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Moving as One with the Global Ocean Agenda

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CLIMATE AND BLUE CARBON

TRACK 1: CLIMATE AND BLUE CARBON

SESSION 1.2

Turning Blue: The Role of Cities in Forwarding Blue Carbon Solutions towards Climate Change Mitigation and Adaptation

CONVENERS:

ICLEI-Local Governments for Sustainability

Department of Environment and Natural Resources, Philippines

Turning Blue: The Role of Cities in Forwarding Blue Carbon Solutions towards Climate Change Mitigation and Adaptation: Session Report

Executive Summary

The session, *Turning Blue: Examining the Role of Cities in Promoting Blue Carbon Solutions towards Climate Change Mitigation and Adaptation* was a side event at the East Asian Seas (EAS) Congress 2018 that took place on 28 November 2018 at the Iloilo Convention Center, Iloilo City. The session was organized by ICLEI Southeast Asia Secretariat, in cooperation with Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), with funding support from Forest Foundation of the Philippines (FFP). Attended by at least 42 participants representing local government units, national government agencies, academe, private sector, local communities, and other key stakeholder groups, the session aimed to revisit the important role that local governments play in designing and implementing innovative blue carbon solutions. The activity became a venue to discuss and share strategies and programs towards integrated marine resource management.

Fostering an interactive and dynamic interaction amongst the participants, the session employed the Marketplace Activity approach. The resource speakers presented posters highlighting the blue carbon solutions that they are implementing in their respective localities. To enable the participants to directly engage and discuss with the speakers, the plenary was divided into groups and each group was given the chance to visit each poster station. As a culminating activity, the resource speakers and the participants gathered for a panel discussion that summarized the highlights of the session. The panel discussion was also a venue for the participants to express additional questions, insights, ideas, and other pertinent feedback related to the topic of the session.

Key learnings from the workshop centered on recognizing the importance of community participation. The resource speakers noted that local governments should always encourage and solicit the engagement and cooperation of its stakeholders, particularly the local communities who can be tapped as stewards of the marine ecosystems. In addition, the session also put premium on the enforcement of the laws and policies in place. The participants and the speakers agree that ordinances pertaining to fishing activities, harvesting of marine resource, pollution, and others should be strictly enforced at all times. The local government should allocate resources to support the operations of local enforcement groups such as the *Bantay Dagat*.

Another theme of the discussions is linkages and partnership building. Recognizing that the effects of climate change know no boundaries, the local governments maintained that partnership building with neighboring municipalities, national agencies, academe, private sector, and others is a strategic approach to integrated marine resource management. Inter-LGU cooperation and networking also scales up blue carbon solutions and allows them to pool their resources to expand the coverage of their initiative. A good example for this is the Oriental Mindoro Marine Protected Area (MPA) Network, a province-wide effort to uphold and preserve the biophysical integrity of the seas of Oriental Mindoro.

As a knowledge sharing session, the participants and the resource speakers also discussed key points and considerations for replication of the presented strategies. The resource speakers noted that municipalities should assess their challenges, context, and priorities first before they design their own blue carbon initiatives.

At the policy level, discussions during the session delved into the promotion of participation and cooperation through incentive mechanisms, alternative livelihood programs, and capacity building activities. It is significant that local communities are empowered to be stewards of the marine ecosystem and they should also be given the chance to try alternative livelihood to decrease their dependency on the marine ecosystems.

Blue carbon solutions should also be integrated into the development plans of the local government. This is to ensure that marine preservation and conservation is clearly defined and prioritized in the LGU's development agenda. Direct reference to blue carbon solutions in the development plans also enables the local government to allocate resources for the implementation of programs, projects, and activities supporting integrated marine resource management.

Ordinance and policies at the local level should also be revisited to assess if they are still in line with the current challenges and realities of the local government. There might be a need to update policies concerning fishing activities such as the use of proper fishing gear, observance of seasonal closures, licensing procedures for fisheries, and similar concerns.

Lastly, the initiatives towards blue carbon solutions should always be in accordance to the priority and goals of the national government. This will enable the LGU to access support from national agencies in terms of capacity building, technical guidance, and resource mobilization. Aligning blue carbon solutions to the national priorities and plans also enables the LGU to contribute to the mitigation and adaptation goals of the country.

Session Proceedings

The East Asian Seas Congress 2018 convened key stakeholders to discuss issues, concerns, challenges, and solutions that relates to marine resource management, environmental sustainability, and climate change adaptation and mitigation. To this end, the session, *Turning Blue: Examining the Role of Cities in Promoting Blue Carbon Solutions towards Climate Change Mitigation and Adaptation* was able to provide a dynamic platform where local governments, national government agencies, academic representatives, the private sector, and other stakeholders discussed their insights, ideas, and challenges concerning integrated marine resource management and blue carbon solutions. The session was organized by ICLEI Southeast Asia Secretariat, in cooperation with Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), with funding support from Forest Foundation of the Philippines (FFP).

Through the session, four Philippine cities have shared concrete and innovative strategies to implement and promote integrated marine resource management solutions which are inclusive, participatory, and sensitive to the stakeholders' needs and preferences.

A. Participants and Speakers

As a side session to the EAS Congress 2018, the activity was able to convene various stakeholders to discuss and deliberate about the significance of blue carbon ecosystems. Through the Marketplace Activity, the speakers were able to facilitate a multi-stakeholder knowledge exchange on topics such as marine resources management, blue carbon solutions, and their importance in climate change adaptation and mitigation.

A total of 42 participants attended the event, with representatives of the national government across Southeast Asia, local governments, academe, non-government organizations, and others. The organizers of EAS Congress tagged the event as a priority side session for the members of the PEMSEA Network of Local Governments (PNLG). The PNLG is a network of local government across East Asia that works on realizing the goals of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). The SDS-SEA aims to cover 25% of the regional coastline with integrated coastal management programs by 2021.

The Department of Environment and Natural Resources was represented by Undersecretary for Attached Supervising Agencies and Supervising Undersecretary for Manila Bay Coordinating Office, Shermin Rigor.

Featured local governments in the session were represented by the resource speakers: Engr. Noel Mendaña of Tubigon, Bohol; Ms. Rhodora Emilia Ramiento of the Provincial Agriculture Office of Oriental Mindoro; Hon. Ronaldo Golez of Dumangas, Iloilo, and Dr. Emma Porio and Dr. Norelene Uy of Ateneo de Manila University.

