








Draft NOWPAP Mid-term Strategy 2018-2023



Outline

- Global policy landscape
- Elements of the strategy
- Core theme: Support integrated coastal and river basin planning and management
- Core theme: Assess status of the marine and coastal environment
- Core theme: Prevent and reduce land- and sea-based pollution
- Core theme: Conserve marine and coastal biodiversity
- Core theme: Strengthen regional cooperation through partnership building and resource mobilization
- Proposed Steps to Finalize MTS 2018-2023








Changing global landscape

- “Transforming our world: the 2030 Agenda for Sustainable Development and adopted a set of 17 universal and transformative Sustainable Development Goals and targets in 2015
- Paris agreement on climate change entered into force on 4 November 2016
- Resolution 2/10 on oceans and seas of the Second United Nations Environment Assembly of the United Nations Environment Programme in 2016
- Regional Seas Strategic Directions (2017-2020) adopted in 2015
- High-level United Nations Conference to Support the Implementation of Sustainable Development Goal 14 in New York in June 2017 “Call for Action”








NOWPAP in 20 years: How much was achieved?




- NOWPAP Regional Oil and NHS (Hazardous and Noxious Substances) Spill Contingency Plan adopted in 2005;
- NOWPAP Regional Action Plan on Marine Litter agreed by member states in 2008;
- Regular Regional Joint Exercises on Oil Spill Preparedness and Response since 2005;
- Establishment of NOWPAP database and regional information management system;
- A range of scientific and policy-relevant regional reports on the state of the marine and coastal environment and emerging issues;
- Capacities of technical experts and policy specialists were strengthened and increased public awareness.

Background

Implementation of NOWPAP activities faces some important challenges that should be addressed by the new MTS:

- *Lack of translating results of NOWPAP assessments into practice*
- *Lack of capacity and sufficient resources available to RACs in addressing complex issues as biodiversity, integrated ecosystem management and climate change impacts*
- *Potential to improve NOWPAP outreach to sub-national and business communities as well as NGOs*
- *Over time NOWPAP mechanism has transformed from a “project-based” to a “RAC-based” institution that limits its ability as a whole to secure additional funding*
- *Results-based management with clear performance indicators is absent*

Focus of MTS 2018-2023

Coordination of the regional implementation of the ocean-related SDGs using NOWPAP mechanism.

NOWPAP will contribute to achieving SDG 14 (particularly targets 14.1, 14.2, 14.5, and 14.c) and SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Future NOWPAP contribution will be on the achievement of SDG 14 targets, while contributing to or advance achieving SDGs 6, 8, 11, 12, 13, and 15.

Report on the implementation of CEARAC activities for the 2016-2017 biennium

NOWPAP CEARAC FPM15
29-30 August 2017

CEARAC Activities for 2016-2017

- ◆ 2 FPMs and 1 Expert Meeting
- ◆ Maintenance of Websites
- ◆ Specific Projects
 - Assessment of major pressures on marine biodiversity in the NOWPAP region
 - Feasibility study towards assessment of seagrass in the NOWPAP region
- ◆ Cooperation/Coordination with other RACs and local/regional/international organizations
- ◆ Marine litter

FPMs and Expert Meetings

- 14th FPM - April 2016
 - Reviewing progress of 2016-2017 activities
 - Changing the target in marine BD project
- 15th FPM - September 2017
 - Reviewing progress of 2016-2017 activities
 - Discussing workplan of 2018-2019 activities
- Expert Meeting - 2017
 - CEARAC Expert Meeting on Eutrophication Assessment in the NOWPAP Region (18 October 2017 in Qingdao, China)

Maintenance of Websites

- Renewal of the structure to be more user-friendly style and updating information/data



Specific Projects in 2016-2017

- Assessment of major pressures on marine biodiversity in the NOWPAP region
- Feasibility study towards assessment of seagrass distribution in the NOWPAP region

Cooperation/Coordination with other RACs and relevant local/regional/int'l organizations

- Attending meetings/workshops of other RACs and NOWPAP partners for sharing info/data
 - RAC FPM, ICC, PICES annual meeting
 - Sustainable Ocean Initiative (SOI), etc.



Marine Litter Activities (RAP MALI)

- **Regular work**

Harmonizing/summarizing monitoring data from the member states and submitting to DINRAC

- **New work**

Updating website contents of NW Pacific Regional Node



Budget (US\$140,000) and Expenditure

Activity	Budget & Expenditure	
	Budget (2016+2017)	Expenditure (Aug. 2017)
FPMs (14th & 15th) + Expert Meeting	54,000+ ext.	17,885
Website Maintenance	12,000	1,532
Assessment of major pressures on marine BD		
- Developing a report	5,000	0
- Reviewing the developed report	6,000	0
- Collecting information in each state	9,000	9,000
- Organizing a workshop	10,000	0
Feasibility study for seagrass assessment		
- Collecting/reviewing literatures on seagrass	16,000	16,000
- Estimating image analysis cost	4,000	0
- Organizing an international workshop	15,000	11,370
- Developing a feasibility report	5,000	0
Cooperation/Coordination with other RACs,etc	4,000	2,636
Total	140,000	58,423
Marine Litter (RAP MALI)	6,000	0

Thank you
very much

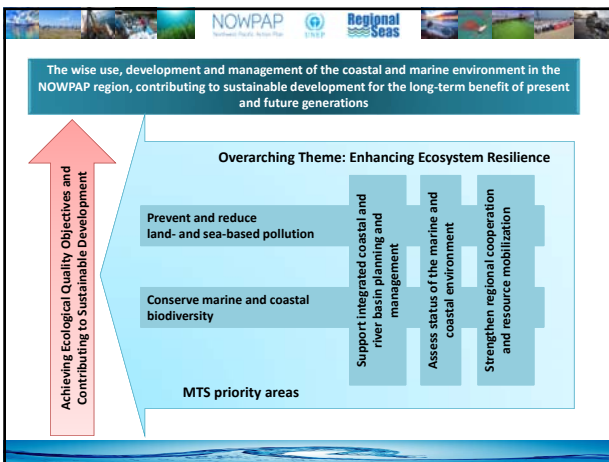


SOMER-2 identified **eight** major regional environmental issues corresponding closely to results of global assessments:

- *Fragmentation, degradation and loss of habitats and landscapes*
- *Chemical contamination of waters, sediments and biota resulting from pollution from sea- and land-based sources*
- *Eutrophication caused by input of nutrients linked to the increased incidence of harmful algal blooms (HABs) and hypoxia;*
- *The impacts of marine litter;*
- *The number and occurrence of invasive non-indigenous species have increased in recent years;*
- *Overfishing and destructive fishing practices;*
- *Changes in freshwater fluxes and sediment discharge to the sea;*
- *Global climate change impacts*

MTS 2018-2023 Operating Principles

- Relevance to regional and national contexts and priorities
- Leveraging science for policy and decision-making
- Enhanced regional cooperation and networking on science and research
- Synergy through strategic collaboration and partnerships
- Cost-effectiveness
- Results-based management
- Communication and public outreach



