

Report on the Implementation and expenditures of CEARAC activities for the 2012-2013 biennium

NOWPAP CEARAC FPM12
2-3 July 2014

Activities for 2012-13 biennium

Activity	
Meetings	2 annual FPMs and 1 Expert Meeting
Web Maintenance	- Update of information on HABS and Ocean RS - Upgrade of Marine Environmental Watch System (in-kind)
<Main Projects>	
- Marine Biodiversity	- Preparation of the regional report for conservation of marine biodiversity and sustainable use of marine ecosystem services
- Eutrophication	- Refinement of the NOWPAP Common Procedure and assessment of the eutrophication status
- Remote Sensing	- Organization of a training course on RS data analysis
Cooperation & Coordination	Participation in and/or joint organization of meetings, workshops, etc.
Marine litter (RAP MALI)	- Report on measures/best practices for ML prevention - Compilation/Harmonization of ML monitoring data

1

FPM10 (17-18 April 2012)

- ◆ Acknowledged outputs/comes of CEARAC activities for 2010-2011
- ◆ Reviewed the progress of CEARAC activities for 2012-2013 with revised budget (US\$ 112,000)
- ◆ Adopted revised ToR of CEARAC FPM

2



3

Expert Meeting on Marine Biodiversity and Eutrophication (5-6 August 2013)

- ◆ Review of CEARAC activities
 - marine protected areas (MPAs) in the NOWPAP region
 - case studies on eutrophication assessment with revised NOWPAP Common Procedure
- ◆ Presentation on seagrass/seaweed mapping activities
- ◆ Discussion on potential work for 2014-2015 (marine BD, eutrophication, seagrass/seaweed mapping)

4

FPM11

(11-12 September 2013)

- ◆ Reviewing progress of CEARAC activities
- ◆ Discussing workplan and budget for 2014-15 activities with 3 budget plans (focus on marine BD, eutrophication, seagrass/seaweed mapping)



Adoption of the draft workplan with 3 budget plans to be submitted to NOWPAP IGM 18 (Dec. 2013)

5

Website Maintenance

- ◆ Regular information update
 - HAB Integrated website
 - NOWPAP Ocean Remote Sensing Portal



- ◆ Electric distribution of CEARAC newsletter (#9 & 10)
 - in English and Japanese
- ◆ Upgraded Marine Environmental Watch System (March 2013)

6

Specific Projects

- ◆ Marine Biodiversity → Developing a regional report on Monitoring and Management of Marine Protected Areas in the NOWPAP region
- ◆ Eutrophication → Refining the NOWPAP Common Procedure and assessing the eutrophication status in selected sea areas in the NOWPAP region
- ◆ Remote sensing → Organizing NOWPAP-PICES Joint Training Course on Remote Sensing Data Analysis (Oct.21-25, 2013)

7

Report on Monitoring and Management of Marine Protected Areas

- **Aichi Target 11** (CBD COP 10, 2010) → by 2020, 10 % of marine and coastal areas are designated as marine protected areas in the world
- **MAPs in the NOWPAP region** → Reporting definition and the management status of MPAs in each member at "NOWPAP/NEASPEC Joint Workshop on Marine Biodiversity Conservation and Marine Protected Areas in the Northwest Pacific (March 2013)"

8

Application of the refined NOWPAP Common Procedure for eutrophication assessment in selected sea areas in the NOWPAP region

- Developing NOWPAP Common Procedure (2009)
 - Eutrophication assessment in 2010-2011
 - technical problems in the procedure
- ↓
- Refining the procedure and implementing another eutrophication assessment

9

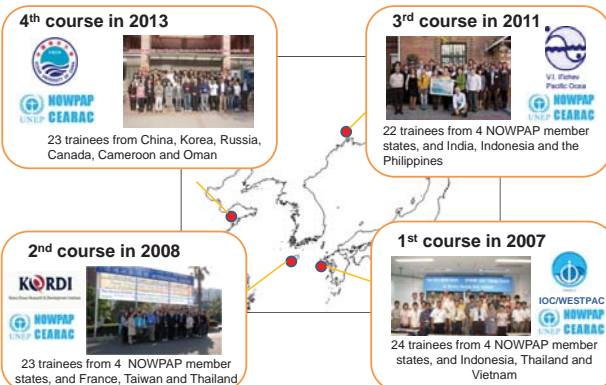
NOWPAP-PICES Joint Training Course on Remote Sensing Data Analysis (21-25 October 2013)



10

RS Training Courses (2007-2013)

In total, 92 people from 14 countries/region attended the training courses



11

Cooperation and Coordination

- ◆ Events that CEARAC joined in 2012-13:
 - 10th & 11th DINRAC FPM
 - 15th & 16th MERRAC FPM
 - 10th & 11th POMRAC FPM
 - 17th & 18th NOWPAP IGM
 - NOWPAP ICC and Workshop
 - Regional Workshop on Marine Invasive Species Problems in Northwest Pacific Region (Oct. 2012)
 - 2012, 2013 PICES Annual Meeting
 - PICES 2013 Summer School (August, 2013)
 - 15th Int'l Conference on Harmful Algae (Oct.-Nov. 2012)
 - 2012 ASLP Aquatic Science Meeting (July 2012)

