

SCALING UP OF COASTAL AND MARINE ECOSYSTEMS MANAGEMENT PROGRAM



Baliangao Protected Landscape and Seascape, Region 10

Since 2017, following the issuance of DAO 2016-26 “Guidelines for the Implementation of Coastal and Marine Ecosystems Management Program (CMEMP)” in October 2016, the Department has formulated and implemented policies and plans to comprehensively manage and address the drivers and threats of degradation of the coastal and marine ecosystems nationwide. Activities conducted have been anchored on restoring the country’s coastal and marine ecosystem services near their original state and on increasing natural resiliency through science, community and experience-based approaches with relevant precautionary principles.

Significant to the systematic and efficient conduct of CMEMP was the National Program Orientation and Assessment held online in three (3) clusters in June 2020 and hosted by the BMB, through its Coastal and Marine Division (CMD), in order to level off of the CMEMP Logical Framework and its components to the Regional Planning and Technical staff.

For CY 2020, however, implementation on the ground has been challenged by the COVID-19 pandemic and the consequences stemming therefrom. Despite delays in the conduct of some activities, completion of work targets has been achieved throughout the fourth year of implementation of CMEMP.

In summary, all the CMEMP activities have been accomplished fully (100%) or have exceeded the targets (above 100%) collectively by the Regional Offices.

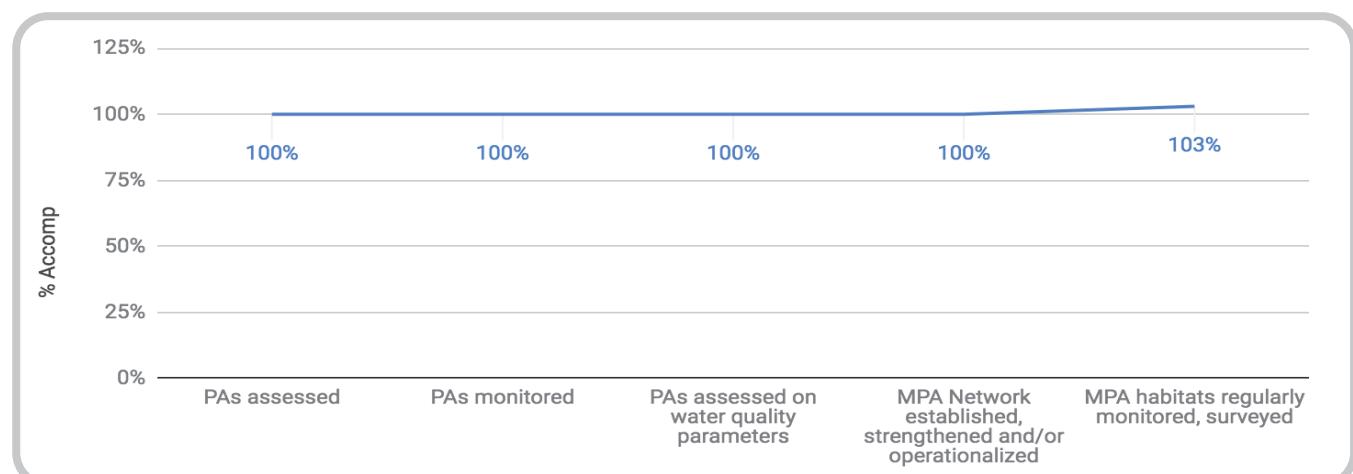


Figure 11.1 Overall Regional performance on the activities under the MPA Management, Strengthening and Networking component of CMEMP

