.
- Task 1.2 Identify different types of products (advisories, bulletins) currently being issued and by whom at the national, regional, district and upazila levels. Assess current ways in which farmers access information about weather and climate risks and hazards (floods, flashfloods, droughts etc.) and identify mechanisms that are working well and those that need to be strengthened.
- Task 1.3 Identify weather and climate related information needs and requirements of farmers and farming community in different agro-ecological and agro-climatic zones in Bangladesh and clearly indicate how the information needs of farmers and other relevant stakeholders should be fulfilled through the development of relevant agro-meteorological advisories and products and design of BAMIS portal. Develop a methodology (questionnaires, field interviews, focus group discussion) for undertaking the needs assessment to understand key climate/weather related risks and hazards faced by farmers in Bangladesh. Meet with the anticipated end users of the BAMIS portal, and gather information on the data, products and services desired by the end users. A detailed accounting of this information will be documented, analyzed, and worked into the design of the BAMIS portal. Based on this methodology and in coordination with DAE, BMD, BARI and other relevant institutions at the national and district levels, carry out the needs assessment, analyze the results and make recommendations for design of BAMIS portal, products and information needed by farmers and the best modalities of disseminating information to them. Identify the methodology needed to deliver and obtain feedback for BAMIS-portal products. Districts and upazilas covered for needs assessment should keep in view specificities of the different agro-ecological zones in Bangladesh with sufficient focus on the major crops grown and the most agriculturally productive areas/districts.
- Task 1.4 Identify data to be exchanged with key data providers such as BMD, DAE, and BARI. Coordinate with BMD so that upgraded agro-meteorological stations include technology to transmit the data automatically to the BAMIS portal; and identify and assess the protocols for getting data/forecasts from BMD and other relevant agencies. Meet with the agencies that will be contributing data, and determine the data that will deliver from these agencies as well as a mutually acceptable method of data sharing (such as automated FTP, email, or HTTP Post).
- Task 1.5 Identify the products to be disseminated to the agricultural community; Identify the format(s) of products and methods through which products will be disseminated to the agricultural community.
- Task 1.6 Prepare a Report based on the above analysis (Tasks 1.1-1.5), and provide recommendations for designing BAMIS. As part of the needs assessment, evaluate the requirement for additional agromet stations, and document these requirements as recommendations to DAE, BMD and BWDB as the two latter agencies modernize the overall hydro-meteorological network of the country.

Task 2: Development of Design of BAMIS portal

- Task 2.1 Develop a comprehensive document on the design of the BAMIS portal, the different visualization tools that should be included and an effective user interface. Develop and devise requirements for data visualization, allowing for the dissemination of data in tabular, graphical, and plot formats, as well as SMS push data delivery and mobile APP dissemination.
- Task 2.2 Design the software aspects and associated application that would power BAMIS. This would include aspects of data compatibility, integration across data streams and systems, transferability and ease of maintenance.
- Task 2.3 Develop the Network Design and identify the hardware elements (based on future load requirements) Identify the computing resources required for the BAMIS portal. After understanding the requirements of BAMIS, perform a design of the hardware requirements including network connectivity, and other infrastructure requirements (including linkages to BAMIS at BMD through acquisition of infrastructure) for the deployment of BAMIS. This should take into account security, power backup, computer room environment, and system redundancy.
- Task 2.4 Outline the different outputs of BAMIS and the content in the Portal. Create a catalog of all data to be stored and disseminated through BAMIS. This should include both basic data and value added products (such as advisories and forecasts). The catalog will include how each piece of information will be collected, the frequency of collection, the products to be generated from the data, and the proposed delivery mechanism of the data. The catalog is to include product name, description, and product cycle (e.g. daily, weekly, monthly, etc.);
- Task 2.5 Analyze and design tools required to disseminate information among farmers and include methodologies for obtaining the feedback and for monitoring.. It is initially thought that mobile based applications, web based dissemination, and SMS push technology would be useful as a method to disseminate information. Devise alarm based reporting strategy where the agricultural community can subscribe to products and/or data being stored on BAMIS; Devise a thorough flow diagram documenting the transfer of data in and out of BAMIS, indicating protocols, data providers and end users;
- Task 2.6 Develop a Frequently Asked Questions (FAQs) capability on the information portal. Provide training to DAE on maintaining the FAQs. The FAQs will help facilitate better understanding of the contents of data, information, and agro advisory packages disseminated through the portal. The FAQs will reside on BAMIS. Specifications for function, operation and maintenance will be included in the BAMIS portal tender.