12

CEARAC staff members joined



2013 NOWPAP International Coastal Cleanup & Workshop on Marine Litter Management (Okinawa, Japan, Oct. 2013)



PICES Summer School on Ocean Observing Systems & Ecosystem Monitoring (Newport, USA, Aug. 2013)

13

◆ Contribution to the State of Marine Environment Report (SOMER-2) by POMRAC

<Subchapters to which CEARAC contributed>

- primary production
- sustainable use of the biodiversity resources
- nutrient and organic matter excessive inputs – HAB
- eutrophication and hypoxia
- marine litter

14

Activities on RAP MALI (Activities on marine litter)

- ◆ Regular work:
 - Compilation/Harmonization of marine litter monitoring data on beaches
- ◆ New work:
 - Publishing regional report on measures and best practices for prevention of marine litter input from land-based sources in the NOWPAP region (March 2013)



15

◆ Brochure in NOWPAP members' languages



16

Fund Mobilization

- ◆ Financial support from UNEP Small Scale Funding Agreement (US\$4,000)
 - Preparing a pamphlet on marine litter in English and 4 languages of the member states

17

Delay of some work

- Development of 2 regional reports (MPAs and eutrophication) were completed in **2014**



- need more detailed timeline in workplan
- need more frequent communication with contracted experts and others

18

Budget/Expenditure for 2012-13

Activity	Planned Budget (US\$)			Expenditure (US&)		
	2012	2013	Total	2012	2013	Total
<Meetings> 2 FPMs + 1 EM	27,000	27,000	54,000	20,444	34,919	55,363
Web Maintenance	2,000	2,000	4,000	0	2,488	2,488
Watch System	In-kind	In-kind	0	In-kind	In-kind	0
<Projects>						
- Marine BD	6,000	14,000	20,000	0	20,444	20,444
- Eutrophication	16,000	4,000	20,000	0	20,000	20,000
- RS Training	0	10,000	10,000	0	10,287	10,287
Cooperation and Coordination	2,000	2,000	4,000	2,000	1,740	3,740
<RAP-MALI>						
Data compilation	In-kind	In-kind	0	In-kind	In-kind	0
Best Practice	3,000	0	3,000	2,678	0	2,678
Total	56,000	59,000	115,000	25,122	89,878	115,000

19



20

Workplan and Budget of CEARAC activities for the 2014-2015 biennium

NOWPAP CEARAC FPM12
2-3 July 2014

CEARAC Activities for 2014-2015 biennium

- ◆ **Organization of Meetings**
- ◆ **Maintenance of Websites**
- ◆ **Specific Projects**
 - marine biodiversity
 - eutrophication
 - sea grass mapping
- ◆ **Cooperation and Coordination**
- ◆ **RAP MALI (marine litter)**

1

Organization of Meetings (FPM12 & 13 and 1 Expert Meeting)

- ◆ **FPM 12 - July 2014**
 - report outputs/outcomes of 2012-2013 activities
 - review revised workplan/budget and progress of 2014-2015 activities
- ◆ **FPM 13 - September 2015**
 - review progress of on-going activities
 - discuss draft workplan for 2016-2017
- ◆ **Expert Meeting - summer 2015**
 - review progress of on-going activities
 - suggestions on potential activities for 2016-2017

2

Maintenance of Websites

- ◆ **Regular upload of latest information on HABs and ocean remote sensing**
- ◆ **Upgrade of Marine Environmental Watch System**



3

Specific Projects

- ◆ **Marine Biodiversity**
 - pilot assessment on the impact of major threats to marine biodiversity
- ◆ **Eutrophication**
 - trial application of screening procedure of the NOWPAP Common Procedure
- ◆ **Sea grass mapping**
 - Case studies on sea grass/seaweed mapping by applying RS techniques

4

1. Marine Biodiversity

- ◆ **Pilot assessment on the impacts of major threats to marine biodiversity in selected sea areas in the NOWPAP region**
 - Collecting data/information on 3 threats (eutrophication, non-indigenous species and habitat loss)
 - Assessing their impacts in selected sea areas
 - Workshop to review the assessment results
 - Developing a regional report

5

2. Eutrophication

- ◆ **Trail applications of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment**
- Applying 'screening procedure' to entire NOWPAP sea area
- Identifying potential eutrophic zones for comprehensive assessment

6

3. Sea grass mapping

- ◆ **Case studies on sea grass/seaweed mapping in selected sea areas in the NOWPAP region**
- Developing a manual
- Conducting case studies to map temporal changes of sea grass/seaweed distribution using satellite images
- Workshop to discuss the results of case studies and to elaborate the manual

7

Cooperation and Coordination

Potential partners:

- ◆ marine biodiversity with **DINRAC, IOC/WESTPAC, PICES** and **YSLME**
- ◆ Eutrophication with **POMRAC** and **IOC/WESTPAC**
- ◆ Sea grass and seaweed mapping with **DINRAC** and **IOC/WESTPAC**
- ◆ HABs with **PICES**

8

RAP MALI (marine litter)

- ◆ **Regular work**
- Collecting and harmonizing/summarizing monitoring data from the member states and submitting to DINRAC for compilation
- ◆ **New work**
- Developing a report of case studies on basin-wide collaborative actions for prevention of marine litter input from land-based sources in Japan

9

- the Northwest Pacific Regional Node of the Global Partnership on Marine Litter

(NPEC, host organization of CEARAC, and NOWPAP RCU has established **the Northwest Pacific Regional Node of the Global Partnership on Marine Litter** with the support by Global Programmed of Action for the Protection of the Marine Environment from Land-based Activities)

