

Protecting Dinagat Island's Threatened Endemic Species

ProDITES Project Report Summary

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Protecting Dinagat Island's Threatened Endemic Species: ProDITES Project Report Summary
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PROTECTING DINAGAT ISLAND'S THREATENED AND ENDEMIC SPECIES

Dinagat Island, which is located northeast of Mindanao, the southern Philippines, is a key biodiversity area and is one of the 117 important bird areas recognized by the Department of Environment and Natural Resources and Haribon Foundation. The unique biological wonders inherent in the island make it suitable for the establishment of local conservation areas (LCAs) and wildlife sanctuaries (WS), ensuring the protection of endemic, critically endangered, and vulnerable species of wildlife as well as their habitats. These include sea-level mangrove forests and residual and old-growth forests up to almost a thousand meters above sea level.



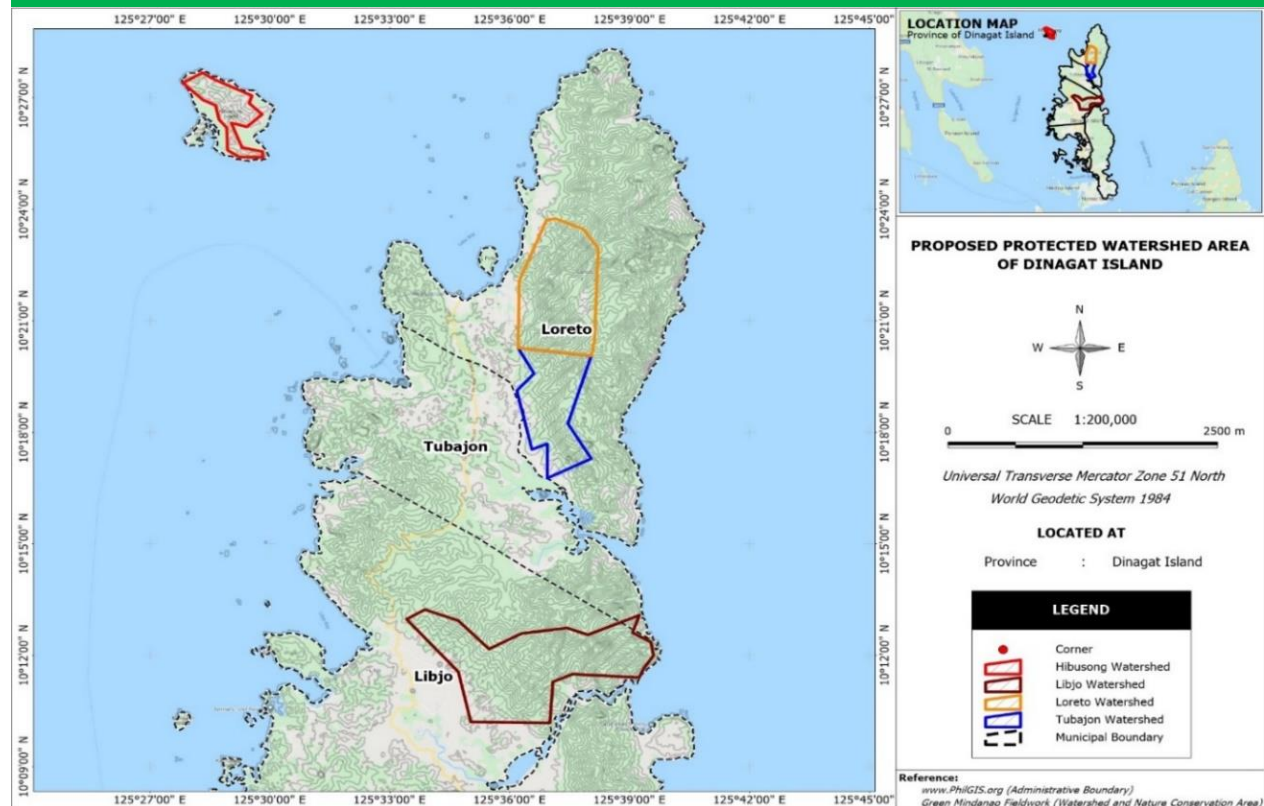
Bita-og Beach (or Bitaug Beach). Unspoiled white sand beach in Dinagat Island. *(Photo by Chy Canoy)*

Any initiative to safeguard the Dinagat provenance and its habitat, however, is challenged by the prevalence of mining operations in the area, which is a mineral land reserve rich in chromite, nickel, and gold. Logging, land conversion, and other destructive man-made activities pose further threats to conservation efforts of concerned organizations and local communities.