Priority area: Support integrated coastal and river basin planning and management (ICARM)

Linked to delivery of SDG 14.2 and SDGs 6, 11, 14 and 15

Objective:

NOWPAP countries increasingly apply ecosystem-based approach to planning and management as a basis to achieve healthy and productive coastal and marine ecosystems

Priority area: Assess status of the marine and coastal environment

Linked to delivery of SDGs 6, 11, 12, 14, 15, and 17

Objective:

NOWPAP countries are presented with and use reliable information and data on the state of marine and coastal environment to support evidence-based policy making process

CEARAC related: Collection of information on EcoQOs and SDG indicators (biodiversity and eutrophication related, CEARAC – land-based marine litter through Regional Node of GPML)


Priority area: Prevent and reduce land- and sea-based pollution

Linked to delivery of SDG 14.1 and NOWPAP EcoQO 3 and SDGs 2, 6, 8, 12, and 14

Objective:

NOWPAP countries develop and adopt effective measures for mutual support in marine pollution emergencies and in the prevention and mitigation of coastal and marine pollution

CEARAC related: Maintaining and upgrading North Pacific Regional Node of the Global Partnership on Marine Litter (NPEC/CEARAC supported by RCU), Regular update of potential eutrophication zones in the NOWPAP region using Common Procedure




Priority area: Conserve marine and coastal biodiversity
Linked to delivery of SDG 14.2 and 14.5 and NOWPAP EcoQO 1 and 2 and SDGs 6, 11, 14 and 15

Objective:

NOWPAP countries increasingly apply ecosystem-based approach to planning and management as a basis to achieve healthy and productive coastal and marine ecosystems

CEARAC related: Assessment of the status and threats to identified Red List species of regional concern, National reports and Regional overview of area-based tools used to protect coastal and marine biodiversity in the region, Regional map of important biodiversity areas, Development of Regional Action Plan for Marine and Coastal Biodiversity Conservation




Priority area: Conserve marine and coastal biodiversity (cont.)

What is the focus of the future NOWPAP Regional Action Plan on marine and coastal biodiversity?

Ideas for your reflection:

- Focus on selected threatened or endangered transboundary species in the marine and coastal environment among the four countries;
- Focus on new/emerging species of transboundary concern, particularly related to climate change impacts – watching brief.


Issues: joint selection of target species, assessment of status and pressures, development of mitigation (for invasive invasive) and conservation (for others) action plans --> leading to NOWPAP Regional Plan on marine and coastal biodiversity



Priority area: Strengthen regional cooperation through partnership building and resource mobilization
Linked to delivery of SDG 17

Objective:

Through NOWPAP mechanism member countries strengthen regional cooperation, complemented by partnerships that mobilize and share knowledge, expertise and financial resources to support the achievement of Action Plan objectives




Some of potential activities with CEARAC contribution in 2018-2019 ?

1. Collection of information on EcoQOs and SDG indicators (integrated by DINRAC and supported by other RACs on specific indicators: CEARAC – biodiversity and eutrophication related, POMRAC – pollution related, MERRAC – sea-based marine litter, CEARAC – land-based marine litter through Regional Node of GPML)
2. Regular update of potential eutrophication zones in the NOWPAP region using Common Procedure (CEARAC)
3. Development of habitat maps using remote-sensing methods (focused on seagrass beds, CEARAC)
4. Development of the list of target species for NOWPAP biodiversity activities (CEARAC)
5. Assessment of their status and threats (CEARAC)
6. National reports and Regional overview of area-based tools used to protect coastal and marine biodiversity in the region (MPAs, IBA, EBSAs, NOWPAP environmental sensitive areas, fishing closures, MSP zoning and etc.) (ICARM WG and CEARAC supported by POMRAC) ?
7. Regional map of important biodiversity areas (CEARAC) ?



Steps to Complete MTS 2018-2023 for Adoption by 22nd IGM

1. Discussion of the MTS structure, its Strategic Objectives and Outcomes at the 21st NOWPAP IGM, November 23-25, 2016
2. Inputs from member states through NOWPAP Focal Points on the MTS priorities – ongoing
3. Consultations within RACs and proposal of actions under the MTS at the Focal Points Meetings: MERRAC – April 2017, DINRAC – May 2017, CEARAC – Sept 2017, POMRAC – Oct 2017
4. RCU undertakes partnership and resource mobilization efforts with regional and global partners – Nov 16 – Oct 17
5. Revised MTS submitted to NOWPAP Focal Points for comments by RCU – Jul 2017, next version sent to partners and members – Sept-Oct 2017
6. Draft MTS 2018-2023 prepared for adoption by the 22nd NOWPAP IGM Dec 19-21 2017 - by second week of Nov 2017



Questions / action requested from the 15th CEARAC FPM

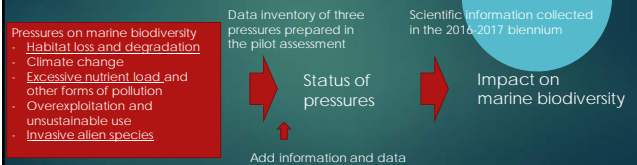
1. Specific role of CEARAC in the delivery of MTS, incl. activities for 2018-2019: Focus of CEARAC Biodiversity Strategy?
2. Cooperation with other RACs – priority issues
3. Formulation of specific recommendations of the 15th CEARAC FPM to consider in the further development of MTS

Assessment of major pressures on marine biodiversity in the NOWPAP region

15th CEARAC FPM
29-30 AUGUST 2017
TOYAMA, JAPAN

Objective

To assess the status of major pressures on marine biodiversity, eutrophication, non-indigenous species and habitat alteration, using available data collected in the pilot assessment conducted in the 2015-2015 biennium.



Tasks

1. Publication of a regional report on pilot assessments of impacts of major threats on marine biodiversity
2. Assessment of major pressures on marine biodiversity in the NOWPAP region
3. Collection of scientific papers on the impacts of major pressures on marine biodiversity
4. Collection of information on strategies on marine biodiversity conservation
5. Organizing of a workshop

Task 1: Publication of a regional report on pilot assessments of impacts of major threats on marine biodiversity (expanded)

In the 2014-2015 biennium: Pilot assessments of impacts of major threats on marine biodiversity in the selected sea areas in the NOWPAP

- Experts collected available data on eutrophication, NIS and habitat alteration and prepared national report

In the 2016-2017 biennium:

- The first draft was prepared by Secretariat and reviewed by CEARAC FPs and expert who implemented pilot assessment
- The second draft was reviewed by NOWPAP National FPs and the report was finalized

Task 2: Assessment of major pressures on marine biodiversity in the NOWPAP region

Objective of this activity is to publish a report "Assessment of major pressures on marine biodiversity in the NOWPAP region"

