

Progress of Implementation of Northwest Pacific Action Plan

NOWPAP Regional Coordinating Unit,
UN Environment

16th CEARAC FPM
10-11 May 2018, Toyama, Japan

DINRAC

- Continues to maintain databases on:
 - major environmental data,
 - NOWPAP coastal and marine environmental GIS and Remote Sensing applications,
 - marine litter,
 - coastal and marine nature reserves,
 - NOWPAP publications,
 - NOWPAP institutions and experts
- Launched new DINRAC website and web GIS
- Collected Major environmental data

DINRAC

- Collected information on endangered/threatened species (Phase II)
- Collected Marine environmental standards
- Provided administrative and financial support to POMRAC
- 3 new Projects approved by 22nd IGM:
 - Sea reclamation state and management
 - Human marine activity objects
 - Collecting information about endangered/threatened species (Phase 3)

MERRAC


- Information system based on Web GIS
- Information sharing platform on oil and HNS spills
- Report on oiled wildlife response
- Establishment of oil sample exchange procedure for transboundary marine pollution,
- Review and analysis of existing prediction models for floating marine litter.
- New format for databases on oil and HNS experts and equipment
- New online pollution reporting system

MERRAC



MERRAC








MERRAC

- Three new projects approved by 22nd IGM
 - Guidelines on the assessment of oil spill response capability
 - The use of unmanned aircraft in marine pollution response
 - Minimum response requirements for oil and HNS spills, which may arise from the offshore units
- Regional report on floating marine litter
- Organize workshop to identify regional capacity gaps on sea-based pollution







POMRAC

- 

POMRAC

- 

POMRAC

- Projects approved by IGM:
 - Microplastics abundance in river runoff and coastal waters with a case study in the Russian coastal water
 - Develop regional NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)
 - Development of the Regional Overview: Assessment of trends in river and direct inputs of contaminants to the marine and coastal environment




Building partnerships

YSLME Phase II Project meeting, Dalian, China, Mar 2018






Building partnerships

- 6th International Marine Debris Conference in San Diego, California, 12-16 Mar 2018



Building partnerships

- The Third 2018 UNEP Forum of The Japan's Association For The UN Environment Programme, March 20th, 2018, Tokyo, Japan



Building partnerships

- Japan Seaology Symposium,
17th February 2018, Toyama, Japan



Building partnerships

- NOWPAP attends Global Dialogue on Technology for Resilient Cities , 17-18 Oct 2017



Building partnerships

- Strengthening regional ocean governance and partnership towards clean seas event at the 1st Asia-Pacific Ministerial Summit on the Environment, September 5-8 2017, Bangkok, Thailand



Building partnerships

- Strengthening co-operation between NOWPAP and North Pacific Marine Science Organization (PICES), 22 Sep 2017



Regional Action Plan on Marine Litter (RAP MALI)

China

- Draft Regulation on Mandatory Garbage Classification (2016)
- Action plan for prevention and control of pollution from ships and ports (2015-2020)
- Action Plan for Prevention and Control of Water Pollution
- US\$ 2.5 million project on micro-plastic pollution

Japan

- US\$ 27 million to remove and prevent marine litter

Regional Action Plan on Marine Litter (RAP MALI)

Korea

- Implementing the 2nd Framework Plan for ML Management (with US\$294 million by 2018).
- Act on Fishing Equipment Control and an Act on Marine waste management enacted in 2017

Russia

- Far East movement to clean up the coastline of debris
- legislation has been amended to improve waste management

NOWPAP-TEMM ML Workshop and ICC held in Toyama, Japan 2017.



NOWPAP-TEMM ML Workshop and ICC held in Toyama, Japan 2017.



NOWPAP-TEMM ML Workshop and ICC held in Toyama, Japan 2017.



22nd NOWPAP IGM held in Toyama, Japan, 21-23 Dec 2017



Resolution 1 of 22nd NOWPAP IGM

Approves the NOWPAP Programme of Work with the total budget of **US\$1,300,000**

Adopts the revised **TOR of the RCU**

Requests also RAC Directors when reporting to the NOWPAP IGM to provide summary of their Focal Point Meetings and indicate clearly **relevance of their activities to the NOWPAP Medium-term Strategy (MTS) 2018-2023**

Resolution 1 : Budget

Activity	Approved Budget	Suggested Budget Option B
	2016-2017	2018-2019
CEARAC	140	185
DINRAC	140	185
MERRAC	140	185
POMRAC*	140	185
RAP MALI	70	91
Public Awareness (RCU)	19	20
Coordination of RACs (RCU)	16	127
Implementation of NOWPAP (RCU)	83	
RCU Operation (RCU)	78	50
Resource Mobilization (RCU)	15	27
NOWPAP Special Projects	-	95
Sub-total	841	1150
13% of the sub-total as PSC	109	150
TOTAL	950	1,300

Resolution 2: Contributions

Table 1. Scale of contributions to NOWPAP Trust Fund for 2018

	Annual contribution (US\$)
China	125,000
Japan	125,000
Republic of Korea	125,000
Russian Federation	125,000
Total	500,000

Resolution3: NOWPAP MTS

Agrees on the principles contained in the MTS 2018-2023 and to this effect requests:

- NOWPAP RCU to prepare a revised version reflecting upon agreed principles of the MTS 2018-2023 considering comments received by Member states by March 1st, 2018 and submit for one month review by Member States, followed by the **adoption by correspondence by June 30th, 2018**
- NOWPAP RCU and RACs in consultation with the Focal Points, to **develop the monitoring and evaluation framework** for MTS 2018-2023 for adoption by the 23rd NOWPAP IGM.