10

Resource mobilization

- ◆ Assessment of hypoxic zones and their negative impacts on marine ecosystems in the Northwest Pacific region



(potential donors)

- ◆ Toyota Environment Activity Fund
- ◆ Asia-Pacific Network for Global Change Research (APN)
- ◆ Mitsui & Co., Ltd. Environment Fund

11

Budget plan

Activity	2014	2015	Total	Note
2 FPMs and 1 Expert Meeting	27,000	27,000 + external	54,000	Annual FPM, EM in 2015
Website Maintenance - Regular update (HAB + RS) - Update in Watch System	1,500 In-kind	1,500 In-kind	3,000 In-kind	HAB – 1/biennium RS – 1/yr Watch – 1/yr
<Marine biodiversity> - Implementing assessment - Organizing a workshop - Developing a regional report		12,000 10,000 2,000	24,000	
<Eutrophication> - Implementing assessment - Developing an eutrophic map		16,000 4,000	20,000	
<Sea grass mapping> - Developing a manual - Purchasing satellite images - Organizing a workshop - Implementing case studies	4,000	4,000 external 12,000	20,000	
Cooperation/Coordination	2,000	2,000	4,000	2014-2015
Total	34,500	90,500	125,000	

12



13

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

NOWPAP CEARAC
12th CEARAC FPM,
2–3 July, 2014

New marine environmental assessment method for marine biodiversity conservation

- ▶ Toyama Bay Pilot Study implemented in the 2010–2011 biennium
 - Gaps on data availability among the member states and difficulty of assessment using various parameters
- Need to understand the status of monitoring and data availability in each member state
 - Selecting common indicators which is available for all member states

1

Activity in the 2012–2013 biennium

- ▶ Publication of a regional report “Monitoring and management of MPAs in the NOWPAP region”
 - Collecting information on definition and monitoring/management status of MPAs
 - Available data in each member state
- ▶ Joint workshop on MPAs and marine biodiversity conservation
 - Potential CEARAC activities

 **New Assessment method for marine biodiversity conservation**

2

Threats to marine biodiversity

Global Synthesis, UNEP Marine Biodiversity Outlook Series, 2010

- ▶ Land-based pollution
- ▶ Eutrophication
- ▶ Destructive fishing
- ▶ Loss of physical habitats
- ▶ Invasion of non-indigenous species
- ▶ Global climate change

3

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

Objective:

To assess and understand the impacts of major threats (eutrophication, non-indigenous species and habitat alteration) to marine biodiversity in the NOWPAP region.

Primary objective of this project is to clarify the available data on three threats in each member state and try to assess the current status using available data.

Not aim to investigate the relationship between three threats and biodiversity in the NOWPAP region.

4

Tasks

1. Selection of target sea areas for pilot assessment
2. Collection of available data and development of data inventory
3. Implementation of pilot assessment
4. Organization of a workshop to review assessment results
5. Preparation of a regional report on major threats to marine biodiversity in the NOWPAP region

5

1. Selection of target sea areas

- ▶ Target area;
 - Sea area where data/information on 3 threats (eutrophication, non-indigenous species and habitat alteration) is available
 - Sea area which is significant for marine environment/marine biodiversity conservation
 - wider sea area as much as possible, but not a bay



Example: Around Qingdao Peninsula (China), Northern coast of Kyushu (Japan), Southern coast of Korea (Korea), the Peter the Great Bay (Russia)

2.1 Collection of available data

- ▶ data by national monitoring programs
- ▶ data by local governments
- ▶ data by research institutes/universities
- ▶ Other reference materials:
 - Integrated report on eutrophication assessment (CEARAC)
 - Monitoring and management of MPA (CEARAC)
 - Annual summary of major marine environmental data (DINRAC)
 - The Atlas of Marine Invasive Species (DINRAC)
 - State of marine environment (POMRAC) etc.

Relevant parameters on three threats

Cause of threat	Status of threat	Impact of threat	Change of marine BD and marine ecosystem services
–Aquaculture –Fertilizer –Factory disposal –Land use –Population	Eutrophication •T-N, T-P •River input	Water quality Bottom environment Red tide Hypoxia	Marine life Diversity Marine Trophic Level
–Aquaculture –Foreign ship –Ballast water	Non-indigenous species •Number of NIS	Indigenous species Endangered species	Fish catch
–Coastal development –Dum	Habitat alteration •Coastal structure •Landfill •Dredging •Natural coast line •Warm water discharge	Water quality Bottom environment	

2.2 Development of data inventory

Collected data is summarized as data inventory in each member state (Table 1 in Document)

- Data availability
- Contents of data
- Sea area of which data is available
- Period of data
- Monitoring frequency
- Monitoring organization
- etc.

3. Implementation of pilot assessment

- ▶ **Understand the current status of three threats**
Eutrophication, non-indigenous species and habitat alteration are problematic in member states?
- ▶ **Identify causes of threats**
What is the cause(s) of problems?
- ▶ **Forecast threats**
In the future, will each threat become problematic or not?
- ▶ **Understand the impacts of threats to marine biodiversity and/or marine ecosystem services**
What impacts to marine BD have occurred?

