

1. Background

Since its inception, CEARAC has worked on assessment and monitoring of the marine and coastal environments, by focusing on harmful algal blooms as a target species (activity of NOWPAP Working Group 3) and applying remote sensing techniques to the study on the marine and coastal environments (activity of NOWPAP Working Group 4).

In recent years, however, taking into account regional and global problems in the marine and coastal environments and five thematic elements suggested in the NOWPAP Medium-term Strategy 2012-2017 (MTS), CEARAC has expanded its study areas to eutrophication and marine biodiversity. At the same time, respective meetings of Working Group 3 and Working Group 4 have been combined into one Expert Meeting, which is held once in every biennium with all relevant experts in and out of the NOWPAP member states, for sharing useful information on the marine environments among the experts who are related to CEARAC activities, and reviewing and discussing CEARAC activities from various perspectives of meeting participants.

At the 11th CEARAC Focal Points Meeting (FPM) (11-12 September 2013, Toyama Japan), the Secretariat of CEARAC presented a draft workplan and budget of its activities for the 2014-2015 biennium with three specific projects: pilot assessment on the impacts of major threats to marine biodiversity in the selected sea areas in the NOWPAP region, trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment, and case studies on seagrass mapping in the selected sea areas in the NOWPAP region. After review and discussion, the workplan and budget for 2014-2015 were approved to be submitted to the 18th NOWPAP Intergovernmental Meeting (IGM) (4-6 December 2013, Toyama, Japan).

Because of the delayed approval of the workplan and budget of entire NOWPAP activities at the 18th IGM and the following first Extraordinary IGM (9-10 April, 2014, Seoul, Korea), there was some lag time at the beginning of 2014. Then, the Secretariat of CEARAC presented a modified workplan and budget to the 12th CEARAC FPM (2-3 July 2014, Toyama, Japan), which were reviewed and adopted by the meeting participants with some modifications.

Approaching the end of the 2014-2015 biennium, the Secretariat of CEARAC, then, will report expected outcomes and outputs of the planned activities for the current biennium to be reviewed by CEARAC FPs at the 13th CEARAC FPM (25-26 August 2015, Toyama, Japan).

CEARAC activities such as CEARAC FPMs, Expert Meetings, and specific projects are funded by the NOWPAP Trust Fund, supplemented by in-kind contribution from the

Northwest Pacific Environmental Cooperation Center (NPEC) which is originated from the support of the Ministry of the Environment of Japan, Toyama Prefectural Government and other external sources. The operation of the Secretariat of CEARAC is financially supported by Toyama Prefectural Government, including personnel salaries and other miscellaneous costs.

CEARAC is operated by the following staff members:

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2. Activities for the 2014-2015 biennium

Summary of CEARAC activities for the 2014-2015 biennium is shown in Table 1.

Table 1 Workplan for CEARAC activities for the 2014-2015 biennium

Activity
<p>Organization of Meetings</p> <ul style="list-style-type: none"> - 12th FPM (2014) and 13th FPM (2015) - Expert Meeting (2015)
<p>Maintenance of Websites</p> <ul style="list-style-type: none"> - Regular update of contents (HAB Integrated Website and Ocean RS Portal Site) - Upgrade of Marine Environmental Watch System
<p>Specific projects</p> <p>Pilot assessments on the impacts of major threats to marine biodiversity in the selected sea areas in the NOWPAP region</p> <ul style="list-style-type: none"> - Implementing pilot assessments in the selected sea areas - Organizing a workshop - Preparing a regional report
<p>Trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment</p> <ul style="list-style-type: none"> - Applying the screening procedure in the NOWPAP sea areas of each member state - Developing a web-based potential eutrophic map
<p>Case studies on seagrass mapping in the selected sea areas in the NOWPAP region</p> <ul style="list-style-type: none"> - Developing a manual for seagrass and seaweed mapping with satellite images - Implementing case studies in the selected sea areas
<p>Cooperation and coordination</p> <ul style="list-style-type: none"> - Exchanging/sharing latest information with other RACs and NOWPAP partners by attending and/or co-organizing meetings/workshops, and so on
<p>Marine litter-related activities (RAP MALI)</p> <ul style="list-style-type: none"> - Compiling/Harmonizing monitoring data and submitting data to DINRAC - Developing a case study report on basin-wide collaborative actions to prevent land-based Marine Litter input in Japan

2.1 Organization of Meetings (12th FPM and Expert Meeting)

2.1.1 Twelfth CEARAC Focal Points Meeting (FPM12)

The twelfth CEARAC FPM was held on 2-3 July 2014 in Toyama, Japan. The meeting reviewed the workplan, which was revised in accordance with the decisions of the 18th NOWPAP Intergovernmental Meeting (IGM) (December 2013) and the first

Extraordinary NOWPAP IGM (April 2014), and the progress of on-going CEARAC activities. While the meeting recognized the tight schedule of the activities to be implemented and completed as planned, they expressed their expectation toward productive outputs/outcomes at the end of the biennium.