Resolution 4: RAP MALI

3. Requests **DINRAC to provide hosting services** and management of the **Regional Node**
4. Requests RCU in consultation with the RAP MALI Focal Points to prepare the **TOR of RAP MALI** Focal Points for the adoption by NOWPAP Focal Points by correspondence no later than two months before the 2018 RAP MALI Focal Points Meeting

Resolution 4: RAP MALI

	Budget, US\$
2018 NOWPAP ICC campaign and NOWPAP-TEMM Workshop in R. Korea	20,000
2019 NOWPAP ICC campaign and NOWPAP-TEMM Workshop in P.R. China	20,000
Enhancing NW Pacific regional node of the Global Partnership on Marine Litter (GPML)	20,000
CEARAC: Regional overview of national efforts to address microplastics	9,250
DINRAC: Updating and visualizing database on marine litter	9,250
MERRAC: Understanding floating marine litter sources and flows	9,250
POMRAC: Research on micro-plastics content and migration in the Peter the Great Gulf	9,250
RCU supported by all RACs: Third Regional Overview of marine litter in the NOWPAP region	6,000
RCU: Support for regional cooperation, travel and development of public awareness materials	8,000
Total:	91,000

Follow-up and review of SDG 14 through the Regional Seas programmes

Recommendations to the Governing Bodies of the Regional Seas programmes (RSP)

1. to use their respective regional **reporting mechanisms** on the state of the marine environment
2. If not in place, setting it up to an **indicator-based monitoring programme** on the state of the marine environment,
3. Allow the RSP to **share data and information** relevant to SDG indicators, particularly 14.1.1 and 14.2.1 with UN Environment, Science Division, SDG Data and Information Unit



Follow-up and review of SDG 14 through the Regional Seas programmes

4. Consider using these **existing reporting mechanisms** to the Secretariats to collect any **additional data on marine pollution, coastal management, and Marine Protected Areas** on a voluntary basis,



2030 Agenda for SD and the Follow-up and review process

1. On 25 Sep 2015, **17 SDGs and 169 targets** adopted;
2. The Sustainable Development Goals Indicators Framework
3. The National Statistical Systems are the central compilers of data and indicators; UN Statistical Division (UNSD), which is the custodian of the Global SDG Indicators Database
4. The RSP agreed to work through the Regional Seas Indicators Working Group to prepare their outlook documents
5. The First Working Group meeting adopted **22 indicators as the Regional Seas Core Indicators Set.**



UN Environment proposed approach to the reporting on SDG 14 indicators

Indicator 14.1.1 (**Index of Coastal Eutrophication** [ICEP] and **Floating Plastic debris Density**) is an indicator for which there are no established methodology and standards, or methodology/ standards are being developed/tested

UN Environment proposes:

1. allows the use of proxy indicators for nutrients pollution and eutrophication, as the methodology for ICEP is still under development. **Chlorophyll-a concentration** has been identified as proxy indicator for nutrient pollution.



UN Environment proposed approach to the reporting on SDG 14 indicators

- 2. additional indicators added to a “dashboard of indicators”, including **nitrites, nitrites, ammonium, phosphates and dissolved oxygen.**
- The ICEP will be included in the dashboard of indicators when the related methodology will be made available, tentatively in 2020.
- It is proposed that reporting on these indicators related to nutrients pollution to UN Environment be carried out by the RSP



UN Environment proposed approach to the reporting on SDG 14 indicators

Floating Plastic debris Density

- Start reporting on beach litter as a proxy indicator for marine litter.
- GESAMP to develop harmonized monitoring methodologies on marine litter and microplastics
- Reporting on the actual SDG indicator will be carried out by RSP by adding information on macro- and micro-plastics to a “dashboard of indicators on marine litter”.



