

13/28

Government of the People's Republic of Bangladesh

Ministry of Food

Modern Food Storage Facilities Project (MFSP)


Terms of Reference


for

*The Procurement of ICT Consultancy Service*

Package Name	ICT Consulting Firm(s) FOR THE FOOD STOCK AND MARKET MONITORING SYSTEM
Package Number	SD-2
Assignment duration	36 months From 01 December 2015 to 30 November 2018
Primary assignment location	Dhaka
Funding source(s)	IDA Project Cr. Number: 5265-BD for Modern Food Storage Facilities Project (MFSP)
Contracting entity	Project Director Modern Food Storage Facilities Project Directorate General of Food Ministry of Food

1

  
Engr. Syed Rafiqul Alam  
Senior Procurement Specialist  
Modern Food Storage Facilities Project  
Directorate General of Food, Dhaka.

  
(মোঃ রেজাউল করিম সেখা)  
উপ-প্রকল্প পরিচালক (উপ-সচিব)  
আধুনিক খাদ্য সংরক্ষণাগার প্রকল্প  
খাদ্য অধিদপ্তর, ঢাকা।

Consulting TOR Template  
June 2010



8/26

## A. PROJECT BACKGROUND AND OBJECTIVES

### A.1 General

Government of The People's Republic of Bangladesh has received an IDA credit toward the cost of the Modern Food Storage Facilities Project (MFSP), being implemented by the Directorate General of Food, Ministry of Food, and intends to apply part of the proceeds for ICT Consultancy Services. The overall project development objective is to increase the grain reserve available to households to meet their post-disaster needs and improve the efficiency of grain storage management.

Major activities of the project are:

Development of an improved silo storage system to store grain through the construction of modern grain storage silos at eight selected strategic sites, (Component-A)

Provision of grain storage bins to eligible households under a voucher system for safekeeping of rice and other food in the event of disasters and food shortages (Component-A).

Implementation of a food policy research program including, inter alia, a range of priority studies for the development of evidence-based policies, strategies, legal and institutional frameworks for improved food stock management and distribution (Component-B).

Nationwide Electronic Monitoring System of Food Stock (Component-B).

### A.2 Implementation Arrangement

The project will be implemented by the Ministry of Food through the DG Food. DG Food will have overall responsibility for project implementation, including fiduciary compliance. The DG Food will also be responsible for overall financial management. The Project Steering Committee (PSC), chaired by the Secretary, MoFood, will provide overall guidance and help coordination among various government agencies. The project will be implemented over a period of six years. But this component will be completed in 3 (three) years and last one year will be allowed for the warranty or defect liability period. A Project Management Unit (PMU) has been established in the Expatriate Building (level 17), 71-72, Eskaton Garden, Ramna, Dhaka-1000 for implementation and monitoring of the project activities.

### A.3 Existing Food Stock Monitoring System

Presently MIS system of Directorate General of Food is not well organized and equipped. Data mostly collected over telephone from the LSD/CSD/Silo/DCF/RCF, fax and manually in the written prescribed form cannot cope up with the need of the government for providing better service to people timely & efficiently. Manually operated system is lagged with time and incurred a huge cost as well as inefficient use of human resources. Proper monitoring and planning is not possible by the present MIS System due to lack of up to date information system.

Existing system is not well functioning due to lack of efficient manpower & modern logistics. Human resource development is one of the vital issues. Govt. Bureaucrats are educated in different discipline and most of them are not well equated with ICT. To familiarize with modern technology and the benefits of ICT implementation, both theoretical and practical knowledge is necessary considering that short-term; medium-term domestic training which is very important for implementing officials of DG Food.

For greater transparency and accountability and efficient use of Government resources, the operation of food stock management system including finance and auditing with e-services should come in modern information and communication technology that information should come in a click and the operation also go through paper less.

#### **A.4. Rationale:**

Government has already declared their vision 2021 as to prepare as "Digital Bangladesh". This policy aims at building an ICT-driven nation comprising of knowledge-based society.

The project seeks to connect each & every installation of Food Directorate, down from LSD/CSD/SILO, lowest operational ladder through TCF/DCF/CMS/RCF to the HQs at the top through ICT facility. State-of-the art high performance equipments & facilities will be provided and installed under the project to develop an all encompassing management and operational system. Provisions are also there for foreign study tour and training for Ministry of Food and Food Directorate officials. Some ICT manpower will be recruited and more than two thousand officials will get effective ICT training for achieving the project target.

