



Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
Provincial Environment and Natural Resources Office
Bgy. Sta. Monica, Puerto Princesa City, Palawan
E-mail: penropalawan@denr.gov.ph
Telfax No. (048) 433-5638

27 February 2023

MEMORANDUM

FOR : **The Regional Executive Director**
MIMAROPA Region
1515 DENR By the Bay Building, Roxas Blvd.
Barangay 668, Ermita, Manila

THRU : **The OIC Assistant Regional Director for Technical Services**

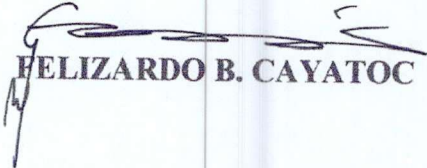
FROM : **The Provincial Environment and**
Natural Resources Officer

SUBJECT : **REPORT ON THE PARTICIPATED TRAINING ON FOREST**
CARBON INVENTORY ON FEBRUARY 6-12, 2023 AS PER
INVITATION FROM THE CONSERVATION
INTERNATIONAL PHILIPPINES


Respectfully forwarding is the Memorandum from PENRO CDS dated February 17, 2023 regarding on the report on the participated training on Forest Carbon Inventory as per invitation from the Conservation International Philippines.

As per report, the training introduced the general concepts of terrestrial forest and mangrove inventory with the goal of preparing the project partners in implementation thru carbon inventory techniques and data collection using field modern equipment. Mr. Genesis Z. Ustares of PENRO CDS participated in the said training particularly for mangroves, the blue carbon inventory. Attached is the report and the photo documentation.

For your information and record.


FELIZARDO B. CAYATOC



DENR-PALAWAN
PENRO-RECORDS
RELEASED
By 
Date: 28 FEB 2023 CN 23-497



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17 February 2023

MEMORANDUM

FOR : The Provincial Environment and Natural Resources Officer

THRU : The OIC Chief, Technical Services Division
The Chief, Conservation and Development Section

FROM : Genesis Z. Ustares
Marine Biologist II, SIMO

SUBJECT : **REPORT ON THE PARTICIPATED TRAINING ON FOREST CARBON INVENTORY ON FEBRUARY 6-12, 2023 AS PER INVITATION FROM THE CONSERVATION INTERNATIONAL PHILIPPINES**

DENR PENRL
PALAWAN RECORDS
RECEIVED

BY: [Signature]
DATE: 02/20/2023 GN 23.1463

Respectfully submitted is the report of the undersigned on the participated training on forest carbon inventory on February 6-12, 2023 as per invitation from the Conservation International Philippines.

The forest carbon inventory training is part of the capacity development initiative for the CI staff, national government agencies, academes, CSOs, indigenous people and local communities through the Community, Conservation and Natural Climate Solutions (CCNCS) Project under the Project Component 5 "High quality terrestrial and blue carbon is verified, validated and registered benefiting MMPL communities". One of the objective of the project is to obtain long-term sustainability for community-based conservation through carbon financing benefits thus this training was initiated.

The training introduced the general concepts of terrestrial forest and mangrove inventory, with the goal of adequately preparing project partners in implementing carbon inventory by exposing the participants to forest carbon inventory techniques and data collection in the field using modern equipment. The training was consisting of two parts: indoors theory training and an outdoor practical training. The undersigned participated for the mangroves team, for the blue carbon inventory.

On indoor theory training, the following were presented:

1. Project brief introduction of the Community, Conservation and Natural Climate Solutions (CCNCS) Project;
2. Carbon Inventory Training:
 - a. TerraCarbon Profile and Team
 - b. Inventory Goals
 - c. Carbon Pool
 - i. Calculating carbon in trees
 - d. Plot procedures
 - i. Random plots thru remote sensing and grid method



- ii. In choosing the plot, it should technically, legally, regulatory and spatially in consideration of permanence to sustain/monitoring for the carbon credit and financing
 - iii. For monitoring, the plots should be protected and not a disturb area
 - iv. Ms. Rachel Appie of CENRO Brooke's Point asked if the NGP planting sites can be considered as sampling site? – answered from FMB, it would be depending on the purpose of NGP, if it is for protection, it may be considered, but for agroforest or others it may be excluded as part of the project site for it will be harvest in due time.
- e. Forest Carbon Inventory
 - f. Mangrove Blue Carbon Inventory

On the outdoor practical training, the following was done:

