

Terms of Reference (TOR) for Assistant ICT Specialist (National Consultant)

A. Context of the Assignment

Agriculture in Bangladesh comprises crops, livestock and fisheries. It provides food, feed, fiber and fuel to its citizens and animals, and plays a key role in economic development of Bangladesh. For achieving the set goal of SDG and turning Bangladesh into a middle income country by the 2021, the GDP has to grow by 7.4% per year. To attain the rate and to keep pace with the population growth, agriculture must grow at a constant rate of minimum 3-3.5% per year. Reaching technologies to the farmers requires technology generation and dissemination through the research and extension systems. National Agricultural Research System (NARS) is responsible for generating agricultural related technologies and Department of Agriculture Extension (DAE), Department of Fisheries (DOF) and Department of Livestock Services (DLS) are responsible for extension of generated technology to the farmers. Both research and extension have made an impressive contribution to food security in the country. In Bangladesh, private investment in research and extension is low. The NGOs, local government and community organizations are coming up but very slowly.

Bangladesh agriculture faces many challenges today. Major challenges are to raise productivity and profitability, reduce high production costs, increase price of products and resource-use efficiency, halt declining and degradation of soil resources and declining of animal and fisheries resources, adaptation to climate change vulnerability, providing consumers safe food, yield gap minimization, expansion of irrigation facilities & farm mechanization, production & distribution of quality seeds/varieties/ breeds/fingerlings, quality production of horticultural crop, popularization of good agricultural & IPM practices, weak linkage of farm-produces with market, low investment in agriculture and inadequate credit support to farmers. These challenges have stagnated the agricultural productivity and production. Further, nutrition outcomes and food safety have not kept pace with the progress achieved with most social and economic indicators. Thus, in order to produce more food for an ever increasing population, raw materials for agro-industries and higher income for farming communities from the decreasing resources (land, water, animal and fisheries), it is necessary to develop existing agricultural production system into a more dynamic, market oriented and sustainable commercial sector by higher productivity and profitability through efficient natural resources management, irrigation expansion, agricultural intensification and diversification, mechanization, value addition and effective market linkages.

To that effect, the Government of Bangladesh (GOB) gives top priority to the development of agriculture sector through its increased productivity, production, supply chains, value addition and market linkages. GOB sought the support of development partners such as the World Bank to provide technical and financial support to activities aimed at boosting agricultural production through productivity enhancement, and increasing smallholders' income. In order to improve agricultural productivity and farm income, on the request of the Government of Bangladesh, the World Bank agreed to support a long term agricultural development program over a period of 15 years to be implemented in three phases of five years each with the first phase beginning in July 2007. IFAD also agreed to co-finance the program with the World Bank. Accordingly, the National Agricultural Technology Project (NATP): Phase-I (NATP-1) was designed with the development objective of improving the effectiveness of national agricultural technology system (including agricultural research, extension and development of supply chains) and

increasing agricultural productivity and farm income in Bangladesh. NATP-1 was initiated in July 2007 and closed in December 2014. NATP-1 has significant achievements in generating technologies, increasing the effectiveness of extension and research systems, development of supply chains and broadening linkages between research-extension-farmers across the project areas. Based on the experience of NATP-1, the World Bank, jointly with IFAD and USAID, decided to provide financial support to GOB for National Agricultural Technology Program-Phase II Project (NATP-2). The duration of the project is 01 October 2015 to 30 September 2021.

B. Project Development Objective :

Project Development Objective (PDO) of National Agricultural Technology Program-Phase II Project (NATP-2) is to increase agricultural productivity of smallholder farms and improve smallholder farmers' access to markets in selected districts. PDO will be achieved through: a) strengthening the capacity of research, extension services and farmers to generate, diffuse and adopt agricultural technologies aimed at increasing farm productivity and reducing post-harvest losses; and b) promoting the sustainability of existing and newly created farmer groups and producer organizations by facilitating their stronger participation in commodity value chain, market-linkages, and improving their knowledge and skill base. Thus, the PDO will be achieved through the generation and release of more productive and locally adapted technologies, enhancing availability of quality seeds/breeds/fingerlings/ breeding materials at the small farm level and providing relevant production, value addition, food safety and marketing support.

C. Project Components

NATP-2 project will have the following 5 components:

Component-1 (Enhancing Agricultural Technology Generation): To be implemented by the Project Implementation Unit of Bangladesh Agricultural Research Council (PIU-BARC), MOA;

Component-2 (Supporting Crop Development): To be implemented by the Project Implementation Unit of Department of Agricultural Extension (PIU-DAE), MOA;

Component-3 (Supporting Fisheries Development): To be Implemented by the Project Implementation Unit of Department of Fisheries (PIU-DOF), MOFL;

Component-4 (Supporting Livestock Development): To be implemented by the Project Implementation Unit of Department of Livestock Service (PIU-DLS), MOFL;

Component-5 (Project Management): To be implemented by the Project Management Unit (PMU), NATP-2, MOA.

