TERMS OF REFERENCE (TOR)

FOR DESIGN, DEVELOPMENT, INSTALLATION AND IMPLEMENTATION SUPPORT OF COMPUTER BASED EDUCATION MANAGEMENT INFORMATION SYSTEM (EMIS) SOFTWARE FOR THE MINISTRY OF EDUCATION AND HIGHER EDUCATION.

1. BACKGROUND INFORMATION

Since the Puntland State of Somalia was established in 1998, the number of primary schools have increased significantly resulting in a considerable increase in the enrolment of primary school children. While these strides in access have been achieved, strengthening of the MoEHE's capacity has not kept up to this pace. A further focus of the programme is strengthening the MoEHE's institutional systems to enable better and more effective education service delivery. This includes improving the collection, management and oversight of education data for Ministry to deliver quality education in Puntland for to all children.

Since 2012, the Pineapple software(EMIS) has been used to compile data on all registered education providers in Puntland. UNICEF has supported the MoEHE in the operationalization of This EMIS software and training of staff. The EMIS system collects, processes, analyses, manages and disseminates the information necessary for educational planning and management and captures data from the primary, secondary, NFE, higher education, special needs children and TVET subsectors.

2. Context

The Education Sector Analysis (ESA) findings show that the EMIS has been successfully implemented in the MoEHE and signifies notable progress over past years when data was not available for conducting any credible analysis of the education sector. However, despite those successes there remains much scope to expand and improve upon the fledgling EMIS that has now operated for only three years. Also, ESA notes that "a number of areas remain unrecorded in EMIS data; data points that could prove helpful in undertaking evidence-based planning" and also that "there is limited data on the access and equity afforded to other marginalized and

disadvantaged groups, and the data collected thus far within EMIS is insufficient for detailed analysis".

To remedy the challenges facing EMIS in terms of aforementioned, the GPE programme will support decentralization to the regions while integrated EMIS system captures more data on EiEs and marginalized groups (IDPs, minorities, and pastoral children). Conversely, the EMIS will document quality-related outcomes such as teacher's attrition rate which will be centrally recorded and managed against EMIS data in a way that allows for meaningful analysis across individual schools, regions, demographic groups and other pertinent areas of interest. UNICEF will continue to mobilise additional resources to complement all EMIS activities under the GPE programme.

For that reason, the Global Partnership for Education (GPE) program will support ministry to have a decentralized EMIS system installed in lower level Education authorities. The first area targeted is EMIS to have quality data which is vital to the formulation of sound policies and promoting equity in education, with the focus on decentralization of the EMIS system to regions in order to facilitate improved data gathering, storage and use at the school, district and regional level and ensure that data is used to improve effective education service delivery at school level and improve children's learning outcomes. The regions role in EMIS will be: 1) data collection at school level; 2) data verification and cleaning; 3) data entry and correction of errors; and 4) submission of data to central level for analysis, validation publication and dissemination. All the activities in this section will be under the coordination of the EMIS unit at the Ministry.

The Ministry envisions to decentralize EMIS into the regions and will inherit functions performed at central level as a more sustainable and cost effective approach to better coordinate and communicate with the district and regional levels ensuring that data is transferred from the ground level to the MoEHE and that the data is used for decision making at all levels. Decentralising EMIS will mean that the routine workload of data collection, processing and data At central level will be shifted into regional level. Each an every regional will analyze on their bases the raw data they have gathered for decision making as regional level.

The Ministry will carry out workshops and trainings for teachers to ensure the EMIS data feeds back to the school level to facilitate a greater level of ownership and recognition of the importance of the data. More importantly, this 'feedback loop' will ensure that data is used to improve effective education service delivery at school level and improve children's learning outcomes.