Procedures

1. The first draft prepared by CEARAC Secretariat and experts
2. Preparing the second draft during the workshop
3. Review the second draft by CEARAC FPs
4. Preparing the final draft
5. Review the final draft by NOWPAP National FPs
6. Publishing the report in digital format

Task 2: Assessment of major pressures on marine biodiversity in the NOWPAP region

Table of contents of report approved at the 14th CEARAC FPM

1. Introduction
2. Assessment data and method
 - Assessment indicators on eutrophication, NIS and habitat alteration
 - Assessment criteria on eutrophication, NIS and habitat alteration
3. Status of major pressures in the NOWPAP region
 - Status of eutrophication
 - Status of NIS
 - Status of habitat alteration
4. Conclusion and recommendation
 - Possibility of assessment of the impacts of major pressures on marine biodiversity
 - DPSIR framework for assessment of major pressures on marine biodiversity in the NOWPAP region

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Introduction
 - Pressures on marine biodiversity
 - Actions against pressures by other region and international organizations
 - Past NOWPAP activities

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Introduction
 - Pressures on marine biodiversity**
 - Global Biodiversity Outlook 3
 - Habitat loss and degradation
 - Climate change
 - Excessive nutrient load and other forms of pollution
 - Overexploitation and unsustainable use
 - Invasive alien species
 - New pressure: Marine debris and anthropogenic underwater noise (COP13)
 - Why our assessment mainly focus on three pressures, eutrophication, NIS and habitat alteration in the above pressures?**

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Introduction
 - Actions against pressures by other region and international organizations**
 - First Global Integrated Marine Assessment (UN World Ocean Assessment)
 - HELCOM Holistic Assessment
 - Other Regional Seas Conventions
 - Nairobi Convention, Western Indian Ocean
 - Abidjan Convention, West, Central and Southern Africa Region
 - Comision Permanente del Pacifico Sur, South East Pacific

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Introduction
 - Past NOWPAP activities**
 - [CEARAC]
 - Pilot assessment, eutrophication assessment, seagrass mapping
 - [DINRAC]
 - Atlas of marine invasive species, list of endangered species
 - [POMRAC]
 - SOMER 1, 2
 - [NOWPAP]
 - Marine biodiversity assessment and outlook

➡ Available data/information from past NOWPAP activities

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Assessment data and method
 - Data inventory developed through pilot assessment
 - Other available data in the NOWPAP region (other RAC's activities)
 - Assessment method using DPSIR framework

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Assessment data and method
 - Data inventory developed through pilot assessment
 - Other available data in the NOWPAP region (other RAC's activities)
 - Assessment method using DPSIR framework

Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Status of major pressures in the NOWPAP region
 - Eutrophication
 - [Driver] [Pressure] [State] [Impact] [Response]
 - Non indigenous species
 - [Driver] [Pressure] [State] [Impact] [Response]
 - Habitat alteration
 - [Driver] [Pressure] [State] [Impact] [Response]



Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Status of major pressures in the NOWPAP region
 - Eutrophication
 - [Driver] Population growth, economic growth
 - Basic statistical data on driver (from experts)
 - [Pressure] Discharge of nutrient from land
 - Situation of pressure in pilot study areas and areas of eutrophication status assessment
 - [State] Eutrophication status
 - Status of eutrophication using available data and Eutrophication assessment by CEARAC
 - [Impact] Literature review of impact on marine life using collected scientific papers
 - "Anthropogenic impacts on hyperbenthos in the coastal waters of Shihli Bay, Yellow Sea" in China
 - "Effects of Oxygen-Deficient Water on the Benthic Communities" in Japan
 - "Characteristics of algal blooms in the southern coastal waters of Korea" in Korea
 - "Composition and distribution of meiobenthos in Amursky Bay" in Russia etc.
 - [Response] Actions by member states
 - Water Quality Standards, Total Volume Control of Nutrients (from other activities and experts)



Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Status of major pressures in the NOWPAP region
 - NIS
 - [Driver] Maritime commerce, aquaculture
 - Basic statistical data on driver (from experts)
 - [Pressure] Shipping, aquaculture
 - Situation of pressure in pilot study areas
 - [State] NIS status
 - Status of NIS using available data and Atlas of Marine Invasive Species by DINIRAC
 - [Impact] Literature review of impact on marine life using collected scientific papers
 - "*Spartina alterniflora* invasions and effects on crab communities in a western Pacific estuary" in China
 - "Impacts of introduced Marine Organisms on Native Ecosystems, Fisheries and Other Industries in Japanese Water" in Japan
 - "Lineage distribution and barriers to gene flow among populations of the globally invasive marine mussel *Musculista senhousia*" in Korea
 - "Centennial changes in composition and abundance of ichthyofauna of the northwestern Japan Sea" in Russia etc.
 - [Response] Actions by member states
 - Invasive Alien Species Act, Ballast Water Convention (from expert)



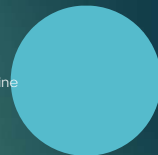
Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

- ▶ Status of major pressures in the NOWPAP region
 - Habitat alteration
 - [Driver] Population growth, economic growth in coastal area
 - Basic statistical data on driver (from experts)
 - [Pressure] Coastal development
 - Situation of pressure in pilot study areas
 - [State] Habitat alteration status
 - Status of habitat alteration using available data
 - [Impact] Literature review of impact on marine life using collected scientific papers
 - "Quantification of intensive hybrid coastal reclamation for revealing its impacts on macrozoobenthos" in China
 - "Effects Scale Reclamation on Benthos" in Japan
 - "Effect of Ocean Renewable Energy on the Ecosystem" in Korea
 - "The decadal changes in the *Ammobaculum* bed in the Peter the Great Bay (Sea of Japan): possible causes" in Russia etc.
 - [Response] Actions by member states
 - Regulation of coastal development (from other activities and experts)



Draft table of contents of report on assessment of major pressures on marine biodiversity in the NOWPAP region

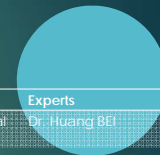
- ▶ Conclusion and recommendation
 - Limitation of available data
 - Future assessment for understanding of pressures on marine biodiversity in the NOWPAP region



Task 3: Collection of scientific papers on the impacts of major pressures on marine biodiversity

Nominated experts

Country	Organization	Experts
China	Zhejiang Provincial Zhoushan Marine Ecological Environmental Monitoring Station	Dr. Huang BEI
Japan	CEARAC Secretariat	
Korea	Korea Marine Environment Management Corp.	Dr. Young Nam KIM
Russia	A.V. Zhirmunskii Institute of Marine Biology	Dr. Tatiana ORLOVA



Task 3: Collection of scientific papers on the impacts of major pressures on marine biodiversity

Collected scientific papers in each member state

	Eutrophication	NIS	Habitat alteration
China	15	4	3
Japan	15	8	23
Korea	3	6	29
Russia	14	7	6

Task 4: Collection of information on strategies on marine biodiversity conservation

