



**VSU EXTENSION PROJECT
ANNUAL ACCOMPLISHMENT REPORT**

CY 2022

I. Basic Information

1. Title of the Project: **"Integrated Coastal Resource Management in Southeastern Camotes Sea and Selected Municipalities in Leyte"**
2. Proponents (s)
 - 2.1 Humberto R. Montes Jr. 1**, Eliza D. Espinosa2**, Analyn M. Mazo2**, Ma. Salome B. Bulayog2**, Senona Cesar2**, Art Russel R. Flandez2**, Ris Menoel R. Modina2**, Julissah Evangelio2**, Ruben M. Mercado, Jr.3***
 - 2.2 Designation: Professors*, Associate Professors**, LGU-CRMF Officer***
 - 2.3 Institution: Visayas State University
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3. Implementing Agency
 - 3.1 Lead Agency: Aquatic Ecosystem Division, Institute of Tropical Ecology & Environmental Management (ITEEM)
 - 3.2 Collaborating Agency (s): LGUs of 5th District of Leyte, Southern Leyte, PASAR and CENRO Baybay (PA-CIPLS)
4. Project Duration: 2017 – 2022 (continuing)
5. Project Location: 5th District of Leyte and Selected Municipalities of Southern Leyte, Isabel, Leyte and Ibarra, Maasin City
6. Total Budget Requirement: Php 354,920.00
 Budget Requested (Released): Php 150,000.00 (VSU)
 Agency Counterpart: Php 35,000.00 (LGU)
 Other Sources: Private Sector (PASAR, Php 139,920.00) and CENRO Baybay (Php 30,000.00)

II. Technical Information

1. Brief Project Description

The Integrated Coastal Resource Management Project of VSU is in collaboration with LGUs in the 5th District of Leyte and Selected Municipalities of Leyte and other private sectors. The 5th District of Leyte is composed of six (6) coastal municipalities which include Baybay City, Inopacan, Hindang, Hilongos, Bato and Matalom, Leyte. Each municipalities have an established marine sanctuary to enhance ecosystem health in coastal communities. Over 1,000 artificial reef modules were also deployed into the near-shore waters of Baybay City, Inopacan, Hindang, Hilongos, and Bato funded by the office of the Congressman of the 5th District. The goal of this project is to provide additional habitat for local marine flora and fauna since natural reef habitats have been disturbed or degraded in coastal environments. VSU mainly provides the technical support to the LGUs and private sectors in the coastal resource assessment and training, conservation and protection.

2. Brief rationale, objectives and methods used

Rationale

Fish catch continue to decline in spite of the many measures taken to abate overexploitation and rehabilitate degraded habitat of coastal and marine resources. In 1985, the VSU conducted preliminary studies on the status of coastal resources of Baybay City, Leyte Province that served as the bases for protection and conservation efforts. Since 1995, the Institute of Tropical Ecology and Environmental Management (ITEEM) of VSU had been conducting coastal resource assessments and monitoring in the 5th District of Leyte, wherein several fisher-folks are dependent on the sea to determine the impact of management efforts on conservation and protection of the coastal resources. The organization of the Integrated City and Municipalities Fisheries and Aquatic Resource Management Council (ICMFARMC) was initiated by Baybay LGU as mandated in the 1985 Fisheries Code the Philippines to implement the Coastal Resource Management (CRM) project with VSU as one of the collaborating agencies. Marine protected areas were established; fishery ordinances were passed and implemented; capability building in resource assessments and law enforcements were conducted; alternative livelihood projects were done; and environmental education and information were conducted. Although the fisheries and coastal resources have improved in some areas, there are still areas that need to be improved.

To sustain the CRM project, annual monitoring of coastal resources and marine protected areas were conducted. Artificial reefs were deployed to improve the habitat and enhance biodiversity and production in degraded coastal areas. Information was needed to prove that the protection and conservation efforts had positive effects on the people and the environment. Compelling further was the necessity to determine the impact of super typhoon "Yolanda" (Haiyan) event last November 2014, typhoon Odette in December 2021 and typhoon Agaton in April 2022 on the coastal resources.

