

1. General Briefing

Background

The Special Monitoring and Coastal Environmental Assessment Regional Activity Centre (CEARAC) is one of the four Regional Activity Centres (RACs) to coordinate activities relevant to specific components of the Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Action Plan (NOWPAP). CEARAC was founded in 1999 and is hosted by the Northwest Pacific Region Environmental Cooperation Center (NPEC), which was established in 1998 in Toyama, Japan, under the auspices of the Ministry of the Environment.

Following the Resolution of the 7th Intergovernmental Meeting (IGM) (March 2002, Vladivostok, Russia), which allows NOWPAP to evolve toward a RAC-based rather than an Activity-based structure, the CEARAC Focal Points Meeting (FPM) was established in order to promote smooth and effective implementation of special monitoring and assessment of the marine and coastal environment. The 1st CEARAC FPM (February 2003, Toyama, Japan) defined the priorities and initial steps of CEARAC activities. Following the decision of the 1st CEARAC FPM, CEARAC has been working on monitoring and assessing Harmful Algal Blooms (HAB) under Working Group 3 (WG3), and developing new monitoring tools using Remote Sensing (RS) under Working Group 4 (WG4).

Activities of CEARAC in the workplan such as CEARAC Focal Points Meetings, WG3 and WG4 meetings, specific activities for WG3 and WG4, and other intersessional work are funded by the NOWPAP Trust Fund and supported by in-kind contribution by NPEC, originated from the Ministry of the Environment, Japan and Toyama Prefectural Government, and operation of CEARAC is financially supported by Toyama Prefectural Government, including the personnel salaries and other miscellaneous costs.

Staff

Mr. Norihiko Tanaka Director (tanaka@npec.or.jp)

Dr. Takafumi Yoshida Researcher (yoshida@npec.or.jp)

Mr. Genki Terauchi Researcher (terauchi@npec.or.jp)

Ms. Miwako Nunome Staff Member (nunome@npec.or.jp)

2. Major activities of CEARAC during the 2008-2009 biennium

2.1. NOWPAP CEARAC Focal Points Meeting

2.1.1. The 6th NOWPAP CEARAC FPM

The 6th CEARAC FPM was held in Toyama, Japan on 6 and 8 March 2008. About 20 experts and authorities including the members of FPM, representatives of NOWPAP RACs and others participated in the meeting.

In the meeting, the workplan and budget of CEARAC activities for the 2008-2009 biennium, which had been approved at the 12th NOWPAP IGM (23-25 October 2007, Xiamen, China), were explained. The workplan included 7 proposals of new activities: 2 workplans for WG3 (HAB Case Studies, HAB Integrated Website), 2 workplans for WG4 (educational materials for utilization of RS data, training course on RS data analysis), 1 workplan for Joint WG3 and WG4 (procedures for assessment of eutrophication status including land based sources of nutrients), oil spill monitoring and RAP MALI. The meeting agreed the workplan and budget of CEARAC activities for the 2008-2009 biennium with minor modifications.

2.1.2. The 7th NOWPAP CEARAC FPM

The 7th CEARAC Focal Points Meeting was held in Toyama, Japan on 14 and 15 September 2009. About 20 experts and authorities including the members of FPM, representatives of NOWPAP RACs, and others participated in the meeting.

Following the report on the progress of CEARAC activities for the 2008-2009 biennium with expenditures, the draft work plan and budget of CEARAC activities for the 2010-2011 biennium were explained. The work plan includes 5 proposals of new activities: implementation of the assessment of eutrophication status; update of the Integrated Reports on HAB and Ocean Remote Sensing, which were published in 2005; organization of the 3rd training course on remote sensing data analysis; and development of a new marine assessment method focusing on marine biodiversity.

After the discussion, the meeting requested to revise the workplan and budget to hold FPMs back to back with Expert Meetings, and agreed to submit the revised ones to the 14th IGM for approval.

During the meeting, further cooperation between CEARAC and other RACs and relevant regional/international organizations and projects were emphasized by the participants.

2.2. The 4th NOWPAP WG3 and WG4 Joint Meetings

The 4th NOWPAP WG3 and WG4 Joint Meeting was held in Toyama, Japan on 10 to 12 September 2008 with about 20 experts including members of WG3 and WG4, representatives of NOWPAP RACs and others as participants.

In the meeting, the workplan and budget of CEARAC for the 2008-2009 biennium approved by the 6th FPM of CEARAC were explained and the interim progress of respective activities was reviewed.