3.1 Understand the current status of three threats

Clarify whether each threat is problematic or not

Investigate the status of problems

- Eutrophication– High T-N, T-P? High Chl-*a*? Hypoxia?
- Non-indigenous species – Increasing NIS? Genetic hybridization?
- Habitat alteration – Decrease of seaweed beds/tidal flats? Disappearance of natural coasts?

3.2 Identify causes of threats

- Causes of problems by each threat are investigated
- ▶ Eutrophication
 - Aquaculture (feed)? Agriculture (fertilizer)? Factory discharge? Land use? Population density?
 - ▶ NIS
 - Aquaculture of NIS? Foreign ships? Ballast water?
 - ▶ Habitat alteration
 - Coastal development? Construction of dams?

12

3.3 Forecast threats

Forecast the **future status** of threats in the selected sea areas using trend assessment if the current status is non-problematic

- ▶ Eutrophication
 - become eutrophic or not?
- ▶ NIS
 - The number(types) of species will increase or not?
- ▶ Habitat alteration
 - Coastal development will be increased or not?

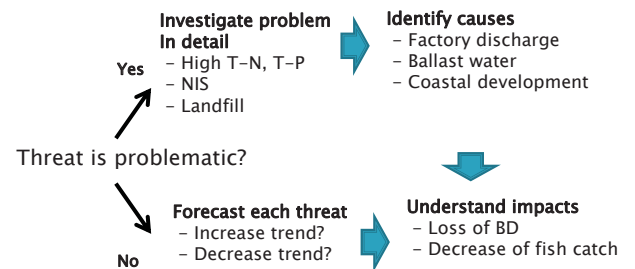
13

3.4 Understand the impacts of threats to marine biodiversity and/or marine ecosystem services

- ▶ Eutrophication
 - Deterioration of water quality, Deterioration of bottom environment, Red tide, Hypoxia
 - Loss of BD, Change of ME, Decreasing of FL
- ▶ NIS
 - Decreasing of IS, Increasing of ES
 - Loss of BD
- ▶ Habitat alteration
 - Deterioration of water quality, Loss of habitat
 - Loss of BD, Change of ME, Decreasing of FL

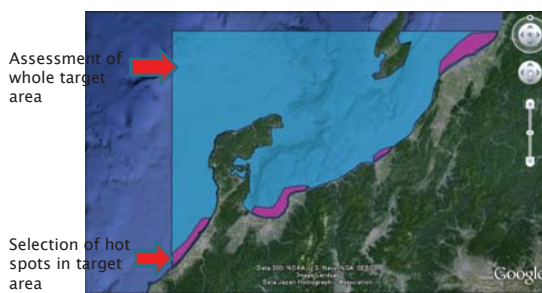
14

Procedures of pilot assessment



15

Image of pilot assessment



16

4. Organization of workshop

- ▶ Date: Q2 in 2015
- ▶ Expected participants:
 - Experts of pilot assessment, and relevant experts/international organizations
- ▶ Theme:
 - Review of pilot assessments
 - Discussion on a new assessment tool

17

Another option of workshop

NOWPAP/PICES joint workshop
 "Major threats to marine biodiversity and ecosystems"

- ▶ Date: October 2015
 (back-to-back with 2015 PICES Annual Meeting)
- ▶ Venue: Qingdao, China
- ▶ Expected participants:
 Experts who implement pilot assessments*
 (Travel fee will be covered by CEARAC)
 Experts from PICES member states

Demerit: Review of national reports will be delayed/skipped

18

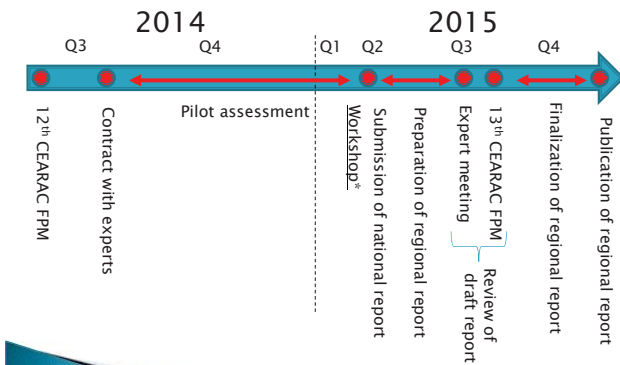
5. Preparation of a regional report on major threats to marine biodiversity in the NOWPAP region

Draft contents

1. Introduction
2. Status of eutrophication
3. Status of non-indigenous species
4. Status of habitat alteration
5. Influence of major threats to marine biodiversity
6. New assessment tool for marine biodiversity conservation for the NOWPAP region

19

Schedule



**Timing of workshop will be changed*

20

Budget

Task	Budget (USD)	
Organizing a workshop	10,000	
Preparing a regional report	2,000	
Implementing pilot assessments	China	3,000
	Japan	3,000
	Korea	3,000
	Russia	3,000
Total	24,000	