- Task 2.7 Cost Estimation: Assess cost of BAMIS system including operation and maintenance costs. This design will be used as the basis for a tender document. Develop a detailed Implementation Plan with estimates of operation and maintenance costs and timeline of implementation.
- Task 2.8 Organize and conduct a workshop to discuss the design of the BAMIS portal. This will be coordinated with DAE. The purpose of this workshop will be to present the draft design of the BAMIS portal and gather feedback from DAE, BMD, BWDB, Research agencies, stakeholders, and the user communities. Feedback from this workshop will be used to refine the BAMIS Portal tender document.

Task 3: Development of an implementation plan and Tender Preparation

- Task 3.1 Develop a tender document for the BAMIS Portal based on the design developed under Task 2. The tender document will include both commercial and technical specifications as well as general and special conditions, terms of reference, and other supporting material as required for DAE and will be submitted in the appropriate formats.
- Task 3.2 Develop a sequenced implementation plan that identifies key responsibilities and timeline for activities for the installation and go-live of BAMIS.
- Task 3.3 Provide support to the DAE Project Implementation Unit for activities related to the BAMIS Portal acquisition. This is to include, but not be limited to, the final tender preparation, pre-bid conference, development of the bid evaluation review, assistance in the bid evaluation review process, equipment acceptance, testing, etc.

Task 4: Procurement, Supervision and Support to Implementation

- Task 4.1 Supervise the application development for the portal and other products according to the agreed design.
- Task 4.2 Supervise final commissioning of software for BAMIS and ensure the integration of the entire system for necessary functionality.
- Task 4.3 Develop an outreach program to train DAE, stakeholders, and end users on the use of the AMIS Portal. A series of outreach/training programs will likely be required.
- Task 4.4 Provide a maintenance and operation manual for the BAMIS system that provides in depth detail on all hardware and software components, as well as the operation and maintenance of the BAMIS Portal. Develop training materials in the form of how-to videos to be uploaded to an appropriate location (DAE/private you tube channel) that is easily accessible by DAE and includes training on various aspects of design, operationalization and maintenance of the BAMIS portal and its applications.)

In order to ensure that all user communities are involved right from the beginning in the design and implementation of the BAMIS portal, the Consulting firm should schedule visits with DAE, BMD and all concerned stakeholders and organize well-planned discussions during the system analysis and design phase. Through meetings and presentations at DAE, the firm will present draft version of design proposed to obtain feedback before finalization. Since the BAMIS portal will draw upon data/forecasts and information from BMD, the activity should also take place in close coordination with BMD and ensure that the proposed design is consistent, integrated and fully compatible with BMD systems. The consulting firm will need to identify data/information transfer mechanism between BMD, the research agencies - BARI/BRRI/BJRI/BSRI and BAMIS. They need to facilitate options for BARI, or other service providing agencies to access the information from designed BAMIS. Thus proposed BAMIS shall act as a link between DAE, BMD and the research agencies and it will be gateway for service delivery to stakeholders, farmers and farming community.

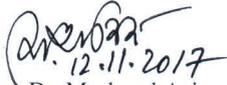
3. Qualification and Experience:

The Consulting firm must be legally registered/ recognized/ competent institution in Bangladesh. It must have timely cleared the governmental taxes and must be working according to the governmental rules, regulations and boundaries.

The team should consist of ICT Experts and Agriculture Experts having relevant knowledge and experience in the similar fields and tasks. The detailed CVs of the personnel to be involved should be submitted along with the original signature and the written commitment on the assigned work.

The Consulting firm should have prior experience in analyzing, designing, and supporting implementation of a computerized and web-enabled MIS system along with agricultural service. The Consulting firms must have considerable experience in design and operationalization of ICT, Web Portal, MIS Analysis & Design, Electronics and Communication related field.