In 2016, GREEN Mindanao (Geographic Rediscovery of Endangered Environment and Nature of Mindanao, or GM) and Rainforest Trust (RT), together referred to in this document as GM-RT, initiated the project “Protecting Dinagat Island’s Threatened and Endemic Species (ProDITES).” They proposed four sites in Dinagat for LCA/WS establishment, briefly described below with their approximate areas.

- **Mts. Redondo and Kambinliw** in the municipality of Loreto, with 2,500 hectares of old-growth and residual lowland forest and constituting the watershed of five barangays and the main town (*poblacion*).
- **Paragua Forest Reserve** in the municipality of Tubajon, with 1,380 hectares of old-growth and residual lowland forest and making up 3,320 hectares of the municipal watershed boundary.
- **Mt. Palhi** in the municipality of Libjo, with 2,205 hectares of old-growth and residual forest and 500 hectares of old mangrove forest in Barangay Layawan, hosting an undetermined population of flying foxes.
- **Gibusong (or Hibusong) Island** in the northwest of Loreto, with 107 hectares of old-growth mangroves, which are the favorite forage of flying foxes.

Proposed protected and watershed areas in Dinagat Island. This is based on the indicative maps and actual shapefiles resulting from the field expedition organized by GM-RT. The total land area delineated for conservation reached about 7,202.55 hectares.



This short book highlights the significant achievements of the ProDITES project, which aimed to establish LCAs/WS in Dinagat Island and seek the support of local governments for the protection of key biodiversity areas in the province. One major activity was the field expedition initiated by GM-RT in 2016 as part of the wildlife assessment. It sought to provide new evidence of endemic rodents and flying foxes and identify their habitats for protection from degradation due to man-made activities.

ProDITES STRATEGIC APPROACHES

- Wildlife assessment
- Capacity building
- Education, information, and awareness campaigns
- Lobbying local government officials to issue resolutions to protect the endangered species and their habitats
- Engaging community stakeholders in safeguarding key biodiversity areas in their localities



The Project Team. GM-RT engaged a Czech zoologist, Dr. Milada Řeháková, to lead the field expedition for the wildlife assessment. She was joined by her fellow Czech scientists Lubomír Peške and Václav Řehák. Accompanying them were five members of GREEN Mindanao, representatives from the Provincial Environment and Natural Resources Office (PENRO), biodiversity specialist Rolly Caballero Balagon, and birdwatching and tour guide Ivan Sarenas. Also present were representatives of the three local government units (including municipal environment officer Domingo Elan, Jr.) and members of the people's organization AKKI. Three local residents further served as porters and field guides. *(Photo from GM photofiles)*

Wildlife Assessment

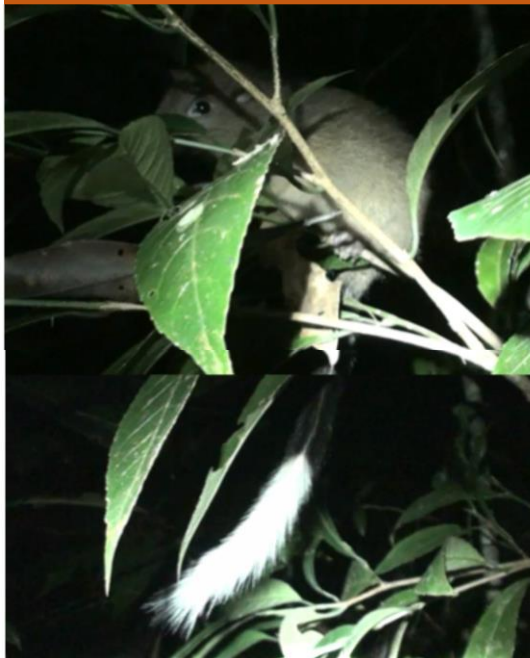
This activity was intended to identify, delineate, and demarcate proposed wildlife sanctuaries and conservation areas, and to gather ecological information on target species, associated wildlife, and their habitats. Two field investigations were conducted. The first was undertaken by Dr. Řeháková with the GM team in each of the four target areas in 2016. The field experience with Dr. Řeháková also served as the capacity building of GM staff and the local people who accompanied the group in its expedition to the different sites.

The second was carried out by the GM staff the following year, after they received hands-on training from the Czech scientists.