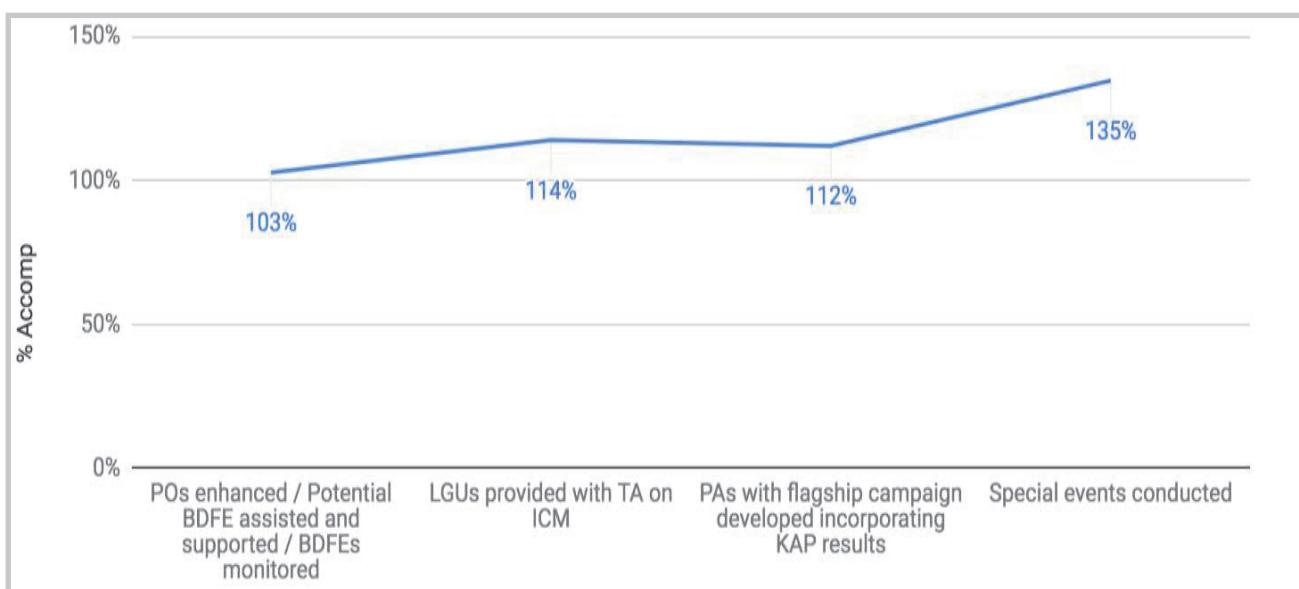


Figure 11.2 Overall Regional performance on the activities under the Development of BDFEs, Technical Assistance to LGUs, and Social Marketing/Communication, Education and Public Awareness (CEPA) components of CMEMP

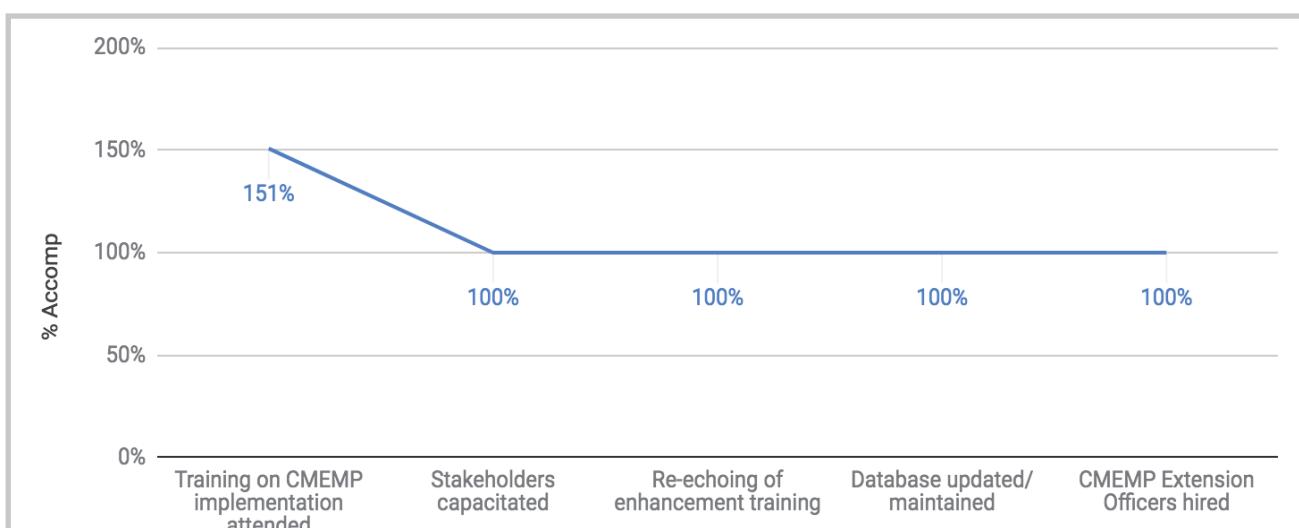


Figure 11.3 Overall Regional performance on the activities under the Capacity Building, Knowledge Management, and Program Support and Management components of CMEMP

MPA Management, Strengthening, and Networking Baseline assessment of corals, mangroves, and seagrass per PA

Baseline assessment is a strategy that provides an updated assessment of the extent and condition of coastal and marine habitats as well as the factors, threats, and pressures affecting their state and health.