China	China national biodiversity conservation strategy and action plan The National Action Outline for Aquatic Biological Resources Conservation The National Plan for Islands Protection The National Plan for Ecological Protection and Construction The National 12th Five-year Plan for Environmental Protection The National 13th Five-year Plan for Environmental Protection
Japan	Basic Act on Ocean Policy Basic Act on Biodiversity Marine Biodiversity Conservation Strategy National Biodiversity Strategy 2012-2020 Basic Plan on Ocean Policy
Korea	Act on the conservation and use of the biological diversity Conservation and Management of Marine Ecosystems Act The Third Biodiversity Strategy
Russia	Russian Federation Law on the Environmental Protection Russian Federation Law on Specially Protected Natural Areas Russian Federation Law on Wild Animals Russian Forest Code, Russian Land Resources Code, Russian Water Code Federal Law on Fishing and Biological Resources Protection State Program "Environmental Protection 2012-2020"

Task 5: Organization of workshop

Objective:

- To review the draft of report
- To prepare the second draft for review by CEARAC FPs

Timing: October or November 2017

Venue: Tokyo

Expected participants:

- Dr. Huang Bei (China)
- Dr. Young Nam Kim (Korea)
- Dr. Tatiana Orlova (Russia)

Schedule

September to October	• Preparing the first draft with support of experts
October or November	• Workshop for review the draft report
November	• Review by CEARAC FPs
December	• Review by NOWPAP National FPs • Publication in digital format

Budget

Tasks	Budget (US\$)
Publication of report on assessment of major pressures on marine biodiversity in the NOWPAP region	5,000
Review of a report on the assessment of major pressures on marine biodiversity in the NOWPAP region	2,000
- Collecting scientific papers on impacts of major pressures	2,000
- Collecting information on national strategies/plans/laws on marine biodiversity conservation in each member state	2,000
- Collecting scientific papers on impacts of major pressures	3,000
- Collecting information on national strategies/plans/laws on marine biodiversity conservation in each member state	3,000
Organization of workshop	3,000
Organization of workshop	10,000
Total	30,000

Report on the activity of feasibility study towards assessment of seagrass distribution in the NOWPAP region

Genki Terauchi
NOWPAP CEARAC

August 29, 2017
Toyama, Japan

1. Background



Conservation of biodiversity



Mitigation of climate change

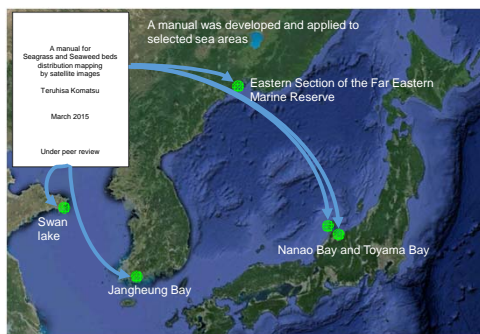
“Sustainable Development Goals (SDGs)” of Rio+20 (2012)

By 2020, conserve at least 10 percent's of coastal and marine areas, consistent with national and international law and [based on best available scientific information](#).

Aichi Biodiversity Target (Target 11)

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved.

1. Background what's been done in 2014-2015 biennium



2. Objective

- To investigate the feasibility for assessment of seagrass distribution in the NOWPAP region, including identifying obstacles and required resources and/or tasks for implementing the assessment.

- Data availability
- Technical issues to be resolved
- Image analysis cost
- Potential collaborator

3. Tasks and progress

Tasks	Progress
3.1 Review of literature on seagrass distribution and threats to seagrass	75% done (Delay in Japanese literature review)
3.2 Development of seagrass data base in the NOWPAP region	20% done
3.3 Estimation of image analysis cost	70% done
3.4 Organization of international workshop on assessment of seagrass distribution in the Northwest Pacific region	Done
3.5 Publication of feasibility study report	30% done

National experts involved

Country	Organization	Experts
China	State Key Laboratory of Tropical Oceanography, South China Sea Institute of Oceanology, Chinese Academy of Sciences	Dr. Dingtian Yang
Japan	Department of Commerce, Yokohama College of Commerce	Dr. Teruhisa Komatsu
Korea	Korea Ocean Satellite Center, Korea Institute of Ocean Science and Technology	Dr. Jong-Kuk Choi
Russia	Pacific Geological Institute, Far Eastern Branch of the Russian Academy of Sciences	Dr. Vasily Zharikov

List of national experts who conduct review of literatures on seagrass distribution and threats to seagrass in the NOWPAP region

Development of a CEARAC Medium-term Strategy on marine biodiversity

15th CEARAC FPM
29-30 August 2017
Toyama, Japan

Background

Past CEARAC Marine Biodiversity Activities

- 2010-2011
 - Development of a coastal environmental assessment tool for marine biodiversity conservation (in-kind by NPECC)
- 2012-2013
 - Publishing "Monitoring and management of MPAs in the NOWPAP region"
- 2014-2015
 - Pilot assessment of the impacts of major threats on marine biodiversity
 - Case studies on seagrass mapping in the selected sea areas in the NOWPAP region
- 2016-2017
 - Assessment of major pressures on marine biodiversity in the NOWPAP region
 - Feasibility study towards assessment of seagrass distribution in the NOWPAP region

There are difficulties and gaps among member states

Need of basic policy and future direction on marine biodiversity in the NOWPAP

Background

- ◆ Biodiversity in the NOWPAP Medium-term Strategy (MTS) 2012-2017
Theme 4: Biodiversity conservation (including invasive alien species)
 - To develop the Regional Action Plan on Marine and Coastal Biodiversity Conservation
 - Endangered species (DINRAC), Invasive Alien Species (DINRAC, CEARAC), MPA (DINRAC, CEARAC), Habitat map (CEARAC), EcoOOs (POMRAC)
- ◆ Biodiversity in the NOWPAP MTS 2018-2023 (Not approved yet)
Theme 4: Conservation marine and coastal biodiversity
 - Provide reliable information and analysis of the status of biodiversity and conservation measures
 - Regional Action Plan for Marine and Coastal Biodiversity Conservation

Background

- ▶ Mid- and long-term strategies of CEARAC and goals of WG3 (HAB) and WG4 (RS) (2006)



- Objective and goals of WGs
- New joint activity of WG3 and 4

Mid- and long-term strategy of WG3 and 4, and joint activity

	2006-2007	2008-2009	2010-
WG3	Booklet of countermeasures	HAB Case Studies HAB Integrated Website	Operation of website Revision of Integrate report
WG4	Eutrophication monitoring guidelines	Education materials 2 nd training course	Revision of Integrate report
Joint activity		Procedures for assessment of Eu	Development assessment method

Objective

- ▶ To develop the CEARAC Medium-term Strategy on marine biodiversity
- CEARAC Medium-term Strategy on marine biodiversity shows
- Basic policy on marine biodiversity activities of CEARAC
 - Future direction and priorities of activities on marine biodiversity by CEARAC
 - Role of CEARAC for marine biodiversity conservation in NOWPAP
 - Workplan on marine biodiversity for the 2020-2021, 2022-2023 biennium

Continue past assessment based on the responsibility of CEARAC?
Find new assessment target?
Start new topic field which we have not ever touched?