Related to WG3, the meeting recommended that the CEARAC website be revised to a new structure which is easier for visitors to find information and materials.

Related to WG4, the meeting encouraged the Secretariat to work closely with other relevant organizations such as YSLME and IOC/WESTPAC.

2.3. Implementation of CEARAC Projects

2.3.1. Working Group 3 (WG3)

1) HAB Case Studies

The objective of HAB Case Studies is to establish the most effective and laborsaving way for sharing HAB-related information. To achieve this objective, each member state selected a target sea area, and experts made HAB Case Studies Reports in each area. The selected sea areas are where HAB occur frequently and HAB monitoring is conducted regularly. These reports introduce who monitors HAB events, what parameters are monitored, and which species is focused, and so on.

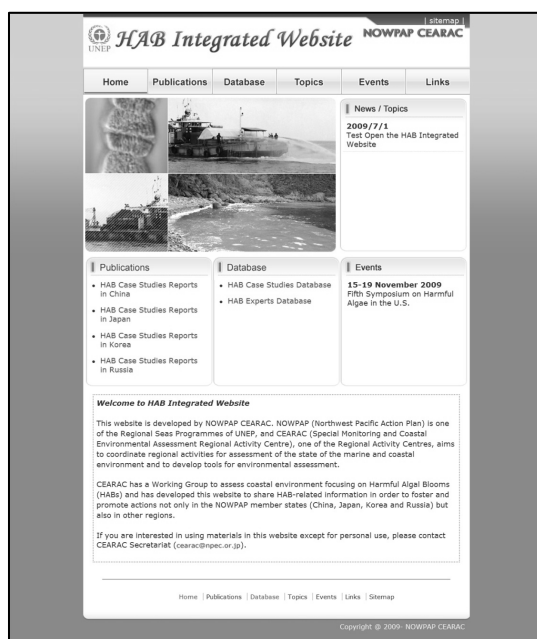
Then, CEARAC contracted with experts in each member state to update these reports by adding latest information on HAB in the target sea areas. Through this activity, CEARAC developed the common format and system to continuously share HAB-related information in the NOWPAP region with the member states.



Location of a target sea area for HAB Case Studies in each member state

2) HAB Integrated Website

The objective is to provide and share HAB-related information as a whole in order to enhance activities against HABs in the NOWPAP region. CEARAC contracted with consultants for developing HAB Integrated Website and making rules for updating the website itself and the information in it. The draft website was reviewed by CEARAC FPs and WG3 experts. The official operation started in November 2009.



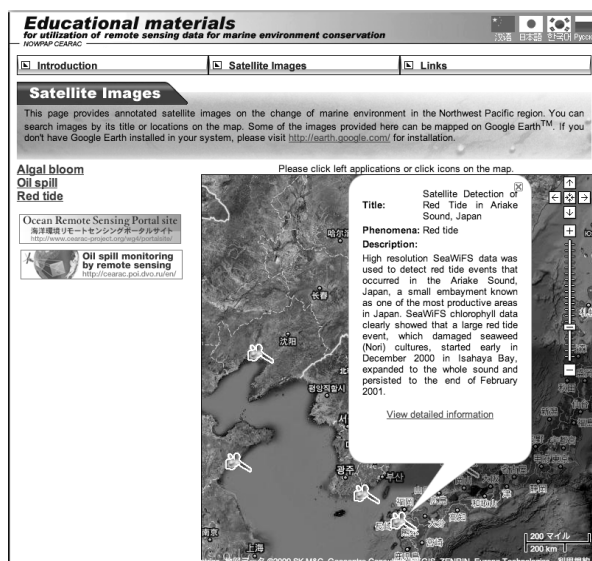
Top page of the HAB Integrated Website

URL: <https://cearac.nowpap.org/hab-web/>

2.3.2. Working Group 4 (WG4)

1) Educational materials for utilization of remote sensing data for coastal environment conservation

The objective of developing educational materials for utilization of remote sensing data for coastal environment conservation is to further promote the use of remote sensing as a marine environment tool. Expected users are students, young researchers and coastal managers in the NOWPAP regions. Web-based prototype of the educational materials was developed, which enables CEARAC to provide GIS compatible annotated satellite images concerned with the issues of eutrophication, oil spill and red tides in the NOWPAP area. CEARAC completed the development in October 2009.



