



THE EAST ASIAN SEAS CONGRESS



Charting a New Decade of Healthy Ocean, People and Economies

1-2 DECEMBER 2021 • Hosted by the Royal Government of Cambodia

Collab 19

2021 International Symposium of Blue Carbon

19 November 2021, 8:00 AM - 4:30 PM (GMT+7)

Online via Zoom

ORGANIZERS:

- Ministry of Natural Resources (MNR), China
- PEMSEA Resource Facility (PRF)
- Xiamen Municipal Bureau of Ocean Development, China
- Marine Ecological Committee, Ecological Society of China
- Society of Entrepreneurs and Ecology (SEE) Foundation

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PROCEEDINGS

1. INTRODUCTION

To promote the knowledge and experience sharing of blue carbon science and policy and facilitate the international cooperation of blue carbon research and management under PEMSEA framework, the 2021 International Conference of Blue Carbon will be held in the 19th November 2021 as hybrid meeting using ZOOM portal. The conference is sponsored as a major event of the PEMSEA EAS Congress 2021 and 2021 World Ocean Week in Xiamen.

Themed as Blue carbon ecosystems management for climate change mitigation and adaption, the symposium is designed to get together experts and professional on the study of Blue Carbon to discuss the following topics:

- (1) Potential of blue carbon ecosystems for climate action;
- (2) Management efforts of coastal blue carbon ecosystem for climate change mitigation and adaption;
- (3) Cooperation of blue carbon research and management.

The event was participated by Dr. Aimee Gonzales, Executive Director of PEMSEA, Dr. Emily Pidgeon, co-chair of the Blue Carbon Initiative and Vice President of Ocean Science and Innovation, Conservation International, nearly 300 participants from 21 countries present, including government officials, scholars and NGO representatives concerning Blue Carbon.

2. OPENING REMARKS

On behalf of TIO and as the host for 2021 International Symposium of Blue Carbon, Dr. Chen Bin, Deputy Director General, welcomed all the delegates and attendees to the symposium. He highlighted this is echo the countries to adapt to the UN COP26 climate change concerns, in order to strengthen the blue carbon science and policy exchange, upgrade the achievements of international blue carbon symposium In 2017 and 2018, this symposium will gather consensus on the development of blue carbon and promoted international exchanges and cooperation.

As Ms. QI Ping, Deputy Director General, Department of Marine Forecasting and Monitoring, Ministry of Natural Resources put, climate change is related to human welfare and the future, and coping with climate change requires the joint efforts of the international community. China has solemnly promised to the international community that it will increase its national independent contribution, adopt stronger policies and measures, strive for the peak of carbon dioxide emissions by 2030, and strive to achieve carbon neutrality by 2060. To achieve the goal, China has adopted more effective policies and measures to protect marine ecosystems.

Ms. Aimee Gonzales executive Director, PEMSEA welcomes more initiatives and efforts to further implement the blue carbon that has already been made, so as to better slow down and adapt to climate change. She believed that blue carbon will bring win-win development, promote the development of fisheries and marine ecology, and reduce the occurrence of extreme weather phenomena. PEMSEA has carried out some corresponding cooperation with other blue carbon experts, and the research proves that blue carbon can further reduce carbon emissions. She called for the collaboration on blue carbon research and projects in hope of global and regional blue carbon partners making joint efforts.

Dr. Emily Pidgeon, Co-Chair, BCI Scientific Working Group brought up from Glasgow the information of The 26th UN Conference held in the past two weeks. All United Nations officials have taken corresponding measures on the oceans in the framework convention, and have conducted a lot of dialogues on the oceans in the framework, which means that global attention has been paid to blue carbon, which will play an important role in future mitigation and adaptation. This will help us better achieve the goal of mitigation and adaptation. At present, more than 70 countries have put the goal of blue carbon into their national goal setting, which is a great progress in such a short time.

3. GLOBAL PROGRESS IN BLUE CARBON SCIENCE AND POLICY

Dr. Jennifer Howard from Conservation International introduced CI's work on corresponding blue carbon opportunities in the world, develop the blue carbon opportunities to a certain scale, so as to better help us to mitigate the climate change, especially in the process, whether mangroves or other ecosystems are right or wrong for us. Specifically, they focused on biodiversity. Here are 3 questions for her: How to put blue carbon in the voluntary carbon market? What is the specific plan for Seaweed? What are the tools for traceability?

Prof. James T. Morris from University of South Carolina shared his research on Resilience to Sea-Level Rise and Carbon Sequestration, he concluded If the sea level rises steadily, the carbon sequestration of mangroves is three times that of *Dunaliella salina*, but if the sea level rises rapidly, there will be no such advantage. Younger mangroves will have more advantages, considering the problem of plant decay in soil. Young mangroves don't grow fast, and the area and volume of the soil are larger, which is why the carbon sequestration rate of young mangroves is higher in the whole, especially mature mangroves.