UN Environment proposed approach to the reporting on SDG 14 indicators

On indicator 14.2.1 (Proportion of national Exclusive Economic Zones managed using ecosystem-based approaches)

- **ICZM protocols** as a proxy indicator for coastal zones management
- Additional information on **Marine Spatial Planning** and other forms of EEZs management will be provided to inform the “dashboard of indicators on coastal zones management”

UN Environment proposed approach to the reporting on SDG 14 indicators

Indicator 14.5.1 (Coverage of protected area in relation to marine areas)

- Established methodology and standards are available and data are regularly produced by Countries
- Reporting is currently carried out using the World Database on Protected Areas (WDPA)

UN Environment proposed approach to the reporting on SDG 14 indicators

Guidance will be provided by the joint publication that UN Environment will release in early 2018, bringing together the results of a collaboration with UN Environment WCMC for the compilation of a **Global Manual on Oceans Statistics**, which will target SDG indicators 14.1.1, 14.2.1 and 14.5.1 and provide linkages with the other SDG 14 indicators and the results of the Regional Seas Indicators Working Group

UN Environment proposed approach to the reporting on SDG 14 indicators

14.1.1 Relevant indicator - Chlorophyll-a

Regional Seas Method Data flow Database

Northwest Pacific	Remote sensing	Remotely sensed Chl-a	NOWPAP-GEARAC database (http://ocean.nowpa.go.jp/?page_id=862)
	In situ sampling	<ul style="list-style-type: none"> Northwest Pacific Region Environmental Cooperation Center NASA 	
		In situ Chl-a	
		Local governments and government-designated organizations monitor the indicator	

UN Environment proposed approach to the reporting on SDG 14 indicators

14.1.1 Relevant indicators - marine litter

Regional Seas Method Data flow Database

Northwest Pacific	Monitoring follows the Guidelines for Monitoring Marine Litter on the Beaches and Shorelines of the Northwest Pacific Region	The Northwest Pacific Region Environmental Cooperation Center and the Korea Marine Environment Management Corporation monitor marine litter	NOWPAP-GEARAC website
	All participating countries also use the International Coastal Cleanup (ICC) data cards		

Report on CEARAC activities in 2016-2017

**NOWPAP CEARAC FPM16
10-11 May 2018**

CEARAC Activities for 2016-2017

- ◆ **2 FPMs and 1 Expert Meeting**
- ◆ **Maintenance of Websites**
- ◆ **Specific Projects (2)**
on marine biodiversity and seagrass
- ◆ **Cooperation/Coordination with other RACs
and regional/international organizations**
- ◆ **Activities on Marine litter (RAP MALI)**

FPMs and Expert Meeting

- **15th FPM** (29-30 August 2017 in Toyama)
 - Reviewing progress of 2016-2017 activities
 - Discussing workplan of 2018-2019 activities
- **CEARAC Expert Meeting on Eutrophication
Assessment in the NOWPAP Region**
(18 Oct. 2017 in Qingdao, China)
 - Reviewing progress on trial application of
screening procedure and discussed how to refine
the current assessment method

Maintenance of Websites

- Renewing the web structure to be more user-
friendly and updating posted information/data



<http://cearac.nowpap.org/>

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 regional/int'l organizations

- Attending meetings/workshops of other RACs
and NOWPAP partners for sharing info./data
 - NOWPAP ICC (19-20 Sep.)



Marine Litter Activities (RAP MALI)

- Harmonizing/summarizing monitoring data from the member states and submitting to DINRAC
- Collecting info. on governmental measures for prevention of ML input



Budget (US\$146,000) and Expenditure

Activity	Budget & Expenditure	
	Budget	Expenditure
FPMs (14 th & 15 th) + Expert Meeting	54,000	53,215
Website Maintenance	12,000	12,098
Assessment of major pressures on marine BD	30,000	30,156
Feasibility study for seagrass assessment	40,000	40,288
Cooperation/Coordination	4,000	4,824
Marine Litter (RAP MALI)	6,000	5,419
TOTAL	146,000	146,000

**Thank you
very much**



Workplan and budget for CEARAC Activities for the 2018-2019 biennium

**NOWPAP CEARAC FPM16
10-11 May 2018**

CEARAC Activities for 2018-2019

- ◆ FPMs (16th and 17th) + Expert Meeting
- ◆ Maintenance of Websites
- ◆ 3 Specific Projects: on marine biodiversity and seagrass
- ◆ Cooperation and Coordination
- ◆ Marine Litter (RAP MALI)

FPM and Expert Meeting

- **16th FPM** (May 2018)
 - Reviewing results of 2016-2017 activities and revised workplan of 2018-2019 activities
- **17th FPM** (fall 2019)
 - Reviewing progress of on-going activities
 - Discussing workplan of 2020-2021 activities
- **Expert Meeting on eutrophication assessment** (2018 and 2019)
 - Sharing latest info. on eutrophication status in the NOWPAP region

Maintenance of Websites

- Updating web contents
- Moving to cloud server



Specific Projects in 2018-2019

- Development of a CEARAC Medium-term Strategy on Marine Biodiversity (MTS on MB)
- Development of a roadmap for Regional Action Plan for Marine and Coastal Biodiversity Conservation in the NOWPAP region
- Development of a tool for mapping seagrass distribution in the NOWPAP region

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

- Participating NOWPAP meetings and other events
 - RAC FPMs, IGMs, ICC, etc..
- Organizing events with other RACs and NOWPAP partners



Enhancing regional capacity to conserve
the marine and coastal environment

Marine Litter activities (RAP MALI)

- Harmonizing/summarizing monitoring data by the member states and submitting to DINRAC
- Collecting information on countermeasures against microplastics in the member states
- Translating info. in the NW Regional Node into Japanese



Budget (US\$194,250)

Activity	Budget (USD)
FPMs + Expert Meeting	54,000
Web Maintenance including moving existing sites/data to cloud server	27,000
CEARAC MTS on marine BD	30,000
Roadmap for Regional Action Plan for Marine and Coastal Biodiversity Conservation	30,000
Tool for mapping seagrass distribution	40,000
Cooperation/Coordination	4,000
Total	185,000
Marine Litter (RAP MALI)	9,250

Thank you very much !