Website for the web-based educational materials URL:

<https://cearac.nowpap.org/map-webgis/>

2) The 2nd NOWPAP training course on remote sensing data analysis

The training course was held at Cheju National University, Jeju, Korea on 1 to 5 November 2008 with Korea Ocean Research & Development Institute (KORDI) as a co-organizer. It was conducted for 23 selected trainees who are postgraduate students and professional researchers working in the fields of marine sciences, from 7 countries and regions: China, Japan, Korea, Russia, France, Taiwan and Thailand. 12 lecturers composed of experts from the four NOWPAP countries and from Germany, India and USA were invited and gave lectures on remote sensing applications for monitoring and assessment of the marine and coastal environment in the Northwest Pacific Region.

2.3.3. Joint Activity of WG3 and WG4

1) Procedures for assessment of eutrophication including evaluation of land based sources of nutrients for the NOWPAP region

As a joint activity, NOWPAP WG3 and WG4 developed procedures for assessment of eutrophication status that can be shared among the NOWPAP member states. Draft procedures, developed by the Northwest Pacific Region Environmental Cooperation Center (NPEC), were presented at the 2nd Coastal Environment Assessment Workshop held in Toyama, Japan in September 2008. Then, the draft procedures were reviewed and refined by the nominated experts from each NOWPAP member state in FY 2008, and the results of the works were harmonized to make the common procedures for assessment of eutrophication status for the NOWPAP region in FY 2009. The procedures were finally reviewed by CEARAC

FPs and completed in June 2009. The developed procedures are being utilized for assessment of eutrophication status in each NOWPAP member state during the 2010-2011 biennium.

2.4. Intersessional Activities

1) Website on oil spill monitoring by remote sensing

Website on oil spill monitoring by remote sensing was constructed in 2004, and the site was updated regularly based on the proposal from Pacific Oceanological Institute of the Far Eastern Branch of Russian Academy of Sciences. More satellite-derived oil spill images were added to the website by 2008.

2) The 1st Workshop on Biodiversity in the Northwest Pacific Region

The 1st Workshop on Biodiversity in the Northwest Pacific Region was organized by NPEC on 16 September 2009 in Toyama, Japan, back to back with the 7th CEARAC FPM (14-15 September, 2009) with about 30 participants: experts of marine biodiversity in the NOWPAP member states and HELCOM, representatives of NOWPAP partners such as PICES, YSLME, WESTPAC and COBSEA and other international organizations, FPs of CEARAC and representatives of NOWPAP RACs and RCU.

The objective of the workshop was to learn the know-how and experiences from a pioneering project on marine biodiversity in the European area and to share information of the current situations/movements of biodiversity-related programmes in the NOWPAP member states.

The information and comments shared during the workshop contributes to one of CEARAC's activities for the 2010-2011 biennium: development of a new method to assess coastal environment using biodiversity indicators in the NOWPAP region.

2.5. Regional cooperation with UNEP, NOWPAP RACs and other organizations

2.5.1. Participation in NOWPAP Partners' Meetings and Workshops

1) NOWPAP IOC/ WESTPAC 7th International Scientific Symposium

CEARAC staff participated in IOC/WESTPAC 7th International Scientific Symposium (21-25 May 2008, Kotakinabalu, Malaysia) and introduced draft procedures for assessment of eutrophication status including evaluation of land-based sources of nutrient for the NOWPAP region.

2) YSLME Regional Workshop on Assessing Marine Environment Quality of the Yellow Sea

CEARAC staff participated in YSLME Regional Workshop on Assessing Marine Environment Quality of the Yellow Sea (2-4 June 2008, Shenyang, China) and introduced draft procedures for assessment of eutrophication status including evaluation of land-based sources of nutrient for the NOWPAP region.

3) PICES 17th Annual Meeting

CEARAC staff participated in PICES 17th Annual Meeting (24 October- 2 November 2008, Dalian, China) and made a presentation to introduce CEARAC WG3 activities for the 2008-2009 biennium. CEARAC also discussed ways of information sharing and cooperation between NOWPAP and PICES with PICES HAB experts.

4) GOCCI PI Workshop

CEARAC staff participated in GOCCI PI Workshop (29-30 October 2008, Jeju, Korea) and collected information on a Korean new geostationary remote sensing sensor for marine environmental monitoring.

5) Workshop on Marine Environment in the East China Sea and its Sound Future

CEARAC staff participated in Workshop on Marine Environment in the East China Sea and its Sound Future (5-6 December 2008, Fukuoka, Japan) and collected information HAB in East China Sea.