4. Department of Agricultural Extension (DAE) now invites eligible applicants to indicate their interest in providing the services. Applicants are invited to provide information indicating that they are qualified to perform the services **(Complete Technical, Financial proposals and supporting documents)**.
5. Detailed Terms of Reference (ToR) will be available upon request from the address provided below either through email or in person. ToR will also be available in the website of DAE (www.dae.gov.bd/site/view/tenders/Tender-EOI-job-circular).
6. The Consulting Firm will be selected using the Selection of Quality And Cost-Based Selection method in accordance with the World Bank's Guidelines: Selection and Employment of Consulting Firm under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011 (Revised July 2014).
7. Expressions of Interest shall be submitted by 17 .00 hours (BD local time) on 10 December 2017 to the address below (in person, or by mail, or by e-mail).


12.11.2017

Name: Dr. Mazharul Aziz

Designation: Project Director

Address: Room # 726, 6th Floor, Middle Building, Khamarbari, Farmgate, Dhaka-1215

Email: azizdae@gmail.com

Terms of Reference (TOR)
for Consulting Firm
for
**Needs Assessment, Design of BAMIS Portal and Methodology to deliver and obtain feedback for
Agro-Meteorological Information Products**
Contract ID No.:

Submitted to:

Department of Agricultural Extension (DAE)
Bangladesh Weather and Climate Services Regional Project (WCSRP)
Agro-Meteorological Information Systems Development Project
Dhaka, Bangladesh

Acronyms

BAMIS	Bangladesh Agro-Meteorological Information Systems
BARI	Bangladesh Agricultural Research Institute
BJRI	Bangladesh Jute Research Institute
BMD	Bangladesh Meteorological Department
BRRI	Bangladesh Rice Research Institute
BSRI	Bangladesh Sugar Crop Research Institute
CQS	Consulting Firm's Qualification Selection
DAE	Department of Agricultural Extension
DDM	Department of Disaster Management
EOI	Expression of Interest
FAQ	Frequently Asked Questions
FTP	File Transfer Protocol
GDP	Gross Domestic Product
HTTP	Hypertext Transfer Protocol
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
IDA	International Development Association
IFC	International Finance Corporation
IVR	Interactive Voice Response
MIS	Management Information System
NOL	No Objection Letter
PMU	Project Management Unit
RFP	Request for Proposal
SAR	South Asia Region
SMS	Short Message Service
SRD	Software Requirement Design
SRS	Software Requirements Specification
ToRs	Terms of Reference
UI	User Interface
WB	World Bank
WCSR	Weather and Climate Services Regional Project

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1. Background

The South Asia Region (SAR) is highly prone to water related hazards such as floods, drought, tropical cyclones and thunderstorms that frequently cut across national borders. In the past 2 decades, over 50% of South Asians, i.e, more than 750 million people have been affected by at least one natural disaster. The societal vulnerability to extreme weather events in South Asia is clearly illustrated in the case of Bangladesh, one of the most densely populated, disaster-prone and climate vulnerable countries in the world. Located at the delta of the Ganges-Brahmaputra-Meghna river systems, it is regularly exposed to extreme weather events such as tropical cyclones associated with storm surges, floods, severe thunderstorms and droughts.

Despite the susceptibility of Bangladesh to weather and climate extremes, the country's hydro-meteorological information infrastructure over land, atmosphere and ocean, basic public weather services, forecasting, and multi-hazard end-to end early warning systems remain weak and need to be strengthened. Further, key climate dependent sectors such as water and agriculture, need tailored weather and climate data, products, information and services to improve planning and decision-making and to mitigate the adverse effects of climate variability and change. Provision of such services at present is limited and needs to be strengthened.

With support from the World Bank, the Government of Bangladesh (GOB) is implementing the Bangladesh Weather and Climate Services Regional Project (BWCSR). The main objective of the project is to strengthen government capacity to deliver effective weather and climate information services and improve the quality and access to such services in priority sectors and communities. This objective will be achieved by strengthening the hydro-meteorological monitoring and forecasting, and service delivery related to water, agriculture and multi-hazard disaster risk management early warning systems. The BWCSR has four Components and include the following:

- Component A: Strengthening Meteorological Information Services implemented by the Bangladesh Meteorological Department (BMD);
- Component B: Strengthening Hydrological Information Services implemented by the Bangladesh Water Development Board (BWDB);
- Component C: Agro-Meteorological Information Systems Development implemented by the Department of Agricultural Extension (DAE); and
- Component D: Contingent Emergency Response Component

In this project, BMD is the provider of weather and climate services, BWDB and DAE are considered as user sectors; with each also producing sector specific information and tools to meet the needs of their own sectoral communities. BMD and BWDB provide critical information for extreme weather and flood warning. For severe weather or flood forecasts to reach people, the role of the Department of Disaster Management (DDM) is essential. Community based early warning system activities will be undertaken in close coordination with DDM.