Task 1: Collection of relevant information on marine biodiversity

Objective is to understand the global situation, needs of each member state on marine biodiversity conservation and find out appropriate topics which CEARAC should/can implement

- Candidate topics on marine biodiversity
 - ✓ Survey of marine organisms and development of a species list
 - ✓ Development of Red List of threatened species and protection of them
 - ✓ Development of a list of invasive species
 - ✓ Conservation of habitats of marine species
 - ✓ Management/establishment of MPA
 - ✓ Understanding the impacts of pressures on marine biodiversity and identification of mitigations

Task 1: Collection of relevant information on marine biodiversity

Collected information:

Activities on marine biodiversity conservation by other organizations
Needs of NOWPAP member states based on national strategies/policies and national reports to CBD
Past related activities by NOWPAP RACs

Which database is available/useful for future CEARAC activities?
Which topic is matched with CEARAC activity?

Task 1 : Collection of relevant information on marine biodiversity

Example of summary table

Marine biodiversity						
Theme	Biological information		Management		Pressure	
	Species diversity	Endangered SP				
Topics	List of MS	Red list	MPA	EBSA	Eutrophication	Climate Change
Implementing Organization	OBIS	IUCN Each country	CBD Each country	CBD Each country	UN HELCOM	UN
Activities	List Distribution	List	Aichi Target 11		WOA Holistic Assess	
Actions in NOWPAP		DINRAC (2018-19)			CEARAC	
National Needs	Country name	Country name	Country name	Country name	Country name	Country name
Priority for CEARAC	Low	Low	Middle	Middle	High	

Task 2: Review of collected information by marine biodiversity experts of the NOWPAP member states

Objective is to check the summary table and add needs of each member state

[Remark]

It is expected that nominated experts are involved to development of the national strategy and policy on marine biodiversity or understand situation of own country.

Task 3: Organization of a marine biodiversity workshop and a meeting for development of CEARAC Medium-term Strategy on marine biodiversity

- Marine Biodiversity Workshop:**
Objective is to share information on national actions/needs and identify the foci in the NOWPAP region.
Expected participants: Governmental officers and/or experts
- Meeting for development of CEARAC MTS on marine biodiversity**
Objective is to develop the outline of CEARAC MTS on MB.
This meeting will be held back-to-back with above workshop

Task 4: Development of CEARAC Medium-term Strategy on marine biodiversity

Objective is to develop the CEARAC Medium-term Strategy on marine biodiversity which shows basic policy and future vision of CEARAC marine biodiversity activities

The draft MTS will be reviewed by CEARAC FPs and be submitted to the IGM to be held in 2019.

Draft table of contents

- Background
- Basic policy and future direction of CEARAC's marine biodiversity activities
- Expected role of CEARAC in NOWPAP
- Draft workplan for the 2020-2021 and 2022-2023 biennium

Expected outcomes

- ▶ Future vision of CEARAC marine biodiversity activities
- ▶ Future workplan (after 2020) of CEARAC marine biodiversity activities
- ▶ Contribution to the NOWPAP Marine and Coastal Biodiversity Action Plan

Expectation of CEARAC Secretariat by this MTS

Smooth operation of future activity

- ✓ Priority of marine biodiversity activities based on its feasibility and national needs
- ✓ Strong support from member states and experts, and provide of data/information

Budget

Activities	Budget (US\$)	Main Body
Collection of information on marine biodiversity	10,000	CEARAC Secretariat Consultant
Review of collected information	3,000 (1,000 * 3 member states expect for Japan)	Nominated experts
Organizing Marine Biodiversity Workshop and Meeting on development of CEARAC Medium-term Strategy on Marine Biodiversity	15,000	CEARAC FPs Governmental officers Experts CEARAC Secretariat
Developing the draft CEARAC Medium-term Strategy on marine biodiversity	2,000	CEARAC Secretariat
Total	30,000	

Schedule

2017 • December: The 22nd NOWPAP IGM

2018 • Spring: The 16th CEARAC FPM
• Q2-Q4: Collection of information

2019 • Q1: Review of collected information
• April: Organizing of WS and Meeting
• Q3: Review of the draft CEARAC MTS by CEARAC FPs
• September: The 17th CEARAC FPM
• Winter: The 24th NOWPAP IGM

2020 • Start activity based on MTS

First International Workshop on Assessment of Seagrass Distribution in the NOWPAP Region

Venue: Himi, Toyama, Japan

Aug 2

- A half day field trip to seagrass beds in Himi
 - Report of case studies in Nanao Bay and Toyama Bay
- Aug 3 (UNEP/NOWPAP/CEARAC/FPM 15/Ref 4)
- 2 key note speeches
 - Country reports (China, Japan, Korea and Russia)
 - 2 presentation towards assessment of seagrass distribution
 - General discussion about the feasibility report



Snapshots from the Himi International Workshop

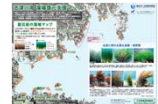
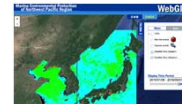
Progress of the feasibility study towards assessment of seagrass distribution in the NOWPAP region

Provisional table of contents have determined

- Executive Summary
- Introduction
- Chapter 1: Data and method of the feasibility study
- Chapter 2: Seagrass in the NOWPAP region
- Chapter 3: Case studies of mapping seagrass distribution by satellite images in selected sea areas in the NOWPAP region
- Chapter 4: Towards mapping of seagrass distribution in the entire NOWPAP region
- Summary and recommendations

Introduction

- Objectives and Backgrounds
- History of NOWPAP
- Past CEARAC activities of ocean remote sensing in the northwest Pacific
- Status of seagrass and threats to seagrass in temperate northwest Pacific
- Background leading to the feasibility study
- Sustainable Development Goal 14
- Blue carbon initiative of UNEP



- Chapter 1- Data and methodology

- Collection of data
 - Literature review
- Methodology of the feasibility study
 - Cost analysis
 - How to handle technical issues
- Flow of the study
 - NOWPAP publication Quality control procedure
 - Schedule

- Chapter 2- Seagrass in the NOWPAP region

- Seagrass species in the NOWPAP region

- | | |
|-----------------------------|---------------------------------|
| • <i>Zostera Marina</i> | • <i>Halophila nipponica</i> |
| • <i>Zostera Japonica</i> | |
| • <i>Zostera caespitosa</i> | |
| • <i>Zostera Asiatica</i> | • <i>Phyllospadix iwatensis</i> |
| • <i>Zostera Caulescens</i> | • <i>Phyllospadix japonicus</i> |



- Spatial distribution of each species
- Comparison with Red List of IUCN
- Construction of Web-based database

- Chapter 2- Threats to seagrass in the NOWPAP region

- China
 - Coastal area development, such as enclosed as new land, port construction, dam and fish pond establishment, and near shore aquaculture
- Japan
 - Coastal development, troll fishing, decreased transparency
- Korea
 - Red-tide, reclamation, clam harvesting activity and typhoons
- Russia
 - Dredging, increased sediment loading, decreasing water clarity, increased nutrient, chemical pollutant loading, eutrophication, and, salinity fluctuation due to altered hydrology and stormwater runoff



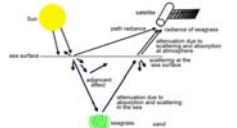
- Assessment of each threat (e.g. spatial coverage and frequency)

- Chapter 3- Case Studies of mapping seagrass distribution by satellite images in the NOWPAP region

- A manual for seagrass and seaweed beds distribution mapping with satellite images.

