



TERMS OF REFERENCE (TOR):

Web Developer for the design and development of an interactive web application:
“Knowledge Management Platform for the Small-Scale Gold Mining Sector”

Project Title	GEF GOLD Philippines: “Contribution towards the elimination of mercury in the artisanal and small-scale gold mining (ASGM) sector: from miners to refiners”
Contract Duration	Twenty-one (21) Weeks
Duty Station	Metro Manila, Philippines
Salary	Will be determined by experience and qualifications and paid in local currency
Application Deadline	Open until filled

BACKGROUND

Based in Victoria, Canada, the Artisanal Gold Council (AGC) is a not-for-profit organization dedicated to improving the working conditions, opportunities, environment, and health of the millions of people involved in artisanal and small-scale gold mining (ASGM) in the developing world. The AGC helps to improve the global gold sector by promoting better practices in ASGM through technology transfer, policy development, and awareness-raising (for more information about the AGC and its projects, please visit www.artisanalgold.org).

The AGC serves as the Executing Agency for the Global Environment Facility-supported programme in Mongolia and the Philippines entitled “Global Opportunities for the Long-term Development of the ASGM sector” or planetGOLD—designed to address the key issues linked to continued mercury use and provide sustainable development opportunities for the communities involved. The project has four components which collectively aim to contribute towards the elimination of mercury in the ASGM sector by applying a supply chain approach from the miners to refiners. The United Nations Environment Programme is implementing components (1) formalization, (2) finance and market access, and (4) knowledge management; while the United Nations Industrial Development Office is responsible for component 3 on technology transfer.

In partnership with the Philippines’ Department of Environment and Natural Resources (DENR), the project is expected to demonstrate the following: 1) government incentives to formalize the ASGM sector in the country are increasingly adopted by miners; 2) national governments are guiding the creation of ASGM fund to allow miners to invest in mercury-free technologies and access responsible gold markets; miners are able to sell their gold directly into a transparent supply chain; 3) reduced mercury releases by the ASGM sector in both countries; and, 4) ASGM communities and the government agreeing on an approach to reach all ASGM communities in each country.

RATIONALE

Republic Act (RA) No. 7076, known as “The People’s Small Scale Mining Act of 1991”, declares the Philippine government’s responsibility to promote, develop, protect, and rationalize viable small-scale mining (SSM) activities to generate more employment opportunities and provide an equitable sharing of the nation’s wealth and natural resources. The policy provides for the declaration of People’s Small Scale Mining areas or Minahang Bayan, registration of small-scale miners, awarding of SSM contracts and mineral processing licenses, the mandatory selling of SSM gold to the government, and taxation of SSM gold sales, among others. It also recognizes the roles and responsibilities of different government agencies with regulatory

functions over the sector such as the DENR, the Mines and Geosciences Bureau (MGB), the Bangko Sentral ng Pilipinas (BSP), the Provincial/City Mining Regulatory Boards (P/CMRB), and the local government units (LGU) having jurisdiction over the mining areas. To provide procedural guidelines related to RA 7076, the DENR issued [Department Administrative Order \(DAO\) 2015-03](#) as the implementing rules and regulations for the policy. This was further revised through recently-issued [DAO 2022-03](#).

In 2021, the AGC conducted a Contextual Study to provide baseline data for the [planetGOLD Philippines](#) project. The research focused on the knowledge, attitudes, and practices of the SSM communities in its two project sites—Sagada, Mt. Province and Paracale, Camarines Norte. Representatives from the SSM communities, national and local government units, civil society organizations, and the private sector participated in the study through survey questionnaires, key informant interviews, and focus group discussions.

Based on the results, a number of challenges have been identified across sectors in terms of formalization: difficulties in enforcement and monitoring of policies; lack of technical capacities of the miners; lack of technical assistance from the government in formalization processes; low awareness on formalization requirements and procedures; and, low acceptability and/or appreciation of non-SSM stakeholders on SSM as a livelihood and a driver for economic development.

As the project aims to ensure that government programs are aligned with the needs and capacities of the SSM communities, it intends to establish an interactive knowledge management (KM) platform for SSM stakeholders. It is envisioned to be a one-stop shop where miners can engage and facilitate applications with relevant government agencies and to be a platform of accessing news and information related to the SSM sector.