2. Description of Component C: Agro-Meteorological Information Systems Development

In Bangladesh, agriculture contributes to almost 18% to the country's GDP and provides employment to about 60% of the people. Being primarily rain-fed, agricultural productivity of key crops such as rice, wheat, jute, tea, potatoes, and sugarcane are highly dependent on rainfall and weather patterns. There are approximately 30 key agro-ecological zones in the country. However, at present, neither BMD nor DAE have a systematic way of combining meteorological information and forecasts with agriculture related information to produce tailored Agro-Meteorological bulletins, information and products for farmers in the different agro-ecological zones that can help farmers make appropriate operational decisions about planting, harvesting, irrigation, adjusting cropping patterns and so forth at the farm level. DAE needs the

development of an appropriate decision support system for agro-climatic information which would be of tremendous value in developing and communicating climate risk information to farmers. This would be developed in collaboration with the Agro-meteorology Division of the BMD and Bangladesh Water Development Board (BWDB).

Weather and climate forecasts are important for reducing risks and enhancing opportunities associated with the achievement of sustainable economic development in recognition of the earth's limited resources. Recent improvements in weather and climate forecasting systems worldwide have made it possible for national and regional Meteorological services to provide useful information to support decision making sectors affected by weather and climate variability. Bangladesh can take greater advantage of these advances in weather and climate prediction by strengthening its data networks, processing and forecasting infrastructure, and strengthening its skilled human resources.

Component C of the project is focusing on enhancing access to weather and climate services for farmers through the development of the Bangladesh Agro-Meteorological Information Systems (BAMIS) so as to increase agricultural productivity and reduce losses from meteorological and hydrological hazards. Key sub-Components of Component C include:

- a Establishment of the Bangladesh Agro-Meteorological Information System (BAMIS)*
- b Training, Capacity Building, Project Management and Monitoring and Evaluation*
- c Agricultural Disaster Risk Management through Agro-Meteorological information dissemination*

The BAMIS is conceptualized as a decision support system for the provision of agrometeorological advisories and products to facilitate on-farm operational decision making by farmers, district development and agricultural extension officers and planning agencies. It will provide open access to weather and climate information, from pre-sowing to post-harvest, to the public without charge. A key aspect of the BAMIS is that it will bridge the gap between BMD, BWDB, DAE and the farming community and deliver timely and relevant weather and climate related information and early warnings to farmers and agricultural producers through the development and implementation of a web-based information portal.

The portal will:

- 1) Create a two-way communication system between DAE and information service providers and farmers, other agricultural producers, agricultural extension and information users. The interface will be web and mobile phone based that will allow farmers to receive information such as advisories and forecasts in a timely manner and contact DAE with any queries for further clarification, advice and specific/customized information;
- 2) Create information portal displaying actionable information and tools in an easily understandable language accessible by farmers to help mitigate weather- and climate-related production risks;
- 3) Utilize Short Message Service (SMS) to provide text messages on relevant local weather information and agro advisory services in a timely manner to farmers; and
- 4) Provide a section on frequently asked questions (FAQs) and answers.

- **Objectives of the Consultancy Service**

The main objective of the Bangladesh Agro-Meteorological Information System (BAMIS) consultancy is to perform a needs assessment, design a comprehensive computerized and web-based BAMIS portal, and supervise the implementation of the portal, with attention to both software and hardware aspects. The

activity will be undertaken under the guidance of DAE, with close coordination with other agencies of the JTWG such as BMD and the research agencies – BARI, BRRI, BJRI, and BSRI.