6) PICES workshop on Status and Trends in East Asian Marginal Sea Ecosystems

CEARAC staff participated in PICES workshop on Status and Trends in East Asian Marginal Sea Ecosystems (21-22 April 2009, Busan, Korea) and made a presentation to introduce CEARAC activities and HAB-related data collected through WG3 activities in order to contribute to construction of the status report in East Asian Marginal Sea Ecosystems by PICES.

7) PICES International Summer School on Satellite Oceanography for the Earth Environment

CEARAC staff participated in PICES International Summer School on Satellite Oceanography for the Earth Environment (25-28 August 2009, Seoul, Korea) and managed and provided on-site support for smooth conduct of the training course.

8) 11th Global Meeting of the Regional Seas Conventions and Action Plans

CEARAC staff participated in 11th Global Meeting of the Regional Seas Conventions and Action Plans (5-8 October 2009, Bangkok, Thailand) and collected information on biodiversity and other Regional Seas Programmes.

9) PICES 18th Annual Meeting

CEARAC staff participated in PICES 18th Annual Meeting (23 October- 1 November 2009, Jeju, Korea) and made a presentation to introduce the outputs of CEARAC's activities in this biennium.

10) East Asian Congress 2009

CEARAC staff participated in East Asian Congress 2009 (23-27 November 2009, Manila, the Philippines) and introduced CEARAC activities.

2.5.2. Participation in NOWPAP-related and other RACs' Meetings and Events

1) NOWPAP International Coastal Cleanup (ICC)

Dr. Takashi Kusui (Professor of Toyama Prefectural University) participated on behalf of CEARAC and made a presentation in NOWPAP ICC held in Dalian, China (11-12 September 2008) on behalf of CEARAC.

CEARAC staff participated in NOWPAP ICC in Vladivostok, Russia (26-28 September 2008) as part of RAP MALL activities.

2) RACs' Focal Points Meetings

CEARAC has kept a close contact with the other three NOWPAP RACs in order to promote protection and management of the coastal and marine environment in the NOWPAP region. The Director of CEARAC and the staff members attended FPMs of other RACs.

2.6. Publication of CEARAC Newsletter

The 5th issue of CEARAC Newsletter was published in December 2008, which introduces implementation status of CEARAC activities for the 2008-2009 biennium. NOWPAP RCU, some experts of Working Group 3 and 4 and other international organizations kindly contributed articles to this newsletter.

The 6th issue was published at the end of 2009. Besides the progress reports on CEARAC activities, this issue had articles from the NOWPAP partner organizations:

Secretariat of the Convention on Biological Diversity/UNEP and the Helsinki Commission (HELCOM).

CEARAC Newsletters are distributed free of charge to people who are interested in CEARAC activities and special monitoring and coastal environmental assessment.

2.7. CEARAC Activities on RAP MALI

1) Development of public awareness materials in cooperation with NOWPAP RCU and NPEC

CEARAC developed a public awareness material in cooperation with NOWPAP RCU, in order to decrease the generation of marine litter, using existing outputs of CEARAC and NPEC.



Pamphlet of marine litter

2) Compilation and harmonization of marine litter monitoring data on beaches and submission of collected data to DINRAC

CEARAC prepared the monitoring plan sheet and asked National coordinators of each NOWPAP member state to submit the sheet with the monitoring results. After the results were submitted to CEARAC, CEARAC summarized them and submitted to DINRAC.

3) Interpretation of results of marine litter monitoring on beaches

CEARAC interpreted monitoring results implemented by NPEC in 2008 and 2009. The result of interpretation is introduced through marine litter website developed in CEARAC

website.

4) Development of technical materials and introduction of best practices on solid waste management, including removal of marine litter on beaches

The Ministry of the Environment, Japan (MOE) implemented Model Survey to understand the current situation and to develop the management method for solid waste including removal marine litter on beaches. Then, MOE made a report and an outline of the model survey. CEARAC made a booklet using the outline of MOE's model survey.

