**Terms of Reference: Enterprise Resource Planning (ERP) System for the Ministry of Energy and Water Resources (MOEWR) Jubaland & Southwest states**

**1. Background:**

IOM received funding from AfDB to implement the Kismayu Baidoa urban water project on behalf of the water ministries. As part of the project activities the development of a WASH information system is necessary for both. Following a review and discussion with both ministries, there are systems in place that are meant for WASH but have not been in use or have not been effective.

There is a lack of comprehensive information about water sources in both regions, hindering effective planning and decision-making. To address this gap, the MOEWR has developed the Wash Resource Information Management System (WRIMS), a cloud-based system to collect and store data on water sources. However, the existing system does not fully cater to the current tasks and responsibilities of the Ministries. Therefore, an ERP system is required to support data management, analysis, and decision-making processes.

Having an ERP system is of utmost importance as it supports data management, analysis, and decision-making processes. It enables the ministry to enhance its operational efficiency, improve resource allocation, enhance financial management and reporting, streamline project management, ensure transparent procurement processes, strengthen asset tracking, optimize water and energy resource management, and facilitate donor coordination.

**2. Objectives:**

The main objectives of the ERP system are as follows:

Streamline and automate key processes related to human resources, financial accounting, project management, procurement, warehouse management, asset tracking, water laboratory management, energy resource management, water resource management, and donor management.

- Improve the efficiency, effectiveness, and accountability of the MOEWR's water and energy programs.

- Enable comprehensive data management, analysis, and reporting for informed decision-making.

- Facilitate accurate and timely reporting on financial, project, procurement, energy and water resource management aspects.

- Facilitate coordination and collaboration among different departments within the ministry.

- Enhance resource planning, financial management, procurement, project management, and asset tracking processes.

- Strengthen coordination with donors and effectively manage their contributions to the ministry's initiatives.

**3. Scope of Work:**

The ERP System development project includes the following aspects:

Geographical coverage:

Data Elements and Functionalities: The ERP system will incorporate the following modules:

 1. Human Resource Module

 2. Financial Accounting & Reporting Module

 3. Project Management Module

 4. Procurement Module

 5. Warehouse Management Module

 6. Asset Tracking Module

 7. Water Laboratory Management Module

 8. Energy Resource Management Module

 9. Water Resource Management Module

 10. Donor Module

Expected Outputs or Deliverables:

* Fully functional ERP system with all modules implemented and integrated.
* Data collection, storage, and analysis capabilities for improved decision-making.
* Training materials, user manuals, and ongoing technical support provisions.

**4. Responsibilities:**

The following stakeholders will have roles and responsibilities in the ERP System development:

- Implementing agency: The MOEWR, responsible for overall project management, coordination, and quality assurance.

- Technical team: A dedicated team of experts in ERP will be responsible for system design, development, testing, and implementation.

- Data Collection and Entry: Relevant staff members will be responsible for collecting and entering accurate data into the system and working with the system after project completion.

- Relevant parties: Other stakeholders, such as ministry departments, agencies, and donor organizations, will provide data, participate in system testing, and offer feedback.

**5. System Requirements:**

- Hardware: Local Linux servers as database backups with large storage capacity. Desktop computers for the relevant ministry departments that will use the ERP system, high speed network routers for reliable internet connectivity. CCTV security cameras to ensure the surveillance and security of all the aforementioned electronic appliances.

- Software: The ERP system should be web application with a cloud-based database management system that uses SQL. The database should automatically synchronization with the local database servers that will be used as backups. Licensed Microsoft Windows with Office 365 for the computer desktops that use the system.

- Network infrastructure: The ERP system should have a high network tolerance that enables it to be responsive in areas that experience low internet connectivity. The system should also have data encryption mechanism and other security measures that protects sensitive data.

- Data standards and protocols: The ERP system should have the necessary standards and protocols to ensure compatibility and interoperability with existing systems, including data formats, data exchange protocols, and data integration procedures.