Table 15. Regional accomplishment on the assessment and mapping of coastal and marine habitats

REGION	NAME OF PROTECTED AREA	HABITAT	HABITAT EXTENT (ha.)	LGU/LOCATION
R4A		seagrass	2.20	Maragondon and Ternate
		coral reefs	510.17	Ragay Gulf (Guinayangan, Tagkawayan, San Andres, San Narciso, and Buenavista, Quezon)
		for giant clams restocking		Mabini (Twin Rocks Sanctuary at Brgy. Bagalangit, San Teodoro, Mabini, Batangas)
R7	Olango Is Wildlife Sanctuary, Camotes Is PLS, Apo Is PLS, Tañon Strait PS, Panglao Is PS	coral reefs	574.25	
	Olango Is Wildlife Sanctuary, Camotes Is PLS, Apo Is PLS, Tañon Strait PS, Panglao Is PS	seagrass	3,790.85	
R10	Bacolod-Kauswagan PLS, Initao-Libertad PLS	coral reefs	262.26	
	Bacolod-Kauswagan PLS, Initao-Libertad PLS	seagrass	524.87	
R9		mangroves, seagrass & coral reefs	1,966.20	Selected coastal areas in Zamboanga City
R4A		mangroves	28.00	Brgy. San Rafael, Noveleta, Cavite
TOTAL			7,658.79	

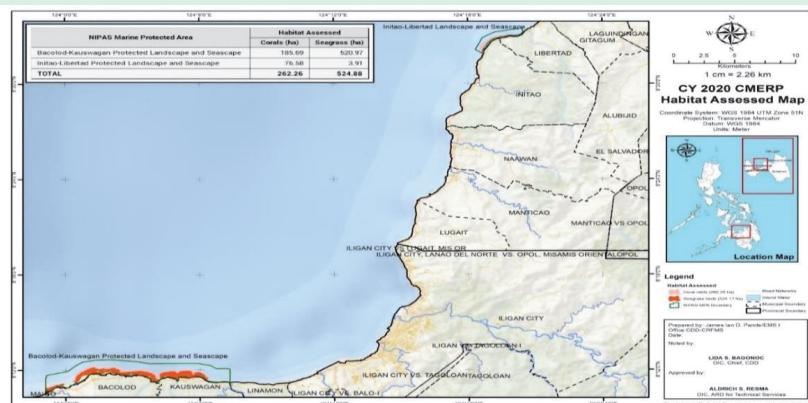


Figure 11.4 Map of the habitats assessed in two NIPAS MPAs in Region 10

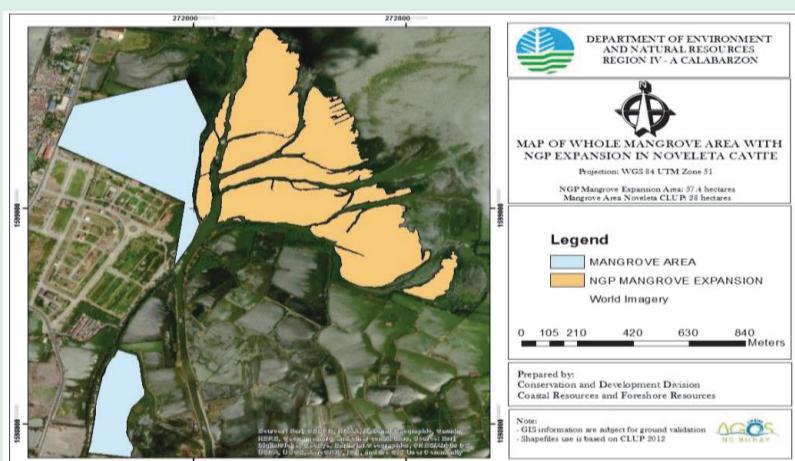


Figure 11.5 Map of the 28-ha mangrove area in Noveleta, Cavite

Figure 11.4 presents the map of the habitats assessed in two NIPAS MPAs in Region 10, namely, Initao-Libertad Protected Landscape and Seascapes and Bacolod-Kauswagan Protected Landscape and Seascapes. Among the threats identified in ILPLS are: High wave amplitude and frequency, garbage within coral reef ecosystem, and tourism activities such as bathing, boating, snorkeling and others; while the decrease of coral areas in BKPLS may be attributed to the influx of riverine sediments.

Figure 11.5 presents the map of the 28-ha mangrove area alongside the 57.4 ha NGP mangrove expansion area in Noveleta, Cavite. The assessment was conducted in partnership with the Forest Foundation Philippines (FFP) and Zoological Society of London towards the establishment of the area as a science-based mangrove conservation and management site.

