International Training Workshop

on the Carbon Sequestration Estimate and Capacity Building of Coastal Blue Carbon Ecosystems in Maritime Silk Road Countries

7-21 Sept. 2024 | Chongming Island, Shanghai

国际科技培训
International S & T Training Program

International Training Workshop on the Carbon Sequestration Estimate and Capacity Building of Coastal Blue Carbon Ecosystems in Maritime Silk Road Countries (CBC-MSR)

7-21 September 2024 | Chongming Island, Shanghai

Sponsored by

Department of International Cooperation, Ministry of Science and Technology of the People's Republic of China

Undertaken by

East China Normal University
State Key Laboratory of Estuarine and Coastal Research
Institute of Eco-Chongming

Objectives

Tidal wetlands are significant coastal blue carbon ecosystems and are recognized as additional means to achieving carbon neutrality. The coastal wetland carbon sinks were agreed to be included in the national greenhouse gas inventory by the Intergovernmental Panel on Climate Change (IPCC) in 2013. Accounting for coastal wetland carbon stocks has posed formidable challenges to many member states due to the lack of expertise in the responsible agencies; only a few states have reported it to the United Nations so far. Scientists at East China Normal University and its collaborating institutions have accumulated a vast amount of scientific information on the wetlands over several decades. Sponsored by the Ministry of Science and Technology of the People's Republic of China, the State Key Laboratory of Estuarine and Coastal Research (SKLEC) aims to develop a training workshop for industries, governments, and students to accurately count the carbon sequestration rate of tidal saltmarshes. This project encompasses experimental design, data acquisition and processing, predictive models, and on-site fieldwork. It will encourage trainees to develop low-cost novel observation tools for managing saltmarshes. The training workshop will further contribute to the protection and restoration of coastal blue carbon ecosystems and the establishment of blue carbon trading systems in China and other countries along the Belt and Road.

Training includes

Lectures (Topics to be covered):

- Why do we care about the carbon?
- Where is the blue carbon?
- What is a salt marsh?
- Where is the blue carbon in the salt marsh?
- How does carbon move from the air to plants and soil and from the air/sea (gaseous to solid states)?

- How do we measure the rates of these movements (fluxes)?
- How can we report the (additional) annual amount of carbon stored in salt marshes to the United Nations?
- What is Carbon Negative Emission Technology and Nature-based Solutions for Coastal Blue Carbon Ecosystems?

Fieldwork and visits:

- On-site field investigation (unvegetated tidal flats, naturally vegetated salt marshes, restored salt marshes)
- Study of indoor analysis methods (deposition rate measurement methods, particulate organic carbon (POC), sediment organic carbon (SOC) measurement methods)
- Wetlands visits

Group discussion:

- Novel ideas to increase the amount of coastal blue carbon (salt marsh) and sustain its potential to sequester atmospheric carbon dioxide

Report:

- Trainees submit their field reports to the instructor individually

<u>Lecturers</u> (to be invited)

Xiaogang CHEN, Westlake University
Xiaoyong CHEN, East China Normal University
Ying CUI, East China Normal University
Neven CUKROV, Rudjer Boskovic Institute
Jinqiu DU，National Marine Environmental Monitoring Center
Jinzhou DU, East China Normal University
Xiaoyong DUAN, Qingdao Institute of marine geology, China Geological Survey
Alfonse DUBI, University of Dar es Salaam
Xuesong FENG, Management Affairs Center of Chongming Dongtan Nature Reserve
Zhenming GE, East China Normal University
GiHoon HONG, East China Normal University
Ying HUANG, East China Normal University
Xiuzhen LI, East China Normal University
Jian'an LIU, Hainan University
Xuefei MEI, East China Normal University
Ante ŠILJEG, University of Zagreb
Bing XU, Tsinghua University
Lin YUAN, East China Normal University
Fenfen ZHANG, East China Normal University
(*Alphabetized by Last Name*)
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Application Eligibility

The organizers welcome marine and ecological graduate students and researchers, experts and technicians from enterprises and international organizations, and staff from government agencies, all based in the Maritime Belt and Road Program participating countries and other developing countries. Applicants must hold a Bachelor's degree or an equivalent qualification.

Travel and Accommodation Arrangements

Meals and lodging expenses in Chongming, Shanghai during the training workshop will be covered by the organizer in designated places. Trainees are responsible for their international travel, personal spending, and medical expenses in Shanghai.

The training workshop has a limited number of scholarships available to support international flight tickets for trainees, depending on their academic and management backgrounds. The travel scholarship applications will be reviewed by the committee.

Training Language

English

Application and Admission

Please complete an online application at **https://mostitp.cistc.gov.cn/student_login.aspx**. Meanwhile, send following documents to the organizing committee at **CBCMSR@ecnu.edu.cn** with the email subject as [Application of CBCMSR2024 – 'Your Name'] by **26 July 2024**. **The review will be conducted concurrently with the application process until all trainee positions are filled.**

- Questionnaire (Word file)
- CV (in a separate PDF, including education background, professional experiences, important publications, etc.)
- Related photos (JPG or PNG format, up to 10MB/image) and/or videos (MP4 format, up to 200MB/video) you would like to share along with your questionnaire

The organizing committee will review applications, select 20 trainees, and send invitation letters no later than 3 August 2024.