(http://cearac.nowpap.org/fpm/meeting_report/13/Annex15.pdf)

-> Theories of detecting distribution of seagrass are well explained in the manual.



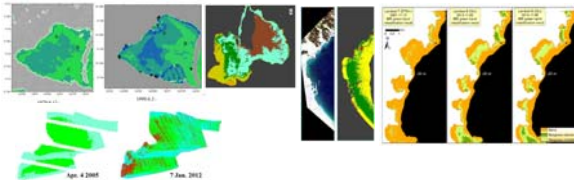
4. Schematic view of passage of electromagnetic radiation from the Sun to the sea



5. Photos showing video camera systems for sea-grass in Akkeshi Bay, east Hokkaido. Underwater video camera is lowered from the boat (left picture). An observer monitors bottom features by the display in the cabin (right picture).

- Chapter 3- Case Studies of mapping seagrass distribution by satellite images in the NOWPAP region

- Summary of case studies in selected sea area
 - Swanlake, China
 - Nanao Bay and Toyama Bay, Japan
 - Jangheung Bay, Korea
 - Eastern Section of the Far Eastern Marine Reserve, Russia



- Chapter 3- Obstacles and limitation of using satellite images

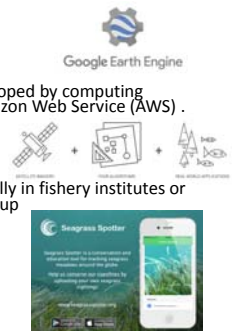
- Data availability
 - Satellite images with good quality
 - Lack of *in-situ* (field survey) data
- Image correction techniques
 - Sun glint correction
 - Water column corrections (DII or BRI)
- Resources
 - Not enough budget for purchasing higher resolution satellite images
 - Lack of man power to analyze satellite images

- Chapter 4 – Towards Assessment of seagrass distribution in entire NOWPAP coastal area

- Available satellite images
 - Free satellite images (Landsat, Sentinel-2)
 - Commercial satellite images
 - > should give up using commercial satellite images and use only freely available satellite images
- Estimation of image analysis cost
 - Conventional method
 - Obtaining satellite images and field data, then analyze satellite images to get distribution of seagrass
 - > cost will be too high and takes so much time
 - New method
 - Obtaining field data and analyze satellite images on the Internet to get distribution of seagrass
 - > should use new method to save money and time

4. -Towards mapping seagrass distribution by satellite images in entire NOWPAP coastal area

- Potential collaborators
 - Obtaining satellite images
 - Cloud computing services developed by computing companies such as Google, Amazon Web Service (AWS) .
- Collecting field survey data
 - Involving local scientists especially in fishery institutes or environmental conservation group
 - Leisure divers
- Possible funding options



5. Summary and recommendation

- Mapping distribution of seagrass
 - Use of freely available satellite images
 - Use of cloud computing technology
 - Involving the public to collect field survey information

4. Expected outcomes

- Development of the seagrass database in the NOWPAP region will help mapping seagrass distribution with satellite images in the future. A feasibility study report to be published includes future actions to be taken for assessment of seagrass distribution, and it enables for CEARAC to mobilize a wide range of funding for the assessment. Collected information will also be contributed to Ocean Biogeographic Information System (OBIS) so as to increase information worldwide as well as to be utilized for setting marine protected areas.

5. Schedule

Time	Action	Main body
2017 Aug 3	- Organized an international workshop for assessment of the of seagrass distribution in the NOWPAP region	CEARAC and national experts
Q3	- Estimated image analysis cost for implementing assessment - Evaluating applicability of remote sensing techniques to detect identified threats to seagrass (in progress)	CEARAC and consultant
Q3 to Q4	- Constructing seagrass database - Preparing/Publishing a feasibility study report	CEARAC and consultant

6. Budget

Task	Budget (US\$)
- <i>Collecting/reviewing literatures on seagrass distribution and changes</i>	16,000 (4,000 for each country)
- Evaluation of applicability of remote sensing techniques for assessment of threats to seagrass	-
- Estimating image analysis cost for assessment	4,000
- <i>Organizing International Workshop</i>	15,000
- Preparing and publishing report	5,000
Total	40,000

Proposal for development of a tool for mapping seagrass distribution in the NOWPAP region

Genki Terauchi
NOWPAP CEARAC

August 29, 2017
Toyama, Japan

1. Background



Conservation of biodiversity



Mitigation of climate change

“Sustainable Development Goals (SDGs)” of Rio+20 (2012)

By 2020, conserve at least 10 percent's of coastal and marine areas, consistent with national and international law and [based on best available scientific information](#).

Aichi Biodiversity Target (Target 11)

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved.

1. Background

First International workshop on assessment of seagrass distribution in the NOWPAP region reached consensus of the followings:

- Use of freely available satellite images
- Involvement of the public to collect field survey information and map distribution of seagrass
- Development of a tool using cloud computing technology.

2. Objective

To develop a tool for mapping and sharing information on distribution of seagrass in the NOWPAP region by using satellite images.

The developed assessment tool will be shared among the NOWPAP member states to help mapping distribution of seagrass in each member state.

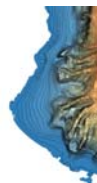
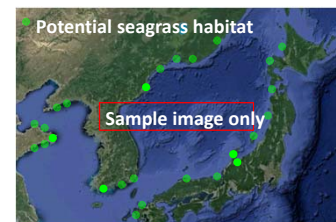
Depending on availability of external funding, CEARAC will develop a website that incorporates the developed tool in it, so that users can detect distribution of seagrass in their regions of interest by uploading their filed data.

3. Tasks

- 3.1 Detection of potential seagrass habitats and collection of water depth information
- 3.2 Development of a tool for mapping seagrass distribution with satellite image
- 3.3 Development of a website for mapping seagrass distribution with satellite images

3.1 Detection of potential seagrass habitat and collection of water depth information

Detection of potential seagrass habitat based on the result of literature review on seagrass distribution



Information of water depth shallower than 20 m will be collected by national experts.