To achieve these objectives, the AGC is looking for a **WEB DEVELOPER for the Design and Development of an Interactive Knowledge Management Platform for Small-Scale Mining Stakeholders** based on the proposed features and specifications identified by the AGC and MGB.

OBJECTIVES

General objective: To develop a web application which will provide a platform for small-scale gold miners and government agencies to interact, facilitate, and monitor applications.

Specific objectives:

- To provide reliable and up-to-date information on the SSM sector including open and machine-readable datasets, news, policies and issuances, MGB services, training materials, downloadable forms, directories, among others;
- To establish a platform where miners can input and submit SSM-related transactions such as miners' registration, Minahang Bayan petitions, SSM Contract (SSMC) applications, and Mineral Processing License (MPL) applications;
- To increase efficiency in facilitating SSM-related transactions through automation, digitization, and streamlining of processes across government agencies handling such transactions;
- To provide an avenue for collaboration among government offices through an online community of practice;
- To address the gaps between small-scale miners and government regulatory bodies through an online help desk;
- To provide a platform for generation of maps related to the SSM sector; and,
- To establish a one-stop shop for small-scale miners with links to other government agencies with mandates related to the SSM sector.

DEFINITION OF TERMS

- **System Administrator** shall refer to the Planning, Policy, and International Affairs Division-Information Systems Group (PPIAD-ISG) of MGB who will be responsible for the maintenance of the web application and its database system.
- **End-User** shall refer to MGB Mining Technology Division and the PPIAD-ISG.
- **Project** shall refer to the development and design of the web application.
- **Project Consultant** shall refer to the Consultant/Consulting Firm who will develop the web application.
- **Project Team** shall refer to the AGC, MGB, and the Project Consultant.
- **Services** shall refer to the enumerated tasks and deliverables identified in this TOR.
- **Web Application** shall refer to the Interactive Knowledge Management Platform for Small-Scale Mining Stakeholders which the planetGOLD Philippines aims to develop based on the proposed features and specifications identified by AGC and MGB.

OPERATIONAL CONCEPT

The web application must have the following general features:

1. Publicly available SSM information, such as:
 - a. news and updates on SSM-related activities;
 - b. policies and issuances on SSM;
 - c. publications and training materials;
 - d. downloadable and editable SSM forms;
 - e. frequently asked questions;
 - f. datasets in open and machine-readable formats such as declared Minahang Bayan areas, SSMCs, MPLs, gold production statistics, among others;
 - g. SSM infographics and information, education, and communication materials;
 - h. SSM-related maps such as geohazard and geological maps;
 - i. MGB services such as fire assays, metallurgical tests, geological and geohazard assessments;
 - j. links to other government agencies connected to SSM;
 - k. directory of offices: MGB, P/CMRBs, LGUs; and,
 - l. demonstration video on how to use the platform.
2. Online help desk:
 - a. submission of queries to concerned offices (MGB Central and Regional Offices);
3. Platform for maps generation related to SSM and compatibility of mapping data (coordinates, etc.) with the existing mapping software of MGB (e.g., ArcGIS);
4. Registration and login, with email verification, for the following users:
 - a. Small-scale miners;
 - b. MGB Regional Offices; and,
 - c. MGB Central Office.
5. Small-scale miners dashboard:
 - a. Online registration:
 - i. automated form accomplishment and submission;
 - ii. platform for uploading documents and photos;
 - iii. email notification for updates;
 - b. Online submission of applications for Minahang Bayan, SSMCs, and MPLs:
 - i. automated form accomplishment and submission;
 - ii. platform for uploading documents and photos;
 - iii. email notification for updates;
 - c. Online submission of monitoring reports related to SSMCs, permits, and licenses:
 - i. automated form accomplishment and submission;