Several Marine Protected Areas (MPAs) had been established as one way to conserve coastal resources. However, their importance and proper management is not well-understood by most fisherfolks. Thus, the need to continuously conduct IECs and networking.

Objectives:

1. To strengthen ICMFARMCs, BFARMCs & POs on coastal resource conservation.
2. To establish MPA network in southwestern Leyte.
3. To assist LGUs, industries and stakeholders on Coastal Resource Management.
4. To conduct IECs on coastal resources of Southeastern Camotes Sea.
5. To assist fish farmers' increase fish production.

Methods Used

Trainings, workshops, surveys and focus group discussions were used to strengthen CMFARMCs, BFARMCs & POs as well as in informing, educating and advocating CRM in the project site. Coastal resource assessments were conducted for formulation of policies and development plans of LGUs and industries. Further, results of coastal resource assessments were used in the development of IEC materials. To augment fish aquaculture and ease the fishing pressure on the overfished coastal waters of Baybay City and neighboring municipalities, fish fingerlings were produced in the hatchery and distributed to fish farmers for backyard aquaculture.

3. Highlights of Accomplishment (brief description of the previous year accomplishments)

Objective 1. To strengthen ICMFARMCs, BFARMCs & POs on coastal resource conservation.

▪ *Marine Spatial Planning and Coastal Zoning of Baybay City, Leyte*

In the realization of the proposed coastal zonation in every Coastal Barangays in Baybay City in connection with the policy recommendation presented by the CRM Team during the Sanguniang Panlungsod Session at Baybay City last May 27, 2021, marine spatial planning and coastal zoning workshop was conducted on July 1, 2022 at the Legislative Building, Baybay City, Leyte. The coastal zonation will shield threatened marine ecosystems and other marine resources from the intrusive human activities. It is way of managing and separating unsuited or multiple uses

of a coastal area. In a definite zone, certain activities can be allowed, allowed with approval, or prohibited, and the zoning can be ranged of from different conditions, such as economic development, tourism, conservation and hazard presence.

The goal or objective of the workshop is to develop a coastal zone map along the coastal barangays of the City of Baybay indicating the coastal resources, existing structures and areas/zones designated for activities like Marine Protected Area (MPA), Artificial Reefs (ARs), mangroves, seagrass beds, coral reefs, fishing grounds, resorts, industries, pier, among others. This activity was attended by 54 participants composed of Barangay Captains, Brgy. Officials (Kagawad, Brgy. Secretary), Fisherfolks, CRFMO who funded the meals and snacks of the participants. Results and output integration of the workshop is still on process.

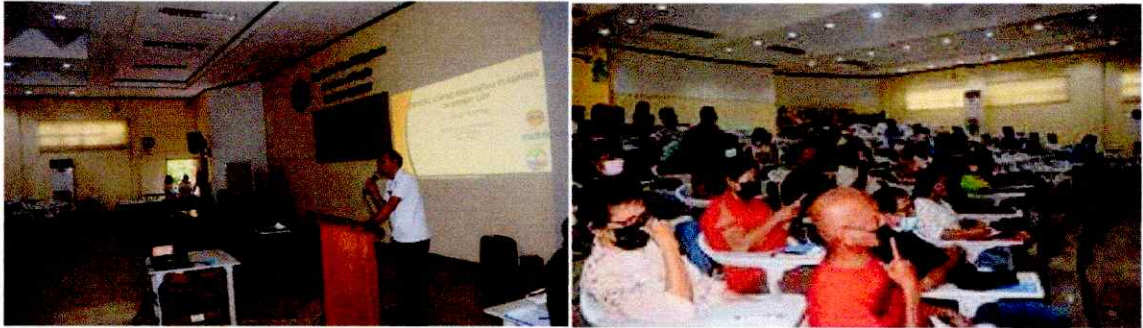


Plate 1. Overview presentation of the activity to the Barangay representatives of Baybay City.



Plate 2. Workshop proper per barangay.

Plate 3. Presentation of output per barangay.