Mr. Victorino Aquitania, Regional Director of ICLEI Southeast Asia Secretariat served as the session moderator. He was supported by Ms. Val Bugnot, Communications Officer and Mr. Ricardo Marfiga Jr, Membership, Partnership, Governance and Special Projects Officer.

Attendees of the session consisted of PNLG members, DENR officials and staff, PEMSEA network members, academics, local government officials and staff, and others.

B. Marketplace Activity: Discussion Highlights

The session employed the Marketplace Activity approach to foster a dynamic interaction between the participants and the resource speakers. The design was also meant to do away with the traditional means of presentation which features a one-way communication mainly from the speakers only. Through the Marketplace Activity, participants are encouraged to interact directly with the resource speakers and converse with them for the allotted time period.

To facilitate the Marketplace Activity, posters highlighting the local government's blue carbon solutions were designed and displayed at the session venue. The posters are found in Annex A.

Participants were divided into five groups and each group was given the chance to spend 15 minutes to per poster station. They were encouraged to ask their questions, provide feedback and insights, and discuss with the resource speakers.

This section summarizes the highlights of the discussions of each poster station:

Dumangas, Iloilo: Integrated Coastal Resource Management: Creating Synergy between Man and Nature

Hon. Ronaldo Golez, Mayor of Dumangas, Iloilo led the poster presentation for his municipality. The succeeding paragraphs highlights the discussion points that he has shared with the participants:

The Municipality of Dumangas is a first-class coastal municipality located on the eastern-most side of Iloilo Province, Central Philippines. As a coastal town, it is endowed with vast aquatic resources with a long coastline totaling to at least 21.6 kilometers. Dumangas has the largest mangrove area in the stretch of Jalaur River basin with a total of 619.77 hectares.

Fishing is one of the main livelihood activities in the municipality and the activity has been ingrained in the people's daily lives. However, the alarming decline of the once rich near-shore fisheries and habitats in the municipality has prompted the local government to design and implement an Integrated Coastal Resource Management Program (ICRMP).

The project's goal is to ensure conservation of critical habitats of the coastal resources and increased income of coastal communities. The project was implemented in coordination with the Bureau of Fisheries and Aquatic Resource (BFAR), Department of Agricultural (DA), and Department of Environment and Natural Resources (DENR), the Zoological Society of London, and the University of the Philippines, Iloilo State College of Fisheries, and Iloilo Science and Technology University.

Results and outcomes

The ICRMP became the basis for the passage of Municipal Ordinance No. 2014-01 or the Municipal Fisheries Ordinance. It also started the mobilizing community members to become active *Bantay Dagat* Volunteers. The volunteers are deputized by the local government to ensure enforcement of applicable laws and have undergone the Fishery Law Enforcement and Enhancement Training conduced by BFAR. Seventeen fishermen's association are also organized by the Municipal Fisheries and Aquatic Resources Management Council.

Through this program, Dumangas has declared a total of 89.134 hectares as marine protected area. In addition, 170 units of artificial reef (AR) modules (jackstone and box type) were also installed between 2010 and 2016. Artificial reefs provide a platform where corals and reefs can form their foundation again and continue to rebuild and grow.

Further, through constant mangrove rehabilitation and reforestation activities, a total of 209,787 mangrove trees were planted between 2012 and 2018 with a survival rate of 40%.

The increase of mangrove forest cover helped in minimizing the effects of coastal bank erosion. The mangrove forest also provided protection against storm surges.

All of these efforts have led to notable results. The National Stock Assessment Program (NSAP) conducted by the Municipal Agriculture Office and BFAR in 2017 noted an improvement of the biodiversity in the Lapus Lapus Fish Sanctuary. The increase in fish stocks led to 10-20% hike in catch as reported by the fisherfolk. The Bantay Dagat and Coast Guard, who were monitoring the deployed AR, also noted a significant growth of corals and sea grasses in areas where AR units are installed. Water quality monitoring conducted by DENR- Environmental Management Bureau and BFAR also showed that water quality in the seas of Dumangas has improved.

Alternative livelihood options

To support communities in having a steady steam of income, the LGU of Dumangas has introduced alternative livelihood programs such as oyster in bamboo raft projects, cultivation of fisheries for bangus and tilapia, and the provision of fishing gears that they are allowed to use within the municipality's boundaries. For those who have tried oyster in bamboo rafts as a livelihood activity, it was reported that the quality of the produced oysters is at par with market standards. In addition, growing oysters in bamboo rafts have shortened the production process from 9-12 months to six months only.

Supplementary activities

All of these activities are supplemented with an information, education, and communication (IEC) to ensure that stakeholders are aware of the initiatives being implemented by the city. Dumangas also has a Climate Field School; a program which provides capacity building for farmers, fishermen, and community members to gain knowledge about climate change and how they can make informed decisions to minimize risks associated with the changing climate.

Concepts of integrated coastal marine resource in Dumangas are also communicated to the fisherfolk during Fisherfolks' Forum. Municipal employees are also trained to conduct mangrove assessment and to design effective mangrove conservation activities.

Next steps

Considering the benefits that ICMRP has delivered to Dumangas, the municipality plans to expand its activities to reach more stakeholders and encourage other sectors to participate and engage as well. Beyond improving the biophysical characteristics of Dumangas' water, the LGU envisions building a culture of environmental stewardship among its citizens. Through continuous awareness raising and advocacy building, the LGU is encouraging all sectors of Dumangas to do their part in protecting their natural resources.

Provincial Government of Oriental Mindoro: Enhancing the Carbon Sequestration Potential of Oriental Mindoro MPA Network

Ms. Rhodora Emilia Ramiento from the Fisheries and Coastal Resource Division of the Provincial Agriculture Office of Oriental Mindoro shared the innovative activities that the Oriental Mindoro MPA and Fishery Law Enforcement Network has conducted throughout the years.

Oriental Mindoro is located in Region IV-B, otherwise known as the MIMAROPA Region. On the north, it is bounded by the Verde Island Passage; Maestro del Campo Island and Tablas Strait on the east; Semirara Island on the south; and Occidental Mindoro on the west. The province is known to be a major food supplier and is also home to a variety of eco-tourism destinations.