Monitoring of Corals, Mangroves, and Seagrass per PA

Regular habitat assessment/surveys are conducted in established/permanent monitoring stations in order to gather the annual conditions of the coral reefs, seagrass beds, and mangroves, assess trends and updates on these ecosystems through time, and determine how they recover from threats and pressures affecting their state and health. For CY 2020, monitoring of 18 out of the 18 targeted PAs have been accomplished.



Figure 11.6 Deployment of permanent monitoring blocks in an established coral reef station in Station 9

Figure 11.6 presents the deployment of permanent monitoring blocks in an established coral reef station in one of the PAs in Region 9 (left); poaching was an observed threat in the Northern Sierra Madre Natural Park in Region 2 as empty shells of giant clams (*Tridacna gigas*) were scattered in its waters (right). A meeting with the community was conducted to inform them of the threat observed and its effects in the environment.



Figure 11.7 Common seagrass species (left) and common mangrove species (right) found within the Sarangani Bay Protected Seascape in Region 12

Water quality monitoring within legislated NIPAS PA

Water quality monitoring within PAs is vital to be monitored in order to clearly account the pollution load and other water-related parameters that can be attributed to causes of pollution in coastal and marine ecosystems within the PAs. For CY 2020, water quality monitoring based on in-situ parameters has been conducted in monitoring stations of 15 PAs, as targeted.



Figure 11.8 Water quality monitoring of marine and river waterbodies in Regions 3 and 5

Figure 11.8 shows the water quality monitoring of marine and river water bodies within the eNIPAS area of Masinloc-Oyon Bay Protected Landscape and Seascape (MOBPLS) in Zambales in Region 3 (left) and Bongsanglay Natural Park in Masbate in Region 5 (middle, right) using the Horiba Multiparameter water quality analyzer. It is noteworthy that the researchers have recommended that besides the conduct of capacity building for water quality methods, a more comprehensive monitoring plan must also be prepared and implemented by the team pursuant to DAO 2016-08 for a more accurate dataset on the required parameters and a more appropriate classification of the water body or the entire PAs.

Marine Protected Areas Networking

An MPA Network (MPAN) is a collection of individual MPAs or reserves operating cooperatively and synergistically, at various spatial scales and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve (UNEP-WCMC 2008).

A significant undertaking in 2020 that clearly defined and leveled off the activities and procedures for designing, establishing, implementing and managing MPAN was the conduct of Open Distance Learning (ODL) on MPA Networking organized by BMB with the SMARTSeas PH Project. This learning event was held online from May 16 to August 20, 2020 participated in by 70 DENR personnel (technical and planning staff) from various field offices. The learning event was able to come up with a five-year period roadmap and corresponding Work and Financial Plan submitted officially to BMB. Through this training, the field implementers were also provided with and now adopting the different thresholds/milestones criteria per level of networking which need to be satisfied and accomplished in order to scale up.

Based on the ODL conducted, 47 were identified for MPA networking to be targeted in the next 5 years. Of these, 23 MPANs were re-assessed in 2020 to determine their actual level based on the new threshold criteria provided by the BMB. The result of the assessment showed that 44 MPANs are still at the establishment level, 2 are for strengthening, 1 for sustaining, and none yet for institutionalization.

Another significant accomplishment under MPAN Component is the approval of the Joint DA-DENR-DILG Memorandum Circular providing the Guidelines on the Establishment and Management of Marine Protected Area Networks by the DENR Secretary. The JMC will serve as a useful guide for LGUs, DA, DENR, and DILG on the requirements and processes in establishing MPANs in the country. As of this writing, the JMC is for immediate signing of the DA and DILG Secretaries as well.

Maintenance and Protection of Coastal and Marine Ecosystems

Maintenance and protection of the coastal and marine ecosystems include the development of schemes to promote cooperation, coordination and partnerships among different stakeholders, as well as, the repair of damaged and disturbed coastal ecosystems by protecting and allowing ecosystems to recover naturally or use of technologies grounded on scientific basis and consistent with the overall management goals. For CY 2020, 38 NIPAS MPAs (32 Legislated, 4 Proclaimed and 2 Initial Components) have accomplished maintenance and protection activities comprising patrolling, surveillance of habitats, conduct of direct activities and repair of signages, other facilities, gears and equipment.