- **Scope of work**

The consulting firm will design the BAMIS through a review of project documentation, field visits, analysis of existing workflow, and discussions with relevant agencies (such as DAE, BMD, research agencies –BARI, BJRI, BRRI, BSRI and extension officers at the district, upazilla and union parishad levels), farmers and relevant stakeholders. It will develop the design for the BAMIS portal by an analysis of the information gathered in the user needs, and development of that information into the requirements of BAMIS project both in IT and agriculture sector. It will cover the farmers’ requirements as well as the methodology to deliver and obtain feedback for BAMIS portal, advisories and other products relevant for the agricultural community.

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- Develop an Implementation Plan and Prepare Tender Documentation: Develop an implementation plan with sequencing of various activities and timelines (including a beta phase and Go Live date) needed to complete them for the development of the BAMIS portal and its content. Provide support for the procurement of hardware and application development services, including but not limited to EOI development and preparation of all technical and commercial parts of tendering documentation for hardware (goods) and software services packages, pre-bid conference, bid evaluation review etc.

- Supervise the installation and implementation of the BAMIS portal: Supervise¹ the integration of the entire system (software, hardware, products) and ensure functionality of the Portal, supervision of application development, according to agreed design; and integration across various features. Activities for supervision include, but are not limited to, evaluation of Application Development and Installation Consultant (ADIC), inception report, inspection and acceptance of equipment, application development and fine-tuning and final commissioning.

The tasks are elaborated as follows:

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- Task 1.4 Identify data to be exchanged with key data providers such as BMD, DAE, and BARI. Coordinate with BMD so that upgraded agro-meteorological stations include technology to transmit

¹ Installation of the BAMIS portal will be carried out by another firm—the BAMIS Application Development and Installation Consultant (ADIC).

the data automatically to the BAMIS portal; and identify and assess the protocols for getting data/forecasts from BMD and other relevant agencies. Meet with the agencies that will be contributing data, and determine the data that will be delivered from these agencies as well as a mutually acceptable method of data sharing (such as automated FTP, email, or HTTP Post).

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Task 2: Development of Design of BAMIS portal

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Task 3: Development of an implementation plan and Tender Preparation

- Task 3.1 Develop a tender document for the BAMIS Portal based on the design developed under Task 2. The tender document will include both commercial and technical specifications as well as general and special conditions, terms of reference, and other supporting material as required for DAE and will be submitted in the appropriate formats.
- Task 3.2 Develop a sequenced implementation plan that identifies key responsibilities and timeline for activities for the installation and go-live of BAMIS.
- Task 3.3 Provide support to the DAE Project Implementation Unit for activities related to the BAMIS Portal acquisition. This is to include, but not be limited to, the final tender preparation, pre-bid conference, development of the bid evaluation review, assistance in the bid evaluation review process, equipment acceptance, testing, etc.

Task 4: Procurement, Supervision and Support to Implementation

- Task 4.1 Supervise the application development for the portal and other products according to the agreed design.
- Task 4.2 Supervise final commissioning of software for BAMIS and ensure the integration of the entire system for necessary functionality.
- Task 4.3 Develop an outreach program to train DAE, stakeholders, and end users on the use of the AMIS Portal. A series of outreach/training programs will likely be required.
- Task 4.4 Provide a maintenance and operation manual for the BAMIS system that provides in depth detail on all hardware and software components, as well as the operation and maintenance of the BAMIS Portal. Develop training materials in the form of how-to videos to be uploaded to an appropriate location (DAE/private you tube channel) that is easily accessible by DAE and includes training on various aspects of design, operationalization and maintenance of the BAMIS portal and its applications.)

In order to ensure that all user communities are involved right from the beginning in the design and implementation of the BAMIS portal, the Consulting firm should schedule visits with DAE, BMD and all concerned stakeholders and organize well-planned discussions during the system analysis and design phase. Through meetings and presentations at DAE, the firm will present draft version of design proposed

to obtain feedback before finalization. Since the BAMIS portal will draw upon data/forecasts and information from BMD, the activity should also take place in close coordination with BMD and ensure that the proposed design is consistent, integrated and fully compatible with BMD systems. The consulting firm will need to identify data/information transfer mechanism between BMD, the research agencies - BARI/BRRRI/BJRI/BSRI and BAMIS. They need to facilitate options for BARI, or other service providing agencies to access the information from designed BAMIS. Thus proposed BAMIS shall act as a link between DAE, BMD and the research agencies and it will be gateway for service delivery to stakeholders, farmers and farming community.