Aimed to uphold the protection and conservation of their natural resources, the provincial government of Oriental Mindoro is constantly working on the enhancement of the carbon sequestration potential of Oriental Mindoro MPA Network.

The Oriental Mindoro MPA and Fishery Law Enforcement Network encompasses some of the most diverse coastal and marine waters in the world. Its 310,789 ha cover is home to 34 MPAs, 1 RAMSAR site, 1 Man and Biosphere Reserve and a significant portion of the Verde Island Passage. Collectively, the annual carbon sequestration potential of blue carbon ecosystems in the network is estimated at over 3.7M GT.

Activities of the network revolve around the basic needs of the 15 LGU members in terms of facilitating information sharing, resource pooling, and conflict resolutions relevant to the MPAs, Bantay Dagat and other fishery law enforcement teams working within Oriental Mindoro and VIP. The network is also developing an approach to implement standardized data gathering protocols for purposes of management planning, monitoring, evaluation, and updating of MPA and Environmental Law Enforcement plans in the province.

Further, the network also calls for accessing partnership and assistance from national government agencies, civil society organizations, partner institutions, and others.

Programs and strategies implemented by the Oriental Mindoro MPA and Fishery Law Enforcement Network has led to the sustainable management of 34 MPAs which cover 6786.51 hectares of mangrove, seagrass, and coral reefs. The network is also implementing an annual two-month fisheries seasonal closure which runs between November and January. The seasonal closure covers 310,7889 hectares of municipal waters. The closure is aimed to maintain desirable population levels of fish and aquatic species within the network. The replenished supply of aquatic resources after the seasonal closures benefit a total of 18,000 registered fishermen representing at least 8,155 families.

Tubigon, Bohol: The Tubigon Group of Island Mangrove Swamp Forest Reserve and Wilderness Area

Engr. Noel Mendaña from the Municipal Planning and Development Office of Tubigon, Bohol led the poster presentation titled, *The Tubigon Group of Island Mangrove Swamp Forest Reserve and Wilderness Area (TGIMSFRW)*. He discussed the opportunities, challenges, and benefits of establishing the forest reserve and wilderness area. Salient points of his discussion are given below:

The Municipality of Tubigon is a coastal port town located in northwestern Bohol, 54 kilometers from Central Tagbilaran and 21 nautical miles south of Cebu City. Tubigon hosts the second busiest port in Bohol and is also a major port of entry to Bohol via Ceby City for passengers and cargo traffic. The 34 barangays in the municipality mainly engage in trading and service industry. Fishing is also one of the most common livelihood activities.

To ensure the vitality and health of marine ecosystems in the Tubigon, the municipality established the Tubigon Group of Island Mangrove Swamp Forest Reserve and Wilderness Area. This space consists of five small islands declared as protected landscape and seascape area under the National Integrated Protected Area System (NIPAS). The islands are also part of the Danajon Double Barrier Reef.

The TGIMSFRW is Tubigon's way of addressing the rampant cutting of mangrove forests, overharvesting of marine resources, coastal erosion and the general loss of marine habitat. The forest reserve was established through continuous dialogue and cooperation with community members, who committed themselves as co-managers and stewards of the area.

The TGIMSFRW is governed by a General Management Plan put together by the municipality of Tubigon in coordination with the Protected Area Management Board (PAMB) and DENR. The GMP of the area is made in synchrony with the Forest Land Use Plan of the Tubigon to ensure integration of strategies, programs, and activities to preserve and protect the TGIMSFRW.

The TGIMSRW was established to meet the following objectives:

- Rehabilitate and protect the various ecosystems within the protected area
- Establish and promote ecotourism sites and facilities
- Explore, develop, and promote sustainable livelihood activities
- Intensify enforcement of applicable laws related to the utilization, development, and protection of natural resources
- Determine and implement allowable zones and regulate activities within the protected area
- Organize and build the capacities of PAMB seaborne patrol groups and access funds for the operations of the group
- Intensify awareness raising about the protected area and the general significance of environmental protection and conservation

Through the establishment of the TGIMSFRW, the municipality of Tubigon was able to start an ecotourism project identifying sites for mangrove tours and bird and bat watching. Three livelihood projects were also extended to the stakeholders of Barangay Maca-as, Batasan, and Matabao.

Following this initiative, four MPAs were established and an additional 20 hectares of mangrove forest was reforested. The forests serve as a protection from storm surges during extreme weather events. This is especially beneficial for the people in Tubigon since most of the barangays lie in the coasts of the town and are extremely exposed to the hazards of storm surges and strong winds.

The TGIMSRFW was also able to consolidate the efforts various stakeholders in the municipality with regards to promoting environmental stewardship. The national government, through DENR, is actively supporting the protected area and lobbying for continuous support from the private sector, academe, community leaders, and other important actors.

Puerto Princesa, Palawan: Love Affair with Nature

Ms. Zorina C. Arellano from the City Environment and Natural Resources (CENRO) of Puerto Princesa City, Palawan led the poster presentation for their city. One of the crowd favorites, participants were intrigued to learn more about this creative activity. Here are the main points of Ms. Zorina's presentation:

Puerto Princesa City located at the mid-section of the long strip of Palawan Island province. The city is dubbed as the Last Ecological Frontier due to its world-famous biodiversity and natural resources. With a total land area of 219,339 hectares, Puerto Princesa is home to 61 barangays. More than 70% of the land cover is forest and the city's coastline stretch to a total of 416 kilometers.

The main industries in Puerto Princesa are tourism and fisheries. The city also has 16 Community-Based Sustainable Tourism Projects (CBSTs) which are commonly near mangrove areas. In 2017, these livelihood projects have earned Php 112.4 million.

Love Affair with Nature

The premise of the activity is quite simple: every February 14, a mass wedding is held for the couples in Puerto Princesa who wish to get married. Then, as a symbol of their eternal love, the couples plant a mangrove propagule along the coastline of the selected planting site.

Every year, stakeholders of Puerto Princesa express their anticipation and excitement for the event. The event is also supported from the Church, academe, community groups, and others.

Such is the significance of the activity that the city government decided to regularly conduct the program. Puerto Princesa LGU passed the City Ordinance 287: An Ordinance Declaring February 14 of Every Year as Love Affair with Nature Day.