Before the training workshop, each trainee must submit a report on Coastal Blue Carbon development in their country. In cases where there are multiple applicants from the same country, one participant will be assigned to complete this task.

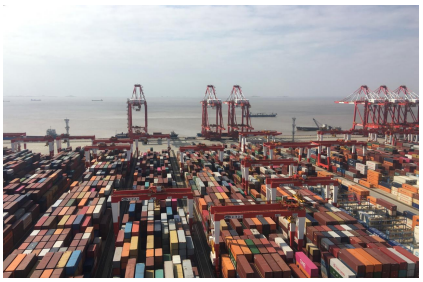
By completing the training courses, the trainees will receive a certificate issued by the Ministry of Science and Technology of the People's Republic of China.

Welcome to Chongming, Shanghai

Shanghai City

Dongtan Wetland Park

Shanghai Chongming Dongtan National Nature Reserve[1]



Yangshan Deep-Water Port

Fieldwork in Chongming wetland

The vibrant city of Shanghai and Chongming Island extend a warm welcome. We believe you will be fascinated by its rich history, diverse culture, flavorful food, stunning architecture, friendly people, lush landscapes, and, most importantly, its dynamic energy.

Weather

The average daytime temperature in Shanghai in September is 28°C (82.4°F). A pair of sunglasses and sun cream will be handy for the field courses. Please consult weather forecasts such as https://www.timeanddate.com/weather/china/shanghai/ext.

Contact

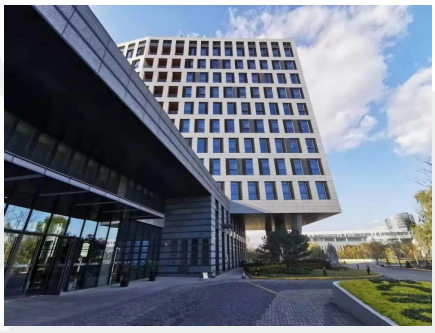
CBC-MSR Organizing Committee
Email: CBCMSR@ecnu.edu.cn (Ms. Qin)
Tel: 86-021-54836463
Fax: 86-021-54836458

For more information, please stay tuned to the workshop website at https://imber.ecnu.edu.cn/10/d0/c44577a594128/page.psp.

Our Supporters

Over the years, while pursuing its own development, China has been committed to providing support and assistance to other developing countries to the best of its capacity. Since 1989, the **Ministry of Science and Technology of China** has implemented Technical Training Programs for Developing Countries every year, training professionals in fields such as agriculture, advanced manufacturing, resources and environment, and healthcare for other developing countries. So far, over 800 training programs have been carried out, attracting more than 15,000 trainees. These training programs have been widely recognized and welcomed by other developing countries. There are a lot of Chinese technologies that meet the needs of developing countries. Their wide application can boost economic growth and technological progress of developing countries. The international training workshops, as a bridge of friendship and a platform for cooperation, have deepened exchanges and cooperation between China and other developing countries in various fields, and been applauded by the governments and trainees of participating countries.[1]

East China Normal University (ECNU) (https://english.ecnu.edu.cn/index.htm) was established in 1957 as the first normal university in China after the founding of the People's Republic of China. Ever since, following the ideal of "Creativity, Character and Community" and engaging itself in promoting education, civilization, and development, ECNU has cultivated a galaxy of talented people for society. Today, ECNU is striving to transform itself into a world-class university and has launched five action plans: "Education+," "Ecology+," "Health+," "AI+," and "Internationalization+," to promote interdisciplinary integration for thriving subjects, including searching for solutions for ecological problems and promoting sustainable development on a global scale. ECNU ranks 3rd in THE's International Outlook among Chinese mainland universities and is creating more effective modes of international cooperation and exchange.