#### **A.5. Objectives of the assignment**

The overall objective of this assignment is to design, implementation and monitoring of ICT based food stock management and monitoring system for Directorate General of Food to implement the National Food Policy. The specific objectives of the assignment include:

- (a) Baseline survey/study of all offices and LSDs/CSDs/Silos of DGFood for intranet & internet connectivity design and also propose required space for the installation of online application in National Data Center;
- (b) Prepare list and specification of existing and required ICT equipment such as computer, laptop, printer, scanner, smart phone, LED TV etc. for field offices of DG Food;
- (c) Prepare software requirement specification (SRS) for Food Stock Monitoring System (online application) and Management;
- (d) Prepare bidding documents for the procurement of above mentioned software (development/purchase), hardware and services including ICT base Training of about 3200 food officials;
- (e) Develop Training Modules for different categories ICT training;
- (f) Monitoring and Supervision of installation and commissioning of networking, ICT equipment, software development and Training activities; and
- (g) Ensuring quality of the works conducted by hardware and software firms;

8/22

## B. SCOPE OF WORK

(Describe the type of consulting work that will be required indicating particular areas to be covered, expected level of detail to be accomplished and qualifications)

### B.1 Services and Phasing

The services required to be performed by the Consultant are as mentioned in Objectives of the assignment.

The services are broken down and grouped under three main phases as described further below:

1. Phase 1: Design Phase
2. Phase 2: Supervision Phase
3. Phase 3: Defects Liability Phase

### B.2 Phase 1: Design Phase

During the Design Phase, the services required from the Consultant will be visiting all of the food offices throughout the country, study DG Food business processes, prepare reports, network design for internet/intranet connectivity, software requirement specification and other documents necessary to develop electronic based advance food stock management system. Required nos. of workshop should be conducted by the consultant to share ideas and views during baseline study and design activities. Arrange field visit for project personnel. The Consultant shall provide the required services which shall include but shall not be limited to the following:

#### B.2.1 Baseline study Stage

The consultant will do baseline study and visit all field offices of Directorate General of Food throughout the country and Head Quarters as well as Ministry of Food (if required). The field offices include LSDs, CSDs, Silos, Flour Mill, TCF Offices, DC Food Offices, CMS Offices, Jetty Offices and RCF Offices. Baseline study will be conducted to find out the best solution of network (intranet/internet) connectivity, assessing ICT equipment required and software development for Food Stock Monitoring System and Management as well as other related works. After study they have to submit a complete study report including all of the above mentioned items to the PD.

#### B.2.2 Recommendation of internet & intranet connectivity Stage

In this stage the consultant will propose and prepare, but not limited, the following:

- a) Assess and measures distance of optical fibre connectivity from Union/Upazilla/District govt. offices (nearest and suitable ones) which are connected through optical fibre by Info Sarker Project (phase II/III) of ICT Division, Ministry of Posts, Telecommunications and Information Technology of Bangladesh.
- b) Design sustainable LAN & WAN (including network methodology & security measures) covering small and large installations of DG Food. These offices include Silos, CSDs, LSDs, RCF offices, Flour Mills, Jetty Offices etc.

*Handwritten signatures and initials in blue and black ink.*

18/20

- c) Prepare a list of hardware requirement and its specification for internet/intranet connectivity of all food offices throughout the country. This list includes optical fibre, cat 5/6 cables, switches, routers, MC, all other accessories and hardware which and where necessary.
- d) Assessment of remote areas connectivity and propose sustainable solutions;
- e) Propose required space for the installation of online application in National Data Center;
- f) Detailed cost estimations for networking and hardware accessories; and
- g) all other works if required.

### B.2.3 Recommendation of ICT Equipment Stage

After baseline study the consultant will prepare, but not limited, the following lists:



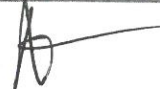
- a) Prepare list of required ICT equipment for food officials' use, quantity required of the same, and specification of the equipments. This equipment includes computer, laptop, printer, scanner and other accessories.
- b) Recommend handy ICT equipments (laptop, tab etc.) for high level executives of DG Food and Ministry of Food for accessing online application to get real time information about food stock management.
- c) Recommend equipment for field level executives to use for cross & instant checking of data on stock position;
- d) Recommend specification for effective remote communication through video conferencing;
- e) Detailed cost estimations for these ICT equipments.