- ii. platform for uploading documents and photos;
 - iii. email notification for updates;
- 6. MGB Regional Office dashboard:
 - a. Online facilitation of miners registration:
 - i. email notification for acknowledgment of receipt;
 - ii. platform for uploading documents and photos;
 - iii. sending of feedback and comments to registration documents;
 - iv. automated license generation;
 - b. Online facilitation of applications and monitoring reports:
 - i. email notification for acknowledgment of receipt of applications and reports;
 - ii. platform for uploading documents and photos;
 - iii. sending of feedback and comments to applications and reports;
 - iv. automated report generation;
 - c. Online facilitation of help desk concerns:
 - i. email notification for acknowledgment of receipt of tickets;
 - ii. platform for uploading documents and photos;
 - iii. reply feature;
 - iv. opening and closing of tickets;
- 7. Community of practice for SSM regulatory bodies:
 - a. Posting of topics which may include questions, best practices, challenges;
 - b. Reply feature;
- 8. MGB Central Office dashboard: MGB-MTD:
 - a. Online facilitation of applications and monitoring reports:
 - i. email notification for acknowledgment of receipt of applications and reports;
 - ii. platform for uploading documents and photos;
 - iii. sending of feedback and comments to applications and reports;
 - iv. automated report generation;
 - b. Monitoring dashboard for transactions with MGB Regional offices;
 - c. Online facilitation of help desk concerns:
 - i. email notification for acknowledgment of receipt of tickets;
 - ii. platform for uploading documents and photos;
 - iii. reply feature;
 - iv. opening and closing of tickets;
 - d. Moderation of community of practice;
 - e. Graphical view and report generation of statistical data vital for decision making.
- 9. MGB Central Office dashboard: MGB-PPIAD ISG:
 - a. Access to all features of the web application; and
 - b. System interface with administrator access to all database tables with create, read, update, delete functionality.
- 10. MGB Central Office dashboard: Management:
 - a. Graphical view and report generation of statistical data vital for decision making.
- 11. Links to other relevant government agencies, such as:
 - a. DENR Environmental Management Bureau;
 - b. Department of Labor and Employment;
 - c. Department of Trade and Industry;
 - d. Cooperative Development Authority;
 - e. Securities and Exchange Commission;
 - f. Social Security System;
 - g. Bangko Sentral ng Pilipinas;
 - h. Freedom of Information Philippines; and,
 - i. Department of Information and Communications Technology (DICT).

SCOPE OF WORK

The Project Consultant shall render the following professional services:

- **Conceptualization:**
 - Participate in the planning session with the project team to understand the overall project objectives and expectations, and collaborate on the features of the web application.
 - Develop and present the final work and financial plan and design concept to the project team.
- **Platform hosting:**
 - Ensure full compatibility of the web application with the existing hardware of MGB.
- **Web application development:**
 - Development of web application with custom-made functions and features linked to existing content management system of MGB, using the following programming languages:
 - Front-End: .net
 - Back-End: VB/C#
 - Database: MSSql
 - Ensure full compatibility with the national guidelines of government websites established by the DICT.
 - Adapt a modular development approach.
 - Ensure compatibility with mobile devices.
 - Develop a database system complemented with a centralized dashboard for collecting, storing, and real time updating.
 - Adapt standard and latest CSS and graphic design elements, create as needed.
 - Optimize the web application for low bandwidth users.
 - Quality-test and troubleshoot the web application in various browsers.
 - Data migration of existing information as identified by the MGB.
- **Support and maintenance:**
 - Provide central administration access and list of all user level access of all features identified by the team.
 - Administrative and technical support, quality control during development—remote, 24/7 and onsite as needed.
 - Create an automated testing system that checks for broken hyperlinks on the web application.
 - Create a script that will automatically create a back-up of the web application and the database on a regular basis agreed with the MGB.
 - Provide detailed reports and documentation as indicated in the deliverables.
 - Perform site testing before going live, such as but not limited to the following:
 - Functional testing
 - Usability testing
 - Interface testing
 - Database testing
 - Compatibility testing
 - Speed/Performance testing
 - Security testing
 - Accessibility testing
 - Lead the platform's launch and provide assistance for any bugs encountered during the activity.
- **Turnover:**

- Develop a user manual and conduct training for the support staff and system administrators to perform content upload, system maintenance, and administration.
- Present the final system prior to launching.
- Maintain full backup of the web application throughout the duration of the contract. The backup, code, and source files will be delivered in full to AGC and MGB on closing of the contract.
- Administrative and technical support after system acceptance, for a period of six (6) months, free of charge.