The teams positively identified and confirmed the presence of almost extinct, critically endangered, and endemic species, along with other endangered, vulnerable, and near threatened species, in their forest habitats. The GM staff findings added two species to the list made by the Czech-Filipino team: the Philippine cockatoo and two kinds of large flying foxes.

2016 Field Investigation

Critically Endangered Species



Dinagat bushy-tailed cloud rat (*Crateromys australis*). This is also an endemic species, first known in 1975, rediscovered by Dr. Milada Řeháková in 2012, and again documented by her Czech-Filipino GM team in December 2016. The single sighting of this species lasted several seconds and was recorded on video.

Its presence affirms the rich biodiversity of the island and its significance at the local, national, and international levels. (Photo by Dr. Milada Řeháková)

Endangered Species

Dinagat gymnure **(*Podogymnura aureospinula*).**

This rat species belongs to the family Erinaceidae. It is endemic to the Philippines, particularly Dinagat, Bucas Grande, and Siargao Islands. This rat was recorded in both the Loreto and Libjo areas. (Photo by Dr. Milada Řeháková)



Vulnerable Species



Mindanao bleeding heart (*Gallicolumba crinigera*). One of eleven bleeding-heart species, this pigeon is distinguished by a large blood-red patch on its breast. It was spotted in Mt. Kambinliw, Loreto. Forest clearance within this species' range must have led to a rapid reduction of its small, fragmented population—a trend that will likely continue. (Photo by Dr. Milada Řeháková)



Philippine wild duck (*Anas luzonica*). This species was observed in Libjo and Gibusong. Its population is declining rapidly owing to extensive hunting and the widespread conversion of its wetland habitats. (Photo by Brian Lawas)

Near Threatened Species



The Philippine tarsier (*Tarsius syrichta*). While this species is classified as near threatened, Dr. Řeháková speculates that the Dinagat tarsier may have a different conservation status.

In 1973, the “father of Philippine wildlife,” Dr. Dioscoro Rabor, recorded the Dinagat tarsier as bigger in size compared to the Bohol tarsier.

In 2014, UP scientists confirmed that the Dinagat tarsier is a new species among Philippine tarsiers.

In Dinagat, these nocturnal tarsiers, easily identified by their large eyes, were heard and seen in the Libjo area. One night, the scientists also discovered strong tarsier smell in a particular site. A resident further helped confirm the presence of tarsiers in the area. (Photo by Lubomír Peške)

2017 Field Investigation

Critically Endangered Species

Philippine cockatoo or red-vented cockatoo (*Cacatua haematuropygia*). This endemic and critically endangered white parrot is characterized by red feathers in its undertail. It was found in a dried, rocky river and was clearly visible between 6:00 a.m. and 8:00 a.m.



Haribon Foundation reports that the forest areas of Mt. Kambinliw and Mt. Redondo of Loreto are home to 102 bird species and a great number of biologically significant mammals. (Photo by Albert Serrano)

Vulnerable Species



Rufous hornbill (*Buceros hydrocorax mindanensis*). Locally known as *kalaw*, this bird can be seen in numbers in the Loreto forests as well as its neighboring island of Siargao. It is the largest of the Philippine hornbills, with the males reaching up to 94 cm in length.

The *kalaw* is dependent on forest habitats. Their numbers are diminishing because of habitat destruction and hunting, where they are often captured as pets.

Diverse species of hornbills were recorded mostly in the Tubajon and Loreto areas. Avibase, the bird checklist of the world, showed a record of 239 species as of 24 December 2019. At least 40 to 60 individuals had been recorded through vocals and actual sightings in these areas. Minimal results of at least 10 to 15 individuals were noted in Libjo. (Photo by Joseph Magana)

Near Threatened Species

Large flying fox (*Pteropus vampyrus*). They can be seen roosting at the center of Loreto and parts of Tubajon and Gibusong. Visible are the *Pteropus hypomelanus* and the *Pteropus vampyrus*; while one, *Acerodon jubatus*, is difficult to find, possibly because they are very few.



Large flying foxes are threatened by hunting, *kaingin*, and other forest activities that destroy their habitats. The *Pteropus vampyrus* is endemic to the country and is classified as near threatened in the IUCN Red List. All flying foxes are thus protected under the Wildlife Resources Conservation and Protection Act. (Photo by Brian Lawas)

Enactment of Relevant Ordinances

The wildlife assessment reports motivated the barangay officials to enact local ordinances for the conservation of endangered and endemic species within their areas of jurisdiction. The field investigation teams thus collaborated with the individual barangays concerned in mapping the watershed boundaries.