Ms. Jill Hamilton from Conservation International shared conception of potentials of Blue Carbon. He suggested that Never use the ocean as a tool for carbon sequestration, but protect it as an ecological environment, which requires the participation of more stakeholders, including academia, industry, government and financial institutions. In the United Nations Framework Convention on Climate Change and the sustainable development goals, which can affect the whole process, best practices can be shared on the whole platform, which can help to better share knowledge, make up for the defects of knowledge, and help to better cultivate the ability of the government and international organizations.

Dr. CHEN Guangcheng from Third Institute of Oceanography, MNR, P.R.C. overview the undertakings and efforts by Chinese government on the development of Blue Carbon, he concluded that strategy of mangrove blue carbon management is a very important. By reducing the degradation of mangroves, which affects carbon emissions, the scope of mangroves in China is limited to some extent. Compared with other mangroves, the role of mangroves in China in carbon sequestration is not that important. Now, great attention is paid to the restoration of mangroves, so as to further mitigate the impact of climate change on the coastline. In the process, we need to make various market arrangements, such as making

further use of mangroves in the arrangement of carbon market to better protect the environment and achieve the goal.

4. REGIONAL PROGRESS IN BLUE CARBON SCIENCE AND MANAGEMENT FOR COPING WITH CLIMATE CHANGE

Prof. LIN Guanghui from Tsinghua University provided his own research case to illustrate the research progress of carbon exchange and blue carbon sink in mangrove forests in China. He emphasized the understanding of the mechanism, it takes a lot of work to really do the global map; It is also necessary to strengthen the carbon linkage between mangroves, seagrass beds and coral reefs, so as to truly evaluate blue carbon; At present, there are a lot of data, more sample surveys, and severe duplication, but the data are inconsistent, so it is very necessary to establish a network to analyze the whole unified data of a country; The influence of tides is very important, and many international studies have also pointed out that it is difficult to evaluate blue carbon unless we understand the process. And he and his team would like to cooperate with related scientists.

Prof. Daniel Murdiyarso from Center for International Forestry Research provided insights on Coastal Blue Carbon in Indonesia's Low Carbon Development Agenda 2045, he referred to Indonesia's policy, the Indonesian government has realized this problem and attached great importance to the research on carbon sink. The government has issued a long-term strategy of carbon sequestration development, paying great attention to the ecosystem, which is the key point of Indonesian government policy. To support policy making with scientific evidence, for their government, the hope to adopt green and low-carbon development, build a green and low-carbon development mechanism, and at the same time, to adapt and mitigate the climate change.

Prof. Miguel D. Fortes from University of the Philippines briefed Problems and Progress in Blue Carbon Science and Management in the Philippines, Policy introduction, he mentioned that policy launched three years ago, also has different policy objectives. The specific document's name is "How to Control the Framework of Coastal Ecological Environment". Blue carbon is very important in the formulation of national policies. Other carbon finance and carbon transactions must take into account blue carbon. Blue carbon itself will also become a very important mainstream in the research, which is the case when formulating economic policies and other policies. Blue carbon must be put into the formulation of relevant national regional policies, and carbon accounting and statistics should be conducted based on blue carbon.

Dr. Virni Budi Arifanti from Forestry Research, Innovation and Development Agency, Ministry of Environment and Forestry, Indonesia, proposed to fill in the gap on the research, and suggested more data are needed to map the current loss and change of mangrove habitats. Because the related data can further predict the future development of mangrove areas, the discharge and removal of exposed organic soil and the restored ecosystem, all these need further understanding, and the data of scientific literature is needed for carbon sequestration. Human activities also lead to carbon emissions and loss of mangroves. Coastal erosion and related carbon sequestration should be considered, which need further research. The future development potential of blue carbon is huge, and we hope that blue carbon will be included in the main agenda of our country.

Dr. Dan Friess from National University of Singapore stated that a lot of emphasis is placed on seaweed, but for mangroves, the area occupied by mangroves is very insignificant

compared with the sea floor area, which is also the limitation we face for the whole ecosystem, not just looking at mangroves or seaweed. There is a need to do more and more analysis related to a wider range of fields, and it is also necessary to conduct relevant analysis especially on a global scale, especially to reach an agreement on a global scale, and there are still more limitations in this field. He believed that the potential of carbon in Southeast Asia is enormous, and the global potential is also enormous, and we can use blue carbon for habitat restoration and protection.