Plate 4. The participants (Barangay Captains, Bantay-Dagat, LGUs, and ITEEM-AED) attended the Coastal Zoning and Spatial Planning Workshop in Baybay City, Leyte.

▪ **Giving of Plaques of Recognition to Partner LGUs**

The plaque of recognition was given to our CRM LGU Partners from Inopacan and Hindang, Leyte through its Honorable Mayor Azucena P. Mirambel and SB Member, Hon. Romualdo Ybañez, respectively. The activity was one of the highlights during the culmination program of the ITEEM 24th Founding Anniversary held at the Terrestrial Ecosystems Division on May 31, 2022. The team acknowledged and thankful to the Environmental Leadership and Training Initiative (ELTI) who funded the production of the plaques. The activity was participated and graced by our College Dean, Dr. Dennis P. Peque, the Vice-President for Research and Extension and Innovation, Dr. Maria Juliet C. Ceniza and VP for Administration and Finance, Dr. Danniel S. Tan. The citations of the recognition are the following:

presents this PLAQUE OF RECOGNITION

to the

**Local Government Unit of Inopacan, Leyte thru
the Hon. Mayor, Azucena P. Mirambel, MD
&
Local Government Unit of Hindang, Leyte thru
the Hon. Mayor, Betty O. Cabal**

for accommodating and continuously supporting the conduct of Marine Biodiversity Conservation in Camotes and Cuatro Islands, Camotes Sea, Central Philippines for Sustainable Marine Economy (CHED DARE-TO), Improved Cuatro Islas Protected Landscape and Seascape, Inopacan & Hindang, Leyte (GIZ-PAME), Ecofish and Coastal Resource Management (CRM) project of the Visayas State University (VSU).

**Local Government Unit of Baybay City, Leyte thru
Hon. Josette Y. Villamor
Barangay Captain, Brgy. Maitum, Baybay City, Leyte**

for accommodating and facilitating the conduct of Culture and Phenology of the Brown Seaweed Sargassum (Phaeophyceae, Ochrophyta) in Southern Philippines and Coastal Resource Management project of the Visayas State University (VSU), funded by the Commission on Higher Education (CHED), Region VIII.



Plate 5. The LGU Partners, VSU VPs, University Secretary, CFES Dean, ITEEM Director, AED and TED Heads and ITEEM faculty and staff.

Objective 2. To establish MPA network in southwestern Leyte.

▪ **Integrated Municipal Fisheries and Aquatic Resource Management Council (IMFARMC) and Southwestern Leyte Alliance (SWELA) Revival Meeting of the 5th District of Leyte and Southern Leyte**

The meeting was conducted in Inopacan Leyte, Function Hall, Old Municipal Building dated June 22, 2022 with the participants from LGUs – MENRO, MPDO, MAO and Bantay Dagat (Fisherfolks) within 5th District of Leyte and Southern Leyte through the office of the Governor and Maasin City. It was a collaborative effort with the CENRO – Baybay who funded the food and snacks, LGU-Inopacan for the venue and the travelling expenses shouldered by

the partner City and LGUs. The one-day activity was attended by 35 participants, wherein the main objectives of the activity was to reactivate/revive the ICMFARMC/SWELA and the finalization of the Southwestern Leyte MPA Network Memorandum of Understanding (MOU) and the plan for the election of new set of officers.

During the meeting, each LGUs were given the chance to report on the status of their respective CRM Program. This was facilitated by Mr. Jorge B. Omolon, the IMFARMC Chairman of the 5th District of Leyte. The following accomplishments and problems encountered were presented and discussed one by one by the representatives from the different municipalities:

- **Hilongos** - BFAR warned the fishermen for illegal fishing and will conduct a seminar to educate the community for awareness.
- **Bato** - BFARMC was created in 5 out of 7 barangays; seaweed production decreased since the typhoon Odette and relief from several agencies was given to the seaweed vendors.
- **Matalom** – tourism operations will be turned over to the LGU and will create a program to help the fishermen.
- **Inopacan and Hindang** – plan to conduct seminar or community training to give awareness to the “mananagat” since fisherfolks are invading the tourist spots like Canigao and Cuatro Islas.
- **Maasin** - the City was able to establish 10 bantay-dagat and trained them. A smokehouse was also built for fish tapa production. Also, BFAR distributed relief to all barangays to compensate and help the fishermen. Plan for the regular meetings for the fish cages and fish production recipient in Sogod Bay Area will be conducted after the covid 19 pandemic. The provincial government also made multi species hatchery. For the commodities under the protection, and in order for the system to work, the fisheries law should be enforced. In terms of the Livelihood, maintenance of the fish production for the fishermen and other livelihood programs will be conducted.