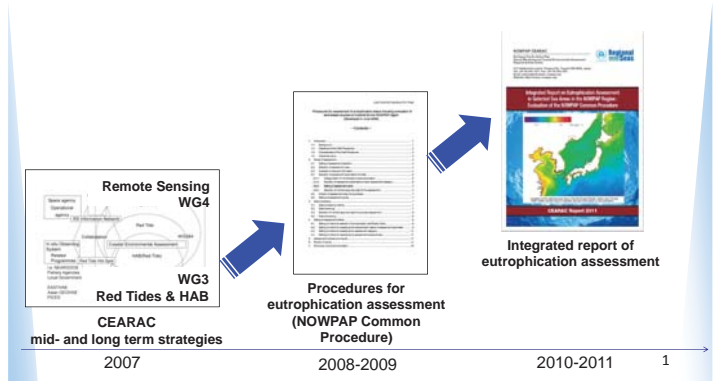
21

Proposal for trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment

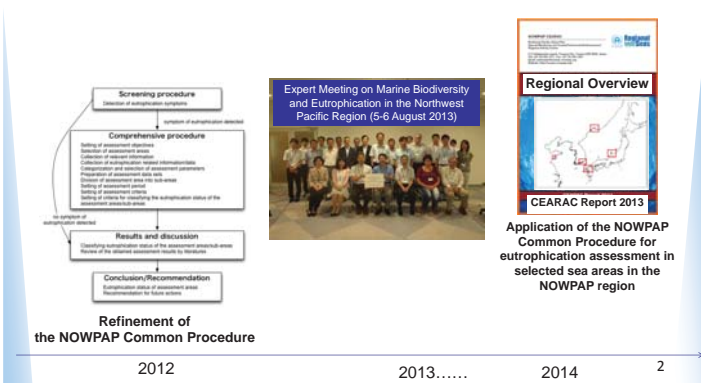
Genki Terauchi
NOWPAP CEARAC

July 2, 2014

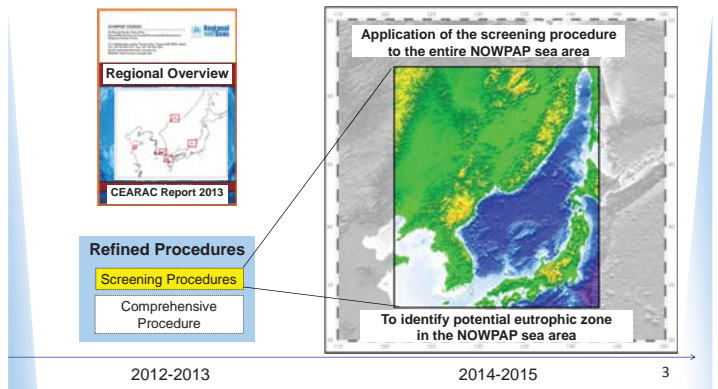
1. Background (past activities)



1. Background (past activities)



1. Background



1. Background (relation with NOWPAP MTS)

Theme 2. Regular assessments of the state of the marine environment

Expected accomplishment

- Contributed to provide NOWPAP member states reliable information and analysis of the state of marine and coastal environment in the NOWPAP region, including (but not limited to) biodiversity, **eutrophication**, harmful algal blooms, chemical pollution, marine litter, oil and HNS spills, invasive alien species, climate change impacts

Theme 3. Pollution prevention and reduction

Suggested activities

- Contribute to collection of information and experiences on **the prevention and reduction of coastal and marine pollution** in NOWPAP member states
- Contribute to setting pollution reduction targets

2. Objective

- To encourage **autonomous use of the NOWPAP Common Procedure** by the member states by applying the Screening Procedure of the refined NOWPAP Common Procedure **to the entire NOWPAP sea area** in order to **identify potential eutrophic zones** as well as to verify the suitability of the Screening Procedure

3. Main tasks

- 3.1.1 Collection and analysis of data on nutrients input and their residence time



Selection of enclosed and semi-enclosed bays in each country



Collection of data on nutrients Inputs and their residence time

POMRAC 2009 6

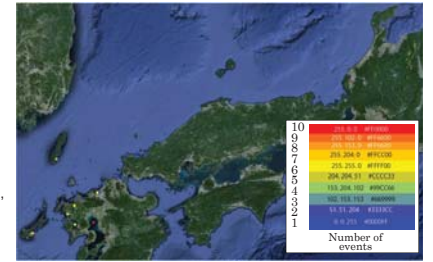
3. Main tasks

- Collection of data and mapping of occurrences of red tides



HAB Case Study Report in China, Japan, Korea and Russia

- Red tide event information
- Toxin event information
- Water quality information

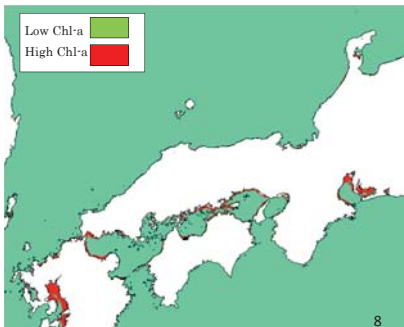


Location of red tide events from 2006 to 2008 and their frequency in 10 grade

3. Main tasks

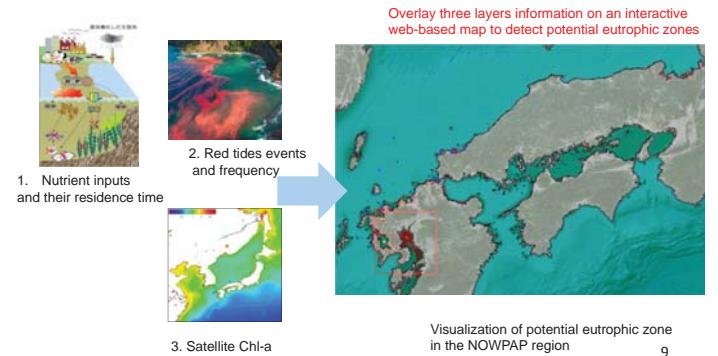
- 3.1.3 Development of satellite map of chlorophyll-a concentration (Chl-a)