Results and Outcomes:

In its 16 years of implementation, the Love Affair with Nature has facilitated the rehabilitation and reforestation of 90 hectares of mangrove area. More than 130,000 seedlings of mangroves were also planted in select sites within the city.

Through the activity, the city is also able to deliver awareness raising campaigns to communicate the importance of stakeholder engagement in the protection and conservation of mangrove ecosystems.

The Love Affair with Nature also gathers various stakeholders in the city; fostering strengthened partnership and linkages among these actors.

Supporting sustainable livelihood for the communities, the Love Affair with Nature also attracts tourists that do not only witness the ceremonies but take part in mangrove planting activities as well.

Ateneo de Manila University (ADMU) and Manila Observatory: Coastal Cities at Risk (CCAR) in the Philippines

This poster presentation was delivered by Dr. Emma Porio, Professor from ADMU's Department of Sociology and Anthropology and Project Leader, CCAR and Dr. Norelene Uy, Project Manager, CCAR.

As a representative of the academic sector, Dr, Porio and Dr. Uy stressed the importance of marrying scientific work with local and national policy development. As such, they shared their work on Coastal Cities at Risk (CCAR), a project that aims to enhance the capacity of coastal cities in Metro Manila, Iloilo, and Naga through the promotion of better understanding of the complexity and dynamics of climate change and disaster risk reduction and management.

At the macro level, the project aims to undertake new transdisciplinary action research, strengthen public-private partnerships, build capacity of resilience scientists and practitioners, and inform resilience plans of cities. In addition, CCAR fosters the co-creation, co-management, and co-ownership of resilience building by local and national governments, academic and scientific institutions, private sector and other stakeholders.

CCAR bring in advance knowledge for partner areas in understanding climate change adaptation and disaster risk reduction for resilience. This is done through the characterization and visualization of climate and atmospheric hazards across space and time. Project sites are also assisted in understanding the evolving exposures, contextual vulnerability, and capacities of multiple stakeholders.

Further, CCAR is involved in developing methodologies and tools for climate change adaptation and disaster risk reduction for resilience. They support local governments in ensuring that significant elements of resilience and disaster risk reductions are present in their development plans, processes, and programs. The National Resilience Council is currently developing a City Resilience Suite to streamline this assessment process. The project is also working on informing and enhancing the existing tools and approaches including the Climate Disaster Risk Assessment (CDRA) which is primarily being used for disaster and climate risk governance in the Philippines.

Lastly, CCAR puts premium on enhancing the capacity and knowledge transfer for climate change adaptation and disaster risk reduction for resilience. The project strives to achieve this goal through enhancing the newly-created Master in Disaster Risk and Resilience (MDRR) program. This program is designed to train public and private sectors to develop risk and resilience research utilization approaches

that can strengthen implementation of disaster risk reduction and resilience programs. Further, CCAR is also delivering multi-stakeholder and transdisciplinary work with the National Resilience Council to inform policy reform and formulate public and private practice on resilience.

C. Highlights and Themes: Participants' Feedback, Insights, and Ideas

Participation and Stakeholder Engagement

Most of participants of the session asked the resource speakers about their efforts in ensuring citizen engagement and participation in their respective initiatives.

Engr. Noel Mendaña of Tubigon, Bohol noted that when they were first establishing the TGMISFRW, they had to manage resistance from affected communities and households. He shared that as duty bearers, local government officials had to understand that the resistance is not inspired by mere insubordination but because of the community's preference to preserve the status quo. Communities were afraid that their livelihood would be affected and would ultimately drive them away from their homes and families in search for other income-generating activities.

To address these concerns, the LGU implemented information dissemination activities and conducted dialogues with communities to explain to them the value of establishing a forest and wetlands reserve in Tubigon. This is coupled with alternative livelihood programs so that affected residents are assured that they can still continue with their income-generating strategies as long as they do not violate the rules inside the forest reserve.

In the case of the Provincial Government of Oriental Mindoro, Ms. Ramiento shared that participation of all key stakeholders is necessary for any initiative to be successful. Participation is at the core of the province's MPA network. She shared that when people, especially the local communities, are given the chance to participate, they are always willing to extend their cooperation and coordination with the authorities. However, she also noted that a good prerequisite of participation and engagement is awareness-building. Information dissemination activities, dialogues, and consultations are necessary to ensure that stakeholders are well-informed of the initiative and the commitment that are expected from them.

Enforcement of Laws and Policies in Place

Another theme of the discussion is the enforcement of the laws and policies in place. All presenters, with the exception of CCAR, highlighted improve policy enforcement through *Bantay Dagat* and other relevant groups. The resource speakers shared that the strict enforcement of the law is important in ensuring that the MPAs are well managed.

In Oriental Mindoro, where an annual seasonal closure is being implemented, the *Bantay Dagat* officers are encouraged to stay vigilant and apprehend anyone who will violate the law. Since the seasonal closure is implemented throughout the whole network, neighboring LGUs are expected to uphold the same ordinances and support each other in apprehending anyone who will continue with fishing activities during the seasonal closure.

The resource speakers also noted that institutionalization of integrated marine resource solutions should always come first before a local government looks into the enforcement of laws and policies in place. For instance, Tubigon, Dumangas, Oriental Mindoro, and Puerto Princesa all have municipal and provincial ordinances that supports the establishment of Marine Protected Areas. Ordinances that are passed by the municipal council lend legitimacy to the marine resource management solutions which enables the local government to allocate resources for its implementation, build technical working groups to support its operation, and craft polices that will support the preservation and conservation of marine resources.

Linkages and Partnership Building

Participants also asked queries regarding establishing linkages and partnerships that are necessary to support the local governments' blue carbon solutions. They expressed particular interest for Oriental Mindoro's province-wide MPA network, a feat which is considered difficult since it requires the unanimous agreement of local government units. Ms. Ramiento shared that the establishment of the network is a product of tireless and continuous relationship building not only with the local governments but with the national government agencies, private sector, academe, and community members as well. She stressed that partnership building should focus on fostering trust and cooperation and highlighting co-benefits for everyone involved. In the case of the Oriental Mindoro MPA Network, the local governments have acknowledged the need for integrated, widened, and consolidated efforts to preserve and protect their seas.

