

## **Proposal for construction of a seagrass blue carbon network in the NOWPAP region**

### **1. Background**

CEARAC has recognized the importance of seagrass beds in coastal areas in terms of conserving marine biodiversity and storing carbon, and implemented a series of activities on mapping seagrass beds by using remote sensing techniques since 2014. In the 2018-2019 biennium, CEARAC developed a web-based tool for mapping seagrass distribution by taking advantage of cloud computing, and in 2020, established a website, “Mapseagrass Project”, under the auspices of the Ministry of the Environment of Japan (MoEJ) to promote the use of remote sensing techniques in mapping seagrass beds. In the website, CEARAC uploaded a cloud-based seagrass mapping tool, Seagrass Mapper, and field seagrass information management system, Seagrass Trainer, both of which are under trial operation at present. In the 2020-2021 biennium, CEARAC has focused on potential of seagrass blue carbon and been implementing case studies of its estimation in selected sea areas in each member state with nominated national experts (Table 1).

For the coming 2022-2023 biennium, CEARAC plans to establish a seagrass blue carbon network in the NOWPAP region to further advance activities on mapping seagrass and evaluating seagrass blue carbon in the NOWPAP region based on the ongoing case studies in estimating seagrass blue carbon in selected sea areas in each member state.

Table 1 List of national experts for case studies of estimating seagrass blue carbon  
in the NOWPAP Region

Experts	Organization	Country	Case study area
Dr. Qinghui XING	National Marine Environmental Monitoring Center	China	Swan Lake
Dr. Gregory N NISHIHARA	Nagasaki University	Japan	Katagami Bay in Ohmura Bay
Dr. Seung Hyeon KIM	Pusan National University	Korea	Dongdae Bay
Dr. Vasili ZHARIKOV	Pacific Geographical Institute, FEBRAS, Russia	Russia	Srednyaya Bay

### **2. Objectives**

Objectives of this activity are to construct a network for further promoting mapping seagrass and evaluating seagrass blue carbon by identifying stakeholders and resources (human, technology and funding opportunity) in the NOWPAP region.

### **3. Tasks**

This activity consists of three task components; (1) making a list of organizations/institutions and/or personnel to conduct mapping seagrass beds in the NOWPAP region, (2) establishing a system to support the organizations/institutions and/or personnel who conducts mapping seagrass beds, and (3) developing a research proposal to support mapping seagrass and estimating seagrass blue carbon in the NOWPAP region in coordination with Blue Carbon

Initiative of the United Nations Environmental Programme (UNEP) and other international programmes.

### **3.1 Making a list of organizations/institutions and/or personnel to map seagrass in the NOWPAP Region**

Having extensive knowledge and collecting field data are essential for mapping seagrass. Therefore, CEARAC will make a list of organizations/institutions and/or personnel involved in mapping seagrass beds in the NOWPAP region.

### **3.2 Establishing a supporting system for the organizations/institutions and/or personnel for mapping seagrass and estimating seagrass blue carbon**

CEARAC together with national experts nominated by CEARAC FPs will establish a supporting system for the organizations/institutions and/or personnel who are involved in mapping seagrass beds and estimating seagrass blue carbon in 3.1 above.

At first, CEARAC Secretariat with the national experts will establish a technical supporting system to promote mapping seagrass in various sites in the NOWPAP region by using the Seagrass Mapper and the Seagrass Trainer. Then, CEARAC, in cooperation with NOWPAP RCU, will construct a scheme to certify a seagrass distribution map by NOWPAP. After that, CEARAC Secretariat will promote a campaign to disseminate the developed scheme with experts nominated from each member state. The nominated national experts then will publish seagrass distribution maps at 3 sites in each member state by contracting Memorandum of Understanding with CEARAC. The maps will be published on the Mapseagrass Project website after certified by NOWPAP.

### **3.3 Development of a research proposal for seagrass mapping and estimation of seagrass blue carbon in the NOWPAP region**

Mapping seagrass distribution and estimating seagrass blue carbon for the entire NOWPAP sea areas will require enormous amount of labor and time. Thus, a research proposal will be prepared by an international collaborative team consisting of the stakeholders listed in task 3.1 and national experts of the member states to develop a research proposal for mapping seagrass and estimating seagrass blue carbon in the NOWPAP region. Then, the prepared proposal will be submitted to several international frameworks/organizations to financially support projects on nature conservation such as Asia-Pacific Network for Global Change Research (APN) and the Nippon Foundation with the support of NOWPAP RCU. Developing a NOWPAP special project proposal will also be considered by obtaining support from NOWPAP RCU.

## **4. Expected outcome**

The seagrass blue carbon network in the NOWPAP region to be constructed by using cloud-based seagrass mapping tools of CEARAC will support mapping seagrass and evaluating seagrass blue carbon in the region. If the developed research proposal is accepted, mapping

seagrass and estimating seagrass blue carbon in the NOWPAP region will be promoted further by utilizing external funding.

## 5. Schedule

The timeline of this activity is shown below.

Time		Action	Main body
2021	August	Proposal and approval of the workplan at FPM 18	CEARAC and CEARAC FPs
	Q4	Proposal and approval of NOWPAP workplan and budget at IGM24	National FPs
2022	spring	Adoption of workplan at CEARAC FPM 19	CEARAC and CEARAC FPs
	Q2	Making a list of organizations/institutions and/or personnel to map seagrass in the NOWPAP Region	Nominated experts and CEARAC
	Q2	Establishing a supporting system for the organizations/institutions and/or personnel for mapping seagrass and estimating seagrass blue carbon	National experts, CEARAC and NOWPAP RCU
	Q3	Publication of seagrass distribution maps in each member state	Nominated experts
2023 Q2			
2023	Q3	Development of a research proposal for mapping seagrass and estimating seagrass blue carbon in the NOWPAP region	Nominated experts, CEARAC and NOWPAP RCU
	Q3 - Q4	Submitting the developed research proposal	Nominated experts, CEARAC and NOWPAP RCU

## 6. Budget

Task	Time	Output	To be completed	Main body	(US\$) Budget
Publication of seagrass distribution maps in each member state	2022 Q3	Seagrass distribution maps	2023 Q2	Nominated experts	24,000 (6,000/each)
Development of a research proposal for seagrass mapping and estimation of seagrass blue carbon in the NOWPAP region	2023 Q3	A research proposal document	2023 Q3	CEARAC	3,000
Total					27,000