Biodiversity Activity I: Development of a CEARAC Medium-term Strategy on marine biodiversity

16th CEARAC FPM
10-11 May 2018
Toyama, Japan

Background

Past CEARAC Marine Biodiversity Activities

2010-2011

Development of a coastal environmental assessment tool for marine biodiversity conservation (in-kind by NPEC)

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

NOWPAP

NOWPAP Medium-term Strategy 2012-2017

Theme 4: Biodiversity conservation (including NIS)
Development of a NOWPAP Action Plan for Biodiversity Conservation

NOWPAP Medium-term Strategy 2018-2023

Publishing "Monitoring and management of MPAs in the NOWPAP region"

Regional Action Plan has not been developed yet

➡ Biodiversity Activity II

No clear vision for marine biodiversity conservation in the NOWPAP region

Future direction is necessary for CEARAC ASAP

Objective

- ▶ To develop the CEARAC Medium-term Strategy on marine biodiversity

CEARAC Medium-term Strategy on marine biodiversity shows following elements

- ▶ Basic policy on marine biodiversity activities of CEARAC
- ▶ Role of CEARAC for marine biodiversity conservation in NOWPAP
- ▶ Future direction and priorities in CEARAC's marine biodiversity activities
- ▶ Workplans on CEARAC's marine biodiversity activities in 2020-2021 & 2022-2023 biennia

Comments from CEARAC FPs at the 15th CEARAC FPM

- ▶ Narrowing down the target of topics on marine biodiversity
- ▶ Reflecting national needs of member states in activities

Task 1: Development of a list of potential topics for future CEARAC activities

Proposed country	Potential topics	Potential activities
China	Assessment of Marine biodiversity	Development of assessment methodology and indicator
China	List of marine biological species and its distribution	Development of list Collection of information
Japan/Korea	Specific migration species	Conservation of specific species
Japan	Tidal flat, salt-marsh and seagrass/seaweed bed	Habitat mapping
Korea/Russia/China	Harmful species and invasive species	Monitoring and assessment
Korea	Marine litter	Monitoring and assessment
Korea	Ballast water	Assessment
Russia	Plankton	Monitoring
Expert	Environmental DNA	Training course

Task 2: Feasibility study of potential topics and activities

- ▶ CEARAC FPs nominate expert
- ▶ CEARAC Secretariat prepares the feasibility study report format
Question-and-answer format
- ▶ Nominated experts conduct feasibility study on proposed 9 topics and make a report
- ▶ Feasibility study report includes following points
 - need/situation in your country on each proposed topic
 - data availability
 - feasible activity

Assessment of marine biodiversity:

- Development of methodology and indicators of marine biodiversity assessment

First Question (feasibility/need of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ What kind of data/information on diversity of marine species is available?
- ▶ Situation of submission of data to OBIS/BISMaL/other international database
- ▶ Is there any specific species/genus/family that assessment can be done?
- ▶ Is there any experts who implement this topic/activity

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

List of marine biological species and its distribution:

- Development of a list of the main marine biological species and invasive species - Understanding of distribution and quantity of the main marine biological species and invasive species

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ What kind of data/information on marine species and/or invasive species is available?
- ▶ Situation of submission of data to OBIS/BISMaL/other international database
- ▶ Is there any experts who implement this topic/activity

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

Remark

- ▶ Differences from DINRAC/PICES database? Can we update them?

Specific migration species:

- Detection of migratory endangered species - Environmental assessment of sea areas where endangered species migrate - MPA network for conservation of migratory species

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ What kind of data/information on specific migration species is available?
- ▶ How many species (from list of species of The Convention on the Conservation of Migratory Species of Wild Animals) is found in your country?
- ▶ Is there any experts who implement this topic/activity

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

Remark

- ▶ NOWPAP member states don't adopt the CMS
- ▶ YSLME Implement MPA network on migration species, NEASPEC has NEAMPAN

Conservation of tidal flat, salt-marsh and seagrass/seaweed beds:

- Seagrass/seaweed mapping

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ What kind of data/information on tidal flat and salt-marsh is available?

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

Remark

- ▶ CEARAC implements seagrass mapping project

Impact of marine litter:

- Distribution of foreign marine litter

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ Is there any pressures on marine biodiversity?
- ▶ Is there any specific sea areas/habitats where marine litter influence
- ▶ Is there any experts who implement this topic/activity?