Plate 6. Overview presentation of the activity.



Plate 7. ICRM Program presentation.



Plate 8. Participants from the 5th District of Leyte and Southern Leyte (MENRO, MAO, CENRO-Baybay, and Marine Team) attended the 1st and revival meeting of the IMFARMC/SWELA for FY 2022.

Objective 3. To assist LGUs, industries and other stakeholders on Coastal Resource Management.

- **Monitoring of the marine flora and fauna in the vicinity of Philippine Associated Smelting And Refining (PASAR) Corporation, Barangay Libertad, Isabel, Leyte**

PASAR in Barangay Libertad, Isabel, Leyte is one of the progressive industries that have been contributing a lot to the economy of the Philippines. Considering the probable effluent and their possible impact to the marine ecosystem, PASAR invited the Visayas State University Marine Team to monitor the marine flora and fauna in its coastal area and conduct survey in relation to the ecosystem goods and services. Forging of MOA between VSU and PASAR was done first as our basis for the assessment conducted last December 8-10, 2022. Results of the

assessment can provide informed decision-making in the planning and management of the coastal area in PASAR and can be utilized in the re-application of the Environmental Compliance Certificate (ECC).



Plate 9. Random ecosystem services survey among fisherfolks in Barangay Matlang.



Plate 10. Random ecosystem services survey among fisherfolks in Barangay Sto. Niño.

▪ ***Coastal clean-up (VSU Beach)***

The coastal clean-up was conducted along the VSU Beach Sea front, dated May 20, 2022, a month after typhoon "Agaton" hit Leyte and Southern Leyte. The activity was participated by the BS in Environment Management graduating students. Estimated to more than 10 truckloads (ITEEM Canter) of debris and logs were collected brought about by floods.



Plate 11. BSEM students participated in the coastal clean-up at the VSU beach after the typhoon "Agaton".

▪ ***Crown-of-Thorns Removal and Coastal Clean-Up in Cuatro Islas***

The VSU Marine Team assisted the Protected Area Management Office (PAMO) staffs in the conduct of COT removal and coastal clean-up in Cuatro Islas Protected Landscape and Seascape (CIPLS), Inopacan and Hindang, Leyte on September 1-2, 2022. The two-day activity was participated by 21 participants composed of Barangay Officials, Bantay Dagat, members of the People's Organization – Key Biodiversity Conservation Association (KBCA).

Approximately 322 COTs with an average diameter of 17 cm were removed, collected and buried on land. While on the coastal clean-up, about 30 sacks of solid wastes collected which composed of plastic bottles/cans, disposable cups, plastic bags, kitchen scraps, glass bottles, metals, fishing lines, diapers, masks, plastic food containers, food wrappers, clothing, footwear and plastic/foam pieces. The collected waste was brought to the mainland of Inopacan, Leyte for proper disposal.



Plate 12. Removal of COT and solid waste collection with the participation of Bantay-Dagat and members of the People's Organization – Key Biodiversity Conservation Association (KBCA).

Objective 4. To conduct IECs on coastal resources of Southeastern Camotes Sea.

▪ **Construction and putting up of new “No Fishing” Signage at VSU Marine Sanctuary**

Construction and putting up of the new “No Fishing” signage at VSU Marine Sanctuary was done on May 13-15, 2022 after the Typhoon Agaton. Three (3) printed tarpaulins were mounted and placed near Calbiga-a river, in front of VSU Pavilion and Center for Continuing Education (CCE) Building (Fig 1a-c). Visibility of the signage is to remind everyone especially the fisherfolks, students and other stakeholders that fishing is strictly not allowed and prohibited within the VSU Marine Sanctuary to conserve and protect the marine resources and its diversity from exploitation.