In the case of Puerto Princesa, linkages and partnership building came quite simpler because the initiative is rooted at the community level already. Even before the Love Affair with Nature, the Puerto Princesa LGU is conducting mass weddings for couples who have limited resources to organize their own marriage ceremonies and wedding parties. The Love Affair with Nature became an interesting activity not only for the couples but for the community, schools, and private sectors as well. The mangrove planting activity became an entry point to organize volunteers within the city. In fact, Ms. Arellano noted that mangrove planting during the event is not done by the newlyweds alone but by students, private sector employees, tourists, and others.

For Tubigon, Bohol, partnership building was done primarily at the community level. Circling back to the issue of resistance that they have encountered during the early years of the initiative, the LGU of Tubigon realized that the community members should be at the core of their linkages and partnership building. To this end, the LGU conducted capacity building activities to teach the concepts of environmental stewardship. They have also identified and built relationships with community champions—figures of leadership and authority that can readily mobilize and organize the support and engagement of community members.

In the case of Dumangas, partnership building at the community level centered on improving their capacities to adapt to climate change. Through their Climate Field School initiative, the LGU is able to deliver capacity-building activities for farmers, fishermen, and other community members. Aside from extending technical guidance in minimizing risks associated with climate-related challenges, the LGU also conducts awareness-raising activities that encourages the community participation and involvement in the municipality's strategies towards climate change mitigation and adaptation.

Replication

Recognizing the innovative blue carbon solutions that the resource speakers have shared; the participants were eager to know how they can effectively replicate these activities in their respective local governments.

The resource speakers noted that its is important to assess the gap that they want to address first. The LGU should conduct assessment and feasibility studies to see which issue they should prioritize: biophysical integrity of the ecosystem, participation of the community, enforcement of local laws and ordinances, and other topics. Once they have identified what they want and need to focus on, the local government has to check if they have enough resources to implement the solutions that they have thought of.

Local governments that have shared their initiatives stated that having an integrated marine resource management program is a good first step towards promoting blue carbon solutions. IRMP touches on the different aspects of managing a marine ecosystem and it promotes a balance between conservation and social needs.

The resource speakers shared that they are always willing to answer more questions and discuss with the participants who are interested to replicate their solutions. With their consent, contact details of the participants were shared to interested parties.

Lessons Learned

Albeit being a small side session compared to the other activities during the East Asian Seas Congress 2018, the ICLEI session on blue carbon solutions has been a worthwhile learning experience. The organizers and the resource speakers share the hope that the participants and guests who joined the event were satisfied with the learnings and found the session worthy of their time and participation.

Putting the activity together has uncovered great learnings and points for improvements which are worth sharing in this report:

A. Highlighting the Importance of Community Participation

An important lesson gleaned from the session is the importance of communicating the participation of community members. The resource speakers noted that the success and achieved outcomes of their initiatives were greatly influenced by the engagement and participation of the local communities who were involved in the initiatives.

Participants of the session also shared their own initiatives and strategies to encourage the participation of community members. As agreed during the session, local communities should be at the core of any environment-related initiative because they form a solid foundation of environment stewards that can support advocacy building, enforcement of laws and policies, and the protection and conservation of valuable marine ecosystems.

Putting the community at heart of the blue carbon solutions also ensures the balance between preserving natural resources and sustainable economic growth. Community-based blue carbon solutions integrate solutions to conserve and protect marine ecosystem while minimizing the negative effects of the people's livelihood and economic activities. Initiatives shared during the session also promoted the exploration of alternative livelihood options that communities can do to decrease their dependence of their respective marine ecosystems.

Lastly, stakeholders of the local government units should be properly and adequately consulted regarding the formulation and implementation of integrated marine resource management solutions. It is important that key stakeholders including the academe, private sector, CSOs, and others are aware and informed of these programs so they can contribute their own ideas and feedback about these. Keeping communication lines open between the local government and its stakeholders is also desirable in maintaining healthy partnerships and ensuring continuous cooperation from these actors.

B. Inter-LGU Cooperation and Its Significance in Forwarding Blue Carbon Solutions

While there are clear ways to mark LGU boundaries at land and sea, the negative effects of climate change go beyond boundaries and limitations of space. As such, participants of the session agreed that integrated

marine resource management will be more effective if the LGUs look beyond their boundaries and explore the potential of coordinating and working with neighboring municipalities and cities.

The Oriental Mindoro MPA Network is a good example of inter-LGU cooperation in promoting blue carbon solutions. As communicated by Ms. Ramiento, the network supports each other by consolidating their resources, implementing complementary enforcement activities, and constantly sharing information and knowledge. Another example is the Verde Island Marine Protected Area Network and Law Enforcement

Network, a network consisting of the provincial governments of Batangas, Romblon, Oriental Mindoro, and Marinduque. Collectively, the network encompasses 1.14 million hectares of seas and is working together to protect the "Center of the Center of Marine Shorefish Biodiversity."

Local governments should not design and implement blue carbon solutions in silo; instead, they should reach out to nearby LGUs in forming a consolidated approach to marine resource management and conservation. As demonstrated by inter-LGU MPA networks in the country, working together with other local governments, national government agencies, private sectors, and other partners makes it easier to aim for larger objectives, increase the coverage of protected areas, and encourage the cooperation of more stakeholders.

Policy Recommendations

The learnings and recommendations gleaned from the session were discussed in the previous section. As such, this part is allocated entirely for policy recommendations that were made with the goal to further promote and enrich blue carbon solutions implemented at the local level:

A. Promote partnership and cooperation with community members through incentive mechanisms, alternative livelihood options, and capacity building activities.

As stated multiple times throughout this report, the community members are important sectors in advancing blue carbon solutions. Local governments should craft policies that foster participation and cooperation with community members. LGUs should design and implement incentive mechanisms that will encourage stakeholders to support marine resource management programs. These incentive mechanisms may take the form of alternative livelihood options which will decrease the community's dependence on the marine ecosystems. Volunteering programs are also viable strategies in soliciting participation and engagement.

Further, policies and ordinances shall also be in place to support capacity building initiatives for local communities. As stewards of marine ecosystems, these communities can greatly benefit from activities that improves their technical knowledge about climate change, marine ecosystems, disaster risk reduction and management, and other topics. Local champions can also be trained to monitor fish population, water quality, pollution levels, and other ecological indicators that can be used as basis for revisiting the integrated marine resource management plans.