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

Remark

- ▶ NOWPAP Marine Litter Monitoring

Impact of Ballast water:

- Effect of ballast water on introduction of invasive species

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ Is there any data/information on ballast water?
- ▶ Is there any survey on introduction of NIS through ballast water?
- ▶ Is there any experts who implement this topic/activity

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

Remark

- ▶ MERRAC's activity

Plankton species which related to aquaculture and fisheries:

- Monitoring system in order to control the possible emergence of microalgae
- Control the impact of nutrient
- Development of monitoring tool using remote sensing

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ Is there any data/information on plankton?
- ▶ Is there any expert who implement this topic/activity

Third Question (Candidate activity)

- ▶ What kind of activity can be implemented as CEARAC activity?

Remark

- ▶ Fishery issue

Environmental DNA

- Spread methodology of biodiversity monitoring using environmental DNA

First Question (feasibility of proposed topics/activities)

- ▶ Is this topic/activity feasible/need in your country?
- ▶ Relationship to the national strategy, basic plan and law

Second Question (Reason of feasible/unfeasible)

- ▶ Is there any researches/activities on e-DNA in your country?
- ▶ Is there any experts who implement this topic/activity?

Third Question (Candidate activity)

- ▶ Is there needs of training course?

Remark

- ▶ Japanese scientists group plans to establish an academic society
- ▶ They also plan to develop manual on monitoring using e-DNA

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

◆ Marine Biodiversity Workshop:

Objectives are to share information on

- (1) National actions/needs, and (2) Feasibility of proposed topics and to identify the common foci in the NOWPAP region

Expected participants: Governmental officials and experts

◆ Meeting for development of CEARAC MTS on marine biodiversity

Objectives are to prioritize the proposed topics/activities and to develop the outline of CEARAC MTS

This meeting will be held back-to-back with the workshop above

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 (Past activities and Responsibilities of CEARAC, NOWPAP MTS)
 - Basic policy and future direction of CEARAC's marine BD activities
 - Expected roles of CEARAC in NOWPAP
 - Draft workplan for the 2020-2021 and 2022-2023 biennium

Expected outcomes

- ▶ Future vision of CEARAC marine biodiversity activities
- ▶ Future workplans (after 2020) of CEARAC marine biodiversity activities
- ▶ Contribution to the NOWPAP Regional Action Plan on Marine and Coastal Biodiversity Conservation (Biodiversity Activity II)
- ▶ Expectation of CEARAC Secretariat: Smooth operation of future activities
 - ✓ Priority of marine biodiversity activities based on its feasibility and national needs
 - ✓ Strong support on collection of sufficient data/information from member states and experts

Budget

Activities	Budget (US\$)	Main Body
Collecting information on other potential topics	1,000	CEARAC Secretariat Consultant
Implementing feasibility study	12,000 (3,000 * 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 officials Experts CEARAC Secretariat
Developing a draft CEARAC Medium-term Strategy on marine biodiversity	2,000	CEARAC Secretariat
Total	30,000	

Schedule

2017

- December: 22nd NOWPAP IGM

2018

- May: 16th CEARAC FPM
- Q2: Nomination of experts, finalization of proposed topics/activities
- Q3-Q4: Implementation of feasibility study

2019

- Spring: Organizing of WS and Meeting
- Q2-Q3: Preparation of draft CEARAC MTS
- Q3: Review of draft CEARAC MTS by CEARAC FPs
- September: approval for submission to IGM at 17th CEARAC FPM
- Winter: 24th NOWPAP IGM

2020

- Starting activities based on MTS

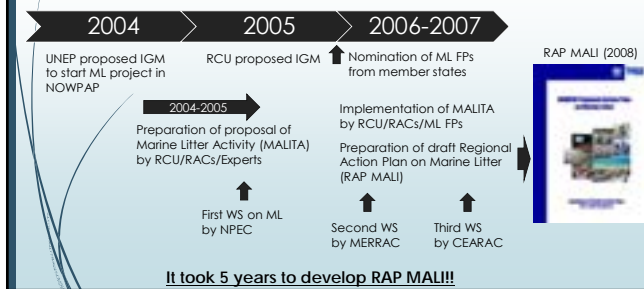
Biodiversity Activity II: Development of a roadmap for Regional Action Plan for Marine and Coastal Biodiversity Conservation in the NOWPAP region

16th CEARAC FPM
10-11 May 2018
Toyama, Japan

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
- Extended to the NOWPAP Medium-term Strategy 2018-2023
- CEARAC marine biodiversity activity 2018-2019
 - Development of the CEARAC Medium-term Strategy on marine biodiversity

Background (RAP MALI)

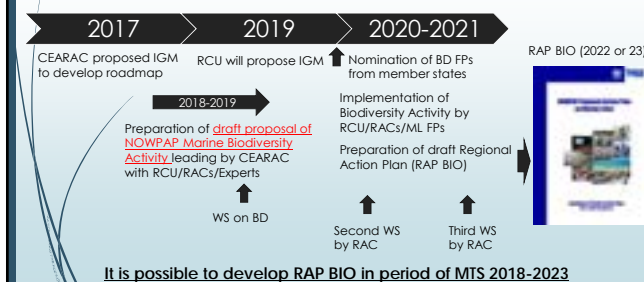


Objective

- To develop a roadmap for Regional Action Plan for Marine and Coastal Biodiversity Conservation in the NOWPAP region (RAP BIO) with NOWPAP RCU and all RACs.

