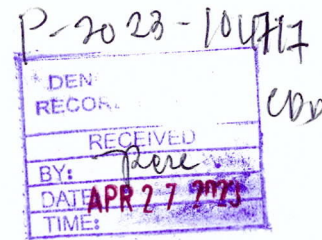




Department of Environment and Natural Resources  
**MIMAROPA Region**  
**Provincial Environment and Natural Resources Office**  
Bgy. Sta. Monica, Puerto Princesa City, Palawan  
E-mail: penropalawan@denr.gov.ph  
Telfax No. (048) 433-5638



April 12, 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

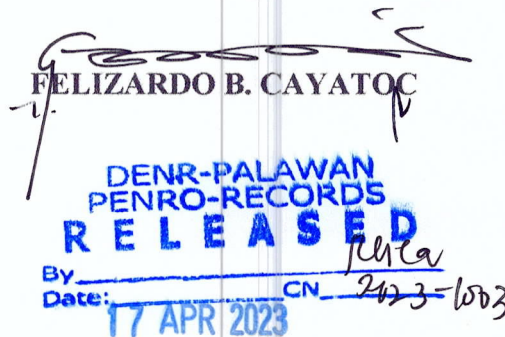
**SUBJECT :** SUBMISSION OF REPORT ON THE CONDUCTED FOREST  
CARBON INVENTORY TRAINING BY CONSERVATION  
INTERNATIONAL PHILIPPINES (CIP) ON FEBRUARY 6-12, 2023

Forwarded is the memorandum dated February 6-12, 2023 from CENRO Quezon on the conducted forest carbon inventory training by Conservation International Philippines (CIP).

As per report, the training was led by TerraCarbon advisory firm aims to develop a carbon offset to fund natural climate solutions and introduce general concepts of terrestrial forest and mangrove inventory which consist of indoor and outdoor practical training.

The training was attended by CENRO Quezon, BMB, FMB, PENRO Palawan, NCIP and NTFP Staff.

For information and record.





Republic of the Philippines  
Department of Environment and Natural Resources  
MIMAROPA Region  
**COMMUNITY ENVIRONMENT AND NATURAL RESOURCES OFFICE**  
National Highway, Bgy. Alfonso XIII, Quezon, Palawan  
Contact No.: 0917-160-4920  
Email: cenroquezonpal@gmail.com

**MEMORANDUM**

**FOR :** The Provincial Environment and  
Natural Resources Officer  
Sta. Monica, Puerto Princesa City  
Palawan

**FROM :** The Community Environment and  
Natural Resources Officer/Concurrent Protected  
Area Superintendent- MMPL  
Quezon, Palawan

**SUBJECT :** **SUBMISSION OF REPORT ON THE CONDUCTED FOREST  
CARBON INVENTORY TRAINING BY CONSERVATION  
INTERNATIONAL PHILIPPINES (CIP) ON FEBRUARY 6-12, 2023**

**DATE :** **23 MARCH, 2022**

**DENR PENRO  
PALAWAN RECORDS  
RECEIVED**

BY:   
DATE: 04-03-2023 CN 23-3014

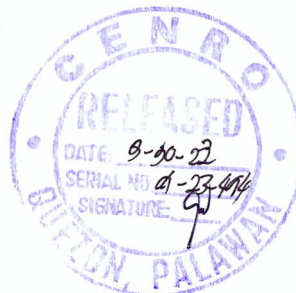
Respectfully forwarded is the Memorandum report from CENRO Quezon personnel in compliance to the Special Order No. 62 Series of 2023 from the Regional Executive Director on the conducted forest carbon inventory training by Conservation International Philippines (CIP).

Please be informed that said training was attended by Forester I-Sheryl S. Bacan and Forest Technician II-Michael John D. Cantuba of CENRO, staff from BMB, FMB, PENRO Palawan, National Commission on Indigenous People (NCIP) and Non-Timber Forest Products (NTFP) staff.

The training led by TerraCarbon advisory firm aims to develop a carbon offset to fund natural climate solutions and introduce general concepts of terrestrial forest and mangrove inventory. This also consist of two parts; indoor and outdoor practical training.

Further, attached is the detailed report of the personnel attended the said training.

For information, record and reference.



  
**RENATO S. GONZAGA**





Republic of the Philippines  
Department of Environment and Natural Resources  
MIMAROPA Region  
**COMMUNITY ENVIRONMENT AND NATURAL RESOURCES OFFICE**  
National Highway, Bgy. Alfonso XIII, Quezon, Palawan  
Email: [cenroquezon@denr.gov.ph](mailto:cenroquezon@denr.gov.ph)

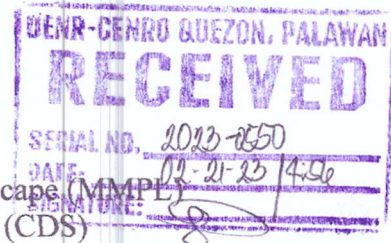
February 17, 2023

**MEMORANDUM**

**FOR** : The Community Environment and Natural Resources Officer  
Quezon, Palawan

**FROM** : Staff, Mt. Mantalingahan Protected Landscape (MMPL)  
& Conservation and Development Section (CDS)

**SUBJECT** : **REPORT ON THE ATTENDED FOREST CARBON INVENTORY TRAINING/WORKSHOP**



Please be informed that the undersigned staff of Mt. Mantalingahan Protected Landscape (MMPL) Protected Area Management Office (PAMO) and Conservation and Development Section (CDS) attended the Forest Carbon Inventory Training/Workshop last February 7-11, 2023 held at Maruyog Ridge, Brooke's Point, Palawan which was spearheaded by Conservation International, Philippines (CIP).

