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FOREST MANAGEMENT BUREAU

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**MEMORANDUM**

**FOR** : The Regional Executive Director  
 DENR Regions III, IV-B, and XIII

**FROM** : The OIC Assistant Secretary for Field Operations – Western Mindanao  
 and Director, in concurrent capacity

**SUBJECT** : **CONDUCT OF PILOT TESTING OF THE EARTHANGER IN AREAS COVERED BY THE SUSTAINABLE INTERVENTIONS FOR BIODIVERSITY, OCEANS AND LANDSCAPES (SIBOL) ASSISTED SITES**

RECORDS UNIT  
DENR MIMAROPA  
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DEC 13 2023

BY: \_\_\_\_\_  
TIME: \_\_\_\_\_  
NO. \_\_\_\_\_

**DATE** : DEC 01 2023

This has reference to the letter dated 27 October 2023 from Ms. Kathy J. Wachala, Chief of Party of the Sustainable Interventions for Biodiversity, Oceans and Landscapes (SIBOL) Project, regarding on the conduct of pilot testing of the EarthRanger in areas covered by the SIBOL assisted sites.

In view hereof, we are referring the herein attached letter from Ms. Wachala for your appropriate action, since the concerned areas are within your jurisdiction.

FOR YOUR CONSIDERATION, PLEASE.

  
ARLEIGH J. ADORABLE, CESO III



OD Records Unit &lt;records@fmb.denr.gov.ph&gt;

## D-41500- Conduct of Pilot Testing of the Earthranger in areas covered by the Sustainable Inventions for Biodiversity, Oceans and Landscapes (SIBOL) Assisted Sites

1 message

OD Records Unit &lt;records@fmb.denr.gov.ph&gt;

Fri, Dec 1, 2023 at 5:14 PM

To: DENR Region 3 <r3@denr.gov.ph>, recordsunitdenr3@yahoo.com, DENR Mimaropa Region <mimaroparegion@denr.gov.ph>, Records Section DENR MIMAROPA <recordsectionmimaroparegion@gmail.com>, DENR Caraga Region <r13@denr.gov.ph>, DENR CARAGA ORED <ordcaraga@gmail.com>, denrcaragarecords@gmail.com  
Cc: FRCD Forest Resources Conservation Division <frcd@fmb.denr.gov.ph>, FRCD-FPS Forest Protection Section <frcd.fps@fmb.denr.gov.ph>, "Ma. Teresa Aquino" <mtaquino@fmb.denr.gov.ph>, raul briz <briz\_raul@yahoo.com>

Sir/Ma'am

Good day

Attached file is a Memorandum for the REDs R3, 4B and 13 dated December 1, 2023 RE: Conduct of Pilot Testing of the Earthranger in areas covered by the Sustainable Inventions for Biodiversity, Oceans and Landscapes (SIBOL) Assisted Sites

Thank you



### Records Unit

Forest Management Bureau

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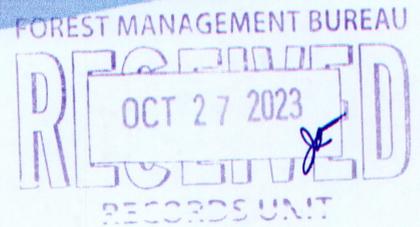
**12-01-23- D-41500- Conduct of Pilot Testing of the Earthranger in areas covered by the SIBOL Assisted****Sites.pdf**

1368K

October 27, 2023

**For. Arleigh Adorable**

Assistant Secretary for Field Operations- Western Mindanao  
concurrent Director, Forest Management Bureau  
Department of Environment and Natural Resources



**Subject:** Request for Clearance in Implementing EarthRanger activities

Dear ASec Adorable:

Greetings! Thank you for meeting with SIBOL Deputy Chief of Party Mar Guidote and myself on September 29. I was honored to exchange with you updates on our respective work particularly in relation to the implementation of activities that involve FMB.

We had also requested the meeting specifically to discuss the questions regarding EarthRanger during the PSC meeting on August 30. To help clarify this issue and as we agreed during our meeting, I am sending you a one-page explanation on the functionality and suggested application of Earth Ranger during SIBOL's year 4 implementation.