Plate 13. “No Fishing” signage within VSU Beach. **a-** near Calbiga-a river; **b-** in front of VSU Pavilion; **c-** near the CCE building.

■ Coastal Resource Assessment (Mangrove Ecosystem)

The assessment was done in Barangay Punta and Palhi in Baybay City led by the Study Leader – Dr. Analyn M. Mazo of DBS together with the CRM project staff dated last June 07, 2022. Based on the assessment conducted, there were nine (9) mangrove species found during the sampling in Barangay Punta, namely: *Rhizophora stylosa*, *R. apiculata*, *Avicennia marina*, *Sonneratia*, *Lumnitzera racemosa*, *Aegiceras*, *Osbornia octodonta*, *Ceriops tagal*, and *Camptostemon philippinensis*. Of the said species, *A. marina* was the most important species ($Ni= 200.41$) having the highest stand Basal area, relative dominance, relative density, and relative frequency. This was followed by *Rhizophora apiculata* ($Ni= 107.46$). In barangay Palhi on the other hand, there were ten (10) species identified namely: *Excoecaria agalocha*, *Avicennia rhumphiana*, *A. marina*, *Rhizophora apiculata*, *R. stylosa*, *Sonneratia*, *Osbornia octodonta*, *Aegiceras*, *Ceriops decandra* and *C. tagal*. Among the ten species, *A. marina* ($Ni= 229.71$) was still the most important species owing to its high relative density and relative frequency. *A. rhumphiana* had the second highest importance value ($Ni= 194.59$) having the highest stand Area and relative dominance. Of the mangroves found in the two sampled areas, one is considered an endangered species, the *Camptostemon philippinensis* which was found in Barangay Punta. *Avicennia rhumphiana* found in Barangay Palhi is also considered vulnerable. These endangered and vulnerable conservation status indicates that there is a need to further protect our mangrove resources.



Plate 14. Mangrove assessment in Brgy. Punta and Palhi, Baybay City.

Other Accomplishments:

■ Food Packed Distribution (Typhoon Agaton Victims)

The CRM Team organized a relief operation among typhoon Agaton victims last June 1, 2022 at the evacuation center in Baybay Senior High School, Baybay City, Leyte. The donation was from the Impact Philippines-New York Friends through our partner NGO (Cebu Consulting Firm) Ms. Karen P. Gatus. The team was able to distribute 58 food packs to affected families who were senior citizen, lactating, pregnant and injured victims. The families were happy and thankful to receive the food packs even with a small amount.



Plate 15. Distribution of food packs at Baybay Senior High School evacuation center.

▪ **Awards of Recognition**

The fruit of our (CRM Team) labor in the Extension Program of ITEEM since 1996 made us proud receiving the awards of recognition in regional (group) and local (individual) categories.



Plate 16. The CRM Team called “*Saving our Seas*” garnered the Civil Service Commission (CSC) PAGASA Regional Award in 2022



Plate 17. Outstanding Extensionist of the Year Award 2023 during the 99th VSU Founding Anniversary

Highlight of Accomplishments for the Quarter (Jan-April 2023)

- **Water Quality Monitoring and Assessment (WQMA) and Habitat Assessment in Cuatro Islas Protected and Landscape and Seascape (CIPLS) Inopacan and Hindang, Leyte.**

The Researcher for AED-ITEEM participated in Water Quality Monitoring Assessment (WQMA) in Cuatro Islas Protected and Landscape and Seascape (CIPLS) Inopacan and Hindang, Leyte. The activity was conducted last March 13-14, 2023. The main objectives of the study are to determine the stages of deterioration in water quality; evaluation of the need for taking actions in preventing, controlling or abating water pollution and designation of water quality management areas (WQMA).

