



Republic of the Philippines
Department of Environment and Natural Resources
Visayas Avenue, Diliman, Quezon City
Tel. Nos. 929-6626 to 29; 929-6633 to 35
926-7041 to 43; 929-6252; 929-1669
Website: <http://www.denr.gov.ph> / E-mail: web@denr.gov.ph

MEMORANDUM

TO : THE DIRECTORS
FMB, BMB, MGB

THE REGIONAL EXECUTIVE DIRECTORS
Regions 6, 7, 8, 10

FROM : THE UNDERSECRETARY
Finance, Information Systems and Climate Change and
Head Secretariat, Task Force Build Back Better

SUBJECT : PARTICIPANTS TO THE CAPACITY BUILDING-CUM-
ON-THE-JOB TRAINING ON RAPID GREEN ASSESSMENT FOR
ENVIRONMENT AND NATURAL RESOURCES IN SIPLAS

DATE : 02 JUNE 2022

In the interest of service and to ensure that environmental concerns will be included into strategic planning during pre- and post-disaster scenarios and prevent further degradation during the reconstruction process, the USAID SIBOL¹ has invited the Department to join the Capacity Building cum on-the-job training on Rapid Green Assessment for Environment and Natural Resources in Siargao Island Protected Landscape and Seascape (SIPLAS).

Since the issuance of the Executive Order 120, series of 2020, entitled "Strengthening Rehabilitation and Recovery Efforts in Typhoon-Hit Areas Through the Creation of the Build Back Better Task Force," Regional Task Force Build Back Better (RTFBBB) has been organized and convened in their respective regions.

Through the RTFBBB, the application of the **Rapid Green Assessment** will prioritize the initially identified 24 climate vulnerable provinces including 4 highly urbanized centers (Metro Manila, Metro Iloilo, Metro Cebu, and Metro Davao) and Super Typhoon Odette hard-hit Provinces in Regions 4B, 6, 7, 8, 10, 13.

The activity is comprised of four (4) stages: 1) Aerial Ground Truth Survey, 2) Marine Ground Truth Survey, 3) Rapid Biodiversity Assessment, and 4) Study of Drivers of Land-Use Change. All trainings be held face-to-face and is set to begin on 19 June 2022 until 03 September 2022.

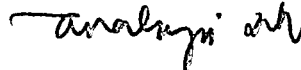
With regards to the lengthy field surveys, regional offices and bureaus may opt not to complete the whole duration to make sure responsibilities in the workplace are undertaken. USAID SIBOL will be covering the food, accommodation, and transportation costs within SIPLAS. Travel expenses of chosen representatives from and to their place of assignments must be charged to each respective office.

With this, may we request representative/s from your Office to serve as a member/s of the Green Assessment Team who will be trained to conduct the assessment in your respective

¹ Philippine Sustainable Interventions for Biodiversity, Oceans and Landscapes (SIBOL) is a project launched by the United States Agency for International Development (USAID) that will support the management of the country's natural resources and combat environmental crimes. The Research Triangle Institute International serves as its lead implementer.

provinces. For inquiries and concerns, our staff-Raquel Ortega and JM Reboton can be contacted through 02-8928-1194. Please submit the list of names to the TFBBB Head Secretariat, Office of the Undersecretary for Finance, Information Systems, and Climate Change and furnish the Office of the Director, Climate Change Service or email at tfbbb.secretariat@gmail.com cc ccs@denr.gov.ph on or before 06 June 2022.

Please see attached concept note for more detailed information on the activity.



ATTY. ANALIZA REBUelta-TEH

cc

Undersecretary for Legal, Administration, Human Resources and Legislative Affairs

Undersecretary for Field Operations - Luzon, Visayas and Environment

Undersecretary for Field Operations - Mindanao

Confirmation Matrix
Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: DENR Region VI

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1			Aerial Ground Truth Survey	Remote Sensing Training (1)		
2 3				Drone Training and Field Survey (2)		
4 5			Marine Ground Truth Survey	Lecture and Demos (2)		
6 7				Field Survey (2)		
8 9			Rapid Biodiversity Assessment	Training (2)		
10 11				Field Survey (2)		
12			Study of Drivers of Land-Use Change	Calibration Training and Field Survey (1)		

Endorsed by: _____
 Head of Office

Confirmation Matrix
Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: DENR Region VII