Figure 11.9 Coral reef monitoring of BBBIDA MPAN in Region 1

Figure 11.9 shows that in Region 1, part of the strengthening activities for the individual MPAs of the Bani, Bolinao, Burgos, Infanta, Dasol and Agno (BBBIDA) MPAN are coral reef monitoring using the photo transect method (left) and coral bleaching validation in response to the Coral Bleaching Watch Bulletin disseminated by BMB; a completely bleached bubble-tip sea anemone was found (right), among other partially and completely bleached corals, during the conducted validation in the waters of the BBBIDA.



Figure 11.10 Maintenance and protection of coastal and marine ecosystems in Regions 7 and 8

Figure 11.10 shows that in Region 8, the Blue Brigade have been conducting regular seaborne patrolling and monitoring in the waters of Biri-Larosa Protected Landscape and Seascape (left); marine turtles which were voluntarily turned over by the Land of Paradise Farmers Association (LOPFA) to the DENR last May 27, 2020 were released to Himokilan island, one of the islands of Cuatro Islas Protected Landscape and Seascape. Removal of Crown of Thorns Starfish (COTS) was conducted within Olango Island Wildlife Sanctuary in Region 7. To address COTS outbreak which can cause extremely rapid destruction of coral reef, boundary points of the area were delineated and concrete markers were constructed and installed on the reef flat (bottom right). Accordingly, the LGU of Uygan provided the materials needed and initiated the construction of the concrete markers.

West Philippine Sea, PH Rise and Verde Island Passage Philippine Rise and West Philippine Sea

The BMB held four (4) episode/ series webinars from September through October 2020 to present to the public the present information and results of the marine scientific researches during the 2019 expedition. The following topics were presented by experts from DENR BMB, DA-BFAR and the UPMSI:

West Philippine Sea

Episode 1: Biodiversity and Ecological Connectivity

Episode 2: Challenges and Threats

Philippine Rise

Episode 3: Biodiversity and Oceanography

Episode 4: Fisheries and Management Programs

The webinar series had an average attendance of 383 per episode based on Unique Viewers on Zoom and live viewers on Facebook live with average engagement of 1,300 from comments, reacts and shares and an average reach of 17,225 based on the Facebook live data.

Verde Island Passage (VIP)

The Verde Island Passage Marine Protected Area Network and Law Enforcement Network Management Board was formed through a Memorandum of Agreement between and among five (5) provinces namely Batangas, Marinduque, Romblon, Oriental Mindoro, and Occidental Mindoro, together with the DENR, DA-BFAR, PNP, and PCG that agree to render mutual collaboration and cooperation in promoting conservation, protection, and improvement of the biodiversity and coastal and marine resources of the VIP through the formal establishment of a passage-wide MPAN and Law Enforcement Network (LEN). The 3rd VIP MPAN and LEN Secretariat Meeting was conducted last March 2020 to discuss the proposed marine cable route study within VIP. It was also discussed during the meeting that VIP would be proposed as NIPAS MPA. There were two (2) levelling-off meetings conducted this year. They were attended by participants mostly composed of Legal Officers of the five Member-Provinces of the Network, DENR Central, MIMAROPA, and CALABARZON. The meetings were also attended by the BMB, Conservation International, and SmartSeas PH. The expected outputs of these meetings were to come up with a DENR position on the collection of user's fees and awareness-raising and appreciation of the significance of the Verde Island Passage that merits enhanced protection, conservation and management. Three virtual meetings were conducted to review the legal basis and recommendation on the management of the VIP MPA Network and Law Enforcement Network as an entity which can collect user's fees for maintenance and operations of this important conservation area. A Management Board composition/structure was drafted in the course of the meeting series.

Development of BDPE per coastal municipality within the NIPAS MPAs

Biodiversity-Friendly Enterprise (BDPE) Development involves the conduct of economic activities and practices of micro, small and medium enterprises, LGUs and People's Organizations (POs) that promote the sustainable use of coastal and marine biological resources; create wealth and value; and open opportunities for the equitable sharing of benefits among stakeholders. The provision of these livelihood options should help sustain the community support on all coastal and marine management efforts.

For CY 2020, BMB has organized six sessions of BDPE National Learning Event: Ecological Impacts of People's Organization Enterprise to Protected Areas, as well as, a series of BDPE Training on Social Preparation and Business Planning for Luzon, Visayas, and Mindanao clusters in December 2020 with remaining topics to be continued until March 2021. This is for the continuous capacitation of BDPE facilitators in order for the enterprises of the POs to be sustainably managed and improved.