2.1.2 The Fourth CEARAC Expert Meeting

Prior to the thirteenth CEARAC FPM, the Fourth CEARAC Expert Meeting was held on 24 August 2015 in Toyama, Japan with the national experts who have been nominated by CEARAC FPs to implement specific projects of CEARAC for the 2014-2015 biennium. The experts presented the progress and the results of their activities, and joined discussion on how to utilize the outputs/outcomes of the current projects in the activities for the next biennium, 2016-2017.

2.2 Maintenance of CEARAC websites

CEARAC has done some routine work such as regular upload of latest information on HABs and remote sensing in order to improve the quality of the contents of CEARAC websites. Information on red tide events collected through trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment will be added in the HAB Integrated Website.

A web GIS to show potential eutrophic zone in the NOWPAP region will be built upon the website of Marine Environmental Watch System.

2.3 Specific Projects

2.3.1 Pilot assessment on the impacts of major threats to marine biodiversity in the selected sea areas in the NOWPAP region

CEARAC, through nominated national experts, has conducted pilot assessments on the impacts of three major threats to marine biodiversity (eutrophication, non-indigenous species and habitat alteration) in the NOWPAP member states.

The results of the pilot assessment were presented at the Fourth CEARAC Expert Meeting (24 Aug.) and will also be presented at a workshop held in 2015 PICES Annual Meeting (16 October, Qingdao, China) to share/disseminate information among researchers in the wider Pacific region.

Also, the results of pilot assessment and obtained data in each selected sea area will be compiled in a regional report by the end of 2015.

2.3.2 Trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment

CEARAC, through nominated national experts, has applied the screening procedure of the NOWPAP Common Procedure to the entire NOWPAP sea area in order to identify potential eutrophic zones as well as to verify the suitability of this preliminary diagnosis.

In the discussion at the last CEARAC FPM, it was agreed that one parameter (residence time of nutrient) in the screening procedure is changed to long-term trend of COD (or TOC), which is an extensively used parameter in the NOWPAP member states.

2.3.3 Case studies on seagrass mapping in the selected sea areas in the NOWPAP region

CEARAC, through nominated national experts, has implemented case studies of seagrass mapping in the selected sea areas in each member state. Prior to implementation of case studies, “a manual for seagrass and seaweed beds distribution mapping with satellite images” was developed by Dr. Teruhisa KOMATSU.

In the discussion at the 12th CEARAC FPM (July 2014), however, it was decided to focus on seagrass but not seaweed in this project.

The results of the case studies were presented at the Fourth CEARAC Expert Meeting (24 Aug.). Originally, an international workshop was planned to be held; however, because of difficulty of external funding, the plan is postponed to the next biennium, 2016-2017.

2.4 CEARAC Activities on Marine Litter (RAP MALI)

CEARAC has implemented two activities on marine litter (RAP MALI), following the decision at the NOWPAP Marine Litter Working Meeting (October 2013, Okinawa, Japan) and the approval of the 18th NOWPAP IGM.

2.4.1 Collecting and summarizing national monitoring data from the member states

CEARAC continuously collects and harmonizes/summarizes monitoring data submitted from the member states to upload in DINRAC website and the Northwest Pacific Regional Node website.

2.4.2 Developing a case study report on basin-wide collaborative actions to

prevent marine litter input from land-based sources in Japan

Preventing generation of litter in terrestrial areas is very useful to reduce the volume of marine litter, CEARAC has studied basin-wide collaborative actions in Japan by focusing on activities along Oyabe River in Toyama Prefecture.

A draft summary report has been under development to disseminate best practices in and out of the NOWPAP region and to raise awareness on this issue among policy-makers and general public. The draft will be presented at the NOWPAP International Coastal Cleanup (NOWPAP ICC) in September 2015 in Yantai, China and reviewed by NOWPAP Marine Litter FPs. The report will be published by the end of 2015.