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1			Aerial Ground Truth Survey	Remote Sensing Training (1)		
2 3				Drone Training and Field Survey (2)		
4 5			Marine Ground Truth Survey	Lecture and Demos (2)		
6 7				Field Survey (2)		
8 9			Rapid Biodiversity Assessment	Training (2)		
10 11				Field Survey (2)		
12			Study of Drivers of Land-Use Change	Calibration Training and Field Survey (1)		

Endorsed by: _____
 Head of Office

Confirmation Matrix
Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: DENR Region VIII

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1			Aerial Ground Truth Survey	Remote Sensing Training (1)		
2 3				Drone Training and Field Survey (2)		
4 5			Marine Ground Truth Survey	Lecture and Demos (2)		
6 7				Field Survey (2)		
8 9			Rapid Biodiversity Assessment	Training (2)		
10 11				Field Survey (2)		
12			Study of Drivers of Land-Use Change	Calibration Training and Field Survey (1)		

Endorsed by: _____
 Head of Office

Confirmation Matrix
Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: DENR Region X

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1			Aerial Ground Truth Survey	Remote Sensing Training (1)		
2 3				Drone Training and Field Survey (2)		
4 5			Marine Ground Truth Survey	Lecture and Demos (2)		
6 7				Field Survey (2)		
8 9			Rapid Biodiversity Assessment	Training (2)		
10 11				Field Survey (2)		
12			Study of Drivers of Land-Use Change	Calibration Training and Field Survey (1)		

Endorsed by: _____
 Head of Office

Confirmation Matrix

Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: Forest Management Bureau

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1			Aerial Ground Truth Survey	Remote Sensing Training (1)		
2				Drone Training and Field Survey (1)		
3			Rapid Biodiversity Assessment	Training (1)		
4				Field Survey (1)		

Endorsed by:

Head of Office

Confirmation Matrix

Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: Biodiversity Management Bureau

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1 2			Marine Ground Truth Survey	Lectures and Demos (2)		
3 4				Field Survey (2)		
5			Rapid Biodiversity Assessment	Training (1)		
6				Field Survey (1)		

Endorsed by:

Head of Office

Confirmation Matrix

Participants to the Green Assessment Capacity Building Cum On-Job-Training

Regional Office: Mines and Geosciences Bureau

No.	Name	Designation	Stage	Activity	Office/Division	Contact No. Email Address
1			Aerial Ground Truth Survey	Drone Training and Field Survey (1)		
2			Study of Drivers of Land-Use Change	Calibration Training and Field Survey (1)		

Endorsed by:

Head of Office

CAPACITY BUILDING CUM ON-JOB-TRAINING ON RAPID GREEN ASSESSMENT FOR ENVIRONMENT AND NATURAL RESOURCES IN THE PHILIPPINES

Concept Note

1. Background

In Post-disaster scenarios, environmental concerns are not always sufficiently incorporated into strategic planning at the outset of the reconstruction process, and that as a result, reconstruction efforts have contributed to further degradation of many areas affected by natural calamities. Based on the assessment, key environmental (i.e., ecosystems, ecosystem services and biodiversity) issues identified will provide a basis for recommendations to strengthen reconstruction efforts and reduce risks from future potential disasters.

This activity will consist of four stages. Stage 1 aims to gather data on land cover classification, biodiversity, and drivers of change and identify any changes in forest surface cover and ecosystem assets. Stage 2 aims to employ both centralized and citizen science-driven streams of data gathering on defined damage hotspots in order to widen the coverage of data capture. Stage 3 will analyze and visualize the information gathered from Stages 1 and 2 to enable assessment of the extent of damage and changes in land use and the crafting of a recovery plan for damages to agriculture, forestry, and fisheries. Finally, Stage 4 aims, with the cooperation of key stakeholders, to formulate management recommendations on and monitoring plans for reconstruction, restoration & rehabilitation, and resilience planning.

2. Objectives

General objective of the activity will be to identify key environmental issues which will serve as a basis for recommendations to strengthen reconstruction efforts and reduce risks from future potential disasters.

Objectives:

- Determine the magnitude of typhoon related damages.
- Improve the capacity and skills of local partners in rapid assessments to determine changes in biodiversity, and threatened ecosystems and refugia.
- Provide science-based management and policy guidance in the restoration and rehabilitation efforts.