In case no such information available, Bathymetry Mapper, a tool to estimate water depth from satellite images, will be used

3.2 Development of a tool for mapping seagrass distribution with satellite images

CEARAC will develop a standalone software program that can carry out the following tasks:

- Input user specified coordinates (row/path or latitude/longitude) for downloading Landsat 8 OLI and Sentinel 2 MSI satellite images from cloud server;
- Apply radiance to reflectance calculation;
- Use infrared data to identify land areas for masking;
- Remove effect of sun glint;
- Correct water column by Depth Invariant Index or Bottom Reflectance Index method;
- Create true color images from Red, Green and Blue band;
- Import training datasets in GIS format;
- Test supervised and unsupervised machine learning methods to distinguish sea floor substrates; and
- Assess accuracy of the classified image against training dataset.

3.3 Detection of a website for mapping seagrass distribution with satellite images

- The website to be developed provides services of:
 - Obtaining freely available satellite images from cloud server
 - Graphical User Interface (GUI) to import (upload) field survey data
 - GUI to analyze distribution of seagrass and share obtained results

External funding is necessary to realize this task



Global Forest Watch

Global Forest Watch is an interactive online platform that offers a variety of data and tools to help you monitor forests. Whether you're looking for general facts or specialized information about fires, climate, or commodities, we can help you learn how to use GFW to achieve your goals.



<http://www.globalforestwatch.org>

MapBiomias

MapBiomias is a multi-institutional initiative involving universities, NGOs and technology companies that have come together to contribute to the understanding of Brazilian territory transformations based on the annual mapping of land cover and use in Brazil.



<http://mapbiomas.org>

Global Surface Water Explorer

The Global Surface Water Explorer is a water dataset developed in the Copernicus Programme. This maps the location and temporal distribution of water surfaces at the global scale over the past 32 years and provides statistics on the extent and change of those water surfaces.



4. Expected outcomes

- By the developed/released web-based information in the NOWPAP region, various stakeholders including governments, citizens, fisheries and/or politicians can share the same knowledge of distribution of seagrass which can help cooperate each other to plan policies to conserve and/or recover seagrass beds, and contribute to sustainable coastal area management. When the total area of seagrass beds in coastal areas is identified, the information is also used to estimate the amounts of CO₂ absorbed in the sea, which is useful for relevant researchers and government officials in terms of mitigating global warming.
- In addition, this activity can cooperate with a project of Ocean Remote Sensing in IOC/WESTPAC, and can be applied in the Southeast Asian countries as well.

5. Schedule

	Time	Action	Main body
2017	August at CEARAC FPM15	Review of this proposal	FP
	December at NOWPAP IGM22	Review and approval of CEARAC workplan and budget for 2018-2019	IGM
2018	Q1 to Q3	Identification of potential seagrass habitat	Nominated national experts and CEARAC
2019	2018 Q4 to 2019 Q3	Development of a tool for mapping seagrass distribution with satellite images	CEARAC and consultant
	Q3 to Q4	Construction of web-based service for mapping seagrass distribution	CEARAC and consultant

6. Budget

Task	Time	Deliverables	To be completed	Main body	Budget (US\$)
Detection of potential seagrass habitat	2018 Q1	-Map of potential sea seagrass habitat - Depth information on shallow waters (<20m) in the NOWPAP region	2018 Q3	Expert in China	5,000
				Consultant in Japan	5,000
				Expert in Korea	5,000
				Expert in Russia	5,000
Development of a tool for mapping seagrass distribution	2018 Q4	A tool for mapping seagrass distribution	2019 Q3	CEARAC	20,000
Construction of web-based service for mapping seagrass distribution	2019 Q3	Web-based service for mapping seagrass distribution	2019 Q4	CEARAC	External fund
Total					40,000

Consideration of future direction of NOWPAP marine biodiversity activities

15th CEARAC FPM
29-30 August 2017
Toyama, Japan

***Remark**
NOWPAP RCU requested all RACs to prepare two options of budget and workplan for the 2018-2019 biennium. Increasing of budget of RACs has not been approved by IGM. It will be discussed at the coming NOWPAP IGM to be held in December.

Background

- NOWPAP Medium-term Strategy 2012-2017
 - Theme 4: Marine biodiversity
 - Development of Regional Action Plan for marine and coastal biodiversity
 - Future direction of the NOWPAP marine biodiversity conservation
 - Guidelines for member states and RACs activities

Expanded to the NOWPAP Medium-term Strategy 2018-2023

- CEARAC marine biodiversity activity 2018-2019
 - Development of CEARAC Medium-term Strategy on marine biodiversity

Background

- NOWPAP Regional Action Plan on Marine Litter (**RAP-MALI**)
 - In 2003, UNEP proposed NOWPAP IGM to develop an activity on sustainable management of marine litter in the NOWPAP region
 - In 2005, RCU proposed to establish Marine Litter Activity (**MALITA**) in the NOWPAP region to the IGM, and IGM approved to start MALITA from 2006.
 - During 2006-2007, MALITA was implemented with collaboration of RCU, RACs and MLFPs. The draft of RAP-MALI was developed and proposed to the IGM.
 - In 2008, RAP-MALI was approved by member states.

MALITA: It aims to develop the NOWPAP future vision on marine litter (RAP-MALI). For that, various information was collected and several guidelines were developed.

RAP-MALI: It shows the basic policy against marine litter issues in the NOWPAP region and roles of each member state and RAC

Objective

- To consider the future direction on marine biodiversity conservation in the NOWPAP region and necessary actions/activities with collaboration of NOWPAP RCU, all RACs and the NOWPAP member states and propose "the draft **NOWPAP Marine Biodiversity Activity**" to IGM for their consideration.

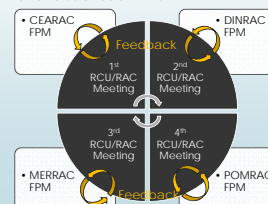
NOWPAP Marine Biodiversity Activity: It shows Basic policy on marine biodiversity conservation in the NOWPAP region as same as NOWPAP Marine Litter Activity (MALITA)

Task 1: Collection of relevant information on marine biodiversity conservation in other Regional Sea Programmes

- To collect information on past and current projects of marine biodiversity conservation and regional action plans on marine biodiversity in the other Regional Seas Programmes

Task 2: Organization of Marine Biodiversity RCU/RAC Meeting

- To organize Marine Biodiversity RCU/RAC Meeting back-to-back with RACs FPM in order to discuss the collaboration among RACs and roles of each RAC



- Interesting Topics of each RAC
- Collaboration between RACs
- Role of each RAC in future marine biodiversity conservation in the NOWPAP region

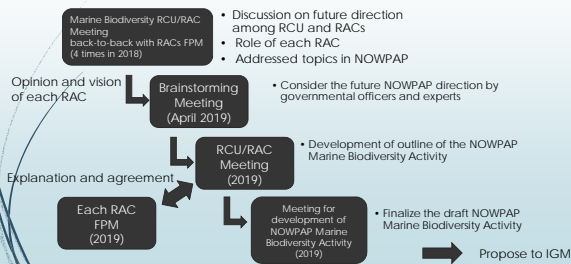
Task 3: Organization of a Brainstorming Meeting