3. Expenditures of CEARAC activities for the 2008-2009 biennium

Table 1 Budget and Final Expenditures of CEARAC for the 2008-2009 biennium (US\$)

Activity	Time	Planned Budget (US\$)	Expenditures (US\$)
Organization of 6 th FPM - organizing the meeting - publishing the meeting report	Mar.2008	16,000 2,000	15,381 2,535
Organization of 7 th FPM - organizing the meeting - publishing the meeting report	Sep. 2009	16,000 2,000	18,760 2,873
Organization of 4 th Meetings of WG3 (HAB) and WG4 (RS) - organizing the meeting - publishing the meeting report	Sep. 2008	25,000 6,000	21,046 4,974
WG3(HAB) - HAB case studies - HAB Integrated Website	Throughout 2008 - 2009	10,000 10,000	10,000 10,000
WG4(RS) - educational materials for utilization of remote sensing data for marine environment conservation - 2 nd training course on remote sensing data analysis	Throughout 2008 - 2009	10,000 15,000	9,000 14,515
WG3 and WG4(joint) - procedures for assessment of eutrophication status including evaluation of land based sources of nutrients for the NOWPAP Region	Throughout 2008 - 2009	10,000	10,000
Intersessional work - Website on oil spill monitoring by remote sensing - Preparing documents for 7 th FPM	Throughout 2008 - 2009	2,000 4,000	2,000 0
Cooperation, coordination of CEARAC activities - 2008 - 2009	Throughout 2008 - 2009	4,000 4,000	3,422 15,320
Publication of CEARAC Newsletter - 5 th issue - 6 th issue	Autumn 2008, 2009	2,000 2,000	 4,704
Sub-total		140,000	144,530

CEARAC activities on RAP MALI	Throughout 2008- 2009		
- Develop public awareness materials		2,500	3,108
- Compile and harmonize marine litter monitoring data on beaches		4,000	0
- Interpret results of marine litter monitoring on beaches		4,000	0
- Develop technical materials and introduce best practices on solid waste management, including removal of marine litter on beaches		In-kind (developed by MOE)	2,862
Sub-total		10,500	5,970
TOTAL		150,500	150,500

4. Revised Workplan and Budget of CEARAC Activities for the 2010-2011 Biennium

Following the agreed mandated tasks for CEARAC for the 2010-2011 biennium at the 13th NOWPAP IGM (20-21 October 2008, Jeju, Korea) and discussion at the 7th CEARAC FPM (14-15 September 2009, Toyama, Japan), CEARAC submitted a proposal of its workplan for the 2010-2011 biennium to the 14th IGM (8-10 December, 2009, Toyama, Japan) with the budget of US\$ 140,000.

Besides the specific activities to be implemented, CEARAC planned to maintain and update existing CEARAC websites: HAB Integrated Website, RS Portal Site, Homepage of RS Educational Materials and Website on Oil Spill Monitoring by RS on regular basis in order to provide up-to-date information in a timely manner.

Also, taking into consideration of future CEARAC activities which might not be implemented under the current WG3 and WG4 framework, a new expert meeting (with experts of HAB, RS, eutrophication and biodiversity as participants) was planned to be held back-to-back with regular FPMs for more effective and efficient way of thorough discussion and information sharing within the limited budget. CEARAC continues to make efforts on close cooperation and communication within the NOWPAP member states and with other international organizations through the abovementioned meetings and every other opportunity for successful implementation of our activities, sharing/exchanging of information and avoidance of unnecessary duplication of activities.

During the 14th IGM, the budget for CEARAC for the 2010-2011 biennium was decided as US\$107,000 and revision of it was done accordingly. Then, the revised budget plan was circulated among the FPs and adopted.

4.1. Organization of the 8th and 9th CEARAC Focal Points Meetings back-to-back with Expert Meeting

CEARAC plans to hold two CEARAC Focal Points Meetings (FPMs) during the 2010-2011 biennium: the 8th is planned to be held in Toyama, Japan in September 2010, and the 9th FPM in September 2011. Both FPMs are planned to be held back to back with Expert Meetings to economize the cost of organization and to save time for expected participants. CEARAC FPMs are to be held in order to carry out its designated goals and purposes, which are described in the revised Terms of Reference (TOR) for the CEARAC FPM, and to review and discuss the progress and outputs of CEARAC activities.

The 8th CEARAC FPM is to review the progress of CEARAC activities being implemented for the 2010-2011 biennium.

The 9th CEARAC FPM will review and approve the progress/outcome in implementation of the workplan and expenditures of CEARAC activities for the same biennium. During the meeting, the frame of workplan for CEARAC for the 2012-2013 biennium will be presented by the Secretariat.