Mr. ZHANG Cheng from Conservation International-Beijing introduced Blue Carbon-related work from CI in China, summarizing CI, China's role in Facilitating science, engaging stakeholders, restoring coastal ecosystems, and developing tradable projects. Also, he shared Efforts in Zhanjiang Mangroves Nature Reserve, Guangdong Province, and Restoration in Hailing Island, Yangjiang, Guangdong Province, Tradable blue carbon pilot project in Lingshui, Hainan Province provide best practices on blue economy development in China.

5. PANEL DISCUSSION AND SUMMARY

Ms. WANG Jing from SEE Foundation moderated the discussion. Questions are raised around the topics underground biomass and bio-carbon, the biggest challenges of commercialization of blue carbon, techniques and data quality, financial and investment, involvement of SDG 14 in the national strategy, and blue carbon products and marketing. The moderator commented that it is an important but difficult problem as to the scientific data. If you just wait for the data, you will have to wait a lot of time, which will delay the work. The longer you wait, the more serious the ecological damage will be, until one day the ecological environment is damaged seriously. She also provided that we must pay more attention to changes in the process. In terms of financing, adaptation and mitigation, financial resources are very important. We must conduct research on marine ecology and marine climate. There is a lot of information in the COP26 meeting, and we should also pay attention to the funding sources.

6. CLOSING REMARKS

Dr. Cai Feng declared the closure of the event, and thanked all the efforts of speakers and participants for the reports, viewpoints and in-depth discussions on blue carbon science, global climate change, management and regional analysis of blue carbon science, blue carbon development plan. He instructed attendees to continue exchanges on the outcome document, the East Asia Initiative.

ANNEX 1. PROGRAM.

**19 November 2021, 8:00 AM – 4:30 PM (GMT+7)
Online via Zoom**

Time	Session	Speaker
08:00 am - 08:20 am	Opening remarks	<p>Moderator</p> <p>Dr. CHEN Bin Third Institute of Oceanography, MNR, P.R.C.</p> <p>Speakers</p> <p>Ms. QI Ping Deputy Director General, Department of Marine Forecasting and Monitoring, Ministry of Natural Resources, P.R.C.</p> <p>Ms. Aimee Gonzales Executive Director, PEMSEA</p> <p>Dr. Emily Pidgeon Co-Chair, BCI Scientific Working Group</p>
	Group photo	
08:20 am - 10:40 am	Global Progress in Blue Carbon Science and Policy	<p>Moderator</p> <p>Dr. Miguel Cifuentes-Jara Conservation International</p> <p>Introduction</p> <p>Dr. Miguel Cifuentes-Jara Conservation International</p> <p>Identifying blue carbon opportunities</p> <p>Dr. Jennifer Howard Conservation International</p> <p>Implications of mangrove migration into saltmarsh habitat: Resilience to sea-level rise and carbon sequestration</p> <p>Prof. James T. Morris University of South Carolina</p> <p>Blue Carbon Policy: An Overview of COP 26 and Beyond</p> <p>Ms. Jill Hamilton Conservation International</p> <p>Conservation of mangrove in China as a climate change solution</p> <p>Dr. CHEN Guangcheng Third Institute of Oceanography, MNR, P.R.C.</p>

Time	Session	Speaker
		<p>Synthesis Dr. Miguel Cifuentes-Jara Conservation International</p>
10:40 am -12:00 pm	Lunch break	
12:00 pm – 03:20 pm	Regional Progress in Blue Carbon Science and Management for Coping with Climate Change	<p>Moderator Ms. WANG Jing SEE Foundation</p> <p>Studies on Ecosystem Carbon Exchange and Blue Carbon Sinks in Mangrove Forests of China Prof. LIN Guanghui Tsinghua University</p> <p>Coastal Blue Carbon in Indonesia’s Low Carbon Development Agenda 2045 Prof. Daniel Murdiyarso Center for International Forestry Research</p> <p>Problems and Progress in Blue Carbon Science and Management in the Philippines Prof. Miguel D. Fortes University of the Philippines</p> <p>Mangrove Blue Carbon Ecosystem for Climate Change Mitigation and Adaptation Dr. Virni Budi Arifanti Forestry Research, Innovation and Development Agency, Ministry of Environment and Forestry, Indonesia</p> <p>Linking Science and Commercial Blue Carbon Opportunities in Southeast Asia Dr. Dan Friess National University of Singapore</p> <p>Blue Carbon-related work from CI in China Mr. ZHANG Cheng Conservation International-Beijing</p>
03:20 pm – 03:50 pm	Panel Discussion and Summary	<p>Moderator Prof. Miguel D. Fortes University of the Philippines</p>
03:50 pm – 04:00 pm	Closing Remarks	<p>Dr. CAI Feng Third Institute of Oceanography, MNR, P.R.C.</p>

ANNEX 2. LINK TO PRESENTATION MATERIALS.

<https://tinyurl.com/TIO-Collab-Presentations>