3. SCOPE OF THE WORK

This procurement is for the design, development, installation and deployment of online/offline computer based EMIS software for the ministry of education and higher education at central, regional and district levels. The selected consultant/Firms shall be responsible for analysing the requirements, designing, developing and supporting towards implementing the EMIS software system for the ministry at central, regional and district levels as well as operationalizing of the system within the agreed time frame. The selected consultant/Firms shall be in regular consultation with the ministry during the design, software development, and especially implementation support and training of related Ministry staffs including regional EMIS technical staff to ensure smooth functioning of the software. The selected consultant will install new software, undertake Develop new tools for data collection and Software usage manual for data entry, cleaning, processing, analyzing and reporting. And also develop usage training manuals.

4. PURPOSE OF THE ASSIGNMENTS

The purpose for this Assignment is to design, develop and decentralize an online/offline computer based EMIS system with database application that will assist Ministry to manage, access, analyse, process, and convert data into useful information using various search, sort, filter, and rank queries accessible of both online and offline.

5. OBJECTIVES OF THIS ASSIGNMENT

The specific objectives of this assignment are;

- To design and develop computer based Integrated EMIS database application for offline/online data entry and inquiry for information based planning, decision making, monitoring and evaluation.
- To develop and establish fully functional computer based EMIS useful for Ministry to automatically generate EMIS report on periodical basis (daily, monthly, annually).

- To ensure flexibility in database design to adapt/accept the changes in data that may be required in future management.
- To decentralize, Integrate, expand data collection, process analysis and dissemination to support effective quality assurance and continuous improvement on key education performance indicators.

6. GENERAL TASKS.

- Specify and agree required EMIS software with detailed features together with the relevant Officials.
- Develop a plan for the replacement of the current EMIS software including detailed specifications and requirements of new software aligned to Global indicators such as SDG Goal 4 indicators for answering global problems.
- Identify, select and install new EMIS software and EMIS data collection tools;
- Train relevant central, regional and district level staff on the new system;
- Train relevant central, regional and district level staff on data collection tools, advanced Excel, SPSS, data processing, analysis, verification, utilization and dissemination;
- Assess, design system and purchase the necessary equipment for a decentralised EMIS at district, regional and central levels;
- Decentralize and implement EMIS activities at district and regional levels;
- Carry out broad discussion with the ministry relevant Officials on EMIS related matters during the process of designing, development and installation of EMIS software.
- Design, develop and install EMIS for the ministry of education and higher education.
- Develop a fully functional computerized EMIS for ministry for timely decision making purposes. This system will have provision for computer based, on-line data entry as well as off-line data entry where data can initially be entered/saved locally and uploaded to the central database directly from the local files.
- Install and test the software in at ministry central Office and demonstrate its functionality.
- Provide operational and technical training for the staff of ministry and other stakeholders on the EMIS system use (data entry, generating reports), and operational documentations of the EMIS.

- The consultant/firm should carry out data entry for the testing purposes and provide accurate testing report based on real data.

7. Develop EMIS School mapping to support micro-planning and social mobilization at institutional, Regional level and District levels (software should have GIS system for generating actual location of the schools.

8. Institutionalizing an integrated EMIS for the education sector to capture on budget and off-budget spending on education.

KEY CHARACTERISTICS OF THE EMIS

1. Provides user-friendly, computer-based, online/offline data entry/access, inquiry, and reporting facilities.
2. Provides option of first entering the data off-line (and storing locally), and uploading the data to the central database later directly from the local files (e.g., MS Excel, PDF data entry forms that can be uploaded to the web-based data entry system).
3. Provides options of downloading the entered data from university/campuses in different formats such as SQL server, pivot table e.c.t.
4. Stores system indicator based detailed records about (e.g. student enrolment, graduates, pass percent's, teachers, staffs, programs, financial information and recent trends on their enrolment, centres, graduates, and public financing etc disaggregated by, centres, programs, levels, gender, regions, districts, and others).
5. Provides tools for basic data analysis (such as producing summary statistics, simple graphs, trend plots, etc.)
6. Maintain individual personnel information (e.g. students, teachers, staffs etc.), by providing online/offline electronic data form and keep track of those personnel.
7. Provide flexibility to add/delete/modify attributes to data records.
8. Ability to import/export data from/to other database software such as MS- Excel, SPSS SQL and pivot table.
9. Able to generate two types of tables: Pre-defined tables -the fixed indicator based tables defined by ministry to prepare EMIS report. User defined tables- tables created by system based on user queries, which are available in the system.