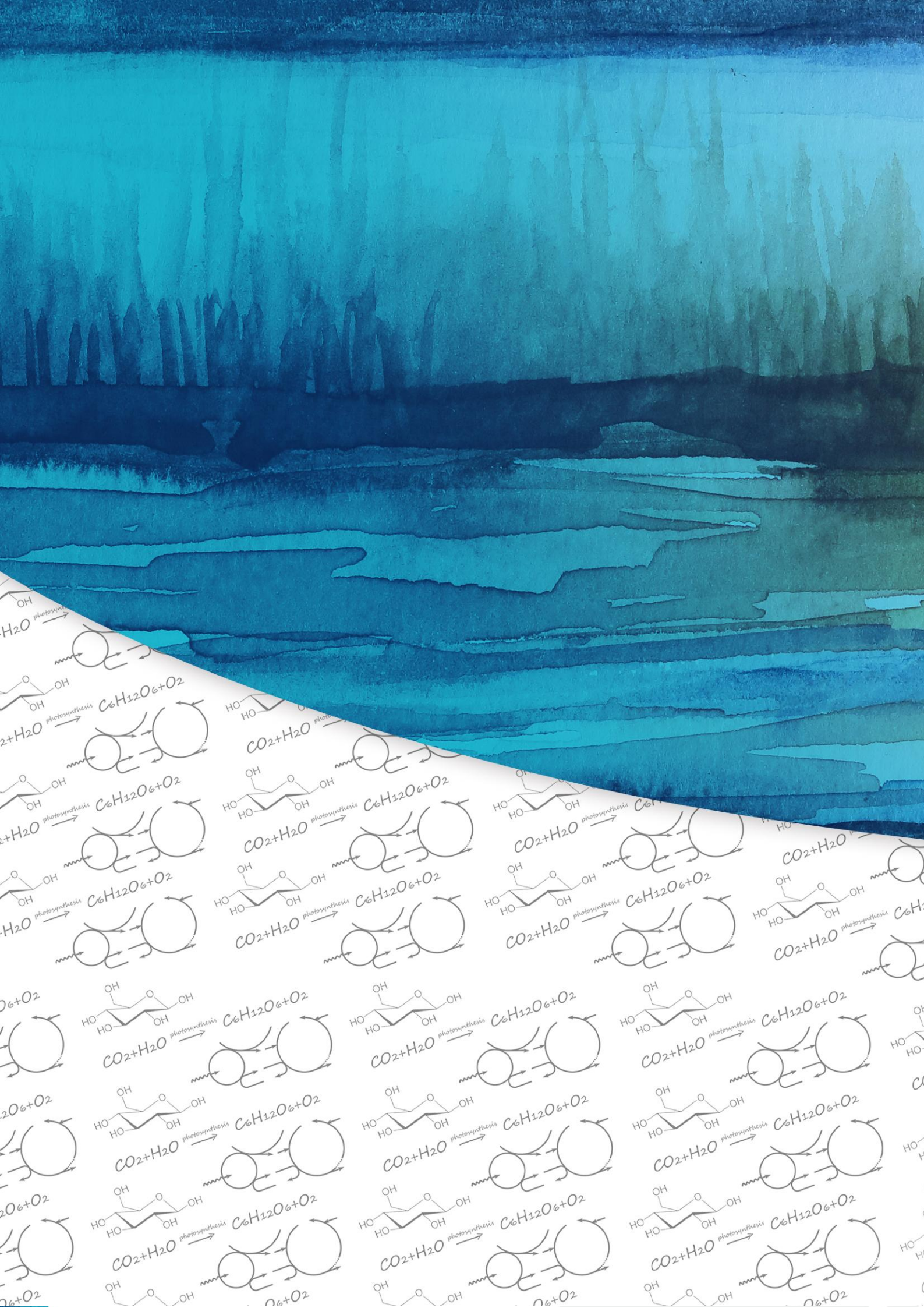


The **State Key Laboratory of Estuarine and Coastal Research (SKLEC)** (http://www.sklec.ecnu.edu.cn/) originated from the Estuarine Research Institute established in 1957. SKLEC has been strongly involved in providing solutions to theoretical and practical problems encountered in the very diverse and large-scale

[1] Source: 2023 International Training Program
http://www.cstec.org.cn/CSTECUploadFiles/file/20240315/17104636995632353.pdf

coastal developments in China. These include the first national comprehensive survey on coastal resources, the construction of harbors and ports, channel regulations, the restoration of coastal blue carbon ecosystems, and the implementation of engineering structures. While serving national needs, SKLEC continues to promote the development of Earth Sciences, with an increasing influence abroad. SKLEC maintains close collaborative relationships with relevant research institutions in the United States, the United Kingdom, the Netherlands, Germany, Japan, Canada, South Korea, and other countries. Recently, it has taken the lead in the "Mega-Delta Programme" of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030), led the Joint International Laboratory of Deltas (Science and Technology Commission of Shanghai Municipality (21230750600)), and hosted international project offices for Integrated Marine Biosphere Research (IMBeR) and Future Earth Coasts (FEC). Over the last decades, SKLEC has adopted and promoted an atmosphere of being “Open to Collaboration, Exchange of Experience, Unity in Performance, and Open to Competition”. This has been and will continue to be the basis of SKLEC.

Located in the scenic Chongming Island in the Yangzi River estuary of Shanghai, the **Institute of Eco-Chongming (IEC)** (https://chm.ecnu.edu.cn/main.htm) was established in 2017 by East China Normal University as the leading unit, in collaboration with Fudan University, Shanghai Jiaotong University, and the People's Government of Chongming District, with approval from the Shanghai Municipal Education Commission. IEC's mission is 1) to establish scientific, technological, and policy pillars to support the construction of Chongming to be a world-class ecological island and 2) to establish an international research platform for ecology and Earth system sciences. At present, IEC has four centers focusing on Atmospheric Environment Security, Ecological Conservation and Restoration, Disaster Risk and Prevention, and Intelligent Monitoring and Simulation, and fosters the Chongming High-end Think Tank of Ecological Civilization. IEC leverages the cluster of resources and strengths from multiple universities and institutions to create an incentive synergy to stimulate innovation and creativity.


$CO_2+H_2O \xrightarrow{photosynthesis} C_6H_{12}O_6+O_2$