Meanwhile, in the DENR Field Offices, about 114 out of 111 targeted as POs enhanced / POs profiled and assisted / potential BDPE assisted and supported / BDPE monitored and assessed have been accomplished. POs are continuously capacitated through CMEMP in order for them to sustainably manage their enterprise thereby improving their life and well-being. A total of PhP 37.775M of financial assistance was provided to POs, of which PhP2.8M was awarded to the Samahan ng Bakawan sa Barangay Maidlang in 2020, for the enhancement of their ecotourism project. A policy was also submitted to the PTWG of the Department outlining the development and recognition process of BDPEs.



Figure 11.11 Photo documentation of the BDFE National Learning Event on the Ecological Impacts of PO Enterprises to Protected Areas and related webinar series.



Figure 11.12 BDFE in Masinloc-Oyon Bay PLS

Figure 11.12 presents that in Region 3, the Samahang Magbabalat ng San Salvador (SMSS) is one of DENR's partners that implements this sea cucumber ranching enterprise in the Masinloc-Oyon Bay Protected Landscape and Seascape which helps in restocking sea cucumber, as well as, in improving the quality of water in the PA. The SMSS conducted harvesting and processing of sea cucumber on July 22, 2020 at San Salvador Island, Masinloc Zambales together with the DENR Field Offices, representatives from DA-BFAR, and LGU Masinloc personnel. A sample of a full-size sea cucumber harvested by SMSS is shown in the middle photo.

Technical Assistance to Local Government Units on the Establishment or Implementation of ICM linked to NIPAS sites

As an important component in the implementation of the DENR's CMEMP, Technical Assistance to LGUs on ICM is extended by the DENR both at the National and Regional Levels per Executive Order 533. In this Same Executive issuance and in order to institutionalize the ICM strategy with LGUs which are at the frontlines, mainstreaming ICM Strategy to their CLUPs and CDPs is realized to be the most practical approach in drawing their involvement in the process as well as their adherence to said plans for sustainability.

The Technical Assistance component of CMEMP covers the sharing/transfer of technical capacity of the DENR personnel to the LGUs. Among the activities on the conduct of TA include: inventory of active Municipal ICM Plans, Comprehensive Land Use Plan (CLUP), Comprehensive Development Plan (CDP), and Local Development Investment Program (LDIP) along a major river system influencing and draining within or adjacent to a Marine Protected Area; mapping of major river systems draining within or adjacent to a Protected Landscape and Seascape (PLS), Protected Landscape, or Protected Seascapes; setting up a demonstration site of Ridge to Reef Management and documentation of ICM Best Practices; meeting/consultations with key officials at the provincial/municipal LGUs; formulation or updating of Integrated Coastal Management (ICM) Plans; habitat assessment; deployment of MPA demarcation buoys and sinkers; conduct of trainings; and collaboration with LGUs particularly on activities pertaining to the updating of coastal and marine management databases.

For CY 2020, 74 LGUs were provided with technical assistance wherein 52 of those are on ICM which included activities on inventory and mapping of major river systems draining within or adjacent to PAs, inventory of active municipal ICM plans and orientation towards mainstreaming of ICM to CLUPs and CDPs.



Figure 11.13 Webinar on mainstreaming of ICM into the CLUP and CDP

Figure 11.13 shows the webinar on mainstreaming of ICM into the CLUP and CDP which was held on September 9, 2020. It was highlighted that the mainstreaming of ICM into these local plans is the most practical way to ensure sustainability. The online event was participated in by representatives from the DENR Regional and Field Offices, the Department of Human Settlements and Urban Development (DHSUD), Department of Interior and Local Government (DILG), and Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). Furthermore, the DHSUD and DILG signified their roles in the mainstreaming process.

Social Marketing Activities and Strategies; Conduct of Social Mobilization/Communication, Education and Public Awareness Activities

Development/ Updating of Social Marketing Activities and Strategies

CMEMP aims to develop social marketing campaigns for MPAs following the human-centered design thinking approach. Accordingly, the Knowledge, Attitude and Practices (KAP) Survey, a qualitative and quantitative method of data collection which measures the knowledge, attitude and practices of the residents relative to the coastal and marine ecosystems within their PA, is being utilized for this purpose. For CY 2020, 28 out of the targeted 25 PAs have undergone flagship campaigns incorporating KAP results.

Region 7 has facilitated coordination meetings in preparation for the KAP surveys and the actual conduct of surveys and interviews. Among the results of the surveys, assessed the information regarding the public's knowledge towards the coastal and marine ecosystems. This should be able to contribute to devising innovative strategies to strengthen social norms in promoting sustainable actions of the people towards marine ecosystems management.