In the final indicative map, the watersheds in Tubajon and Loreto municipalities are combined to form part of a large proposed protected area, totaling around 7,203 hectares. This accounts for 7 percent of Dinagat’s total area of 103,634 hectares.

The proposed LCA/WS are shown below.

Municipality/area	Indicative map area coverage (in hectares)	Area reflected in shapefiles (in hectares)
Loreto (Mt. Kambinliw-Esperanza-Santiago Watershed)	2,066.00	2,043.00
Tubajon (Mabini and Sambonotan Watershed)	1,382.00	1,366.48
Libjo (Gen. Aguinaldo-San Jose-Bayanihan Watershed)	3,192.00	3,156.00
Gibusong/Hibusong Island	562.55	556.11
Total	7,202.55	7,121.59



The ProDITES project contributed to municipal and barangay declarations on biodiversity conservation in the proposed areas through GREEN Mindanao’s lobbying and advocacy activities to approve the relevant ordinances, as shown in the photos above. GREEN Mindanao considers community initiatives as critical to the creation of LCA/WS in Dinagat Island. The forests do not just provide a home to the endangered species but also ecosystem functions that are equally vital to human existence, such as water and food, climate regulation, and clean air. They form the essence of the Dinagat natural heritage. *(Photos by Carmela Oquina and Brian Lawas)*

Municipal and barangay declarations approved for the conservation of biodiversity

<p>Municipality of Tubajon</p> <ul style="list-style-type: none"> • Diaz • Mabini 	<ul style="list-style-type: none"> • Barangay Ordinance No. 03, s 2017, for the Municipal Council headed by Vice Mayor Simplicia Pedrablanca, Presiding Officer of the Municipality of Tubajon, to review and approve the order declaring Mt. Sambonotan (Bangkaw) Watershed Resource Reserve Measuring 1,382.161 Hectares within two Barangays Diaz and Mabini of the Municipality of Tubajon, Province of Dinagat Islands as a joint community watershed and wildlife sanctuary • Municipal Ordinance 2017-03-003, “An Ordinance Declaring the Sambonotan Watershed a Protected Area, Creating the Sambonotan Watershed Council, Providing Funds for the Purpose”
<p>Municipality of Libjo</p> <ul style="list-style-type: none"> • General Aguinaldo • San Jose • Bayanihan 	<ul style="list-style-type: none"> • Barangay Ordinance No. 01, s 2017, February 6th, on the Establishment of a Sanctuary inside the watershed area located at Barangay General Aguinaldo, Libjo Town, Province of Dinagat Islands • Barangay Ordinance No. 01, s 2017, March 25th, on the Protection of the Watershed Area/Wildlife Sanctuary within Barangay San Jose, Libjo, Province of Dinagat Islands • Barangay Ordinance, s 2016, December 1st, of Barangay Bayanihan, for DENR Secretary Regina Lopez of DENR to issue an executive order declaring Mt. Palhi Watershed Resource Reserve of about 875 hectares more or less within Presidential Proclamation No. 391 in Barangay Bayanihan, Municipality of Libjo, Dinagat Islands, as community watershed
<p>Municipality of Loreto</p> <ul style="list-style-type: none"> • Mt. Kambinliw 	<ul style="list-style-type: none"> • Submission of resolution to the municipal LGU for a proposed ordinance on the exclusion of Mt. Kambinliw watershed areas from the mineral land proclamation
<p>Gibusong/Hibusong Island</p>	<ul style="list-style-type: none"> • Joint Resolution No. 1, series of 2017, “An Ordinance Providing for the Conservation and Protection of Wildlife Resources, Gibusong Island and Their Habitats, Appropriating Funds Therefor and for Other Purposes,” signed by the barangay captains of Liberty, Magsaysay, and Helene

Engaging the Community

To sustain protection efforts, raising community awareness and appreciation of the environment is important. The local people need to be equipped with the skills and knowledge to manage LCA/WS effectively. In 2016, GREEN Mindanao, in partnership with government agencies, local governments, and private organizations, conducted biodiversity conservation and values formation training among local partners and leaders in partner barangays. It also teamed up with the Bureau of Fisheries and Aquatic Resources (BFAR), the office of then Congresswoman Arlene “Kaka” Bag-o, and the Department of Trade

and Industry (DTI) in training the communities in alternative livelihoods.