To achieve this objective, the procedure of RAP MALI development will be applied

Image of a roadmap to RAP BIO



Difference between RAP MALI and RAP BIO

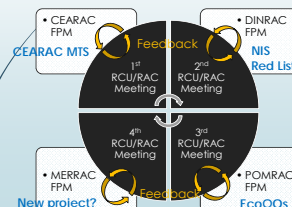
- International convention, national law
 - [Biodiversity]
 - Convention on Biological Diversity → Strategic Plan for Biodiversity 2011-2020
 - Each member state has own national strategies and/or policies
 - [Marine litter]
 - No direct convention, London Convention, MARPOL
 - All member states didn't have laws and/or strategies
- Position of RACs
 - [Biodiversity]
 - Some RACs have already implemented activities on BD
 - [Marine litter]
 - Role of RACs was decided before starting project, CEARAC=land-based sources

Task 1: Collection of relevant information on marine biodiversity conservation

- To collect information on past and current projects of marine biodiversity conservation and regional action plans on marine biodiversity in other Regional Seas Programmes
- To review the national reports on biodiversity submitted to CBD
The latest reports will be submitted by the end of 2018

Task 2: Organization of RCU and RAC Meeting on Marine Biodiversity

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



- Points:
- Interesting Topics for each RAC
 - Collaboration among RACs/RCU
 - Role of each RAC/RCU in future on marine biodiversity conservation in the NOWPAP region

DINRAC FPM: 30-31 May
POMRAC FPM: 4-5 July
MERRAC FPM: 17-20 July

Task 3: Organization of Brainstorming Meeting

- To organize a brainstorming meeting back-to-back with the Marine Biodiversity Workshop to be held in Biodiversity Activity I.

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: Government officials and/or experts who will participate in the CEARAC Marine Biodiversity Workshop

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

- Organize a meeting to discuss and develop a draft 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:

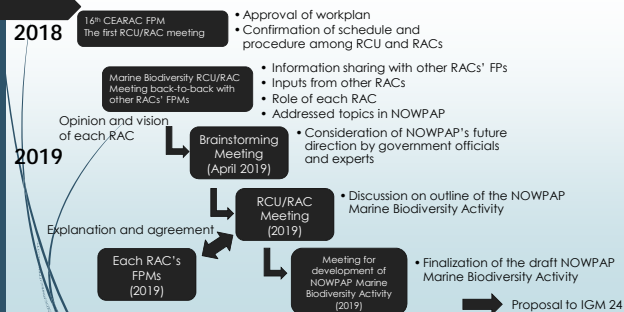
Representatives of RCU, RACs and each RAC FP

Outcome of project: Proposal of NOWPAP Marine Biodiversity Activity

Draft Contents

- Introduction
 - General information on marine biodiversity
 - Situation in the NOWPAP region and NOWPAP member states
- NOWPAP Marine Biodiversity Activity
 - Objective
 - Organizational arrangement
 - Workplan
- Proposed elements of the Regional Action Plan on Marine and Coastal Biodiversity Conservation (RAP BIO)

Schedule



Budget

Activity	Budget (US\$)	Main Body
Collection of relevant info. on marine biodiversity	5,000	CEARAC Secretariat Consultant
Marine Biodiversity RCU/RAC Meeting	4,000 (1,000 x 2 in 2018 & 2019)	RCU and all RACs
Brainstorming Meeting	7,000	RCU, RACs and government officials/experts
Meeting for development of NOWPAP Marine Biodiversity Activity	14,000	RCU, RACs and representative of RAC FPs
Total	30,000	

Rationale and proposed steps for the development of the NOWPAP Regional Action Plan on Marine and Coastal Biodiversity: NOWPAP RCU Inputs

Lev Neretin, NOWPAP Coordinator

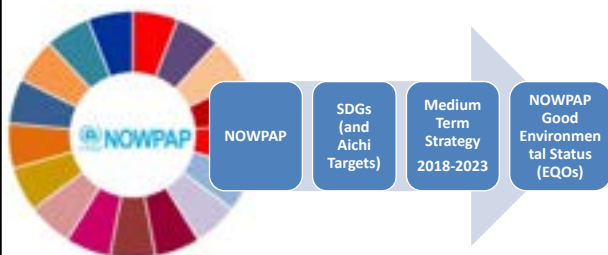


NOWPAP Biodiversity Issues Identified in SOMER-2 Report (2014)