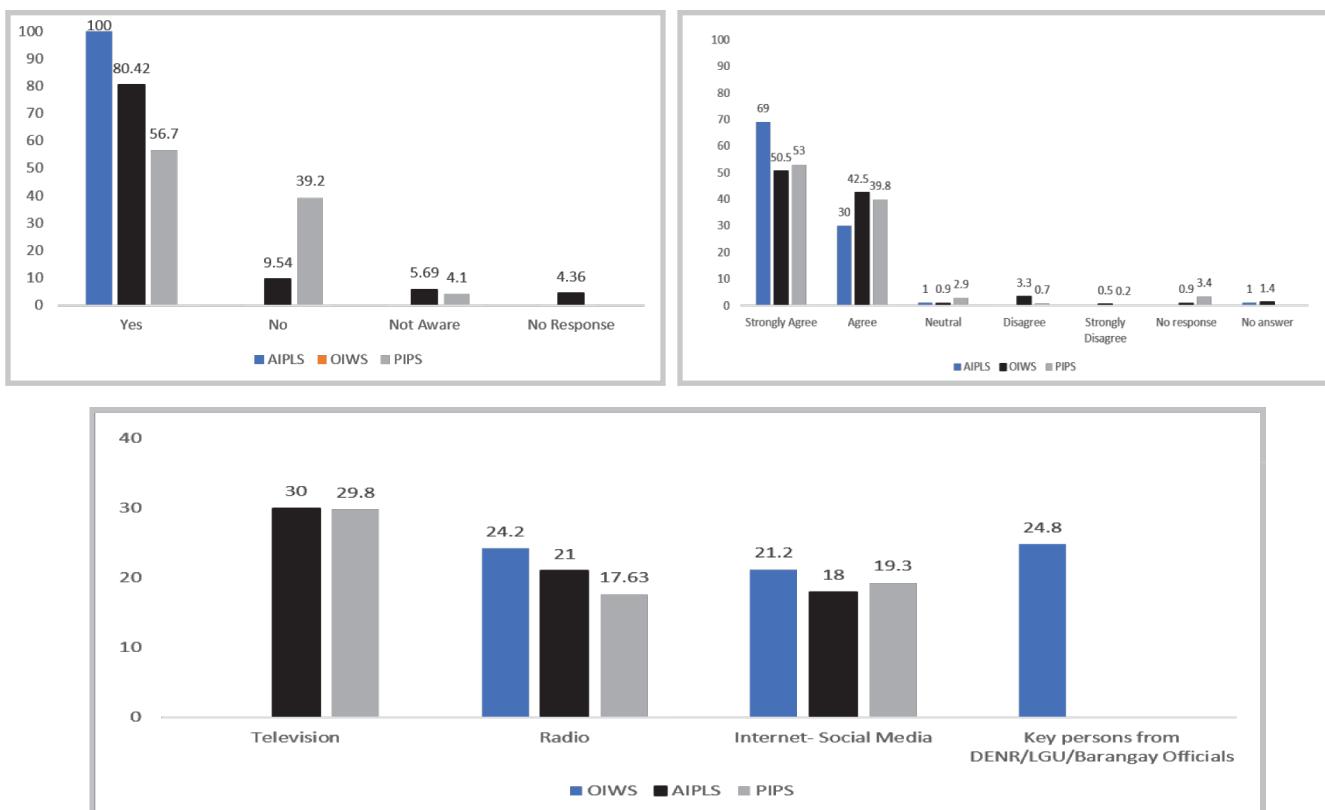


Figure 11.14 Survey results on the development/updating of social marketing activities and strategies

Figure 11.14 presents the survey results which showed that majority of the respondents were aware that their barangay is part of the Protected Area (top left). More than 50% of the respondents felt the need to protect the various ecosystems surrounding them because they affect their source of livelihood (top right); The most preferred communication channel were (a) Television, (b) Radio, (c) Internet - Social Media, (d) Key Persons from DENR/LGU/Barangay Officials (bottom).

Conduct of Mobilization/CEPA activities

The Communication, Education and Public Awareness (CEPA) activities form part of the Social Marketing and Mobilization component of CMEMP. It is one of the approaches promoting public awareness, instill social and environmental consciousness and effect behavior change with regard to the coastal and marine ecosystems. Three (3) special events regularly celebrated on coastal and marine are Month of the Ocean, Coral Triangle Day and International Coastal Cleanup. For CY 2020, an additional celebration was organized by BMB called World Oceans Day last June 8,2020. Because of the pandemic most of these celebrations were conducted through maximizing the use of social media that enables to reach a greater number of audience.