3. Scope and Coverage

The application of the **rapid green assessment framework** will prioritize the initially identified 24 climate vulnerable provinces including 4 highly urbanized cities (Metro Manila, Metro Iloilo, Metro Cebu, and Metro Davao) and Super Typhoon Odette hard-hit Provinces in region 4B, 6, 7, 8, 10, 13.

For the second semester of 2022, the green assessment will be conducted in Siargao Islands Protected Landscape and Seascape (SIPLAS).

4. Activities in the Conduct of Green Assessment

AERIAL GROUND TRUTH SURVEY

A. Remote Sensing Training

In order to sustain the effects of the capacity development initiatives, the team will also conduct a training workshop for the stakeholders. The Remote Sensing Training will consist of workshops on rapid mapping, identifying training polygons and reference points for validation, and image orthomosaics. This activity aims to improve the skills of the park workforce, DENR, and PCSDS to perform and deploy on conducting rapid post-disaster assessments through upgrading their equipment, drone surveys, and image processing.

Schedule: June 20 to 24, 2022

Qualifications of participants:

- Background on Geographic Information System (GIS)
- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: one representative per regional office

Number of participants from the FMB: one representative

Equipment

- Laptop, minimum i5 processor with at least 8GB RAM or Higher

Software

- Pix4D (Php 17,850.00/month) (Optional)
- Google Earth - open source
- QGIS - open source

B. Drone Training

In order to sustain the effects of the capacity development initiatives, the team will also conduct a training workshop for the stakeholders. The Drone Training will consist of workshops on ground truthing, remotely piloted aircraft systems (RPAS), and hands-on drone piloting. This activity aims to improve the skills of the park workforce, DENR, and PCSDS to perform and deploy on conducting rapid post-disaster assessments through upgrading their equipment, drone surveys, and image processing.

Schedule: June 20 to 24, 2022

Qualifications of participants:

- Participants must have experience in conducting ground survey using remotely piloted aircrafts or drones

- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: two representatives per regional office

Number of participants from the FMB and MGB: one representative per bureau

Equipment

- Quadcopter Drones (At least 1)
- Mobile GPS station with antenna (Optional)
- Handheld GPS device
- Ground Control Point Markers

Software

- Trimble subscription (Php 13,175.00/month) IF participant has a mobile GPS station, otherwise, this software can be optional

C. Field Survey

This comprehensive appraisal will allow us to differentiate the ecosystem assets in the landscape as distinct units via aerial ground truthing. This would streamline information to be generated which provides land cover categories following IPCC standard six classes (which can be disaggregated to include other class or subclass of ecosystem assets e.g. agriculture into croplands and plantation. Wetlands into mangroves and water bodies, fallow lands, and etc.). This information is useful on species distribution modeling in determining survival envelopes and predicting ecosystem/habitat refugia of species. Lastly, this activity allows for the delineation of ecosystem units and vulnerability assets, which associates impact assessments, vulnerability of disaster reduction features for each ecosystem asset based on ground-truthing and ecological surveys.

Schedule: June 27 - August 10 (~45 days)

Number of participants from the DENR regional offices: two representatives per regional office *(must have attended the drone training)*

Number of participants from the FMB and MGB: one representatives per bureau *(must have attended the drone training)*

Equipment

- Quadcopter Drones (At least 1)
- Mobile GPS station with antenna (Optional)
- Handheld GPS device
- Ground Control Point Markers
- Maps with plastic cover

- For those joining the field survey, consider bringing the following items: sleeping bags, arm sleeves, caps, raincoats, and rainboots

MARINE GROUND TRUTH SURVEY

A. Lectures and Marine Ground Truth Demonstrations

In order to sustain the effects of the capacity development initiatives, the team will conduct a 3-level workshop for the stakeholders. Level 1 consists of lectures on marine ground-truthing methods, while in Level 2, each marine GT method will be demonstrated. (*Damage underwater is also being conducted in SIPLAS by the Zoological Society of London or ZSL, another SIBOL consortium partner. This training focused on methodologies for collecting data that can be used to map the extent of coral reefs and seagrasses.*)

Schedule: July 11 to 14, 2022

Qualifications of participants:

- Participants must have experience in conducting coral reef and seagrass mapping
- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: two representatives per regional office

Number of participants from the BMB: two representatives

Equipment

- Side Scan Sonar (USD 3,150.00) (Optional)
- Waterproof camera (Optional)
- Mask, Snorkel, Rash Guard
- Waterproof pouch

B. Field Survey

This activity aims to develop high conservation value maps that show the extent and detect changes in the coral reefs, and seagrass ecosystems in Siargao Island Protected Landscape and Seascape (SIPLAS) before-and-after Typhoon Odette affected the area by conducting ground truth field surveys. The results will be used to improve the Protected Area Management Plan of SIPLAS, enhance their marine management zones, and provide a basis for the reconstruction efforts.