Lastly, community leaders are important message carriers to encourage and sustain participation of community members. Local governments should ensure that they constantly communicate with these leaders to get their support in organizing and mobilizing community members to support and comply with the local government's programs and strategies to protect their marine ecosystems.

B. Include blue carbon solutions in development plans such as Comprehensive Land Use Plans, Coastal Resource Management Plans, Local Development Plans, Local Climate Change Adaptation Plans and others.

To support institutionalization of blue carbon solutions, the LGU has to ensure that integrated marine resource management programs and activities are included in its development plans such the Comprehensive Land Use Plans, Coastal Resource Management Plans, Local Development Plans, Local Climate Change Adaptation Plans and others. Direct reference of blue carbon solutions in these development plans will ensure that protection and conservation of marine ecosystems will be included in

the development agenda of the LGU, regardless of external factors such as change in leadership. If blue carbon solutions are included in these plans, the LGU can also readily allocate resources to ensure that these innovative solutions are implemented.

In agreement with the policy recommendations outlined in the PEMSEA Report, Understanding Strategic Coastal Blue Carbon Opportunities in the Seas of East Asia, local governments should also guarantee that their climate change adaptation and mitigation plans integrate concepts and activities related to blue carbon solutions. Local governments in the Philippines are mandated to formulate and implement their respective Local Climate Change Adaptation Plans (LCCAP) and this is a good entry point to ensure that all blue carbon solution strategies and programs of the local government are integrated with its climate-related policies, programs, and strategies.

C. Revisit ordinances and policies related to establishment of fisheries, the use of proper fishing gear, observance of seasonal closures, apprehension of entities violating ordinances and policies, and others.

The Philippines has the Republic Act No. 8550 or the Philippine Fisheries Code of 1998, an act which lays down the law for the development, management, and conservation of fisheries and aquatic resources. According this national policy, the LGU has the right to grant fishing privileges in its municipal waters, set licensing fees for fishing activities, ban fishing gears, recognize and regulate fishing groups, and regulate fishing activities. The LGU has the power to manage its marine resources according to its needs, preferences, and context.

To this end, it could be strategic if LGUS revisit their ordinances and local policies concerning these fishing activities to ensure that they are still in line in supporting the goals of blue carbon solutions implemented by the LGU. There might be a need to update these local laws to reflect the current realities and pressures that the communities are experiencing at the present time. A reassessment of the policies shall also enable the local government to decide whether stricter policies are needed or if other institutional mechanisms are necessary such as the establishment of a marine protected area within the LGU's waters.

Ordinances should also be in place regarding the observance of seasonal fishing closures, illegal harvesting of mangrove trees and plants, and any activity that may incur damage to any marine ecosystem within the municipal waters.

D. Ensure that blue carbon solutions are in line with the priorities and goals of the national government.

Local policies and laws pertaining to marine resource management and the preservation and conservation of these valuable ecosystems should be designed and implemented in accordance to the priorities and goals of the national government. This will allow the LGU to readily access support from national government agencies in terms of capacity building, technical guidance, and resource mobilization. Aligning blue carbon solutions to the national priorities and plans also enables the LGU to contribute to the mitigation and adaptation goals of the country.

As such, the LGU and relevant national government agencies should keep and maintain an open communication with each other and continue working together in designing and implementing innovative solutions to marine resource management.

Annexes

Annex 1: Poster Presentations of Resource Speakers

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PEMSEA

Municipality of

Tubigon Bohol

The Municipality of Tubigon is a coastal port town located in northwestern Bohol, 54 km from the City of Tagbilaran and 21 nautical miles south of Cebu City. The municipality hosts the second busiest port in Bohol (next only to Tagbilaran City) and is a major port of entry to Bohol via Cebu City both for passengers and cargo traffic. The municipality have 34 barangay, six of which are small islands.

POPULATION
45, 893

AREA OF CITY (KM2)
81.96 SQ. KM

CITY MAYOR
Engr. William R. Jao

The Tubigon Group of Island Mangrove Swamp Forest Reserve and Wilderness Area

The Tubigon Group of Island Mangrove Swamp Forest Reserve and Wilderness Area (TGIMSFRW) consists of five small islands declared as protected area under the National Integrated Protected Area System (NIPAS). This is also part of the Double Barrier Reef, located at the southwest-most tip of a unique and geological formation.

Batasan, the largest island in the barangay, hosts the largest mangrove reforestation project covering more than 80 hectares of mudflats. There are four Community Based Marine Protected Areas (MPAs) within the TGIMSFRW.

The TGIMSFRW has a General Management Plan which was finalized through the cooperation of the Protected Area Management Board (PAMB) and Department of Environment and Natural Resources (DENR). The plan is also integrated into the Forest Land Use Plan of Tubigon.

Objectives

To rehabilitate and protect the various ecosystems within the protected area

To promote ecotourism sites and facilities and develop sustainable livelihood activities

To intensify the enforcement of existing laws, policies, rules and regulations on the utilization, development and protection of natural resources within the protected area

To determine and implement allowable zones and regulate activities within the protected area

To organize, build the capacity of, and support the PAMB seaborne patrol group

To promote ownership of the protected area among the community and relevant stakeholder

Results and outcomes of this initiative

- Establishment of an eco-tourism attraction including mangrove tour, bird, and bat watching
- Establishment of four Marine Protected Areas
- Livelihood projects initiated at Brgy. Moco-as, Batasan, and Matabao
- Capacity building activities for coastal law enforcers and wardens
- Institutionalized financial and technical support for the management of TGIMSFRW

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COASTAL CITIES AT RISK IN THE PHILIPPINES

INVESTING IN CLIMATE AND DISASTER RESILIENCE

ATENEO DE MANILA UNIVERSITY

IDRC CRDI Canada

Many low-lying coastal, river-delta megacities, already stressed by rapid population growth and economic, social, health and cultural challenges, are now increasingly vulnerable due to climate change. The Philippines is identified among the top countries most exposed and vulnerable to natural hazards, and with highest urban risk.

Coastal cities in the Philippines are highly vulnerable to catastrophic climate and disaster events due to natural hazards and coastal, riverine and deltaic urbanization patterns.