• **Deliverables and Timing:**

The outputs to be delivered by the Consulting firm include the following:

Task	Deliverables	Description	Timing in Week (from Contract signing)
Overall Reporting	Inception Report	Main activities, work schedule design of the study and output & outcomes and Farmers Requirement Study plan.	2 nd week
	Monthly Progress Report (Brief)	- Major output - Constraint, if any - Work plan of next month	Each month
	Work Completion	Final report	At the end of the Consultancy
Task 1	1. Chapters on review of existing institutions and current mechanisms of data /information dissemination	As per Task 1.1 and 1.2	3 rd week from initiation of consultancy
	2. Methodology of survey design, determination of sample size, questionnaires design (Needs analysis field visits and survey should be carried out during 3 rd week-6th week of Consultancy	As per Task 1.3	2 nd week from Initiation of consultancy
	3. Chapter on farmer's Needs and Information Requirements and recommendations for modalities of two-way	As per Task 1.3 (It should include recommendations based on analysis of Tasks 1.1-1.4).	9th week from initiation of consultancy

	<p>communication, information dissemination and feedback</p> <p>4. Data and product documentation</p> <p>5 Final Report on Task 1</p>	<p>Provide report as per Task 1.4 identifying data exchange partners, products/data that is exchanged (or will be exchanged), existing protocol of data exchange, and whether the protocol has been agreed to with the data exchange partner.</p> <p>As per Tasks 1, prepare a complete report (including chapters/outputs of all the tasks above). It should include chapter on the products to be considered for distribution to the user community and a complete catalog of data and products which will be stored and distributed by BAMIS.</p>	<p>10th week from the initiation of the consultancy</p> <p>12 weeks from initiation of consultancy</p>
<p>Task 2</p>	<p>1. Draft Design of BAMIS Portal including hardware and software aspects and system requirements report and Implementation Plan</p> <p>3. Report on methods of dissemination of advisories and products to farming communities,</p>	<p>As per Tasks 2.1 to 2.4. prepare a comprehensive technical document on the network design of the BAMIS portal including software, hardware, all relevant ICT aspects and outputs to be developed.</p> <p>As per Task 2.5. Produce a document that provides the details of dissemination of advisories and products. This includes the design of dissemination tools through SMS Text, Mobile Based Web APPS and web passed dissemination. This will be based on user interaction along with international examples</p>	<p>14th week</p> <p>17th week</p>

	<p>receiving feedback, and monitoring quality of service delivery and users reached.</p> <p>4. Report on FAQs</p> <p>5. Organize and Conduct a workshop to discuss the draft design of the BAMIS Portal. Invitees to include DAE, BMD and other stakeholders.</p> <p>7. Final Report on the design of the BAMIS portal. Methodology for monitoring service delivery.</p>	<p>and standards.</p> <p>As per Task 2.6 Produce FAQ content in the form of a document. This will be placed on the BAMIS portal at the time of BAMIS implementation. Details of the operation of the FAQ must be detailed in the BAMIS Portal Tender Document.</p> <p>As per Task 2.7. Plan, prepare, and conduct a workshop on the draft design of the BAMIS portal. Deliverables will include all presentations of the workshop and will include correspondence and issues raised by the attendees of the workshop. Results of the workshop will be used to improve and finalize the BAMIS design and Portal Tender</p> <p>Based on all sub-tasks under task 2.</p>	<p>18th week</p> <p>19th week</p> <p>20 weeks from the beginning of the consultancy</p>
Task 3	1. Document on tender preparation	As per Task 3.1 Produce a tender document that meets both Government of Bangladesh and WB	23 rd Week

