

TERMS OF REFERENCE FOR INDIVIDUAL CONSULTANTS AND CONTRACTORS

Title	Funding Code	Type of engagement	Duty Station:
National Consultancy for the Rollout of the Citizen Budget Monitoring and Reporting System	N/A	Individual Consultant	Phnom Penh, Cambodia

Purpose of Activity/Assignment:

Active citizen participation in local planning and budgeting processes is crucial for ensuring efficient and effective responses to the needs of citizens and fostering community development. Civic engagement brings diverse perspectives and ideas, enabling communities to influence decision-making. It promotes transparency and accountability in governance, making it more responsive to the needs and aspirations of the people it serves. Encouraging and facilitating citizen participation in local planning and budgeting fosters a sense of ownership and responsibility among community members.

Building on Sub-Decree #26 on Commune/Sangkat Financial Management System and MEF Prakas #331 on the preparation and implementation of commune/Sangkat budgets, in 2020-2021, UNICEF provided technical support to the Department of District, Municipality, Commune, and Sangkat Administrative Affairs (DDMCS) of the General Department of Administration (GDA) of the Ministry of Interior to develop guideline for citizen budget and participation in commune/sangkat budget formulation and adoption process. This support led to the adoption and dissemination of Guideline #025 on Citizen Participation in the Commune/Sangkat Budget Formulation and Adoption Process. The intervention aimed to strengthen mechanisms that legally allow citizens, especially youth, to participate in commune budget formulation and adoption, resulting in higher transparency and accountability. The guideline was also included in MEF Prakas 180 dated 03 April 2023 on Implementing Commune/Sangkat PFM Guideline. A set of tools was developed to assist Commune/Sangkat in implementing the guideline, including a comprehensive timeline for budget planning and adoption, a citizen budget template for dissemination and consultation, and an instructional video.

To monitor the implementation of the citizen budget implementation at the ground an, application based survey tool was developed and tested with commune/Sangkat and capital/provincial administrations. The current deployed survey tool encompasses approximately 150 questionnaire’s items that stratified in 3 major sections, i) planning and budgeting process, ii) budget information, and iii) other personnel information. The dashboard was also developed to report on the process and budget information using the data collected from the survey tool. The dashboard should offer seamless filtering interaction with all collected data, prioritizing a user-friendly and functional design. Additionally, it should ensure compatibility with modern web browsers, including Microsoft Edge, Chrome, and other up-to-date options. A user-friendly web interface should be developed for MIS and Sys Admin users. This interface will allow them to easily navigate, explore and filter collected data, with the option to export it in Excel format.

The survey tool was developed with distinctive roles assigned to national and sub-national users. At central level, the Ministry of Interior (MoI) administers the entire system, including managing access of users at sub-national levels. All commune/Sangkat nationwide (1652 CS) are end users who input data into the survey tool, while the 25 Capital/provincial administration (CPA) validate the information input by the CS within their jurisdiction.

Before rolling out at national scale, both survey tool and dashboard need further enhancement to optimize their functionality, user friendliness, data and system security, data retrieval and exporting. The enhancement is also required to align with latest development of guideline on social service components, national gazetteer, and suggestion for adjustment from field testing, including reporting requirement.

Objective

The purpose of this assignment is to enhance the efficiency and accuracy of the current citizen budget monitoring and reporting system in UNICEF support to MoI for national rolling out of the survey tool and public access to the dashboard. Specific objectives of the assignment includes:

- In consultation with UNICEF and MoI, review the existing system to determine the gaps related to the system functionalities, security and data and user management, user friendliness including adding the responsiveness to device screen sizes, redesign and normalize the database to allow dynamic management of CS Budget Questionnaire, adding a RESTful API layer to facilitate data exchange and prepare plan for enhancement.
- Upgrade, test and deploy a robust, standardized mobile app (IOS and Android) and web-based survey tool and citizen budget dashboard, MIS and User Admin web interface in consultation with MoI, UNICEF and end users at sub-national level.
- Build capacity of system administrator at central level, and sub-national end users. This includes providing training to ensure successful adoption and optimal utilization of the citizen budget monitoring and reporting system including system administration and maintenance.
- Provide post-deployment technical support, maintenance and documentation of the citizen budget monitoring and reporting system.

Scope of Work:

The consultancy's area of work involves:

- Providing IT assistance to MoI in assessing the requirements for the enhancement of current monitoring system,
- Performing the update of current survey tool (android and iOS), and development of web-based survey tool.
- Enhancement of reporting dashboard, and
- Building the capacity of the system administrator of MoI as well as providing technical backstopping in the cascade training to 25 capital provinces, and 1652 commune/Sangkat, and v)
- Post-deployment technical support.