GREEN Mindanao further organized three-part cross visits toward the end of 2016 up until early 2017. It brought selected community leaders outside Dinagat to learn best practices from other areas undertaking similar biodiversity conservation work in partnership with tribal and local community organizations and the private sector. The aim was to familiarize them with the concepts of green ecosystems, nature and wildlife protection, and the benefits of an eco-friendly environment.



During the biodiversity conservation and values formation training, seminar discussions were held in both closed and open spaces (especially for the study tours), while the workshops gave the participants the opportunity to express their concerns and ideas, and to respond to questions about the importance of the environment, biodiversity, and responsible and environment-friendly livelihoods. Their responses will become the core values underlying the need to be organized for their own benefit and that of their children and future generations.

This activity formed part of the capacity building of partner communities to refresh them on the concepts of biodiversity conservation in terrestrial and marine habitats and discern their organizational strength as long-time partners in protecting these species.

From GREEN Mindanao, Brian Lawas and Albert Serrano joined the training as resource persons, while Carmela Oquina documented the participants' responses. *(Photos by Carmela Oquina and Brian Lawas)*

BFAR gave training on crab fattening and milkfish and *banagan* (lobster) culture to ensure the locals are aware of the appropriate technologies for using their marine resources. DTI provided training on bamboo plantation and the prospects of bamboo furniture making. This form of livelihood can be sustainable if bamboo is properly harvested. *(Photos from GM photofiles)*



During the cross-visits, barangay and municipal leaders of Dinagat had an opportunity to learn about local cooperation and unity in a local conservation area in Alegria Municipality, Surigao del Norte. In Gingoog City, they met with the manager of the local water district and had a discussion on private sector partnership in watershed management and restoration. At the Mt. Balatukan Protected Area, they learned from the park superintendent how to institutionalize integrated protected area management, where the locals are involved in efforts toward biodiversity conservation and sustainable development. The Minalwang Higaonon Tribal Organization (MIHITRICO) of Claveria-

Gingoog City boundary served as a model of indigenous biodiversity conservation and ancestral domain management. *(Photos from GM photofiles)*

GREEN Mindanao Executive Director Butch Dagondon acted as delegation head, introducing the Dinagat partners to the host organizations.

To popularize the conservation value among the constituents of Dinagat, GREEN Mindanao conducted information, education and communication (IEC) and awareness campaigns among community leaders and organizations, such as Alagad sa Kinaiyahan ug Kalambuan, Inc. (AKKI), and even the youth, particularly the students of Loreto Municipal High School and Loreto Academy. The campaigns focused on the diverse and abundant natural resources in Dinagat and the presence of

critically endangered, endemic, and vulnerable animals that need to be protected. These formed part of the core conversations with the communities of the concerned barangays.

Aware of the importance of these species, local contacts disclosed to GM staff the fate of the unique animals and how human activities had greatly altered their habitats. These interactions drove the momentum of the barangays to declare their own LCA/WS.



Ramon Jorge Sarabosing, a journalist from *Caraga News Courier*, with Loreto Municipal High School students, during the awareness training on biodiversity and essay-writing contest. Other resource persons were from GREEN Mindanao and the DENR-PENRO. The winning essay, titled “Bats Can Save the Day,” was coauthored by Mark Clemence Limpioso and Janperson Elan Ibanez. It was published in the *Caraga News Courier* on August 21, 2017. (Photo by Joseph Magana)

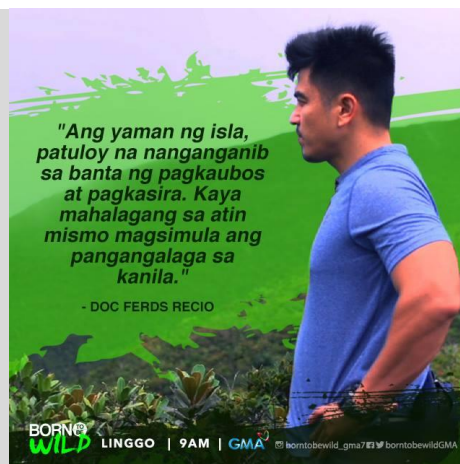


The ProDITES project provided funding for the construction of multipurpose guard stations in barangays that had successfully enacted their local ordinances for the conservation of biodiversity. One of these is Barangay Magsaysay in Gibusong Island, whose barangay captain, Ronnie Cabas, was highly proactive and supportive of the project. (Photos by Carmela Oquina and Chy Canoy)