**6. Data Management:**

- Data collection methods: There should be preparation of data collection tools (KOBO, ONA) for field measurements and digital data capture energy (assets) and water resource (boreholes, shallows, barkads). This data will be crucial for energy and water management modules of the ERP system.

- Data feeds mechanisms: Assigned ministry staff will be responsible for inputting data into the system, including manual data entry, automated data feeds, and integration with other databases or systems.

- Data storage: The primary data storage of the ERP system will be cloud-based database with a local server as a secondary backup. Both databases should have scalable data storage infrastructure to accommodate large volumes of data.

- Data security measures: The ERP system should have strict data security requirements, including access controls, user authentication, encryption, and disaster recovery plans regular data synchronization between the cloud and local servers.

- Data sharing protocols: The ERP system should establish protocols and mechanisms for data sharing within the ministry and with relevant stakeholders while ensuring privacy and data protection.

- Data quality assurance: The ERP system should define processes for data validation, data cleaning, and data quality control to ensure the accuracy and reliability of information.

**7. Reporting and Analysis:**

The ERP system should provide reporting and analysis capabilities, including:

- Standard reports: Predefined reports that cover key performance indicators (KPIs), financial statements, project status, procurement summaries, and water resource management metrics.

- Ad-hoc analysis: Tools and functionalities to generate custom reports and perform on-demand data analysis.

- Visualization tools: Incorporation of data visualization techniques, such as charts, graphs, and maps, to facilitate data interpretation and decision-making.

- Key performance indicators (KPIs) and metrics: Identify and track key performance indicators and metrics related to water and energy resource management modules and any other relevant module(s).

**8. Capacity Building:**

- Training plan: Propose a comprehensive capacity building plan to ensure relevant staff members are proficient in using the ERP system effectively.

- Training sessions: Conduct training programs for relevant staff members, covering system usage, data entry, reporting, and analysis.

- User manuals: Develop user-friendly manuals and guides to serve as references for system functionalities, processes and troubleshooting.

- Technical support: Establish provisions for ongoing technical support, including help desk services and regular system updates.

**9. Timeline:**

The development, testing, and implementation of the ERP system should adhere to the following timeline:

|  |  |  |
| --- | --- | --- |
| Name | Description | Duration |
| Phase 1 | System requirements gathering and analysis | 1 week |
| Phase 2 | System development, customization and data collection (boreholes, shallow wells, barkads)- |  3 weeks |
| Phase 3 | Testing and quality assurance | 2 weeks |
| Phase 4 | Implementation and user training | 1 month |
| Phase 5 | Post-implementation review and adjustments | 1 month |

Specific milestones and deadlines should be established for each phase of the project.

**10. Budget:**

The budget estimate for the development and implementation of the ERP system should cover the following aspects:

- System development and customization

- Hardware: Cost of servers, storage devices, networking equipment, and related infrastructure.

- Software: Cloud storage fee, Licensing fees, customization costs, and software maintenance expenses and internet fee.

- Training: Expenses associated with training sessions, user manuals, and capacity building activities.

- Ongoing maintenance: Estimated costs for ongoing technical support, software updates, and system maintenance.

- Funding source: Identify the source of funding for the project and any potential fundraising activities to secure additional resources if needed.

**11. Evaluation and Monitoring:**

To ensure the effectiveness of the ERP system and monitor its performance, the following mechanisms should be implemented:

Evaluation: Define evaluation criteria to assess the system's performance against the stated objectives.

Monitoring: Establish a monitoring framework to track system usage, data quality, user satisfaction and compliance with data management protocols.

Review and feedback process: Propose a periodic review process to address identified issues, incorporate user feedback, and make necessary improvements to the ERP system to ensure it meets evolving requirements.

By adhering to these Terms of Reference, MOEWR aims to develop and implement an ERP system that will enhance its capacity to manage water and energy resources effectively, support data-driven decision-making, and improve the overall efficiency and accountability of its operations. This ultimately leading to improved efficiency and effectiveness in the management of water and energy resources in Jubaland State of Somalia.