Key assignments of the consultancy include:

- Develop workplan of the updating of survey tool application (iOS and android), development of web base survey tool, and dashboard enhancement.
- Implement workplan on the update of application-based survey tool (iOS and android), built on which develop web-based survey tool, and monitoring dashboard. The consultant will perform the restructuring of the existing project's database schema to increase its flexibility and maintainability. The new structure should avoid hardcoding questions as database columns and instead use a relational database structure. This structure should include separate tables for storing questions, questionnaires, and responses, linked through unique identifiers. This will allow for flexibility in modifications to the questionnaires, including adding, removing, or updating questions, without requiring changes to the database schema. The developer should also provide an intuitive and user-friendly front-end interface for managing the questionnaires and responses.

- Ensure Data and information collected from the survey tool are processed and feed into dashboard. Two features of the dashboard will be developed or modified.
- During data collection period: the dashboard for internal monitoring keeps track on the progress of responses received from commune/Sangkat, and the validation from capital/provincial administration.
- Upon the completion of the survey: the dashboard for public access present results on various indicators related to timeline of budget preparation and approval and citizen engagement, budget by major components, projects, and activities and other relevant indicators.
- Update user guidelines and system architecture for the mobile /App and wed-based system
- Provide training to Mol's system administrators and technical backstopping to cascade training of 25 CPAs and 1652 commune/Sangkat users.
- Provide technical backstopping and troubleshooting to ensure the smooth and effective rolling out the survey and data management and dashboard reporting.

The envisioned functionalities of the CS Budget monitoring should include:

1. **User Management:** The system should have different levels of access with role-based permissions, allowing users to perform only the tasks for which they are authorized.
2. **Data Management:** The system should capture and store data on all Commune/Sangkat survey budgets, distribution, and reporting. The data should be readily accessible and downloadable through a user-friendly web interface. Additionally, it should be easily filterable by key filter options and exportable to Excel format for further analysis. The developed system should enable data classification by production and testing modes. This functionality allows users to seamlessly switch between working with live data (production mode) and test data (testing mode).
3. **Reporting:** The system should enable the generation of reports on all aspects of Commune/Sangkat budgets, distribution, and other relevant metrics at different aggregation and disaggregation levels.

The web-interface, data warehouse, and dashboard should enhance the overall efficiency and effectiveness of data management and reporting. Key objectives include:

1. **Improve Data Accuracy:** Eliminate manual data entry errors through automated data capture and storage, ensuring more reliable and precise data.
2. **Real-Time Information Access:** Provide real-time information, filterable by options, collected by the survey tool for system administrators. This enables tracking of response rates from the 1652 Communes/Sangkats (CS), verification status performed by the Commune Planning Authorities (CPA), and quality control processes.
3. **Streamlined Reporting and Monitoring:** Streamline the reporting and monitoring of Commune/Sangkat budgets, facilitating transparency and accountability at the sub-national level. This includes automating data aggregation and generating comprehensive reports for stakeholders.
4. **Dashboard for Budget Visualization:** Develop a dedicated dashboard for visualizing the allocation and utilization of Commune/Sangkat budgets. This dashboard should be integrated into the routine system, providing intuitive visual representations of budget data, filterable by options, to support informed decision-making.
5. **User-Friendly Interface:** Ensure the web-interface is user-friendly and accessible, allowing users to easily navigate and interact with the system for data entry, reporting, and analysis.
6. **Enhanced Data Security and Compliance:** Implement robust data security measures to protect sensitive information and ensure compliance with relevant data protection regulations.
7. **Customizable Reporting Features:** Include customizable reporting features that allow users to generate specific reports tailored to their needs, enhancing the utility of the data warehouse and dashboard.

8. **Scalability and Flexibility:** Design the system to be scalable and flexible, accommodating future growth and changes in data management needs without significant overhauls.

To complement these functional requirements, the following non-functional requirements will be prioritized:

1. **Fast and Responsive System Performance:** Ensure the system can handle large datasets, simultaneous user interactions, and transactions efficiently. Rapid data retrieval and processing capabilities are essential for real-time decision-making.
2. **Scalability:** Design the system to manage increasing data volumes and user demands without significant performance reduction. Support both horizontal and vertical scaling to facilitate future growth and ensure the system remains robust as it expands.
3. **Robust Mobile Application with Secure Offline Data Storage:** Develop a mobile application incorporating a secure offline data store to ensure critical data remains accessible even in situations with limited or no internet connectivity. Encrypt the data and leverage the device's secure enclave (if available) to significantly reduce the risk of unauthorized access in the event of a device compromise.
4. **Reliability:** Ensure high system uptime and data integrity, minimizing downtime and data loss through reliable infrastructure and robust error-handling mechanisms.
5. **Compliance with Data Protection Regulations and Privacy Requirements:** Implement strong protections against unauthorized access, data breaches, and cyber threats. Use role-based access control, user authentication mechanisms, and encryption to comply with data protection regulations and privacy requirements.
6. **Intuitive and User-Friendly Interface Design:** Design a user-friendly interface with responsive design principles to ensure accessibility across multiple devices, including desktops, tablets, and smartphones. Focus on ease of use and user experience.
7. **Cross-Platform Compatibility:** Ensure compatibility with Windows, macOS, Linux, and popular web browsers (Chrome, Firefox, Safari, Microsoft Edge). The system should integrate seamlessly with commonly used hardware devices (e.g., barcode scanners, printers).
8. **Interoperability:** Support different databases and data formats, ensuring industry-standard communication protocols and data exchange formats are used. This enables seamless integration with third-party systems and APIs.
9. **Multilingual Support and Localization:** Provide support for multiple languages and localize date and time formats, currency symbols, and other user preferences to cater to a diverse user base.
10. **Comprehensive Documentation:** Maintain well-documented source code and provide comprehensive system documentation to facilitate maintenance, troubleshooting, and future development.
11. **Version Control and Change Management:** Implement robust version control and change management processes to ensure systematic tracking of changes, maintaining the integrity and stability of the system throughout its lifecycle.

Child Safeguarding

Is this project/assignment considered as "[Elevated Risk Role](#)" from a child safeguarding perspective?

YES NO If YES, check all that apply:

Direct contact role YES NO

If yes, please indicate the number of hours/months of direct interpersonal contact with children, or work in their immediately physical proximity, with limited supervision by a more senior member of personnel:

Child data role YES NO

If yes, please indicate the number of hours/months of manipulating or transmitting personal-identifiable information of children (name, national ID, location data, photos):

More information is available in the [Child Safeguarding SharePoint](#) and [Child Safeguarding FAQs and Updates](#)

Included in Annual/Rolling Workplan: Yes No, please justify:

Consultant sourcing:

National International

Competitive Selection:

Advertisement Single Source Selection

Emergency - Director's approval

Request for:

Individual Contract

Supervisor:

Chea Kimsong

Start Date:

Aug 01, 2024

End Date:

Aug 30, 2025

<u>Requirements gathering.</u>	Deliverables/Outputs	Number of working days & Delivery deadline	Estimated budget
<u>Requirement gathering, documentation and approval.</u> <ul style="list-style-type: none"> • Review documentation user guide, system architecture, technical instruction of current mobile application and system. • Consult with MoI, UNICEF, MEF-GDSNAF and sub-national administration at all levels to validate functionality needs of the survey tool and dashboard. • Comprehend the requirements of the citizen budget guideline and the enabling environment needs. • Assess system requirements as well as the business process and workflow analysis. 	Deliverable 1: <ul style="list-style-type: none"> • Assessment report on gap and requirement for business and system (functional and non-functional) enhancement and development. • Detailed workplan entailing the timeline key milestones. 	10 days Aug 20, 2024	8%
<u>System update/development and deployment</u> <ul style="list-style-type: none"> • Based on the requirement analysis modify the mobile app (android and IOS), and replicate the function in web-based survey tool, and modify the system architecture and database structure • Design an intuitive and user-friendly dashboard interface that allows the query of indicators of interest of the latest years and previous years. • Create customizable modules for Commune/Sangkat budget management, reporting, and analytics. • Enable multi-user access with appropriate role-based permissions. • Implementation report on data storage and export functionalities. • Incorporate standard-based protocols and formats for data exchange and integration. • Implement robust security measures to safeguard data integrity and confidentiality. 	Deliverable 2: <ul style="list-style-type: none"> • Report on update changes in mobile app, and web-based system ensuring that updates are clearly described and well documented. • User friendly manual on mobile app and web-based including step by step instruction on how to use the mobile app, and web-based survey tool • Presentation or demo showcasing the dashboard features and capabilities. • User guide on data storage and extraction export data into suitable formats such as Excel. • Test cases and results demonstrating successful data export and retrieval. 	30 days Oct 11, 2024	24%