- NOWPAP Sea Area will be divided into two areas: high and low Chl-a
- Reference condition (threshold value) will be determined by the nominate experts
- Evaluation of satellite Chl-a in comparison with in situ Chl-a will be conducted in collaboration with the nominate experts



3. Main tasks

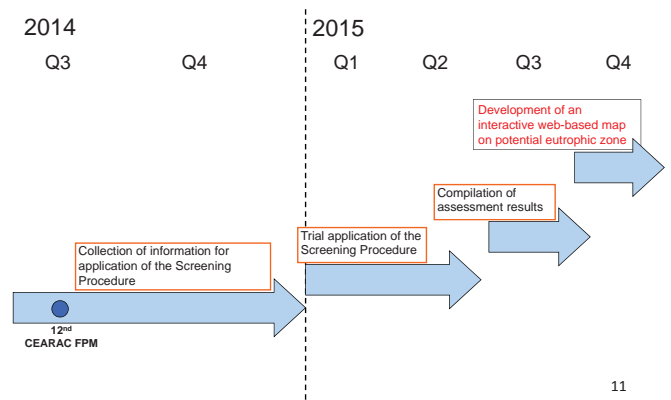
- 3.2 Mapping potential eutrophic zones in the NOWPAP region



4. Expected outcomes

- To identify and visualize potential eutrophic zones on a map.
- An interactive map will be constructed on the Marine Environmental Watch Project website
- Enhanced application of the NOWPAP Common Procedure

5. Schedule



6. Budget

Task	Timing	Output	To be completed	Main body	Budget (US\$)
Trial application of the Screening Procedure of the refined NOWPAP Common Procedure*	2014 Q3	Assessment results based on the Screening Procedure of the refined NOWPAP Common Procedure	2015 Q2	Expert in China	4,000
				Japanese Consultant	4,000
				Expert in Korea	4,000
				Expert in Russia	4,000
Preparation of an interactive web-based map on potential eutrophic zones in the NOWPAP region	2015 Q3-Q4	An interactive web-based map on potential eutrophic zones in the NOWPAP region	2015 Q3 to Q4	Experts in NOWPAP member states and CEARAC	4,000
Total					20,000
					12

Proposal for case studies on seagrass and seaweed mapping in selected sea areas in the NOWPAP region

Genki Terauchi
NOWPAP CEARAC

September 11, 2013

1. Background

Biome	Area (ha)	Total value per ha (\$ha ⁻¹ yr ⁻¹)	Total global flow value(\$yr ⁻¹ x10 ⁹)
Estuaries	180	22,832	4,110
Seagrass/seaweed beds	200	19,004	3,801
Coral reefs	62	6,075	375
Shelf	2,660	1,610	4,283
Tidal marsh/mangroves	165	9,990	1,648
Total coastal biome	3,267	4,352	14,217
Tropical forest	1,900	2,007	3,813
Temperate/boreal forests	2,955	302	894
Total forest biome	4,855	970	4,707

Values of coastal biome is higher than terrestrial biome Costanza et al., (1997)

1. Background



Published in 2009
55% of CO₂ of the earth absorbed by aquatic biota

Relation with NOWPAP MTS

NOWPAP Medium Term Strategy
Theme 4 biodiversity conservation

Suggest activities
Contribute to developing habitat maps for coastal ecosystems using remote sensing and GIS techniques

2

1. Background

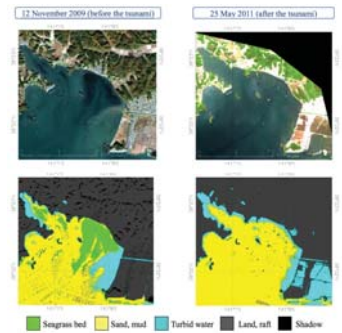
Assessment of damage on seagrass/seaweed by high resolution satellite images

Research period
July 2011 to March 2014

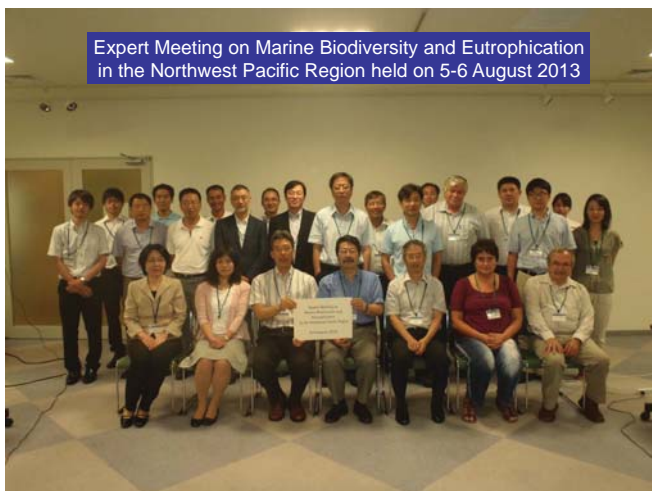
Sponsored by Mitsui & Col, Ltd. Environment Fund



Providing maps to local municipality



3



4

2. Objective

- To develop a manual to derive a seagrass and seaweed distribution map with satellite images.
 - The developed manual will be applied and verified in selected case study areas in the NOWPAP member states.
 - The developed techniques are expected to contribute to building information infrastructure for conservation of marine habitat and serve as one of the major coastal environmental assessment tools in the NOWPAP region.