The Expert Meeting is a substitution of former Working Group Meetings. In line with the expansion of CEARAC activities besides the areas on harmful algal blooms (HABs) and remote sensing (RS), which have been major fields CEARAC has implemented its activities on, consultation and/or collaborative work with experts of wider topics are necessary. Therefore, CEARAC proposed organization of Expert Meeting in the 7th FPM (September 2009) and it was approved by the participants.

The main topics for the Expert Meeting in 2010 are assessment of eutrophication and marine biodiversity. The selected experts of the NOWPAP member states make presentations on the progress of eutrophication assessment being implemented in their respect countries, and NPEC explains a pilot study in Toyama Bay on marine biodiversity.

During the Expert Meeting in 2011, final reports of the abovementioned activities are expected to be presented

4.2. Maintenance of CEARAC websites

Regarding the workplan for the 2010-2011 biennium, CEARAC plans to implement some routine work for keeping the quality of the existing projects in close consultation with current WG experts. There have been more than 2,500 page views per month to CEARAC websites, including HAB Integrated Website, *Cochlodinium* Homepage, Ocean RS Portal Site, Homepage of RS Educational Materials and Marine Environmental Watch Project (based on the statistics obtained from 1 January 2008 to 31 July 2010).

CEARAC plans to conduct maintenance and management work on these websites in order to update and disseminate information on a regular basis. The outline of the work for the 2010-2011 biennium are as follows:

- Translation of *Cochlodinium* Homepage into 4 languages of NOWPAP member states
- Annual information update such as references, events, case studies in the HAB integrated website based on the agreed rules
- Annual information update such as references, links, events and educational materials in Ocean RS Portal site and Homepage of RS Educational materials

4.3. Specific Projects -CEARAC Projects-

CEARAC has made every effort to implement activities on WG3 (HABs) and WG4 (RS) since its inception. Recently more projects have been added to CEARAC activities: RAP MALI with collaboration with other RACs and eutrophication based on NPEC activities. The specific actions taken under these four working areas have made satisfied outcomes in cooperation with CEARAC Focal Points, experts of WG3 and WG4 and related regional and international organizations.

During the 2010-2011 biennium, in the light of completion of current WG3 and WG4 tasks and the increasing global focus on biodiversity, CEARAC proposes the initiation of a new activity as well as continuation of series of abovementioned activities and improvements of some of them. The new workplan for the present biennium was submitted and approved at the 14th IGM. In terms of the prioritization of them, they are set as follows:

- 1) Developing a methodology for costal environmental assessment focusing on marine biodiversity;
- 2) Assessment of eutrophication status in selected sea areas;
- 3) Updating integrated reports on HAB and ocean remote sensing; and
- 4) Organizing the 3rd NOWPAP training course on remote sensing data analysis

4.3.1. Development of the new marine assessment method focusing on marine biodiversity

CEARAC will develop the new coastal environmental assessment method which uses indicators on marine biodiversity. In 2010, CEARAC conducts pilot study to develop methodology for assessment coastal environment focusing marine biodiversity in Toyama Bay. Based on the outputs of pilot study, CEARAC will develop the draft assessment method for sharing among NOWPAP member states. This draft method will be reviewed by CEARAC FPs and Biodiversity Experts in 2011. These activities are implemented with in-kind support by NPEC.

Based on the workplan, CEARAC has been collecting information related to indicators to identify the suitable ones by now. Also, CEARAC has consulted experts about future vision on this activity and practicability of the assessment method. The interim result of the pilot study in Toyama Bay will be presented during the Expert Meeting to be held in September 2010.

4.3.2. Implementation of the assessment of eutrophication status by the NOWPAP member states

CEARAC, together with experts of NOWPAP WG3 and WG4, developed the Procedure for assessment of eutrophication status including evaluation of land based sources of nutrients for the NOWPAP Region (Common Procedures) in June 2009. During the 2010-2011 biennium, assessment of eutrophication status in the selected sea areas of each NOWPAP member state is conducted based on the Common Procedures, to evaluate the suitability of suggested methodology. In 2011, an integrated report on eutrophication assessment in selected sea areas in the NOWPAP region will be published in a digital format.

Based on the workplan, CEARAC has concluded MoU with selected experts and been collecting information for implementing assessment. The interim result of the eutrophication assessment in each selected sea area will be presented by the experts of the member states at the Expert Meeting to be held in September 2010.