### B.2.4 Software Requirement Specification (SRS) Stage

In view of develop software for nationwide electronic monitoring system for food stock and market the consultant should study and review the business processes i.e. all sort of operational work of different offices of Directorate General of Food as well as Ministry of Food. In this connection the services of the consultant include, but are not limited to, the following:

- a) Study and review all the business processes of DG Food and MoFood;
- b) After discussing with all stack holders and reviewing all business processes of DG Food prepare a document of all information and also prepare software requirement specification (SRS);
- c) Review all the food management related govt. Policy, order, guidelines and other office orders issued time to time by the proper authority for the operational works;
- d) finalize the SRS with full features of the business/operational process of DG Food;
- e) ensure mobile apps and SMS base e-services system;
- f) after finalizing the SRS they have to produce activity diagram, sequence diagram & data flow diagram (DFD), Software security methodology, software quality and testing guideline and submit that to the authority/PD.

The consultant must be responsible for any lack of information to write/prepare the SRS. They must have in mind that the software can access web application, mobile application including e-services using mobile apps.

## B.2.5 Training Module Preparation and Submission Stage

After baseline survey the consultant will prepare the suitable ICT base training modules for food officials. These training programmes will be divided into three broad categories such as executive level training, training of the trainers (TOT) & technical persons and computer operation trainings for the user. The numbers of participants would be more or less 3200.

1) These training programmes include, but are not limited to, the following:

- a) Executive level training for higher level officials of DGFood and Ministry of Food. These are-internet, computer operation, software operation and monitoring training.
- b) Training for the technical persons. These include-
  - internet and network security, database and web application, software engineering, system and server administration training for about six persons,
  - training on software operation and administration, understanding of data base design, software development tools and full understanding of source code and other related job (if any) conducted by the software supplier for six persons.
- c) Fundamental of computer and trouble shooting trainings for the field level users. These include-
  - basic computer operation
  - software operation
  - trouble shooting
  - internet
  - avro-bangla software
  - MS Office etc.
- d) Foreign training for 10 executive level officers who are closely related with the project. This training includes the visit to developed country to practically see the state of the art technologies/mechanism of IT system that are being used for public food management and social aspects as well as for ICT personnel capacity building.

2) The consultant will also prepare estimated cost for each module individually.

## B.2.6 Bidding Document Preparation and Submission Stage

The consultant will prepare the bidding documents following the PPR 2008 and World Bank procurement rule/guidance (if any) for-

- a) Bidding documents for supply and installations of ICT equipments such as computers (laptop and desktop), printers, LED tv with vedio conferencing system, smart phones etc;
- b) Bidding document for countrywide optical fibre base networking (LAN/WAN) for DG Food including supplying all necessary equipments and hardware. This document also include suitable networking for remote areas' offices of DG Food.

18/6

- c) Bidding document for software development, testing, commissioning and training on software operation, administration and maintenance etc; and
- d) Bidding documents for ICT based training including basic computer operation, trouble shooting, avro-bangla software, MS Office, internet etc.

The services of the consultant include, but are not limited to, the following:

1. Preparation of fully coordinated bidding and procurement documentation for all Bid Packages including:
  - Invitation to Bid
  - Conditions of contract
  - Functional and technical specifications
  - Drawings, schedules, etc.
2. The bidding documents reviewed and vetted by the PMU.
3. Assistance to the PMU during the bidding process including:
  - Prepare the answers of queries from the Bidders for review by the PMU
  - Attending meetings as required
  - Coordination and assistance to bidders site visits.
4. Prepare final contract documents for signature.