DELIVERABLES AND TIMELINES

The consultancy is output-based and will be on fixed payment terms. The deliverables should be completed within 21 weeks, with the following milestones and deliverables:

ACTIVITIES	DEADLINE
PRE-DEVELOPMENT	
Work and Financial Plan	Week 1
1. Final Scope of Work	
2. Final Timeline	
3. Cost Breakdown	
Design Concept	Week 2-3
4. Conceptual Framework	
5. Interface Design	
6. Process Flow Diagram	
Presentation of Work and Financial Plan and Design Concept	Week 3
DEVELOPMENT	
Database Development	Week 4 - 9
7. Database Documentation	
a. Data Flow Diagram	
b. Database Structure (with field parameters)	
c. Database Diagram (with data relationships)	
d. Stored Procedures/Views (if applicable)	
8. Functioning User Interfaces	
a. System User Interface	

9. System Report Generator	
a. Raw File Extractor	
b. Templated Reports	
c. Dashboard	
10. System Development Progress Report (updated regularly)	
DATA MIGRATION	
11. Data Migration Progress Report	Week 10 - 11
TESTING	
12. System Testing Report	Week 12 -13
POST DEVELOPMENT	
Report based on the Vulnerability Assessment of DICT	Week 14
Training	Week 15
13. Final Presentation	
14. System User Manual (maybe adjusted as needed)	
15. Platform Launch and Training Workshop	
Parallel-Run	Week 16 - 19
16. System Feedback Report	
17. System Implementation Final Report	
Quality Control	Week 20 - 21
18. Quality Control Report	
Turn-over	
19. Source Code	
20. Final User Manual	
21. System Documentation	
22. System Acceptance	

NOTE: Timeline is subject to change depending on the initial meeting/agreement with the project team and progress of each phase. This will be updated monthly.

RESPONSIBILITIES OF PARTIES

The **Project Consultant** is expected to:

1. Coordinate directly with the AGC and MGB in terms of project requirements, timelines, and deliverables;
2. Ensure timely delivery of deliverables as indicated in this TOR;
3. Lead the User Acceptance Training and Training of Trainers and other knowledge transfers indicated in this TOR;
4. Turn over the full system documentation and source code upon completion and acceptance of the project;

The **MGB** is expected to:

1. Collaborate on the web application development and design process through the Technical Working Group for the platform;
2. Ensure the availability of required hardware (servers for deployment of the application) and hosting services;
3. Facilitate and organize the participation of the end-users in the knowledge transfer activities;
4. Develop an implementation policy for the web application;
5. Coordinate with the Department of Information and Communications Technology for the integration of web application security;

The **AGC** is expected to:

1. Actively collaborate with the project team throughout the duration of the project;
2. Provide technical inputs related to the content and functionality of the platform;
3. Lead the procurement process and ensure timely delivery of funds in accordance with the agreed payment schedule with the project team; and,
4. Provide the resources in organizing activities related to the project such as meetings and workshops—through the funds of planetGOLD Philippines project.

ORGANIZATIONAL SETTING AND REPORTING

The work will be undertaken under the supervision of the AGC and the MGB's Information System Group for a regular status update of the consultancy.

Regular meetings will be organized to ensure that the activities are undertaken according to schedule and in a satisfactory, timely, and cost-effective manner. In-person meetings will also be conducted as deemed necessary and in an agreed schedule with the project team.

QUALIFICATIONS

Project Consultant should demonstrate and provide a portfolio of previous experience in the performance of similar services, with the following qualifications:

- Be a reputable individual/firm with at least five (5) years of prior experience developing visually appealing and user-friendly websites;
- Must have excellent technical knowledge and skills in using .NET programming languages including C#, Visual Basic.NET;
- Must have experience in database management using Microsoft SQL Server and Microsoft Report Builder for Microsoft Reporting Service;
- Have a broad knowledge of current web development technologies and design tools in the field; and,
- Have excellent knowledge of recent trends in graphic design and websites.

PROCESS FOR APPLICATION

If you have the required qualifications and are interested in this contract, please submit:

- A portfolio of previous and ongoing projects on web application development with similar functionalities;
- Cover letter and CV of the lead developer (or team of programmers and designers).
- A financial proposal to address the work, broken down by activities and payment schedule. The final rate should include the breakdown of all costs, inclusive of all considerations.

Please submit proposals to planetgoldph@artisanalgold.org with the subject line: **Web Developer for SSM KM Platform**.