Metro Manila, Iloilo, and Naga, for example, are experiencing rising climate and disaster risks not only because of natural hazards but also due to rapid urbanization, population growth, weak infrastructural and economic bases, and water insecurity, among others.

Expected Outcomes
This project aims to generate solutions-driven and actionable science that is consumable by vulnerable populations (a) through trans-disciplinary and multi-stakeholder support in the preparation of "Resilience 2022" plans; (b) by bringing the science of climate and disaster risk and resilience to inform core business of the private sector, government and civil society organizations; and (c) by supporting the priorities of the Sendai Framework for Disaster Risk Reduction 2015-2030, the Paris Agreement, the APEC Disaster Risk Reduction Framework, the New Urban Agenda, and Sustainable Development Goals 7, 11 and 13.

Objectives
The project aims to enhance the capacity of coastal cities in Metro Manila, Iloilo, and Naga through better understanding of the complexity and dynamics of climate and disaster risk.

- Undertake new transdisciplinary action research
- Build capacity of resilience scientists and practitioners
- Strengthen public-private partnerships
- Inform the resilience plans of cities

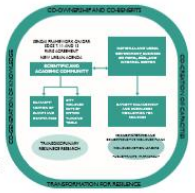
Through co-creation, co-management and co-ownership in resilience-building for local and national governments, academic and scientific institutions, private sector, and other stakeholders, coastal cities will be better equipped to prepare, adapt, and transform for a resilient future.

The project is implemented by the Ateneo de Manila University and Manila Observatory, in partnership with the National Resilience Council and with support from the International Development Research Centre (IDRC).

Work Themes

1. Advance knowledge of climate change adaptation and disaster risk reduction for resilience:
   - 1.1. Characterize and visualize climate and atmospheric hazards, across space and time, using state of the science approaches in selected coastal cities
   - 1.2. Understand the evolving ecosystems, and contextual vulnerabilities and capacities of multiple stakeholders
2. Develop methodologies and tools for climate change adaptation and disaster risk reduction for resilience:
   - 2.1. Examine the elements and indicators of a resilient city, developed by the National Resilience Council, and its application in developing a City Resilience Suite
   - 2.2. Inform and enhance existing tools and approaches, such as the Climate and Disaster Risk Assessment (CDRA) used in disaster and climate risk governance in the Philippines
3. Enhance capacity and transfer knowledge for climate change adaptation and disaster risk reduction for resilience:
   - 3.1. Enhance capacity through the newly-created Master in Disaster Risk and Resilience (MDRR) program specially designed for the public and private sectors and develop risk and resilience research utilization approaches that can strengthen its implementation
   - 3.2. Deliver multi-stakeholder and transdisciplinary work with the National Resilience Council to inform policy reform and/or formulate public and private practice on resilience, including plans and actions for Resilient Cities 2022

Project Framework
The project implements a processual flow from generation knowledge to climate and disaster risks and analytical tools and models to knowledge mobilization towards creation of local disaster resilience plans.



Project Team
Jose Ramon T. Villarin, S.J. (ADMU/MO)
Dr. Emma Porio (ADMU-DSAPM), Project Leader
Dr. Gemma Narisma (MO/ADMU)
Dr. Fabian Dayrit (ADMU-SOSS)
Dr. Cresencio Tenerowe (ADMU-AIC)
Dr. Ramon Clemeña (UPSE)
Dr. Charlosta Kendra Gaseonera (ADMU-IE)
Dr. John Victor (ADMU-SOSS)
Dr. Fere Abbad Cruz (MO)
Dr. James Simsay (MO/ADMU)
Dr. Ma. Ofelmida Cambalea (MO/ADMU)
Dr. Phillips T. Cruz (MO)
Dr. Per Celina Vicerra (MO)
Dr. Rose Perez (MO/NRC)
Ms. Jessica Dator-Bercilla (NRC)
Dr. Nathaniel Libatique (ADMU-AIC)
Dr. Dr. Pride Tiamo (ADMU Economics)
Mr. Justin See (DSA)
Dr. Nandeez Ua (ADMU/MO)
Ms. Antonia Yulo Loanzon (NRC)

Project Timeline
Year 1: Data Collection and Knowledge Generation
Year 2: Knowledge Mobilization, Application, and Testing
Year 3: Synthesis and Dissemination

Partners
Ms. Antonia Yulo Loanzon (President, NRC)
Marilou Erni (Executive Director, NRC)
Local governments of Valenzuela, Naga, Iloilo, Quezon City, Pasig, and Navotas
Ateneo de Naga University
University of the Philippines Visayas

Contact Information
Address: Eduardo J. Aboitiz Sandbox Zone
3/F Gaisano JICTV Learning Innovation Wing, Areza
Ateneo de Manila University Campus
Loyola Heights, Quezon City 1108
Website: ccar2.wordpress.com
Facebook: facebook.com/CCARintothePhilippines/
Twitter: @ccarPH
Landline: (02) 426 6001 loc. 5395

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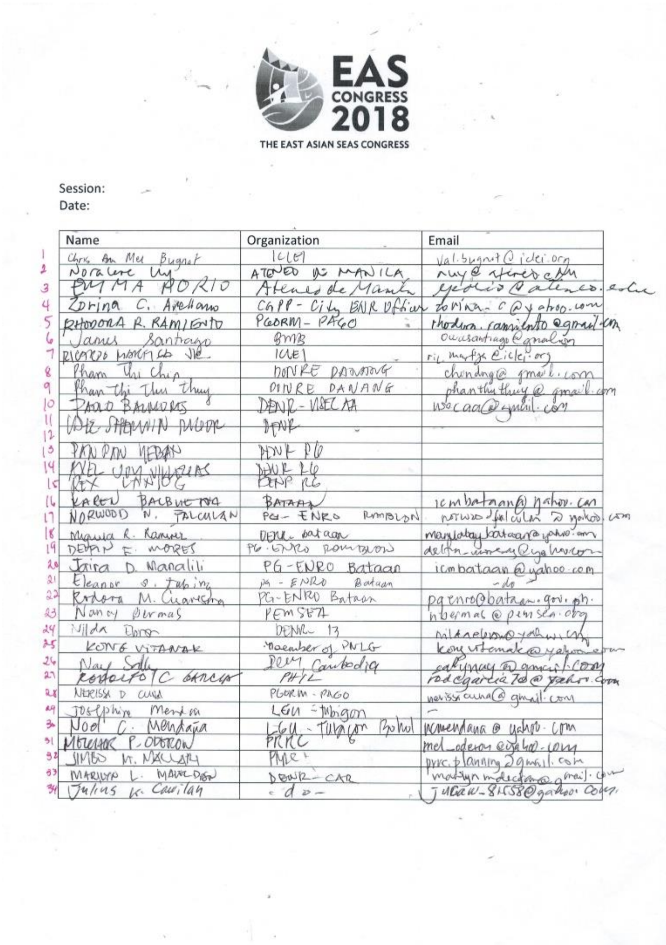
Annex 2: Attendance Sheet