### **B.3 Phase 2: Supervision Phase**

In this phase consultant supervise the following activities conducted by the contractors:

- a) Supply, installation, ensuring quality of supplied ICT equipments, testing and commissioning;
- b) Installation and connection of optical fibre and related equipments to all Food Offices for intranet/internet connectivity (LAN/WAN);
- c) Procurement, development, installation, commissioning and performance testing of software/web application development/mobile apps and SMS based e-service systems. They must ensure the services that include, but are not limited to, the following:
  - 1) Software development and installation-
    - Ensure the effective software operation training that all user and executive can operate and use the installed software independently;
    - Ensure the effective software administration and maintenance training;
    - Ensure error free software/web application installation in DG Food site;
    - Ensure that all business/operational process must be done by the software development firm;
    - Supply required database and others softwares if necessary;
    - Ensure basic and opening data entry; and
    - Ensure testing of software all possible ways that all business process of DG Food must be included and all errors must be removed.
  - 2) Software hand over and copy right-

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

18/9

- Ensure handed over the required software/web application with related documents (i.e., SRS, DFD, ACTIVITY DIAGRAM, SEQUENCE DIAGRAM, NETWORK DIAGRAM etc.) and SOURCE CODE (latest) and also all development tools to DG Food.
  - Ensure the required software/web application's copy right to DG Food.
- d) Proper execution of training of about 3200 food officials according to training module to operate the supplied software.

### B.4 Phase 3: Defect Liability Phase

The defect liability period will be at least one year that will commence after commissioning and handed over of software, hardware and networking to the procuring authority. In this period the consultant will supervise the performances of the software and equipments and shall ensure correction of errors of software as well as ensure replacement of supplied equipments that will not work properly. Responsibilities of consultant include the following:

- During Defect Liability Phase the consultant will conduct ICT audit of all business processes and system reliability.
- Monitoring the performance of software, ensuring trouble shooting and necessary upgrading of the supplied software;
- Monitoring the performance of network system and ensuring correction as well as upgrading if required;
- Monitoring the performance of supplied and installed ICT equipments and ensuring replacement of equipment if trouble arises during operation;
- Reporting weekly basis about the monitoring activities and taken correction measures to the project director; and arranging briefing sessions once in a month to make understand the Food Officials about the performance of ICT management system;
- Solving all the problems arises in anywhere including field offices without delay.

## C. DELIVERABLES/SPECIFIC OUTPUTS EXPECTED FROM CONSULTANT

(Description of the deliverables, delivery schedules, and acceptance criteria for the deliverables)

### C.1 List of reports

1. Baseline study report
2. Reports for networking
  - 2.1 Detailed Network Diagram of intra and internet connectivity
  - 2.2 Preparation of list and specification of Network Equipments
  - 2.3 Recommendations for Network Methodology including Security measures
3. Preparation of list and specification of ICT equipments
4. Software Requirement Specification (SRS)
  - 4.1 SRS
  - 4.2 Database Design and Data Flow Diagram (DFD)



- 4.3 Activity Diagram
- 4.4 Sequence Diagram
- 4.5 Software Security Methodology
- 4.6 Software Quality & Testing Guideline
- 5. Bid Document in World Bank standard format for procurement of ICT system
- 6. At supervision stage, monthly progress report and completion report after implementation of ICT system.
  - 6.1 Software implementation and commissioning report with all other requirements
  - 6.2 Completion report on effective network connectivity
- 7. ICT Audit report.

### C.2.1 Tentative schedule at Design Phase

All timelines are in months from the date of signing contract.

SINo	Output	Timeline (months)
6.2 Phase 1: Design Phase		10
6.2.1	Baseline study	2
6.2.2	Recommendation of internet & intranet connectivity Stage	6
6.2.3	Recommendation of ICT Equipment Stage	6
6.2.4	Software Requirement Specification (SRS) Stage	6
6.2.5.a	Conduct all local training	36
6.2.5.b	Conduct foreign training	10
6.2.6	Bidding Document Preparation and Submission Stage	10
6.3 Phase 2: Supervision Phase		24
6.3.a	Supply, installation, ensuring quality of supplied ICT equipments	18
6.3.b	Ensure Intranet/internet connectivity of all field offices	24
6.3.c	Implementation of Software	24
6.4 Phase 3: Defect Liability Phase		12 months after Phase-2
6.4.a	ICT Audit of all business processes and system reliability	6
6.4.b	Solving all the problems arises in anywhere including field offices without delay.	12

The initial timeline for the project will be for 36 months. However, the competent authority in the Government, upon considering the practical aspects, may extend this period.