The EarthRanger activities form part of the SIBOL Year 4 Work Plan strategy to test innovations on gathering and integrating real-time data from various sources of field information: ranger observations, remote sensors, satellite data, etc. EarthRanger supports different platforms and formats of data collection and enables the monitoring, protection, and study of natural habitats and their threats. Thus, we would like to test this innovation in protected areas covered by SIBOL assistance. During Year 3, we conducted training of trainers on Earth Ranger and we'd like to now test its implementation on the ground. Please note that Earth Ranger will not affect the utilization of Lawin but has the potential of enhancing synergy in data collection and/or sharing between bureaus and agencies of DENR.

We take note of FMB's suggestions to further assess the interoperability of the EarthRanger with Lawin Forest and Biodiversity Protection System to avoid confusion on its use and application by the DENR field personnel. As part of the commitment of the SIBOL Activity, we will continue work with FMB technical team to further advance the innovations on Lawin (e.g., upgrading from use of SMART 6 to SMART 7 app) as the DENR's main protection system in forestlands, in the same manner that we work with BMB to strengthen their capacity in using similar technical innovations to conserve biodiversity.

We would like to move forward with the implementation of the PSC-approved Year 4 Work Plan. In this regard, we earnestly request for FMB's written clearance for the activities related to the piloting of EarthRanger in our assisted sites.

Please inform us if you have additional questions or clarification. Thank you and we look forward to our collaboration in the remaining years of the SIBOL Activity.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathy J. Wachala".

**Kathy J. Wachala**  
SIBOL Chief of Party

Sustainable Interventions for Biodiversity,  
Oceans and Landscapes Project



D - 41500

**EarthRanger Fact Sheet**  
**USAID SIBOL Activity**  
**Last updated: October 2023**

One of SIBOL's principal objectives on the program is to support improving natural resource management practice, including the use of tools that enable the government and relevant stakeholders to effectively collect data and analyze it timely for responsive action. DENR-BMB is implementing the Biodiversity Monitoring System (BMS) using a paper-based approach. One of the main constraints to this current system is the backlog due to this analog system of reporting; leaving datasheets unencoded, not analyzed and curated properly. Moreover, there is no geospatial component. These challenges highlight the need for affordable and scalable technology. SIBOL is providing technical assistance to BMB staff and PAs conducting BMS by piloting EarthRanger as a technology solution pathway that will enable automated data collection, and to spatially visualize, interpret and curate the data coming from protected areas in SIBOL's project sites.

*EarthRanger explained.* EarthRanger is a conservation technology solution<sup>1</sup> that enables real-time data acquisition from different sources of field data: ranger observations, remote sensors<sup>2</sup>, satellite data<sup>3</sup>, thereby allowing interoperability of various platforms. EarthRanger allows for monitoring, protection, and study of the health of natural habitats. Earthranger promotes proactive mitigation through timely, automated alerting and seamless recording of incidents, and is a force multiplier for security operations by providing domain awareness with a visualization capability that allows managers to gain a real-time, in-depth understanding of activities related to poaching and other threats. Earthranger will be used for BMB (PAs) to eliminate the paper-based approach that will significantly reduce the time in not only capturing data but analyzing it. <https://www.earthranger.com/>

*SIBOL's support to FMB.* During co-creation of SIBOL, FMB and the project agreed to improve Lawin using SMART for the National Lawin Unit<sup>5</sup>, DENR data managers, and DENR forest rangers. LAWIN is a national program to protect and monitor the defined forest management areas managed by DENR and the system uses two technologies: (1) SMART for database and dashboard; and (2) CyberTracker Mobile App for data collection. FMB and SIBOL are currently testing SMART 7<sup>4</sup> to enhance LAWIN via the following functions: (1) redefining the conservation area boundaries; (2) refining the data model; (3) migrating the entire database from the old SMART 6 to SMART 7; (4) and transitioning the local cloud server managed by FMB to SMART Connect.