Schedule: July 17 to 22, 2022

Qualifications of participants:

- Participants must have experience in conducting coral reef and seagrass mapping and should have attended the training

- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: two representatives per regional office

Number of participants from the BMB: two representatives per bureau

Equipment

- Side Scan Sonar (USD 3,150.00) (Optional)
- Waterproof camera (Optional)
- GoPro (Optional)
- Mask, Snorkel, Rash Guard
- Waterproof pouch

Software

- Hypack (USD 6,550.00) (Optional)

RAPID BIODIVERSITY ASSESSMENT

A. Training

In order to build the capacity of local stakeholders on biodiversity assessment and monitoring, a two-day workshop will be conducted on proper survey methods for birds, herpetofauna, mammals, and flora.

Schedule: July 20 to 22, 2022

Qualifications of participants:

- Has experience in conducting biodiversity monitoring activities or biodiversity assessments
- Has familiarity with local wildlife
- Background on forestry, biology, wildlife biology, or environmental science
- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: two representatives per regional office

Number of participants from the FMB and BMB: one representative per bureau

Equipment (equipment will be provided by SIBOL)

- GPS Device (*participants can bring their own, equipment will be provided by SIBOL during the field survey*)
- Binoculars (*for conducting birds survey, participants can bring their own*)
- Bird Bags (*for holding captured birds and bats, equipment will be provided by SIBOL during field survey*)
- Mist Nets (*for capturing volant animals, equipment will be provided by SIBOL during field survey*)
- Meter Tape (*for measuring transects and quadrats, equipment will be provided by SIBOL during field survey*)
- Mobile Phone (*participants can use their own smartphones*)
- Field Guide (*equipment will be provided by SIBOL during field survey*)

Software

- EarthRanger mobile app (open source)
- CyberTracker mobile app (open source)

B. Field Survey

The Biodiversity team will conduct surveys on local flora, fauna, and ecosystems to assess the damage wrought by Typhoon Odette in 2021. Rapid biodiversity assessments will be conducted for the detection of threatened and endemic species, as well as indicator species for restoration, with a focus on birds, herpetofauna (amphibians & reptiles), mammals, and flora. Bird surveys will be conducted using cruising methods and mist netting in the morning (5:00 am ~ 10:00 am). Herpetofauna surveys will be conducted at night (6:00 pm ~ 11:00 pm) using cruising methods only. Mammal surveys will be conducted by installing mist nets for bats and cage traps for rodents and other small mammals in the early morning (5:00 am - 8:00 am) and evening (5:00 pm - 8:00 pm). Flora surveys will be conducted by using quadrat sampling, and they may be conducted throughout the day (7:30 am - 4:00 pm). The rapid assessments will be done on defined damage hotspots, and possibly established patrol routes for enforcement activity of the PA. The rapid assessments will be using a cruising method, where anything and everything being observed along the path are recorded.

Schedule: July 25 - August 31

Qualifications of participants:

- Has experience in conducting biodiversity monitoring activities or biodiversity assessments
- Has familiarity with local wildlife
- Background on forestry, biology, wildlife biology, or environmental science
- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: two representatives per regional office

Number of participants from the FMB and BMB: one representative per bureau

Equipment

- GPS Device (*participants can bring their own, equipment will be provided during the field survey*)
- Binoculars (*for conducting birds survey, participants can bring their own*)
- Bird Bags (*for holding captured birds and bats, equipment will be provided during field survey*)
- Mist Nets (*for capturing volant animals, equipment will be provided during field survey*)
- Meter Tape (*equipment will be provided by SIBOL during field survey*)
- Mobile Phone (*participants can use their own smartphones*)
- Field Guide (*equipment will be provided during field survey*)
- For those joining the field survey, please consider bringing the following essential items: tent, sleeping bag, arm sleeves or long sleeved clothes (avoid wearing brightly colored shirts during fieldwork), caps, raincoats, rainboots, and medicine

Software

- EarthRanger mobile app (open source)
- CyberTracker mobile app (open source)

STUDY OF DRIVERS OF LAND-USE CHANGE

A. Calibration Training

The SLU team aims to improve the capacity and skills of local partners in studying land-use change and its drivers. This may be conducted with the Geospatial and Biodiversity teams.