1. Laying of 100 meters transect with establishment of 6 markers (rebar with PVC pipes), make sure to marked it into GPS, as sampling plots with 20 meters' interval. For carbon inventory, it doesn't matter if it is landward/seaward or perpendicular or parallel to the shoreline – it would be randomized plots based on the remote sensing and grid method.
2. Establishment of feldspar marker horizon using the 50x50cm frame, for measurement of carbon increment for the next 5 years of the project. Installation of R-SET can be alternative but it will be costly and needs regular and consistent monitoring.
3. Marking the 7 meters' diameter sampling plots from the established marker as the center. Do the core boring near the marker for 0-50 cm and another core for 51-100 cm and twist it clock-wise before pulling it out. Transfer carefully the samples into the properly labeled half PVC pipes for 0-50 cm and 51-100 cm cores and cover it with expanding plastic and duct tape. Secure it properly without exposing to sunlight. Core boring instrument may cost Php 100,000 – 120,000.
4. Do the above ground measurement by measuring all the trees inside the 7 meters' plot. Get the species, DBH and height (suggested to use the clinometer).
 - a. For scrubs/saplings, (within the Sub-Plot B, 2 meters' radius) get the following:
 - i. Species name
 - ii. Measure the DBH at 30 cm height
 - iii. Total height
 - iv. Crown length, width and depth
 - b. For seedlings, less than 30 cm in height (still within the Sub-Plot B)
 - i. Species name
 - ii. Total count
 - iii. Crown length, width and depth
 - iv. In case of more than 25 counts of seedlings, only measure the first 25



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- c. For pneumatophores, (within the Sub-Plot C, two 30x30cm plot positioned on the outside and opposite ends of Sub-Plot B)
- Species
 - Count
 - Height
 - In case of more than 25 counts of seedlings, only measure the first 25

The activity concluded on February 11, 2023 with brief questions and answer or recommendations to the activity such as:

1. The TerraCarbon have already did the carbon developing project in Cambodia but with regards on the benefit sharing, it is still no clear;
2. In Philippines, there's still no clear policy/guidelines for the carbon projects, credit and financing but as per DENR there's a standard MOA for Protected Areas in engaging blue carbon projects;
3. Circular vs square plots: circular plot has much more efficiency, less edge error and easy to verify. The BMB, ERDB and FMB are already adopting the circular plots for both terrestrial and mangroves. The BMB is already incorporating the use of circular plots for both ecological and carbon mangrove assessment on the BAMS/BMS updating;
4. Suggestion for mangroves plot:
 - a. Use only one bench mark or GPS reading, preferably on plot 1, then use compass for succeeding plots to lessen the errors in map generation;
 - b. Regularly measure the distance and the bearing thru compass.

On behalf of the MMPL-PAMO, Mr. Michael Cantuba, he gave appreciation and acknowledgement to Conservation International Philippines and other partners for this training. Further stated that this initiative will eventually convert the activities such as timber poaching, slash and burn farming, mining to a carbon credit and financing that would greatly benefit the local community and the conservation and protection as well of the MMPL. Then the Certificate of Participation was given to the participants and ended with closing remarks given by Atty. Edna N. Maguigad, Project Lead of the CCNCS Project. Attached is the photo documentation of the activity.

Prepared by:

GENESIS Z. USTARES
Marine Biologist II

Noted by:

RHODORA B. UBANI
Chief, CDS



PHOTO DOCUMENTATION



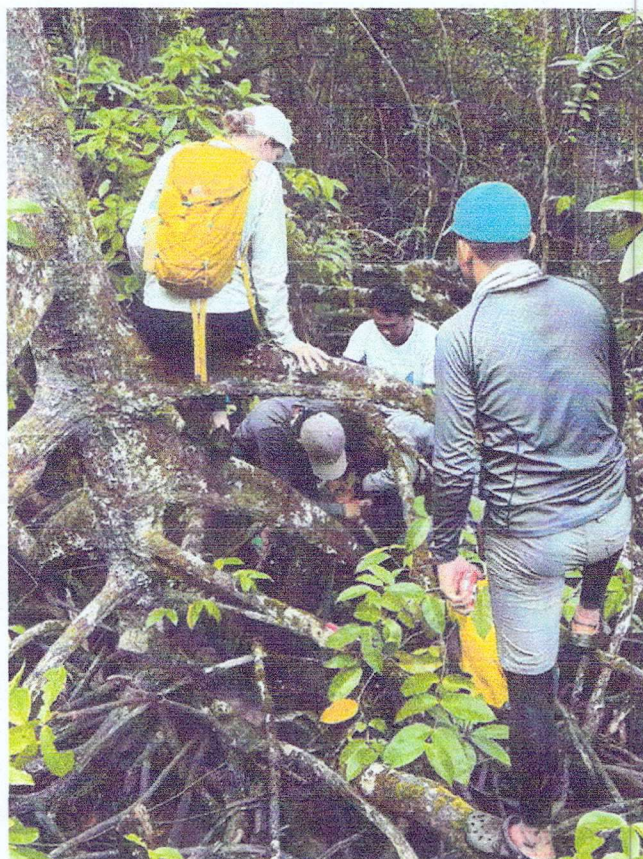
The classroom theory training at Maruyog's Ridge, Brooke's Point, Palawan



The classroom exercises on tree DBH measurement



Mr. Ryan Moyer of TerraCarbon demonstrating the soil coring method



The undersigned and the other team members doing the practicum on soil coring



The mangroves team in the training sampling site at Panalingaan, Rizal, Palawan