### C.3 Expected outputs

- Analyze and make a Software Requirement Specification (SRS) for DG Food and also produce Activity Diagram, Sequence Diagram, and Database Relationship Diagram according to the SRS.
- Ensure web application/software, Mobile Apps and SMS base e-service system for food procurement, distribution and monitoring system including all related operational work of DG

18/3

Food and also ensure other related operational work Personal data sheet (PDS), Audit and Accounts, Payroll etc.

- Ensure secured Mobile apps (application) for many tasks for the top management.
- All expected reports.
- Develop a comprehensive and understandable user manual for the training of Web Application and also for need based/basic computer training.
- Ensure that all the DG Food participants get proper and effective training in all aspects.
- Conduct and ensure foreign study tour/training to the developed countries.
- Ensure security of the web application.
- Ensure security of the DG Food Network.
- Ensure quality of developed web application.
- Ensure standard and understandable source code for web application.
- Ensure all type of error free web application.
- Ensure timely installation of web application in DG Food end.
- Do all type of opening data entry jobs.
- Study and ensure the installation of proper and high performance communication technology i.e. LAN and WAN for DG Food.
- Ensure timely installation of Network (LAN/WAN) in all field offices of DG Food.
- Ensure quality of the high performance equipments like desktop, laptop, printer, scanner, smart phone, network equipment etc. and also installation to all DG Food Offices.
- Ensure hassle free access into the web application at the same time for at least 100000 users.
- Ensure software maintenance in server side for any error or fine tuning, database tuning etc. for 24x7 hours.
- Ensure a dedicated support service team for quick and instant support service for 24x7 hours for smooth operation of software.
- Monitor each and every task of the web application and Network (LAN/WAN) related job performed by the contractors.
- Time to time submission of reports to the project office about the task related to software business case study, software development, networking, training, study tour and other task assigned to them.
- Arranges workshop/ seminar with the stack holders time to time.

#### D. SPECIFIC INPUTS TO BE PRESENTED BY THE CLIENT

An integrated project steering committee (PSC) has been formed to oversee and guide all activities of this project. A special working committee consisting of DG Food Officials will be formed to facilitate the smooth implementation of this assignment.

- List and location of DG Food establishments. Number of establishment is about 607.
- "Info Sarker Project" Connectivity Distance from UNO Offices & Local BTCL

#### E. SPECIAL TERMS & CONDITIONS / SPECIFIC CRITERIA

1. The Firm must have experience in conducting IT consultancy, Preparation of IT strategy document and IT implementation for at least 15 years.

Handwritten initials and signatures: a blue checkmark, 'PK', and a large signature.

2. Must have consultancy experience with various development partners (donors) like WB, IDA, ADB, IDB, JICA, DANIDA, etc.
3. Must have experience and evidence of successful implementation of projects with Government offices in the period of last five years.
4. Turnover of the firm for best three years of last five years. Yearly turnover must be minimum 2 core.
5. Details about the offices, equipment, logistic supports, skill professionals, Managerial strength, etc.
6. Other relevant Company information like, Valid Trade License, Certificate of incorporation, latest VAT & IT clearance certificates, Membership *Certificate of professional association / society, etc.*
7. Must be CMMI Level III or higher certified firm.

### E.1 Key Professionals

Sl no.	Name of the post	Educational Qualifications	Experience	Duration
1	Team Leader (1 no)	M. Sc from any mathematical Science background or Engineering.	At least 12 years of service in IT fields such as IT administration, Network administration, Software Project Management, Web Management, Database Management etc. PMP or equivalent certification Proven experience of ICT project management.	36 months
2	Software Expert (1 no)	MBA/M. Sc from any mathematical Science background or B.Sc. Engineering.	At least 10 years of service in IT fields business requirement analysis specialist or equivalent.	24 months
3	Database Administrator (1 no)	M. Sc from any mathematical Science background or B.Sc. Engineering.	At least 10 years of service in IT fields such as IT Manager/ Network Manager/ Data Center Expert etc. Must have certification of Data Center Certified Professional and proven ability to set up tire 3 data center.	6 months

*[Handwritten signatures and initials]*

18/6

Sl no.	Name of the post	Educational Qualifications	Experience	Duration
4	Network Expert	M. Sc from any mathematical Science background or B.Sc. Engineering	At least 10 years of service in IT fields such Software engineer/ Web Developer/ Database Developer/ Programmer etc. Proven ability to handle online software development.	18 months
			<b>Total man-month</b>	84 mm