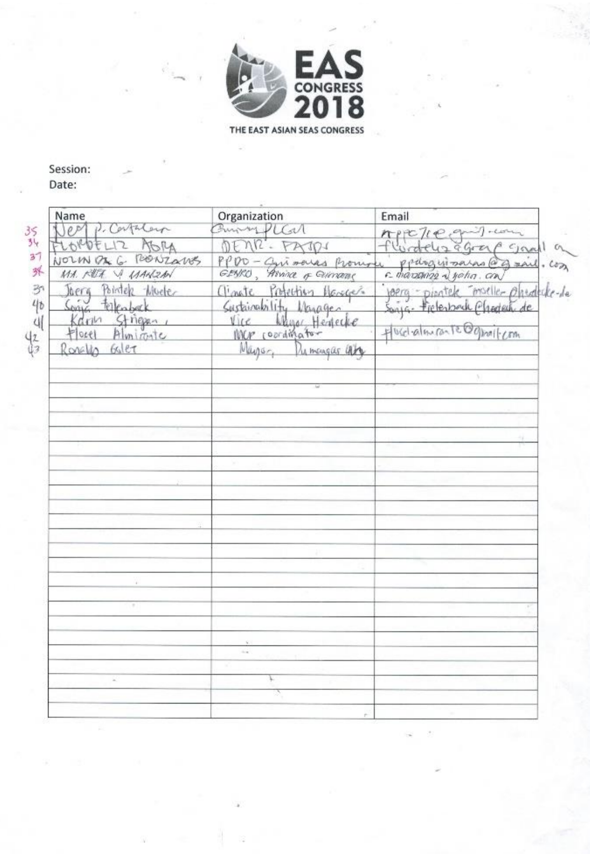


EAS CONGRESS 2018

THE EAST ASIAN SEAS CONGRESS

Session:
Date:

	Name	Organization	Email
1	Chris An Mei Bugnat	ICLEI	val.bugnat@iclei.org
2	Noralene Uy	ATENEO DE MANILA	nuy@ateneo.edu
3	EMMA PORIO	Ateneo de Manila	eporio@ateneo.edu
4	Zorina C. Arellano	CAPP - City ENR Officer	zorina_c@yahoo.com
5	RHODORA R. RAMIENTO	PGORM - PAGO	rhodora.ramiento@gmail.com
6	James Santiago	BMB	[illegible]santiago@gmail.com
7	RICARDO [illegible] JR.	ICLEI	ric.[illegible]@iclei.org
8	Pham Thi Chin	DONRE DANANG	[illegible]@gmail.com
9	Phan thi Thu Thuy	DONRE DANANG	phanthuthuy@gmail.com
10	PAOLO [illegible]	DENR - [illegible]	[illegible]@gmail.com
11	[illegible]	DENR	
12			
13	[illegible]	DENR R6	
14	[illegible]	DENR R6	
15	REX [illegible]	DENR R6	
16	KAREN BALBUENA	BATAAN	icmbataan@yahoo.com
17	NORWOOD N. FALCULAN	PG - ENRO ROMBLON	norwood_falculan@yahoo.com
18	[illegible] R. Ramirez	DENR - bataan	[illegible]bataan@yahoo.com
19	DELFIN E. MORES	PG - ENRO ROMBLON	delfin_[illegible]@yahoo.com
20	Jaira D. Manalili	PG - ENRO Bataan	icmbataan@yahoo.com
21	Eleanor S. Tabing	PG - ENRO Bataan	- do -
22	Rodora M. Cuaresma	PG - ENRO Bataan	pgenro@bataan.gov.ph
23	Nancy Bermas	PEMSEA	nbermas@pemsea.org
24	Nilda Ebron	DENR - 13	[illegible]
25	KONG VITANAK	Member of PNLG	kongvitanak@yahoo.com
26	Nay Sally	DEM, Cambodia	[illegible]@gmail.com
27	RODOLFO C. GARCIA	PHIL	rodcgarcia70@yahoo.com
28	NERISSA D. CUNA	PGORM - PAGO	nerissacuna@gmail.com
29	Josephine Mendoza	LGU - Inabanga	-
30	Noel C. Mendaña	LGU - Tubigon Bohol	ncmendana@yahoo.com
31	MELCHOR P. ODERON	PRRC	mel_oderon@yahoo.com
32	JIMBO M. MALLARI	PRRC	prrc.planning@gmail.com
33	MARILYN L. MALDECDON	DENR - CAR	marilyn.maldecdon@gmail.com
34	Julius K. Cawilan	- do -	JUCAW_81558@yahoo.com



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Session:
Date:

	Name	Organization	Email
35	Neil P. Castaños	Guimaras PLGU	[illegible]@gmail.com
36	FLORDELIZ ABRA	DENR - PAIDS	flordeliz.abra@gmail.com
37	NORMA G. RONZALES	PPDO - Guimaras Province	ppdoguimaras@gmail.com
38	MA. RITA V. MANZAN	GENRO, Province of Guimaras	r_manzan@yahoo.com
39	Joerg Pintek Moeller	Climate Protection Manager	joerg-pintek-moeller@heidecke.de
40	Sonja Fielenbach	Sustainability Manager	sonja-fielenbach@heidecke.de
41	Karin Striegan	Vice Mayor Heidecke	
42	Flocel Almirante	MCP coordinator	flocel.almirante@gmail.com
43	Ronaldo Golez	Mayor, Dumangas City	