4.3.3. Updating the Integrated Report on HABs for the NOWPAP Region

CEARAC developed the common format to share HAB-related information among the NOWPAP member states based on HAB Case Studies implemented in each member state. To share HAB-related information continuously, each member state is expected to submit the data and information annually. Then, CEARAC plans to disseminate the information and summarize them regularly. In this context, CEARAC updates the Integrated Report on HAB in the NOWPAP region during the 2010-2011 biennium using information submitted by each member state, as 5 years have passed since the first publication of the Report. Target Sea areas for HAB case studies in each member state are expanded for the purpose of the Report in order to cover HAB-related information in the other area where HAB occurs. The revised integrated report will be published in a digital format by the end of 2011.

Based on the workplan, CEARAC FPs selected additional sea areas and experts in each member state to take the work. Then, CEARAC has been working on MoU with the experts.

4.3.4. Updating the Integrated Report on Ocean Remote Sensing for the NOWPAP Region

Since the first issue of the Integrated Report on Ocean Remote Sensing for the NOWPAP region in 2005, there has been extensive progress in the field of ocean remote sensing for monitoring of marine and coastal environment in the world. Some of those progresses have been collected and disseminated through maintaining Ocean Remote

Sensing Portal Site and website on oil spill monitoring by remote sensing. CEARAC plans to update the Integrated Report incorporating abovementioned collected progress and so on during the 2010-2011 biennium. The revised integrated report will be published in a digital format by the end of 2011.

Based on the workplan, CEARAC has been preparing draft MoU for the revision of Integrated Report on Ocean Remote Sensing for the NOWPAP Region.

4.3.5. Organization of the 3rd NOWPAP Training Course on Remote Sensing Data Analysis

As an outcome of close communication and cooperation between CEARAC and NOWPAP partners, the 3rd training course will be held in Russia in 2011 with PICES and IOC/WESTPAC as co-organizers. Draft proposal to conduct the next training course jointly with these organizations was approved at the 13th NEAR-GOOS Coordinating Committee Meeting (April 2010, Russia). The same proposal was also submitted to PICES and it will be further discussed at the PICES annual meeting in October 2010 in Portland.

4.4. Cooperation, coordination with NOWPAP and other international activities throughout the 2010-2011 biennium

CEARAC will keep close contact with NOWPAP RCU, other RACs, UNEP and relevant regional and international organizations in order to promote implementation and development of NOWPAP. Taking every opportunity, CEARAC will participate in meetings and/or workshops held by abovementioned organizations to exchange information and data and disseminate past and present CEARAC activities.

4.4.1. Events CEARAC participated in FY2010 (as of August, 2010)

1) 2nd Yellow Sea Regional Science Conference

CEARAC staff participated in the Conference (24-26 February 2010, Xiamen, China) and made a presentation entitled "Assessment of eutrophication status in Toyama Bay based on the 'Procedures for assessment of eutrophication including evaluation of land based sources of nutrients for the NOWPAP region'."

2) 2010 NOWPAP International Coastal Cleanup and Workshop on Marine Litter Management

NOWPAP ICC was held in Hirado, Japan on 26-28 March and CEARAC staff attended the beach clean-up event and the workshop as part of marine litter activities.

3) 13th NEAR-GOOS Coordinating Committee Meeting

CEARAC staff attended the meeting (8-10 April, Vladivostok, Russia), and submitted a proposal on co-organization of the 3 training course on remote sensing data analysis in with NEAR-GOOS and PICES.

4) International Symposium – Climate Change Effects on Fish and Fisheries

CEARAC staff attended the symposium (25-26 April, Sendai, Japan) and collected information relevant to CEARAC activities.

5) 8th Intergovernmental Session IOC Sub-Commission

Director of CEARAC attended the meeting (10-13 May, Bali, Indonesia) and collected information related to CEARAC activities.

5) 8th POMRAC FPM

Director of CEARAC participated in the 8th POMRAC FPM (26-27 May, Busan, Korea).

6) 13th MERRAC FPM

Director of CEARAC participated in the 13th MERRAC FPM (8-11 June, Taejeon, Korea).

4.4.2. Events CEARAC plans to participate in FY2010 (from September 2010)

1) 2010 NOWPAP ICC in Korea

CEARAC staff plans to attend 2010 NOWPAP ICC (1-2 October, Jeju, Korea) as part of marine litter activities.