The program – Coastal and Marine Ecosystem Management Program (CMEMP) as one of the priority programs under the Department of Environmental and Natural Resources (DENR) is consistent with the DENR Administrative

Order (DAO) No. 26, Series of 2016. "Guidelines for the Implementation of Coastal and Marine Ecosystem Management Program (CMEMP)", wherein one of its components namely: Water Quality Monitoring Assessment (WQMA).

The conduct of WQMA is consistent with the DENR Administrative Order (DAO) No. 08, Series of 2016, "Water Quality Guidelines (WQG) and General Effluent Standards" and DENR DAO No. 19, Series of 2021, "Updated Water Quality Guidelines (WQG) and "General Effluent Standards (GES) for Selected Parameters".



Plate 18. The DENR team and AED-ITEEM Researchers on the conduct of Water Quality Monitoring Assessments (WQMA) in Cuatro Islas Protected Landscape and Seascape (CIPLS) Hindang and Inopacan, Leyte.

▪ **Seeding of Abalone on Coral Reefs**

To enhance fish farmers fishery production, the marine staff and researcher assisted the seeding of Abalone in Barangay Punta, Baybay City, Leyte dated March 17, 2023. The Activity was headed by the Coastal Resource and Fishery Team of Baybay City Office. A total of six hundred and ninety-three (693) abalone was successfully seeded on the Artificial Reefs (ARs) in Barangay Punta.



Plate 19. The Coastal Resource and Fishery Team and AED-ITEEM Research Aid/Staff conducted seeding of abalone in Coral Reefs of Barangay Punta, Baybay City, Leyte

▪ **SCUBAsurero and Installation of Marine Sanctuary Markers**

The activity was conducted in Sitio Digyo Island of Barangay Apid, Inopacan, Leyte dated April 05, 2023. The one-day activity was in collaboration with the Protected Area Management Office (PAMO) of CIPLS. The activity on marine buoy/markers installation in marine sanctuary, SCUBAsurero, and Beach Clean-up were simultaneously conducted and participated by the PAMO staffs, AED – ITEEM researchers and faculty and the members of the Marine Environmental Protection Command (MEPCOM) of the Philippine Coast Guard Eastern Visayas.

On the activity conducted, a total of twenty-five (25) buoy markers were successfully installed within the marine sanctuary of Digyo Island and a total of seven (7) large sacks of solid waste materials such as ripped floor mats, rusted tin cans, used clothes, plastic glass bottles, nylons, nets, disposable cups, plastic/foam pieces, kitchen scraps, and diapers were collected during the SCUBAsurero and Beach Clean-up. The collected solid wastes were then segregated and transported to the mainland of Inopacan for its proper waste disposal. The activity aims to reduce the threats and negative impacts of the Protected Area (PA) that may cause destruction on marine resources and its habitat (seagrass and corals).



Plate 20. Underwater solid wastes collection and sorting for proper disposal.



Plate 21. Installation of marker buoys in Digyo Island Marine Sanctuary by PA (CIPLS) and CRM SCUBA divers and volunteers from Environmental Protection Command (MEPCOM) of the Philippine Coast Guard Eastern Visayas.



Plate 22. PAMO-CENRO Staff, ITEEM and DBS Marine Team and MEPCOM volunteers' collaborative efforts during "Earth Day" celebration on April 5, 2023.

4. Problems met and recommendations:

Problems met:

- a. Budgetary constraints to conduct trainings, IECs, workshops, surveys and assessments.
- b. Bad weather prevented assessment for coastal assessments.
- c. Conflict of schedule in teaching and extension activities.

Recommendations:

- a. Revisit the CRM MOA for renewal between VSU and LGUs of the 5th District of Leyte.
- b. Conduct of MEAT in locally established MPAs/Marine Sanctuaries and METT in MPAs under NIPAS in the 5th District of Leyte and neighboring municipalities.
- c. Conduct socioeconomic study/survey in the coastal municipalities of the 5th District of Leyte.
- d. Submit proposal for the conduct of training on new method of coral assessment.
- e. More paralegal training on Coastal Law Enforcement.
- f. Pursue legal recognition of the Southwestern Leyte MPA Network thru submission of NEAT and SEAT results

[Handwritten signature in blue ink over a purple stamp]