*Data standardization.* While supporting FMB to update LAWIN and its application, SIBOL's Sukat ng Kalikasan framework development provided a platform for users of current data collection tools from major government offices and bureaus to discuss how they are currently capturing their data, analyzing it, and using it for management and governance. Through the interactive focus group discussions, and in consultation with the government, SIBOL supported discussions to understand what the main constraints have been in data gathering, analysis and management, and which data points are the most critical for effective decision-making in natural resource management, regardless of the area (protected area, conservation area, forest management unit, etc.). Through its conversations specifically with FMB and BMB, those in attendance agreed on the potential of what a standardized data model may look like and

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<sup>1</sup> <https://www.earthranger.com/>

<sup>2</sup> camera traps, bioacoustics, IoT

<sup>3</sup> GLAD deforestation alerts, VIIRS fire alerts

<sup>4</sup> <https://smartconservationtools.org/en-us/Download/SMART-7-Release>

<sup>5</sup> DENR Administrative Order No. 2018-21 Section 6.3

how it may support both bureaus and their needs (see Figure 1 below)<sup>4</sup>. As a result, discussions on EarthRanger and its potential to provide an interoperable platform for monitoring systems transpired because of its capability to integrate data coming from different data capture technologies (SMART, CyberTracker, Rainforest Connections, Camera trapping, etc.). Its real-time reporting coupled with automatic geo-visualization provides instant guidance to area managers on their day-to-day decisions, a feature not yet present in SMART.

**While Lawin continues to be powered by SMART, BMS can be powered by Earthranger.**

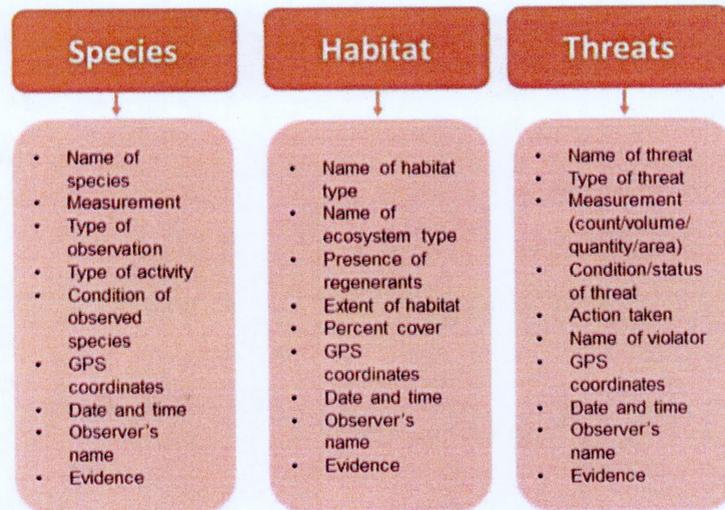


Figure 1. Data points identified during the data standardization workshop.

*Next steps.* BMS powered by EarthRanger is in SIBOL's Year 4 workplan to be pilot-tested in MMPL starting in October and a capacity development on analyzing BMS data is scheduled for November 2023. The expectation is to conduct similar activities in PPSRNP, CNCH, and MOBPLS within the first to second quarter and will be co-led with BMB. These sites are already using EarthRanger for their various management activities (e.g. Almaciga Assessment, Green Assessment - Restoration Catalyst Plot survey, Annual Waterbird Census) to streamline data collection, visualization, and curation. Simultaneously, FMB will also conduct a capacity enhancement of technical staff from the National Lawin Unit<sup>5</sup> on the use of the SMART-7 and the field test of the upgraded system (target site TBD) with the National Lawin Unit and other FMB staff in November and December, tentatively. The standardized data model will be also tested during the pilot run. Aside from the technology enhancement, FMB aims to strengthen the biodiversity skillsets of Lawin forest rangers. LAWIN powered by SMART-7, if fully pilot tested, will be rolled out in all DENR field offices (CENROs) by 2024, as per FMB.

<sup>4</sup> Workshop documentation on the data and information needs standardization workshop with DENR - [Report on Phase 1 Standardization of data and information needs with DENR.pdf](#). This workshop was attended by FMB, BMB, and selected regional offices.