2.4.3 Enhancing the Northwest Pacific Regional Node of the Global Partnership on Marine Litter

The Northwest Pacific Regional Node of the Global Partnership on Marine Litter was established in 2014 with the support by Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. This regional node aims to share information on marine litter among governments, NGO/NPO and other entities. However, current information in the regional node is limited. In order to enhance the contents of the regional node, NPEC, host organization of CEARAC, signed Small-Scale Funding Agreement with UNEP, and information on measures conducted by the Japanese government, local governments and NGOs/NPOs will be added. New contents on micro plastics will also be provided.

2.5 Cooperation, coordination with other NOWPAP RACs and/or regional/international organizations

Taking every opportunity, CEARAC has participated in events (e.g. meetings and workshops) held by NOWPAP RCU, other RACs and relevant regional/international organizations to exchange/share information and data as well as to disseminate past and present CEARAC activities.

CEARAC participated in the following meetings and events in 2014:

- The 17th MERRAC FPM (June 2014, Daejeon, Korea)
- The 12th DINRAC FPM (June 2014, Beijing, China)
- The 12th POMRAC FPM (September 2014, Busan, Korea)
- NOWPAP ICC Campaign and Workshop on Marine Litter Management (25-26 September 2014, Boryeong, Korea)
- PICES 2014 Annual Meeting (14-25 October 2014, Yeosu, Korea)

- The 19th NOWPAP IGM (20-22 October 2014, Moscow, Russia)
- The 8th Nature without Borders International Environmental Forum (23-24 October 2014, Vladivostok, Russia)
- The 11th International Seagrass Biology Workshop (6-10 November, 2014, Sanya, China)
- The 13th DINRAC FPM (9-10 July, 2015,

- The 11th Japan Korea Workshop on Ocean Color (11-12 December, 2014, Ansan, Korea)

Since Dr. Takafumi YOSHIDA is working as ex-officio member of HAB section of the North Pacific Marine Science Organization (PICES), CEARAC has cooperated their activities as much as possible. At the beginning of 2015, PICES established a new Working Group (WG32 on Biodiversity of Biogenic Habitats), and CEARAC will be a co-convener of a 1-day workshop (W2: identifying major threats to marine biodiversity and ecosystems in the North Pacific) during the PICES Annual Meeting 2015 (14-25 October, Qingdao, China). The national experts of one CEARAC's project (pilot assessment on major threats to marine biodiversity) will also attend the workshop to give presentations on their work.

3. Expenditures of CEARAC activities for the 2014-2015 biennium

While the 18th NOWPAP IGM basically approved the NOWPAP Programme of Work for the 2014-2015 biennium, it could not reach consensus on financial matters, which affected implementation of CEARAC activities at the beginning of 2014.

Then, only 2014 budget (US\$ 62,500 for each RAC) was decided at the first extraordinary IGM (April 2014), and the discussion and approval for the NOWPAP budget for 2015 was postponed to the 19th IGM (20-22 October 2014, Vladivostok, Russia).

Because of this unprecedented practice, CEARAC modified its workplan and budget, which was explained at the 12th CEARC FPM.

Both the modified budget and actual expenditures for CEARAC activities for the 2014-2015 biennium are shown in Table 2. Most of the unspent budget are payment to nominated national experts, and the payment will be completed by the end 2015.

Table 2 Modified budget and actual expenditure for CEARAC activities for the 2014-2015 biennium (as of July 2015)

Activity	Modified Budget (US\$)			Actual Expenditure (US\$)		
	2014	2015	Total	2014	2015 (by July)	Balance
Meetings						
- FPM12	27,000		27,000	23,307	0	30,693
- FPM13 + Expert MT		27,000 +external	27,000			
Web maintenance						
- Regular update	1,500	1,500	3,000	1,470	0	1,530
- Upgrade of Marine Environ. Watch System	in-kind	in-kind		In-kind	in-kind	
Specific projects						
Threats on Marine BD						
- Assessment	12,000 9,000		24,000	0	6,000	18,000
- Workshop		10,000			0	
- Regional report		2,000 5,000			0	
Eutrophication Assessment						
- Assessment	16,000 12,000		20,000	0	0	20,000
- Potential eutrophic map		4,000 8,000			0	

Seagrass mapping						
- Manual development	4,000				4,000	
- Purchase of satellite images		4,000	20,000	0	0	16,000
- Case studies		12,000			0	
Cooperation & coordination	2,000	2,000	4,000	2,251	62	1,687
Sub TOTAL	62,500	62,500	125,000	27,028	10,062	87,910
RAP MALI						
- Data compilation	In-kind	In-kind		In-kind		
- Report development on Collaboration in basins		6,000	6,000		0	6,000
- (SSFA)		(13,000)			(13,000)	(+13,000)
Grand TOTAL	62,500	68,500	131,000	27,028	10,062	93,910