	<p>2. Implementation Plan</p> <p>3. Support to DAE for preparation of bid documents and procurement of Application Development and Installation firm.</p>	<p>standards (and submitted in appropriate formats). It should incorporate review and comments from DAE PMU and WB.</p> <p>As per Task 3.2.</p> <p>As per Task 3.3</p>	
Task 4	<p>1. Provide Support for activities related to BAMIS Portal Acquisition and supervise Implementation and integration</p> <p>2. Training</p> <p>3. Operation & Maintenance Manual</p>	<p>As per Tasks 4.1 and 4.2 the team members required include the Team lead, the ICT specialist and the agromet specialist</p> <p>As per Task 4.3 This will be a 5 day training course. As per Task 4.4, in addition to the operational manual, it would include training (how-to) videos.</p>	<p>4 – one week visits for 1) pre-bid conference; 2) Bid-evaluation design and review; 3) Acceptance Tests; 4) Final Commissioning</p> <p>At the time of Final Commissioning</p> <p>Due at the time of Final BAMIS Portal Commissioning</p>

- **Reporting and Implementation Requirements**

- The draft reports should be submitted to the DAE Project Implementation Unit (PIU) unit for review and feedback and recommendations. The final report should have the revisions and recommendations incorporated.
- The consultant shall submit two copies of each of the above reports to the DAE PIU unit and also soft copies.
- All primary data collected in printed and electronic form should be submitted to the DAE PIU along with the final report.
- The reports will be accepted after NOL from the World Bank and subject to the approval by the Project Director, on the recommendation of the review committee.

- **Data Services and Facilities to be provided by the Client**

- Make available all project documents including Project Appraisal Document, Project Implementation Plan, preparatory studies etc.

- Facilitate interaction and exchange of information between the Consulting firm and the DAE and its stakeholders.
- Facilitate office spaces.
- DAE PIU will act as link between Consulting firm and stakeholders.
- DAE PIU will make available all project documents that may be required for the success of the consultancy service.
- DAE PIU will ensure timely review of the stages of the consultancy to ensure that the project falls within the scheduled and agreed time lines.

8. Qualifications of the Consulting Firm and Key Personnel

The Consulting firm must be legally registered/ recognized/ competent institution in Bangladesh. It must have timely cleared the governmental taxes and must be working according to the governmental rules, regulations and boundaries.

The team should consist of ICT Experts and Agriculture Experts having relevant knowledge and experience in the similar fields and tasks. The detailed CVs of the personnel to be involved should be submitted along with the original signature and the written commitment on the assigned work.

The Consulting firm should have prior experience in analyzing, designing, and supporting implementation of a computerized and web-enabled MIS system along with agricultural service. The Consulting firms must have considerable experience in design and operationalization of ICT, Web Portal, MIS Analysis & Design, Electronics and Communication related field.

9. List of Key Professional Positions whose CV and experience would be evaluated

The Consulting firm will provide a team of experts with the following skill sets who shall be adequately qualified and experienced to satisfactorily and timely deliver the expected outputs.

Expert's Position	Key Qualification	Number	Experience & Skills
Team Leader /Project Manager	Post Graduate in IT/Computer Science/MBA/ Electronics& Communication/ ICT/Computer Engineering/Electrical & Electronic Engineering	1	Minimum of 5 years' experience in systems and software analysis which includes at least 2 years of experience in team coordination, project management, documentation. Person having qualification & working experience in agricultural related works shall be given advantage.
ICT Systems Architecture /System Analyst	Post Graduate in IT/Computer Science/ Electronics& Communication/ ICT/Computer Engineering/Electrical & Electronic Engineering	1	Minimum of 4 years' experience in systems and software analysis & design which includes at least 1 years of experience in web enabled MIS development of comparable projects. Experience in developing high level architectural design document, have adequate knowledge on design patterns and frameworks. Experience developing Web Portals, UI Design, and Data Base Management
Agro-Meteorologist	Masters Degree in Meteorology or Agro-	1	Minimum 3 years' of experience in analyzing data from weather

	Meteorology		stations/satellites/radars with an emphasis in dealing with the Agro-met community in developing products for end users.
Agricultural Expert (Agronomy)	Masters Degree in Agronomy or Meteorology	1	Minimum 3 years' of experience with wide background in agro-meteorological processes of Experience on survey design /statistics will be an advantage.

10. Review Committee to Monitor Consulting firm Work

The consulting firm will report to the Project Director, DAE Project Implementation Unit (PIU) who will establish a Review Committee to review and monitor the work of consulting firm.