- Fragmentation, degradation and loss of habitats and landscapes
- Chemical contamination of waters, sediments and biota resulting from pollution from land-based sources
- Eutrophication caused by the increased input of nutrients into marine waters and associated harmful algal blooms (HABs) and increased hypoxia
- Introduction of invasive non-indigenous species
- Marine litter pollution



Setting the Framework for NOWPAP Biodiversity Activities: Focus on species and habitat protection



Status of NOWPAP Knowledge



- Feasibility study towards assessment of seagrass distribution in the NOWPAP region (2017)
- Assessment of major pressures on marine biodiversity in the NOWPAP region (2018)
- Third Phase of Red List Species Project (2018-19)
- NOWPAP Special Project "Identification of key indicator species and ecosystems of biodiversity change in the NOWPAP region" (2018-...)
- Further development of SDG-related indicators for NOWPAP EQOs (2018-2019)



What could we learn from others: Experience of OSPAR and HELCOM

The North-East Atlantic Environment Strategy

Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010-2020

(OSPAR Agreement 2010-3)

- guides OSPAR work towards 2020
- incorporates the Ecosystem Approach
- identifies objectives for 5 Thematic Strategies



Intermediate Assessment (IA) 2017



OSPAR Intermediate Assessment 2017:
<https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/>



Why does NOWPAP Need Regional Action Plan on Marine and Coastal Biodiversity?

Biodiversity loss continues and will be exacerbated by the climate change impacts

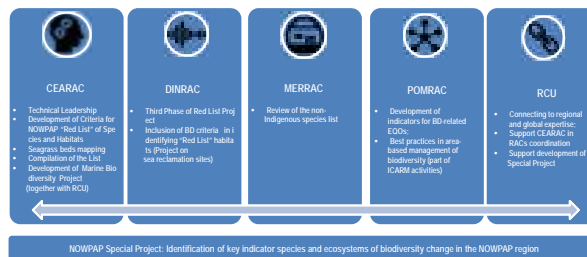
Action Plan does not have specific provisions and action items to conserve and sustainably use marine and coastal biodiversity

SDG 14 calls for conservation and sustainable use of marine and coastal biodiversity

NOWPAP MTS 2018-2023 has specific priority theme focused on marine and coastal biodiversity conservation

NOWPAP needs Regional Action Plan to provide a framework for cooperation

RCU suggestions for the next steps in 2018-2019



Thank you for the attention!

EXTRA SLIDES

Scenario 1: Biological and cultural diversity are not changed significantly due to anthropogenic pressures

Operational criteria	Suggested indicators	Reference data indicators	Value	Score	Score	Score
1.1. Species diversity and conservation	1.1.1. Distribution, abundance and population growth rates of native species 1.1.2. Abundance and population of threatened species		1.1.1. No change data 1.1.2. Possible abundance only (trend) data from country inventory	1.1.1. Possible abundance only 1.1.2. Possible abundance only	1.1.1. Possible abundance only 1.1.2. Possible abundance only	1.1.1. Possible abundance only 1.1.2. Possible abundance only
1.2. Species and ecosystems diversity	1.2.1. Distribution, abundance and population growth rates of native species 1.2.2. Abundance and population of threatened species	1.2.1.1. Proportion of native species 1.2.1.2. Proportion of native species 1.2.2.1. Proportion of native species 1.2.2.2. Proportion of native species	1.2.1.1. No change data 1.2.1.2. No change data 1.2.2.1. No change data 1.2.2.2. No change data	1.2.1.1. Possible abundance only 1.2.1.2. Possible abundance only 1.2.2.1. Possible abundance only 1.2.2.2. Possible abundance only	1.2.1.1. Possible abundance only 1.2.1.2. Possible abundance only 1.2.2.1. Possible abundance only 1.2.2.2. Possible abundance only	1.2.1.1. Possible abundance only 1.2.1.2. Possible abundance only 1.2.2.1. Possible abundance only 1.2.2.2. Possible abundance only
1.3. Distribution of species and ecosystems	1.3.1. Distribution of native species 1.3.2. Distribution of native species 1.3.3. Distribution of native species		1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only	1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only	1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only	1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only