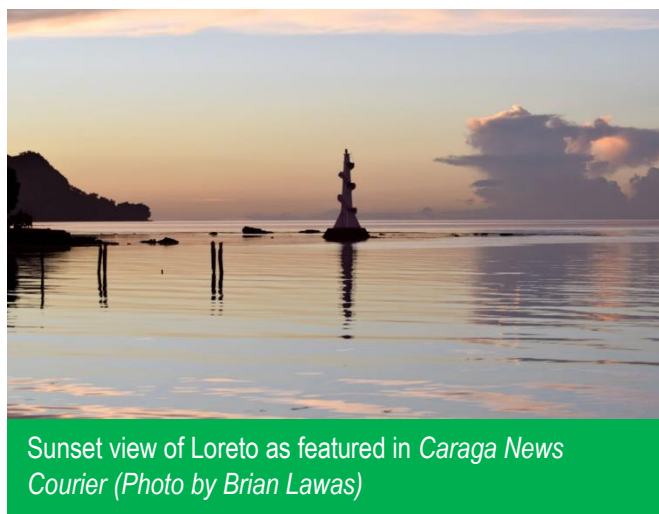
Showcasing Dinagat Island

The natural wonders of the island were featured in the March 18, 2018 episode of “Born to be Wild,” a nature and adventure TV program that is aired weekly on GMA Channel 7. Parts of that episode tackled the endangered species, the Bonsai Forest, and the bats in Loreto. In this nationwide broadcast, Doc Ferds, a co-host of the show, interviewed Carmela Oquina of GREEN Mindanao. This was the greatest media publicity so far that highlighted GREEN Mindanao’s work in Dinagat.

“An island very rich in natural resources but challenged by grave threats to its destruction; thus, it is important that locals take the lead in taking care of this natural heritage.”



GREEN Mindanao also invited a local journalist, Ramon Jorge Sarabosing, to observe the island and its activities, with GM staff as his guide. He wrote three successive stories during his stay in



Dinagat. The story titled “The Blue Lagoon of Libjo: Jewel of Dinagat Islands” was published in the *Caraga News Courier* on March 16, 2018, which featured an interview with Albert Serrano of GREEN Mindanao, highlighting his remarks: “We hope tourists who come here (in Libjo) respect nature and support the efforts of the communities around it.”

The other two stories focused on Loreto, noting the “see-worthiness” of the rock formations of Dinagat and beckoning tourists to visit the island, “Dinagat awaits you with

God-given gifts of nature. Its flora and fauna are abundant and given importance, its mountain forest remains thick (but in danger), and people so humble and kind.”

Working as ONE to Protect Dinagat

The above biodiversity evidence strengthens the important natural legacy of Dinagat Island. Its provenance must be safeguarded to ensure the continuity of ecosystem services brought about by these species and the forest habitat on which they depend for survival, just as humans also depend on these resources. The GM-RT ProDITES project has been generally received well, with the collective support of the community, the local governments, and DENR.

Barangay leaders and residents, being the local stakeholders, comprised an organic network that was tapped to coordinate project activities. Their active involvement was evident in the field survey, particularly the identification, selection, establishment, and monitoring of LCA/WS sites, which were crucial in crafting ordinances and measures for the protection of the target species.

Barangay and municipal officials and local community and PO leaders assisted the project team and the Dinagat PENRO in identifying boundary demarcations, especially in Loreto and Tubajon. With the aid of a topographic map and a GPS gadget, they took note of the natural landmarks, trees, boulders, creek junctions, ridges, and mountain peaks, and drew the indicative map for the LCA/WS.

The Dinagat PENRO provided technical assistance in formulating policies, ordinances, and management measures following existing rules and policies on protected areas and LCA/WS establishment. They also provided forest and wildlife guards with skills training and taught them techniques in conservation management for their future deputation.

This project report provides new and additional evidence that can be integrated into some form of clustered barangay-level protected area system to strengthen local interest toward the implementation of the Dinagat Island Conservation Areas (DICA) in the future. Funding and technical support can be secured from national and provincial governments, and even from incremental municipal budget allocation. The future project team will coordinate with ongoing and forthcoming wildlife research studies to corroborate the past assessment and the present inventory, verify the status of the Dinagat provenance, and update the characteristics of its habitat condition. This is useful for conservation and wildlife sanctuary establishment and management.

The role of local stakeholders, such as AKKI members, teachers, farmers, and fisherfolk, is critical. Their vigilance and conviction on environmental issues, as well as in-depth knowledge of ecosystem services and climate change, can reinforce the people's commitment to securing the Dinagat heritage for the benefit of successor generations.