D. Overall objectives of the Assignment

NATP-2 will promote an integrated approach to leverage ICT to ensure linkages between the various components and stakeholders. ICT within the project will be harmonized to align with ongoing national ICT initiatives under Digital Bangladesh. This entails that the project will utilize common standards, delivery platforms, connectivity, Data Centre facilities, and use of the GOB cloud – to leverage synergies and reduce duplication. The building of an Agriculture Knowledge Repository (AKR) and a Knowledge platform to disseminate this knowledge will be important ICT initiatives under the NATP-2 project.

The frontline workers in the project (SAAOs, LEAFs and CEALs) will receive mobile tablets to interact with farmers in their fields or meeting places. The mobile tablets will be used for data collection, training, communication, collaboration, market access, citizen feedback and social accountability. Data from the mobile tablets will use the mobile phone network (or Wi-Fi) to go to the GOB Cloud. From there, it will be routed to the relevant MIS systems housed at the National Data Centre. All the major MIS systems and the Agriculture Knowledge Repository will be housed in the National Data Centre at Bangladesh Computer Council (BCC). However, the ownership and management of the different MIS systems will remain with the respective NATP-2 line agencies. The project will build common Knowledge & Learning platforms atop the connectivity layer to enable capture, processing, storage and dissemination of data, information and knowledge. It is expected that the ICT foundation will be provided under the Digital Bangladesh and Info Sarkar projects to all project agencies. The Bangladesh Computer Council (BCC) is responsible for providing all these ICT foundational resources on behalf of GOB. All implementing agencies (DLS, DLS, DLS, DLS) will be connected to a high speed GOB fiber backbone with entry/exit speeds of 10 GBps. This entails that all implementing agencies will have VOIP and video-conferencing facilities also. The connectivity between agencies and their MIS systems hosted at the National Data Centre will be through a secure VPN network.

PIU-DLS has provision to hire one Assistant ICT Specialist to accomplish the assignment of PIU-DLS component.

E. Scope of the Assignment:

The Assistant ICT Specialist, PIU-DLS will be responsible to the Director of PIU-DLS of NATP-2. He/she will perform the following duties and responsibilities:

- i. Develop a fully equipped PC-based communication facility for the respective unit;
- ii. Prepared hardware, software and communication peripheral requirements for the project and facilitate their procurement;
- iii. Develop, test and implement the required software for administering the service processes of the unit;
- iv. Design, install and configure the network connecting all project field offices;
- v. Assess the data needs of policy planners, design and implement the Management Information System (MIS) of the respective project unit;
- vi. Study and analyze essential elements of effective computerization with particular emphasis on improving administrative efficiency and service compliance;
- vii. Organize training courses for the officials and staff on computer and communication technologies;
- viii. Study and analyze data needs for effective monitoring of the project activities;
- ix. Design appropriate modules for dispersion of data from the central database;
- x. Manage the central transactions database of the project and developed appropriate modules/utilities for effective and regular dispersion of the data through regular web page.
- xi. Any other tasks as assigned by the authority

F. Specialist qualifications and expertise required:

a. Academic:

Bachelor Degree in Computer Science/Bachelor Degree in Computer Science and engineering/ICT or in related field from any recognized university

b. Experience:

- i. Minimum 5 years work experience in system design, project implementation and firm hiring;
- ii. Experience in the design, development and implementation of LANs, WANs, and most recent communication technologies;
- iii. Experience in the design, development and implementation of hierarchical and relational database captured through customized software with executive information system capability;
- iv. Minimum 3 years work experience in public/private/international organization/development projects is preferred;
- v. Excellent in communication and presentation skills;
- vi. Proficiency in written and spoken English;
- vii. Computer literacy and skills (MS Word, Excel, and Power Point etc.) is essential.

G. Reporting and supervision arrangements:

The Specialist will report to the Director of PIU-DLS, NATP-2 and will be responsible to him for all activities. The Specialist will submit progress report to Director, PIU-DLS quarterly describing progress of implementation with constraints faced and recommendation for measures to be taken to address/overcome them. The Specialist shall submit Draft Final Report one month before the completion of the assignment. Director, PIU-DLS, if required, will provide the Specialist with comments to the draft report and the Specialist shall submit the final report within time frame specified by Director, PIU-DLS.

H. Responsibilities of the contracting party:

PIU-DLS will provide the following inputs and facilities:

- (i) Office space and other logistic support as per project provision.
- (ii) All available documents, papers and information relevant to the assignment will be provided/made accessible to the Specialist.

I. Duration of the assignment:

Duration of the consultancy services will be 69 man months/up to project period which one is earlier. It will be renewed in every year on satisfactory annual performance of the consultant.