- To organize the brainstorming meeting back-to-back with Marine Biodiversity Workshop to be held in the other CEARAC marine biodiversity project.
- Discussion points:
- ✓ Basic concept of marine biodiversity conservation in NOWPAP
 - ✓ Future direction of NOWPAP marine biodiversity activities
 - ✓ Draft outline of NOWPAP Marine Biodiversity Activity
- Expected participants: Governmental officers and/or experts who will participate in the CEARAC Marine Biodiversity Workshop

Task 4: Organization of a meeting for development of NOWPAP Marine Biodiversity Activity

- To organize a meeting to discuss and develop a draft of NOWPAP Marine Biodiversity Activity
- Based on the discussion at the RCU/RAC Meeting, Brainstorming Meeting and comments from each RAC FPM, the draft NOWPAP Marine Biodiversity Activity will be developed.
- Expected participants:
Representatives of RCU, RACs and each RAC FP

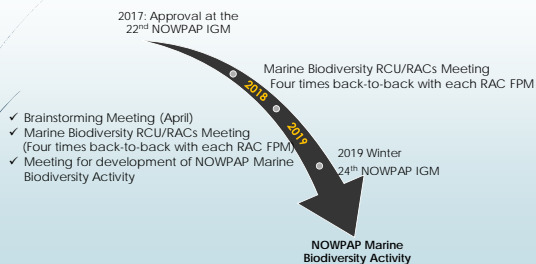
Procedure for development of the draft NOWPAP Marine Biodiversity Activity



Budget

Activity	Budget (US\$)	Main Body
Collection of relevant information on marine biodiversity	5,000	CEARAC Secretariat Consultant
Organization of Marine Biodiversity RCU/RAC Meeting	8,000 (1,000*4 times in 2018 and 2019)	RCU and all RACs
Organization of a Brainstorming Meeting	7,000	RCU, RACs and governmental officers/experts
Organization of a meeting for development of NOWPAP Marine Biodiversity Activity	10,000	RCU, RACs and representative of RAC FPs
Total	30,000	

Schedule



Draft workplan and budget for CEARAC Activities for the 2018-2019 biennium

NOWPAP CEARAC FPM15
29-30 August 2017

CEARAC Activities for 2018-2019

- ◆ FPMs (16th and 17th) + Expert Meeting
- ◆ Maintenance of Websites
- ◆ Specific Projects
 - marine biodiversity
 - seagrass distribution
- ◆ Cooperation and Coordination with other RACs and local/regional/int'l organizations

FPM and Expert Meeting

- 16th FPM - spring 2018
 - Reviewing results of 2016-2017 activities and progress of 2018-2019 activities
- 17th FPM - fall 2019
 - Reviewing progress of on-going activities
 - Discussing workplan of 2020-2021 activities
- Expert Meeting
 - Reporting progress/results of activities by experts

Maintenance of Websites

- Update of web contents
- (Reconstruction of websites by cloud computing technology)



Specific Projects in 2018-2019

- Conserving marine biodiversity
 - Development of a CEARAC medium-term strategy on marine biodiversity
- Mapping seagrass distribution
 - Development of a tool for mapping seagrass distribution in the NOWPAP region

Additional specific project

- Consideration of future direction of NOWPAP marine biodiversity activities

Cooperation/Coordination with other RACs and relevant local/regional/int'l organizations

- Meetings/Workshops
RAC FPMs, ICC, PICES annual meetings, etc.
- Collaboration
 - HAB, marine biodiversity with PICES
 - MPA with NEASPEC
 - Seagrass mapping with IOC/WESTPAC, etc.



Contributing to marine environment conservation

Budget Plan 1 (US\$140,000)

Activity	Budget (USD)	
FPMs + Expert Meeting	(27,000/y)	54,000
Web Maintenance	(6,000/y)	12,000
CEARAC MTS on Marine BD	(total)	30,000
Tool for mapping seagrass	(total)	40,000
Cooperation/Coordination with other RACs, etc.	(2,000/y)	4,000
Total		140,000

Budget Plan 2 (US\$180,000)

Activity	Budget (USD)	
FPMs + Expert Meeting	(27,000/y)	54,000
Web Maintenance	(6,000/y)	12,000
Web reconstruction by cloud computing technology		10,000
CEARAC MTS on marine BD	(total)	30,000
Consideration of future directions of NOWPAP marine BD activities	(total)	30,000
Tool for mapping SG distribution	(total)	40,000
Cooperation/Coordination with other RACs, etc.	(2,000/y)	4,000
Total		180,000

Thank you very much !



Report on CEARAC Marine litter activities

15th CEARAC FPM
29-30 August
Toyama, Japan

Background

- Northwest Pacific Regional Node of the Global Partnership on Marine Litter
It was established with NOWPAP RCU using budgetary support from GPA
Through the regional node, information on marine litter is shared among NOWPAP member states and other regions



CEARAC marine litter activities in the 2016-2017 biennium

- Enhancing the Northwest Pacific Regional Node
 - Information on national and local governments' efforts of Japan, Korea and Russia was uploaded into the regional node.
 - CEARAC Secretariat is waiting nomination of Chinese expert from ML FP of China in order to collect same information in China.

Budget: US\$6,000 (2,000 each for expert of China, Korea and Russia)

Updated information

Actions by central and local governments for prevention of marine litter

- Survey and Research Project
- Projects to promote public awareness
- Project partners
- Conference and symposium
- Other projects

Publications (in English) on marine litter in each member state



CEARAC marine litter activities in the 2016-2017 biennium

- Compiling and harmonizing marine litter monitoring data on beaches and submitting the collected data to DINRAC
 - Data by 2014 was provided from member states
 - Secretariat will ask ML FPs to provide data in 2015 and 2016 at the NOWPAP ML FP Meeting to be held in September



Budget: in-kind

CEARAC marine litter activities in the 2018-2019 biennium

The workplan and budget on NOWPAP marine litter activities for the 2018-2019 biennium will be discussed at the NOWPAP ML FPM to be held on 20 September, in Toyama.

CEARAC will propose two projects for the 2018-2019 biennium, and they will be reviewed at the meeting.

CEARAC marine litter activities in the 2018-2019 biennium

- Collecting information on national actions on marine microplastic
Marine microplastic becomes the most serious marine environmental problem.
Each member state starts actions for this issue: monitoring and countermeasures.
CEARAC will collect such information and upload into the regional node.

Budget: US\$6,000 (US\$2,000 for China, Korea and Russia)

CEARAC marine litter activities in the 2018-2019 biennium

- Compiling and harmonizing marine litter monitoring data on beaches and submitting the collected data to DINRAC (Continued)

Budget: in-kind