2) Marine Biodiversity Forum in the Northwest Pacific Region

NPEC will organize the Marine Biodiversity Forum in the Northwest Pacific Region on 16 October in Toyama, taking the opportunity that COP10 will be held in Japan in October. Representatives of UNEP and other Regional Sea Programme will participate in the forum and give presentations.

3) COP10 Side Event

CEARAC will participate in COP10 (18-29, October, Nagoya-Aichi, Japan) as an exhibitor and introduce activities on the conservation of marine environment for the NOWPAP region and the experimental assessment of the marine environment in Toyama Bay using an indicator on marine biodiversity

4) PICES 2010 Annual Meeting

CEARAC staff will participate in the meeting (22-31 October, Portland, USA) and give a presentation on HAB Integrated Website.

5) 2nd International Conference on Global Change and the Environment in Asia and Pacific (GCEAP): Inland Waters and Coastal Environment

CEARAC staff will participate in the conference (28-29 October, Hong Kong, China) and give a presentation titled "Preliminary assessment of coastal marine eutrophication by remote sensing."

6) 15th NOWPAP IGM

Director of CEARAC will participate in the IGM (16-18 November, Moscow, Russia) and report the implementation of activities in FY2010.

4.5. Publication of CEARAC annual newsletter

The 7th and 8th issues of CEARAC Newsletter will be published in autumn 2010 and 2011 respectively. Besides the digital format of the newsletters, 350 copies will be printed for each issue and distributed to people who are concerned with CEARAC activities and special monitoring and coastal environmental assessment for free of charge.

4.6. CEARAC Activities on RAP MALI

CEARAC plans to conduct its designated activities on marine litter (RAP MALI) under leadership of NOWPAP RCU and cooperation with other RACs.

The specific activities designated to CEARAC for the 2010-2011 biennium are as follows:

- Revise "Marine Litter Guidelines for Tourists and Tour Operators in Marine and Coastal Areas"
- Update the pamphlet "Current situation on marine litter in the NOWPAP region"

- Compile and harmonize marine litter monitoring data on beaches (provided by the member states) and submit collected data to DINRAC,
- Provide information on best practice to reduce marine litter generation from land-based sources

5. Budget of CEARAC activities for the 2010-2011 Biennium

Estimated budget for implementing CEARAC activities for the 2010-2011 biennium is US\$ 107,000. The proposed workplan, revised budget and timetable are shown in Table 2.

Table 2 Workplan and revised budget of CEARAC for the 2010-2011 biennium (in US\$)

Activities	Actions	Tentative Time	Budget (in USD)		
			In 2010	In 2011	Total
Organization of 2 CEARAC Focal Points Meetings back-to-back with Expert Meetings	HAB(1), RS(1), Eutrophication(1), Biodiversity(1); CEARAC FPs in each member state are expected to be included in the members	September 2010, September 2011	27,000	27,000	54,000
Maintenance of Websites WG3 WG4	<ul style="list-style-type: none"> - Updating HAB Integrated Website - Development of the website in each language - Updating Ocean Remote Sensing Portal Site - Updating Website on the RS Educational Materials 		3,000	2,000	5,000
Specific projects <u>Biodiversity</u> <u>WG3 and WG4(joint)</u> <u>WG3(HAB)</u> <u>WG4(RS)</u>	<ul style="list-style-type: none"> - Development of the new marine environmental assessment method focusing on marine biodiversity - Implementation of the assessment of eutrophication status by the NOWPAP member states - Updating the Integrated Report on HAB - Updating the Integrated Report on Ocean Remote Sensing - 3rd NOWPAP Training Course on RS Data Analysis 		In kind 12,000 8,000	In kind 4,000 2,000 4,000 10,000	 40,000 and In-kind
Cooperation/coordination of CEARAC activities			2,000	2,000	4,000
Publication of CEARAC Newsletter		autumn 2010, 2011	2,000	2,000	4,000
<u>Sub-TOTAL</u>			54,000	53,000	107,000

CEARAC Activities on RAP MALI	- Revise "Marine Litter Guidelines for Tourists and Tour Operators in Marine and Coastal Areas"	throughout 2010-2011			5,000
	- Update the pamphlet "Current situation on marine litter in the NOWPAP region"				2,500
	- Compile and harmonize marine litter monitoring data on beaches (provided by member states) and submit collected data to DINRAC				in-kind
	- Provide information on best practice to reduce marine litter generation from land-based sources				3,000
<u>Sub-TOTAL</u>					10,500
<u>GRAND TOTAL</u>					117,500