Schedule: July 19 to 22, 2022

Qualifications of participants:

- Familiar with local geography and history
- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: one representative per regional office

Number of participants from the MGB: one representative per bureau

Equipment

- Mobile Phone (*participants can use their own smartphones*)
- GPS Device (*participants can bring their own, equipment will be provided by SIBOL during the training*)

Software

- EarthRanger mobile app (open source)
- Locus Map (open source)
- Cybertracker mobile app (open source)

B. Ground Validation on Drivers of Land-use Change

The SLU team will validate the information collected by the Geospatial team by visiting identified damage hotspots, determining the impacts to the ecosystem, gathering further data in the form of background research and desk studies, and stakeholders' consultations with representatives of the affected community, including women.

Schedule: July 25 - August 31, 2022

Qualifications of participants:

- Familiar with local geography and history
- Protected Area Management Office staff, Department of Environmental and Natural Resources - Provincial Environmental and Natural Resources Office (PENRO) staff, Department of Environmental and Natural Resources - Regional office staff, Department of Environmental and Natural Resources - Community Environmental and Natural Resources Office (CENRO) staff, Local Government Units (LGU) participants from Siargao Island

Number of participants from the DENR regional offices: one representative per regional office (participants should attend the calibration workshop)

Number of participants from the MGB: one representative per bureau

Equipment

- Mobile Phone (*participants can use their own smartphones*)
- GPS Device (*participants can bring their own, equipment will be provided by SIBOL during the field survey*)

Software

- EarthRanger mobile app (open source)
- Locus Map (open source)
- Cybertracker mobile app (open source)

C. Focus Group Discussion

Focus group discussions (FGDs) will be held in order to discuss and address more in-depth questions of the effects of the disaster to the communities. Validation of the data/information collected will also be part of this activity. Most of the participants here are those who have

participated in the previous consultation conducted in the area, representatives of the concerned local agencies, as well as local NGOs.

Number of participants from the DENR regional offices: not required

5. Expected Outputs

- a. Post-Odette biodiversity and land-use change reports
- b. Maps | Vulnerability/susceptibility maps, community resource map on damage hotspots, pre and odette species distribution models to see changes and impacts on species and ecosystem/habitat refugia, and management zone map (e.g. reconstruction and restoration/rehabilitation zone; and relocation zones)
- c. Pre- and Post-Odette Ecosystem service valuation
- d. Capacity building of regional offices technical personnel
- e. Comprehensive plans for restoration, green reconstruction, rehabilitation and resilience

7. Establishing the DENR Green Assessment Team (Composed of 4 Teams)

The Green Assessment Team will be composed of members from the following offices:

Central Office	Team Leader
Forest Management Bureau	Member
Biodiversity Management Bureau	Member
Mines and Geosciences Bureau	Member
Regional Office	Member
PENRO	Member
CENRO	Member
Third Party Expert/s	Member

Summary of Participants

Activity	# of participants / Office	Remarks
Aerial Ground Truth Survey		
Remote Sensing Training	5 - 1 per regional office and FMB	R6, R7, R8, R10, and FMB
Drone Training	10 - 2 per regional office and 1 per Bureau	R6, R7, R8, R10, FMB and MGB
Field Survey	10 - 2 per regional office and 1 per Bureau	R6, R7, R8, R10, FMB and MGB <i>Must have attended the drone training</i>
Marine Ground Truth Survey		
Lectures and Demos	10 - 2 per regional office and BMB	R6, R7, R8, R10, and BMB
Field Survey	10 - 2 per regional office and BMB	R6, R7, R8, R10, and BMB
Rapid Biodiversity Assessment		
Training	10 - 2 per regional office and 1 per Bureau	R6, R7, R8, R10, FMB and BMB
Field Survey	10 - 2 per regional office and 1 per Bureau	R6, R7, R8, R10, FMB and BMB
Study of Drivers of Land-Use Change		
Calibration Training	5 - 1 per regional office and MGB	R6, R7, R8, R10, and MGB
Field Survey	5 - 1 per regional office and MGB	R6, R7, R8, R10, and MGB <i>Must have attended the calibration workshop</i>