Invited participants were representatives from DENR Regional Office, CENRO Quezon & Brooke's Point, Provincial Environment and Natural Resources Office (PENRO), Mt. Mantalingahan Protected Landscape (MMPL), Biodiversity Management Bureau (BMB), Forest Management Bureau (FMB), Ecosystems Research and Development Bureau (ENRDB), Palawan Council for Sustainable and Development Staff (PCSDS), National Commission on Indigenous People (NCIP), Non-Timber Forest Products (NTFP), Religious Group and TerraCarbon LLC as the resource speakers.

TerraCarbon LLC is a leading advisory firm that helps develop carbon offset projects to fund natural climate solutions. They support Natural Climate Solutions (NCS) that involve restoration, improved management and conservation activities that increase carbon storage and/or avoid greenhouse gas emissions in forests, wetland, grasslands, and agricultural lands around the world. They believed market-based approaches that place a value on nature and ecosystem services and provide incentives for conservation are critical to addressing climate change, improving the availability and quality of freshwater, protecting biodiversity, and alleviating poverty.

The training aims to introduce general concepts of terrestrial forest and mangrove inventory, with the goal of adequately preparing project partners in implementing carbon inventory by exposing participants to forest carbon inventory techniques and data collection in the field using modern equipment.

The training consists of two parts: an indoor theory training and an outdoor practical training in which the trainers from TerraCarbon discussed the Standard Operating Procedures



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of Forest Carbon Inventory using the slideshow and demonstrates on how to measure individual trees. Likewise discussed and explained the functions of the instruments used for measuring trees. And for outdoor practical training, the participants are grouped into three groups; the Terrestrial team 1 - assigned to Aribungos, Brooke's Point, while, the Terrestrial team 2 and Mangrove team - assigned to Panalingaan, Rizal, Palawan. Each group is composed of resource persons from TerraCarbon LCC, CI staff, representatives from different Offices, and CADT members.

The facilitator discussed that each field crew will always carry the following equipments:

**General fieldwork needs:**

- ✓ Cellphone or satellite phone and emergency contacts list
- ✓ Cellphone power bank
- ✓ First aid kit
- ✓ Camping gear if staying overnight in the field
- ✓ Food & water
- ✓ Machete
- ✓ Pencil & notebook

**Data collection & navigation tech:**

- ✓ Cell phone
- ✓ Portable cellphone battery and cord
- ✓ Field data sheets
- ✓ Avenza application loaded onto cell phone OR GPS navigational unit (with extra batteries)
- ✓ DME
- ✓ Extra batteries for DME
- ✓ Compass
- ✓ Two-way radios for forest communication
- ✓ Extra batteries for two-way radios

**Tree measurement tools:**

- ✓ Diameter tape (metric) or logger's tape (metric)
- ✓ Measurement tape (metric) or logger's tape (metric)
- ✓ Clinometer
- ✓ 1.3-meter pole (for DBH) with markings at 5, 15, and 30cm for use if visual estimation is necessary. Pole should be made of PVC piping (rather than cut from forest wood) to ensure accurate and consistent length and to prevent being worn down with use.

**Plot & tree marking:**

- ✓ Flagging
- ✓ Rebar. If possible, weld a nut to one end of the rebar to aid in attaching plot label tag.
- ✓ Hammer
- ✓ Aluminum plot tag and wire (for plot marking)
- ✓ Chalk, logger's crayon, or paint

**Quality control:**

- ✓ Laminated paper copies of field measurement protocols





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The undersigned were grouped in the Terrestrial team 2, in which the assigned area is in Bgy. Panalingaan, Rizal, Palawan. Prior proceeding to the assigned area, which is an hour and 30 minutes hike, the team conducted courtesy call to the concerned Barangay. The Barangay council delegated a representative to join the team in the conduct of practical training for Forest Carbon Inventory.

During the fieldwork, the trainers demonstrate the process of doing the Forest Carbon Inventory and let the participants do the procedures. The participants constructed a circular plot consisting of 3 nested fixed-radius subplots targeting different diameter classes. Plots will be recorded using the same plot number but with letters to indicate the subplot. For example, for plot 1, the smallest (5m radius) sub-plot is "1A", the middle (12 m radius) subplot is "1B" and the largest (20 m radius) subplot is "1C". In sub-plot 1A we measured live trees and standing dead wood with greater than or equal 5 centimeters DBH, in sub-plot 1B we measured live trees and standing dead wood with greater than or equal 15 centimeters DBH and in sub-plot 1C we measured live trees and standing dead trees with greater than or equal to 30 centimeters DBH. In height measurement, height measurements will be taken only in subplot A for trees with greater than 20 cm DBH. We used the instrument called clinometer in measuring the height of a tree, we took three (3) angles in measuring the height the top of the crown, the bole height, and the base of the tree. It also important to observe if the tree is leaning because it will affect the height of a tree. If it is leaning, we measure the angle of leaning using the clinometer. After all procedures done, the trainers conducted evaluation and verification if the trainees did the procedures properly.

After the training, the undersigned are now equipped with general concepts of terrestrial forest and mangrove carbon inventory and recommends to carry out echoing of the learnings earned from the workshop for information and guidance of some technical personnel of the Office.

For your information and record.

  
**MICHAEL JHON D. CANTUBA**  
Forest Technician II

  
**SHERYL C. BACAN**  
Forester I





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GEOTAGGED PHOTOS TAKEN DURING THE FOREST CARBON INVENTORY  
TRAINING DATED FEBRUARY 7 – 11, 2022 HELD AT MARUYOG RIDGE,  
BROOKE'S POINT & PANALINGAAN, RIZAL, PALAWAN



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