10. These outputs can also be saved in Ms Word, Ms-Excel formats for documentation and analysis purposes.

11. TECHNICAL (IT) SPECIFICATIONS OF THE EMIS SOFTWARE/DATABASE

a) ***Data management and functioning***

12. The software shall be compatible with latest internet explorer and operating system.
13. The product has enough flexibility to accommodate the frequent changes and open to customization as required for the future.
14. The software shall be flexible and scalable in terms of performance and functionality.
15. Able to run on offline when there is no internet connection.
16. The software product should provide user manual of the system.
17. Should have a dynamic access menu control.
18. Software should support use of multiple users at a time.
19. The response time of the software system should be as under: For data transaction like – add, update, edit, delete etc.- Response time will be less than one seconds or less. For complex transactions: - Response time will be two seconds but in any case time for completion of the transaction shall not exceed five seconds. Response time for “help, exit/entry of menus, scrolling or paging, error processing etc. shall be one second or less.

b) ***Security and data integrity***

1. Software should be free and firm will hand over all the code of the software for not using again with other organization.
2. Should have the necessary security safeguards mechanism.
3. Provide data integrity features that will prevent more than one user from changing the same information simultaneously.
4. Provide multiuse access to data, along with security features that prevent some users from viewing and/or changing certain type of information.
5. The software shall provide Logon ID and password for any users who use the system with basic level of data entry, data modification, and update, add/delete records.

6. The software shall keep the track of user login / sign out and activities performed on database each time and keep specific logs or history data sets.
7. Administrators shall be able to view and modify all information in EMIS.
8. Any modification (insert, delete, and update) for the database shall be coordinated and done by administrator.
9. Provide proper data backup, and recovery mechanism.

c) **Service Level Agreement**

10. One-year warranty and one-year post warranty annual maintenance contract (AMC).
11. The selected consultant/firm/company shall have to work together with ministry during development to implementation period.

12. DELIVERABLE

13. Inception report including work schedule
14. Completion report
15. Operational manual of the system.

16. ELIGIBILITY CRITERIA

17. Firm/Consultant should have at least five years and must be in the business of electronic software design, development, installation and deployment the software products during the said period.
18. Consultant/Firm must have successfully designed, developed, and installed at least two Secure (Authentication, Encryption, and Integrity) On-line/offline Data Collection and Processing related Software or Secure Computer Based Software.
19. The Firm/Company must be capable of providing enough manpower, financial resources and equipment to perform the entire scope of work mentioned herein.
20. In case of Joint Venture, the role and responsibility of each partner should be clearly furnished.
21. For the short-listing purpose, specific (technical) experience of the lead Firm/Company and financial strength of both Lead and associate Firm/Company would be considered.
22. Short-listing of Firms/Consultant shall be based on the pre-defined evaluation criteria

23. In addition to authenticated hard copy, the Firm/Company must submit information / documents in soft copy.

24. REQUIREMENT BY THE APPLICANT

25. Educational Qualification, Training and Work Experience of all Key Staff should be in IT and detail knowledge on Puntland Education Sector
26. The leader/consultant should have at least degree in engineering/computer Science /telecommunication engineering or IT and programmers must have at least bachelor degree in IT.
27. At least 5 years' experience of operations in software development and installation.
28. Experience of successful design, develop, commissioning and support of electronic based On-line Data Collection and processing related Software in the last five years.
29. The consultant/Firm must have, at least one, successfully designed, developed, installed and commissioned such web based Educational management information system (EMIS) software for any college or government departments or government corporation or public limited organization.

30. TIME FRAME

The selected Consultant/firm/company's expected delivery time is 4 months for design, development, testing, deployment and training followed by 1-year warranty and maintenance.

The deadline for the applications is Tuesday July 3rd 2018 at 4:00 pm.

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