Figure 11.15 CY 2020 International Coastal Clean-up Day

Capacity Building

Capacity building is provided to field personnel in order to enhance their skills on SCUBA diving, habitat assessment and monitoring, determining and evaluating the current condition and relative abundance of resources using simplified scientific methods, among others.

Training by DENR CMEMP implementers to various stakeholders in the communities have been conducted in order to transfer/share knowledge and skills on coastal and marine management so that these may contribute to the overall achievement of the objectives of CMEMP.

Knowledge Management

The CMEMP Database is a knowledge management platform to serve as a repository of all data and information on the coastal and marine ecosystems including the results of the assessments. These shall be used to generate useful information for the management of coastal and marine biodiversity. All regional offices shall have their respective database system dedicated to knowledge storage and retrieval activities on all CMEMP-related matters.

A CMEMP national database will serve as the central repository of all data/information/knowledge gathered.

Program Support and Management

The hiring of CMEMP Extension Officers is intended to support the Regional Offices/PENROs/CENROs with the program implementation. This is to ensure that technical support staff are provided at all levels for effective, efficient and excellent conduct of all CMEMP activities in the field. For CY 2020, a total of 63 CMEMP Extension Officers have been hired.

Ways Forward

- Strengthening of existing convergence initiatives with other agencies on the conservation of coastal and marine resources.
- Complementation and harmonization of CMEMP activities with other initiatives and upcoming projects.
- Development of supplemental guidance and policies related to the implementation of CMEMP and the conservation of the Coastal and Marine Environment, including directives for social mobilization.
- Mainstreaming of water quality monitoring within all NIPAS MPAs in partnership with EMB, to include capacitation both in skills and equipment provision.
- Supporting more Biodiversity-Friendly Enterprise Development for People's Organizations within NIPAS PAs and other conservation areas for the reduction of pressure on coastal and marine resources.
- Development of a Capacity Building Plan based on the competency assessment of DENR personnel leading to the effective implementation of NIPAS MPAs and other conservation/ priority areas.
- Commencement of activities in assessing the value of goods and services provided by the coastal and marine ecosystems by starting with capacity building and exercises with the national and field focal persons. Economic valuation results will serve as inputs to policies and management decisions especially for nature-based climate adaptation solutions and the mainstreaming of ocean considerations in sustainable economic development plans.
- Data buildup and generation of reports through the AGOS Database, as well as, system enhancements and the upgrading of software, hardware and network infrastructures, as necessary. Provision of stable connection and access to the AGOS database for all Regions.
- Development/ Enhancement of a national map of the coastal and marine habitats as ground truthed by the DENR Field Offices showing the habitat extent, condition of the coastal and marine habitats, as well as, the factors, threats, and pressures affecting their state and health.
- The Comprehensive Land Use Plan Guidelines by the Department of Human Settlements and Urban Development already included the Integrated Coastal Management, but needs further enhancement to fully integrate the elements and strategy of an ICM approach. Hence, harmonization with the concerned agencies (DILG, DHSUD) is needed for possible synchronization/enhancement of policies as for the ICM.

For the priority seascapes:

- With the development of the Philippine Rise Marine Resource Reserve Management Plan comes implementation by the DENR and its partner agencies like BFAR. The DENR is also preparing for the GEF-7 PRICELESS Project, now in its Project Preparation Grant Stage, which aims to support and build momentum for management plan implementation, and long-term research, monitoring, and scientific capacity-building program for the area being proposed by the UP Marine Science Institute to the Philippine National Government. Further, the DENR is also leading the development of the House Bill establishing the PRMRR as a full-fledged NIPAS MPA.
- The development of the West Philippine Sea Long-term Roadmap for the conservation and management of biodiversity, ecosystems and environment shall be pursued, in preparation for the proposed Presidential Proclamations declaring the Pag-aso Islands Protected Landscape and Seascapes and the Eastern Kalayaan Protected Landscape and Seascapes as NIPAS Marine Protected Areas, endorsed in 2019, as well as to increase our maritime presence and assert our national interest in the seascapes, especially following the 2016 Arbitral Ruling in favor of the Philippines. In the meantime, Marine Scientific Research in the West Philippine Sea is also being pursued and proposed by the UP Marine Science Institute to the National Government, while other multilateral partnerships and cooperative international management, such as by partaking in the updating of the National Implementation Report of South China Sea Strategic Action Programme under UNDP-UNEP/GEF are explored.
- Strengthening of the institutional and implementation arrangement for the management and financial sustainability of the Verde Island Passage Marine Protected Area Network.

(Source: BMB)