<p>Testing and Quality Assurance</p> <ul style="list-style-type: none"> • Conduct comprehensive testing and user feedback to ensure system functionality, performance, and usability. • Identify and resolve any bugs or issues through rigorous quality assurance processes. • Validate data accuracy and integrity across various stages of the Commune/Sangkat budget survey process. <p>Deployment and Implementation</p> <ul style="list-style-type: none"> • Plan and execute the system deployment strategy, considering organizational requirements and constraints. • Coordinate with relevant stakeholders to ensure a smooth transition from existing systems, if applicable. • Migrate data from legacy systems, ensuring data integrity and completeness. • Conduct post-implementation assessments and fine-tuning to optimize system performance. 			
<p><u>Training and technical backstopping</u></p> <p>Training support on the rolling out of citizen budget survey</p> <ul style="list-style-type: none"> • Develop user manuals and training materials for system administrators and end-users. • Conduct training sessions to Mol’s system administrators and cascade training to 25 CPAS and 1652 commune/Sangkat users. • Provide technical support to Mol during the rolling of data collection, address user inquiries and concerns. <p>Dashboard and technical backstopping</p> <ul style="list-style-type: none"> • Build a fully functional dashboard with agreed-upon indicators for visualization of current year and 	<p>Deliverable 3:</p> <ul style="list-style-type: none"> • Report on 2024 trainings completion, including key issues, solutions, and evaluation from participants. • Monthly progress report on backstopping and trouble shooting. • User manual for the dashboard, including instructions on how to interpret the visualizations. • Documentation of the system architecture, API development, and trouble shooting. 	<p>30 days (including 5 days field trip) Dec 10, 2024</p>	<p>26%</p>

<p>previous years for comparison purposes.</p> <ul style="list-style-type: none"> • Develop functions enabling data storage and export in suitable formats such as Excel and CSV. • Document The APIs process of the monitoring system, • Gather and resolve troubleshooting encountered during the implementation and coaching Mol administrator team on trouble shooting 			
<p><u>Technical backstopping and trouble shooting</u></p> <ul style="list-style-type: none"> • Support national data collection and dashboard reporting of for 2024 and 2025 citizen budget survey • Monitor the application post-release to ensure optimal functionality and running on secure hosting infrastructure. • Maintenance system regularly includes upgrading/updating security vulnerabilities and making necessary feature enhancements. 	<p>Deliverable 4:</p> <ul style="list-style-type: none"> • Monthly Monitoring and Maintenance Reports entailing system enhancement, trouble shooting and security update. • Update on user manual, system architecture, security guidelines, and code repository management. 	<p>25 days (including 5 days field trip) April 20 2025</p>	<p>22%</p>
<p><u>System maintenance and hand-over</u></p> <ul style="list-style-type: none"> • Conduct refresher trainings for IT team of Mol on operation of the systems and trouble shooting. • Review and update of all technical issues related to the Mobile/App and web-base monitoring system architecture and manuals, and the final update of the Dashboard. • Prepare hand-over notes 	<p>Deliverable 5:</p> <ul style="list-style-type: none"> • Final report of the consultancy activities, including system maintenance tasks performed, challenges encountered, solutions implemented and recommendations for future maintenance and enhancement of the system to ensure long-term sustainability and effectiveness. • Final hand-over notes including update of all relevant manual, system architecture, GitHub repository of codes handed over to Mol. 	<p>25 days Aug 30 2025</p>	<p>20%</p>

	<ul style="list-style-type: none"> • Presentation of the hand-over to Mol and joint working team 		
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Minimum Qualifications required:	Knowledge/Expertise/Skills required:
<p><input checked="" type="checkbox"/> Bachelors <input type="checkbox"/> Masters <input type="checkbox"/> PhD <input type="checkbox"/> Other</p> <ul style="list-style-type: none"> • Educational Background: <ul style="list-style-type: none"> • University degree in Information Technology, Computer Science, Software Engineering, or a related field. • Professional Experience: <ul style="list-style-type: none"> • At least 2 years of professional experience in open-source web-based and mobile application technologies development and implementation. • Project Management: <ul style="list-style-type: none"> • Demonstrated experience in managing small to medium scale IT projects, including planning, execution, monitoring, and closing phases. • Experience working with government institutions or international organizations in developing countries on similar projects. 	<p>Technical Skills:</p> <ul style="list-style-type: none"> • Methodological Skills: <ul style="list-style-type: none"> • Needs Assessment: Expertise in conducting comprehensive needs assessments and stakeholder analyses to ensure the system is tailored to the specific context and requirements of the users. • System Design: Proficiency in designing user-centric systems that are accessible and intuitive for a diverse user base, including non-technical users. • Training and Capacity Building: Proven experience in developing and delivering effective training programs to enhance the capacity of government officials and citizens in using the system proficiently. • Web Development: <ul style="list-style-type: none"> • Proficiency in HTML, CSS, JavaScript, and frameworks/libraries such as React, Angular, or Vue.js. Proficiency in flutter will be an advantage. • Backend development experience with Node.js, Django, Ruby on Rails, or similar technologies. • Database management skills with SQL (MySQL, PostgreSQL) and NoSQL (MongoDB) databases. • Experience with RESTful APIs and GraphQL. • Mobile Application Development: <ul style="list-style-type: none"> • Proficiency in developing mobile applications using frameworks like React Native, Flutter, or Xamarin. • Native iOS development using Swift and Objective-C.