11. Selection Criteria

The Consulting firm shall be selected following Consulting firm's Qualification Selection (CQS) method set forth in Guidelines: Selection and Employment of Consulting firms under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011 on the basis of Consulting firms qualification, experiences and capability to carry out the assignment.

Other criteria that must be fulfilled by firm are:

- Firm/Company should be in existence for at least two years.
- Firm/Company must have successfully analyzed and designed, at least 2MIS, electronics and communication, web portals, system design & analysis. Along with MIS system firm should have experience of SMS systems, mobile applications, and IVR system.
- The Firm/Company must be capable of providing enough manpower, financial resources and equipment to perform the entire scope of work mentioned herein.
- In case of a Joint Venture, the role and responsibility of each partner should be clearly furnished.
- Firms/Companies may submit the list of third-party support (i.e., Sub-consulting Firms/Sub-contractor), if it is required for this project.
- Firms/Companies, either single or member of Joint Venture can apply only in one EOI. To avoid confusion and possible elimination after short-listing, Lead Firms of Association or Joint Ventures are strongly advised to confirm relationships (exclusive or non-exclusive) with selected associates or partner prior to expressing interest.
- The Prospective bidder must submit the audited turnover at least 20 million Taka at the time of bidding.

12. Evaluation Criteria:

The consulting firm shall be selected for designing the “BAMIS web application and its required components” for information dissemination on the basis of Selection and Employment of Consulting firms under IBRD Loans & IDA credits & Grants by World Bank Borrowers, January 2011 & on the basis of Consulting firms qualification, experiences and capability to carry out the assignment.

Sl. No.	Evaluation Criteria		Full Marks
1.	Establishment of the firm		5
1.1	Years of Establishment(at least 2 years)	2	

1.2	Audited turnover at least 20 million Taka from 2000 to bidding time.	3	
2.	General Experience of the Firm		10
2.1	General Experience of Firm in Software Analysis & Design	2	
2.2	Specific Experience of the Firm within last 2 yrs for ICT, Web Portal, MIS Analysis & Design, Electronics& Communication related field.	6	
2.3	ISO certification of firm	2	
3.	Description of Approach, Methodology and Work Plan for Performing the Assignment.		20
3.1	Work Plan		8
3.1.1	The main activities of the assignment, their content and duration, phasing and interrelations.	4	
3.1.2	Clarity of progress reporting plan and delivery dates of the reports.	4	
3.2	Technical Approach and Methodology		5
3.2.1	Understanding of the objectives of the assignment and approach to the services.	5	
3.3	Organization and staffing.		7
3.3.1	Structure and composition of project team.	4	
3.3.2	Description of individual roles.	3	
4.	Qualifications and competence of the Consulting firm's personnel proposed for the assignment		65
4.1	Team Leader/Project Manager		20
4.1.1	Education	5	
4.1.2	General Experience	5	
4.1.3	Specific experience in enterprise level web based MIS Analysis & Design	4	
4.1.4	Experience as Project Manager/Team Leader	6	
4.2	System Architecture /System Analyst		15
4.2.1	Education	5	
4.2.2	General Experience	4	
4.2.3	Specific experience in enterprise level web based MIS Analysis & Design	3	
4.2.4	Experience as System Architecture /System Analyst	3	
4.5	Agro-Meteorology Specialist		15
4.5.1	Education	5	
4.5.2	General Experience	5	
4.5.3	Specific Experience (Supported in web based BAMIS)	5	

4.6	Agricultural Expert (Agronomy)		15
4.6.1	Education	5	
4.6.2	General Experience	5	
4.6.3	Specific Experience (supported in web based BAMIS)	5	

13. Payment Schedule

Deliverables	Timing(from Contract signing)	Payment %
Inception Report	After acceptance of Inception Report i.e. after 2 nd week	10 %
Assessment Report		10%
Design Report	After acceptance of SRS report i.e. after 14 th week.	20 %
Tender documents	After acceptance of SRD & Hardware Requirement Specification Report i.e. after 23 th week.	20 %
Report on Supervision of installation and integration	After system is tested and functional	20%
Work Completion Report (including training and capacity aspects)	When training and capacity development activities have been completed	20%

Note:

1. The Consulting Firm will be responsible for all taxes and duties including income tax applicable as per GoB rules and regulations