**Other Professionals**

1	Quality Assurance Engineer (1 no)	M. Sc from any mathematical Science background or B.Sc. Engineering	At least 5 years of service in IT fields such Software testing engineer/ Software Quality Engineer/ Database Tester/ Programmer etc
2	Senior System Engineer (1 no)	M. Sc from any mathematical Science background or B.Sc. Engineering	At least 10 years of service in IT fields such Hardware Expert/System Manager/ System Engineer/ Administrator etc. A+ certification will be preferred.
3	System Engineer (1 no)	M. Sc from any mathematical Science background or B.Sc. Engineering	At least 08 years of service in IT fields such Hardware Expert/System Manager/ System Engineer/ Administrator etc. A+ certification will be preferred.
4	Senior Network Engineer (1 no)	M. Sc from any mathematical Science background or B.Sc. Engineering	At least 10 years of service in IT fields such Network Manager/ Network Engineer/Network Administrator etc. Must have CCNA/ RHCE /RHCSA certification and proven ability of secured network set up.
5	Junior Network Engineer (4 nos)	M. Sc from any mathematical Science background or B.Sc. Engineering	At least 5 years of service in IT fields such Network Manager/ Network Engineer/Network Administrator etc. Must have proven ability of secured network set up.

**E.2 Criteria:**

Experience, Resources and delivery capacity required:

1. Must have experience in conducting IT consultancy, Preparation of IT strategy document and IT implementation for at least 15 years.

*[Handwritten marks]*

*[Handwritten signature]*

18/2

2. Must have consultancy experience with various development partners (donors) like WB, IDA, ADB, IDB, JICA, DANIDA, etc.
3. Must have experience and evidence of successful implementation of projects with Government offices in the period of last five years.
4. Turnover of the firm for best three years of last five years. Yearly turnover must be minimum 2 crore.
5. Details about the offices, equipment, logistic supports, skill professionals, Managerial strength, etc.
6. Other relevant Company information like, Valid Trade License, Certificate of incorporation, latest VAT & IT clearance certificates, Membership *Certificate of professional association / society, etc.*
7. Must be CMMI Level III or higher certified firm.

## **E2.2 Duration, Selection of Firm and Deliverables and Payment Terms**

### **2.1 Duration of Consultancy**

The Consultant Firm would be hired for the whole period of the assignment. The contract period is 3 years. It may vary depending on the performance of the consultant and recruited other ICT firm. But defect liability period will be one year.

### **2.2 Selection of the Firm**

The client shall ask the applicant to provide both technical and financial proposals at the same time but in separate envelop (Two envelop system). Then the client shall negotiate the financial proposal with the technically highest ranked applicant and contract. Thus the Consultant firm will be hired following the Quality Based Selection (QBS) method according to World Bank Guidelines for Selection and Employment of Consultants under IDA Credits & Grants by World Bank Borrowers updated January 2011.

### **3.3 Lump sum Payment against deliverables:**

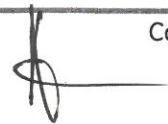
The contract is performance based, and payments would be based on achievement of key tasks and outputs completed within the stipulated time.

Advance: 10%

Deliverable 1: Design Phase

2

PK



8/7

- a. Conduct Baseline survey and accepted by Project Director, MFSP – 15%
- b. Conduct workshop and field trip – 10%
- c. Prepare bid document and accepted by World Bank and approved by appropriate authority. – 25%

Deliverable 2: Supervision Phase

- a. Supply of all goods like hardware, software, equipments etc by the bidder and certified by ICT consultant and accepted by Project Director. – 15%
- b. Implementation of the Electronic Monitoring System and accepted by Project Director. – 10%

Deliverable 3: At the end of the Defect Liability Phase – 15%

The consulting firm should be required to put in a detailed break up on the percentage of payment.

**Engr. Syed Rafiqul Alam**  
Senior Procurement Specialist  
Modern Food Storage Facilities Project  
Directorate General of Food, Dhaka.

(মোঃ রেজাউল করিম সেখ)  
উপ-প্রকল্প পরিচালক (উপ-সচিব)  
আধুনিক খাদ্য সংরক্ষণাগার প্রকল্প  
খাদ্য অধিদপ্তর, ঢাকা।