	<ul style="list-style-type: none"> • Native Android development using Kotlin and Java. • Data Engineering: <ul style="list-style-type: none"> • Demonstrated skill in data engineering, including ETL processes, data warehousing, and working with big data technologies like Hadoop and Spark. • Cloud Services: <ul style="list-style-type: none"> • Experience with cloud platforms such as AWS, Azure, or Google Cloud for hosting and deploying applications. • DevOps: <ul style="list-style-type: none"> • Knowledge of CI/CD pipelines, containerization (Docker), and orchestration (Kubernetes). • Familiarity with version control systems like Git. • Frameworks and Tools: <ul style="list-style-type: none"> • Experience with mobile app development frameworks such as React Native, Flutter, or Xamarin. • Familiarity with native development tools and environments like Xcode for iOS and Android Studio for Android. • Additional Skills: <ul style="list-style-type: none"> • Strong skills in data visualization and analytics tools such as Power BI or Tableau. • Knowledge of cybersecurity principles and practices to ensure secure application development. • Strong problem-solving and analytical skills. • Excellent communication and collaboration skills to work effectively in team environments.
<p>Submission of applications:</p> <ul style="list-style-type: none"> ▪ Letter of Interest (cover letter) ▪ CV or Resume ▪ Performance evaluation reports or references of similar consultancy assignments (if available) ▪ Financial proposal: All-inclusive lump-sum cost including travel and accommodation cost for this assignment as per work assignment. 	
<p>Evaluation Criteria (This will be used for the Selection Report (for clarification see Guidance))</p>	

A) Technical Evaluation (100 Points)

- Relevant educational background (20 points)
- Relevant skill and experience (30 points)
- Proven experience on complex database structures, cloud infrastructure, web, mobile and API software development framework (50 points)

B) Financial Proposal (100 Points)

The maximum number of points shall be allotted to the lowest Financial Proposal that is opened /evaluated and compared among those technical qualified candidates who have attained a minimum 70 points score in the technical evaluation. Other Financial Proposals will receive points in inverse proportion to the lowest price.

The Contract shall be awarded to candidate obtaining the highest combined technical and financial scores, subject to the satisfactory result of the verification interview.

Administrative details:

Visa assistance required:

Home Based (50%) Office Based (50%) at MoI

If office based, seating arrangement identified:

IT and Communication equipment required:

Internet access required:

¹ Costs indicated are estimated. Final rate shall follow the “best value for money” principle, i.e., achieving the desired outcome at the lowest possible fee. Consultants will be asked to stipulate all-inclusive fees, including lump sum travel and subsistence costs, as applicable.

Payment of professional fees will be based on submission of agreed deliverables. UNICEF reserves the right to withhold payment in case the deliverables submitted are not up to the required standard or in case of delays in submitting the deliverables on the part of the consultant

Text to be added to all TORs:

Individuals engaged under a consultancy or individual contract will not be considered “staff members” under the Staff Regulations and Rules of the United Nations and UNICEF’s policies and procedures and will not be entitled to benefits provided therein (such as leave entitlements and medical insurance coverage). Their conditions of service will be governed by their contract and the General Conditions of Contracts for the Services of Consultants and Individual Contractors. Consultants and individual contractors are responsible for determining their tax liabilities and for the payment of any taxes and/or duties, in accordance with local or other applicable laws.

The selected candidate is solely responsible to ensure that the visa (applicable) and health insurance required to perform the duties of the contract are valid for the entire period of the contract. Selected candidates are subject to confirmation of fully-vaccinated status against SARS-CoV-2 (Covid-19) with a World Health Organization (WHO)-endorsed vaccine, which must be met prior to taking up the assignment. It does not apply to consultants who will work remotely and are not expected to work on or visit UNICEF premises, programme delivery locations or directly interact with communities UNICEF works with, nor to travel to perform functions for UNICEF for the duration of their consultancy contracts.

UNICEF offers [reasonable accommodation](#) for consultants with disabilities. This may include, for example, accessible software, travel assistance for missions or personal attendants. We encourage you to disclose your disability during your application in case you need reasonable accommodation during the selection process and afterwards in your assignment