5

3. Main tasks

- 3.1 Development of a manual for seagrass and seaweed beds mapping with satellite images



NPEC developed manual



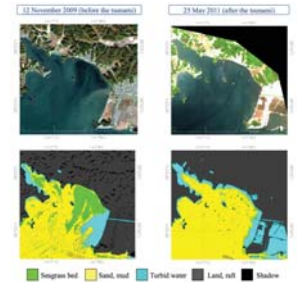
Free or reasonable satellite data

Free software for satellite data analysis

3. Main tasks

- 3.2 Mapping of seagrass and seaweed distribution in selected case study areas

- ♦ Detecting changes of seagrass/seaweed distribution from 2 satellite images with several years intervals.
- ♦ What are the possible factors?
 - Anthropogenic eutrophication?
 - Aqua culture?
 - Temperature increase?
 - Coastal Development?



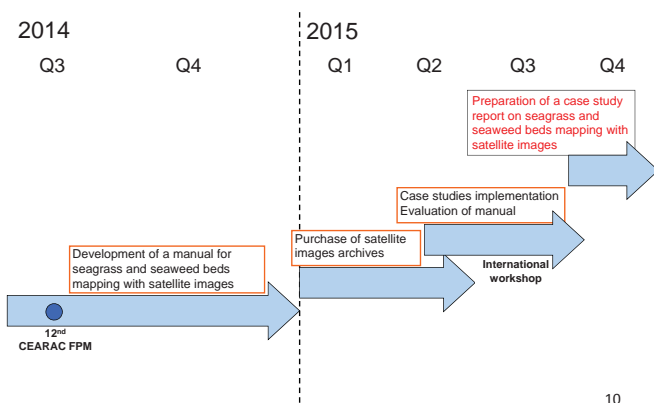
3. Main tasks

- Organization of international workshop on mapping of seagrass and seaweed beds distribution in the Northwest Pacific region
 - ♦ An international workshop aiming at discussing directions and actions required by the NOWPAP member states
 - ♦ Construction of information infrastructure on seagrass and seaweed distribution for their conservation and restoration in the NOWPAP region
 - ♦ Collaboration with regional partner such as IOC/WESTPAC is necessary
 - ♦ Seek for external funding due to budget constraint

4. Expected outcomes

- Case study results and the developed manual will be shared among coastal managers in the NOWPAP member states on CEARAC websites to help understand and conserve seagrass and seaweed beds that are important to [maintain marine biodiversity in the NOWPAP region](#)
- Developed manual provides [a cost effective method to map seagrass/seaweed distribution](#)
- First step for developing habitat maps for coastal ecosystems using remote sensing and GIS techniques proposed in the [NOWPAP MTS](#)

5. Schedule



6. Budget

Task	Timing	Output	To be completed	Main body	Budget (US\$)
Development of a manual for seagrass and seaweed beds distribution with satellite images	2014 Q3-Q4	Archives of high-resolution satellite images	2014 Q4	NPEC Consultant	4,000
Purchase of archives of high-resolution satellite images	2015 Q1	Archives of high-resolution satellite images	2015 Q1	CEARAC	4,000
Case studies on seagrass and seaweed mapping in selected sea areas in the NOWPAP member states	2015 Q2 to Q3	Maps of seagrass and seaweed beds distribution in respective case study sea areas	2015 Q3	Expert in China	3,000
				Japanese Consultant	3,000
				Expert in Korea	3,000
				Expert in Russia	3,000
Organization of a workshop on seagrass and seaweed beds mapping in the Northwest Pacific region	2015 Q3	Report and proceeding of a workshop	2015 Q3	CEARAC	(15,000) Depends on budget
Total					20,000 (35,000)

Workplan and budget of CEARAC Marine Litter Activities

2-3 July, 2014
NOWPAP CEARAC

1. Background

- 2012-2013 biennium
“Regional report on measures and best practices for prevention of marine litter input from land-based sources in the NOWPAP region”
“Best practices for prevention of marine litter input from land-based sources in the NOWPAP region”
- NOWPAP Marine Litter Working Meeting
- The 18th NOWPAP IGM

1

2. Tasks

- Developing a report of case studies on basin-wide collaborative actions for prevention of marine litter input from land-based sources in Japan
- Compiling and harmonizing marine litter monitoring data on beaches and submitting the collected data to DINRAC
- Continuing sharing information on the current status of marine litter in the NOWPAP region

2

2.1 Developing a report of case studies on basin-wide collaborative actions for prevention of marine litter input from land-based sources in Japan

Objective

To provide useful information on prevention of land-based marine litter input in Toyama, Japan