Scenario 2: Native species are at levels that do not adversely affect ecosystems

Operational criteria	Suggested indicators	Reference data indicators	Value	Score	Score	Score
1.1. Species diversity and conservation	1.1.1. Distribution, abundance and population growth rates of native species 1.1.2. Abundance and population of threatened species		1.1.1. No change data 1.1.2. Possible abundance only (trend) data from country inventory	1.1.1. Possible abundance only 1.1.2. Possible abundance only	1.1.1. Possible abundance only 1.1.2. Possible abundance only	1.1.1. Possible abundance only 1.1.2. Possible abundance only
1.2. Species and ecosystems diversity	1.2.1. Distribution, abundance and population growth rates of native species 1.2.2. Abundance and population of threatened species	1.2.1.1. Proportion of native species 1.2.1.2. Proportion of native species 1.2.2.1. Proportion of native species 1.2.2.2. Proportion of native species	1.2.1.1. No change data 1.2.1.2. No change data 1.2.2.1. No change data 1.2.2.2. No change data	1.2.1.1. Possible abundance only 1.2.1.2. Possible abundance only 1.2.2.1. Possible abundance only 1.2.2.2. Possible abundance only	1.2.1.1. Possible abundance only 1.2.1.2. Possible abundance only 1.2.2.1. Possible abundance only 1.2.2.2. Possible abundance only	1.2.1.1. Possible abundance only 1.2.1.2. Possible abundance only 1.2.2.1. Possible abundance only 1.2.2.2. Possible abundance only
1.3. Distribution of species and ecosystems	1.3.1. Distribution of native species 1.3.2. Distribution of native species 1.3.3. Distribution of native species		1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only	1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only	1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only	1.3.1. Possible abundance only 1.3.2. Possible abundance only 1.3.3. Possible abundance only

NOWPAP Nonpoint Water Pollution Abatement Program **Designated** Nonpoint Pollution **Control** Program **Area**

SOWFAP **International** **University**

SCWPAF   

Workplan and budget on development of a tool for mapping seagrass distribution in the NOWPAP region

Genki Terauchi
NOWPAP CEARAC

May 10, 2018
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

Outcome of the 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.

<https://news.gefbeforests.org/seagrass-carbon-in-the-nowpap-region>

1. Background

- Discussion at the 15th CEARAC Focal Point Meeting
34 Dr. Kim and Dr. ISHIZAKA pointed out the description of the task 3.1, detection potential seagrass habitat and collection of water depth information, is not clear.

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 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 so that users can detect distribution of seagrass in their regions of interest by uploading their field data.

3. Tasks

- 3.1 Update of information on seagrass distribution
(“Detection of potential seagrass habitats and collection of water depth information” at the 15th CEARAC FPM)
- 3.2 Development of a tool for mapping seagrass distribution with satellite image using cloud computing technology
- 3.3 Development of a website for mapping seagrass distribution with satellite images

3.1 Update of information on seagrass distribution

Information in China, Korea and Russia is sparse and addition of information is requested.



(open to the public very soon)

Providing smartphone applications to collect field data and information



Reality in global databases

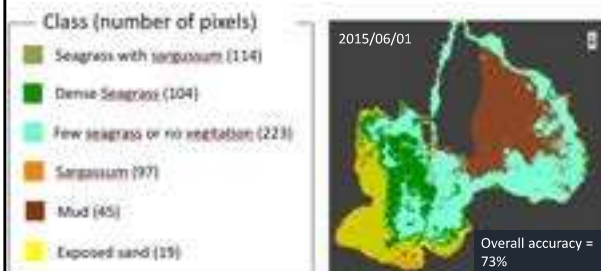


Location of seagrass in Toyama Bay is wrong

Incentives are important



Incentives are important



By providing field data on seagrass, larger spatial scale information around the field data can be obtained

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.

Learning existing tools for mapping geo spatial information

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.



<https://global-surface-water.appspot.com/>

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>

Evaluation of tools for mapping seagrass

Studying how Google Earth Engine works



Test of water column correction with MATLAB



Evaluation of "Coastal Mapper Of Bathymetry And Habitat Types (CMOBAH)" developed by RESTEC



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



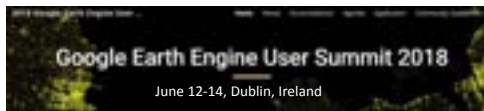
4. Expected outcomes

- With the use of the developed mapping tool, various stakeholders including governments, citizens, fisheries and/or politicians can share the same knowledge of distribution of seagrass. When the area of seagrass beds in coastal areas is identified, such information can be used for planning policies to conserve and/or recover seagrass beds, and also to estimate the amounts of CO₂ absorbed in the sea.
- 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
2018	May	Review of this proposal	CEARAC FPs CEARAC Secretariat
	June to October	-Update of field data/information of seagrass distribution - Baseline design of a tool for mapping seagrass distribution with satellite images using cloud computing technology	-Consultant and nominated experts -CEARAC Secretariat and Consultant
	November	Development of a tool for mapping seagrass distribution with satellite images using cloud computing technology	CEARAC and consultant
2019	October		
	Q3 to Q4	Construction of web-based service for mapping seagrass distribution	CEARAC and consultant

Key events in the near future



This project will be introduced at a 3 mins lightning talk.



Participating in WS4 to develop a smartphone tool for NOWPAP to collect field information on seagrass and WS6 to prepare a proposal for external funding.

6. Budget

Task	Time	Deliverables	To be completed	Main body	Budget (US\$)
Update of field data/information of seagrass distribution	2018 Q2	-Updated field data /info. of seagrass distribution	2018 Q3	Consultant and nominated experts	15,000
Development of a tool for mapping seagrass distribution	2018 Q4	A tool for mapping seagrass distribution	2019 Q3	CEARAC	25,000
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