Tasks

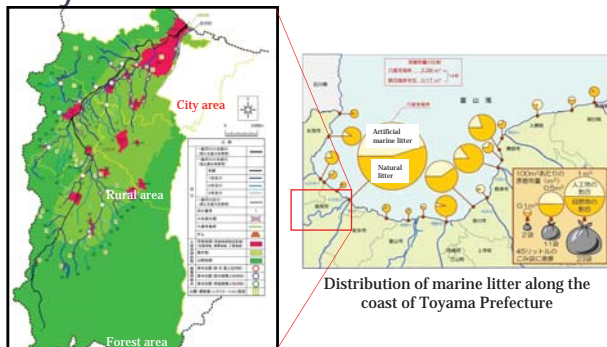
- Collecting information on basin-wide collaborative actions for prevention of marine litter input from land-based sources, implemented at Oyabe River basin in Toyama prefecture
- Preparing a report on case studies on basin-wide collaborative actions

Budget

6,000 US\$ (for printing, including English check)

3

Oyabe River basin



Land use in Oyabe river basin

4

Draft contents of the report

1. Background
2. Status of marine litter in Oyabe River basin
3. Best practices for preventing marine litter by entities in downstream and upstream areas
4. Basin-wide collaboration

5

2.2 Compiling and harmonizing marine litter monitoring data on beaches and submitting the collected data to DINRAC

Objective

To compile and harmonize marine litter monitoring data implemented in the NOWPAP member states

Tasks

- Compiling monitoring data submitted from the member states
- Submitting harmonized data to DINRAC

Budget

In-kind

6

2.3 Continuing sharing information on the current status of marine litter in the NOWPAP region

Objective

To update information on the current status of marine litter in the NOWPAP region

Task

Updating the contents of the website of “Northwest Pacific Regional Node” by adding the latest information on the marine litter status

Budget

In-kind



7

Additional activity

- Northwest Pacific Regional Node (http://www.npec.or.jp/NWPacific_node/)

NPEC, host organization of CEARAC, developed a new website in order to

- enhance awareness of marine litter prevention actions,
- strengthen information exchange on best practices and measures for prevention, and
- enhance knowledge of GPML

This activity is supported by Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

8

A screenshot of the Northwest Pacific Regional Node website. The header features the title "Northwest Pacific Regional Node of the Global Partnership on Marine Litter" and a "Stemap" button. Below the header is a banner image showing a group of people on a beach participating in a marine litter cleanup. The main content area includes a "Let's Learn About Marine Litter" section with a navigation menu (Looking at marine litter, Why are surveys conducted?, What kind of things are there?) and a list of objectives. The objectives are: a. To enhance awareness of marine litter prevention actions at the national, local and grass-root levels; b. To strengthen exchange information on best practices and measures for prevention of marine litter input among the NOWPAP member states and beyond through Global Partnership on Marine Litter (GPML*); c. To enhance knowledge of GPML among local governments, NGOs/NPOs and local people in NOWPAP countries.

9

Collaboration with other RACs and other regional/international Organizations

NOWPAP CEARAC FPM12
2-3 July 2014

Strengthening partnership by

- **Exchanging/sharing information and data**
 - Expanding knowledge/understanding on the status of the marine environment
 - Applying techniques/tools developed by other organizations and avoiding unnecessary overlapped activities
- **Organizing joint workshops/training courses**
 - Saving limited budget

1

Past collaborative Activities

➤ Training course on RS data analysis

#	Partners	Date & Venue
1	IOC/WESTPAC Nagasaki University	Sep. 2007 Nagasaki, Japan
2	Korea Ocean Research & Development Institute (KORDI) Jeju National University	Nov. 2008 Jeju, Korea
3	PICES, IOC/WESTPAC Far Eastern Federal University	Oct. 2011 Vladivostok, Russia
4	PICES Ocean University of China China National Environmental Monitoring Center (CNEMC)	Oct. 2013 Qingdao, China

2

➤ Other Joint Event

Joint Workshop in the 2011 PICES Annual Meeting (14-23 October, Khabarovsk, Russia)
Remote sensing techniques for HAB detection and monitoring

NOWPAP/NEASPEC Joint Workshop on Marine Biodiversity Conservation and Marine Protected Areas in the Northwest Pacific (13-14 March 2013, Toyama, Japan)

Definitions and management status on MPAs in the member states

3

Possible Collaborative area

CEARAC's activity	Potential partner organizations/groups
Marine biodiversity	- DINRAC (DB, invasive species, red list) - IOC/WESTPAC (invasive species) - PICES (WG28: Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors) - YSLME (MPAs, biodiversity assessment)
Eutrophication	- POMRAC (nutrient input from land)
Seagrass mapping	- DINRAC (Database, WebGIS) - IOC/WESTPAC (capacity building)

4

CEARAC's activity	Relevant activities/groups in other organizations
HAB	- PICES (S-HAB: Section on Ecology of Harmful Algal Blooms in the North Pacific, NOWPAP-PICES Study Group) - DINRAC (Marine Environment Data)
Marine Litter	- NPEC (Northwest Pacific Regional Node of the Global Partnership on Marine Litter) - International organizations, governments, NGOs, academia, private sector, civil society, and individuals

5

Cooperation with PICES

- > Joint Study Group (SG) on PICES-NOWPAP cooperation
 - ✓ The first meeting will be held at the 2014 PICES Annual Meeting in Yeosu, Korea
- > Joint Workshop in PICES Annual Meeting 2015
 - ✓ Major threats to marine biodiversity and ecosystems
 - ✓ Identification of Ecologically and Biologically Significant Marine Areas (EBSAs) in the North Pacific

6



7