

Annex XI

Second NOWPAP training course on remote sensing data analysis

1 Background

The Integrated Report on Ocean Remote Sensing for the NOWPAP Region was published in 2005, based on the contents of the National Reports on Ocean Remote Sensing in the NOWPAP Region. This report suggested activities for enhancing of the technical training programs. Following this suggestion, CEARAC organized the first NEAR-GOOS - NOWPAP Joint Training Course on Remote Sensing Data Analysis at Nagasaki University, Nagasaki, Japan from 3-7 September 2007 jointly with IOC/WESTPAC.

Recognizing these milestones and considering mid- and long-term strategies of CEARAC and goals of WG3/WG4, CEARAC proposed to organize the second NOWPAP training course on the remote sensing data analysis for the 2008-2009 biennium at the 12th NOWPAP IGM and 6th CEARAC FPM, and it was approved.

2 Objective

Objective of this activity is to help students, young researchers and coastal managers obtain useful skills and knowledge in utilizing remote sensing data in monitoring and assessment of marine environment through conducting an intensive training course on remote sensing data analysis.

3 Status of implementation

3.1 Outline of the second NOWPAP training course on remote sensing

Through consultation with WG4 experts and relevant organizations, CEARAC decided to conduct the second NOWPAP training course from 1-5 November 2008 at Cheju National University, Cheju Korea with the support of KORDI as co-organizer. A tentative program of the training course was also prepared by CEARAC (Annex1), then reviewed and agreed among WG4 experts in July 2008.

3.2 First public announcement of the training course

Upon decision of the date, the venue and a tentative program, CEARAC made an announcement of the training course on CEARAC website for the public on 28 July 2008. Deadline for application is set on 31 August 2008. The first announcement is attached to Annex 2.

4 Partnerships with relevant organizations

In order to efficiently implement the training course, CEARAC formed partnerships with relevant organizations for announcing the training course, allocating lectures, sharing travel expenses of participants and so on.

- Co-organizer
 - ✧ KORDI
- Supporters (tentatively agreed as of 14 August 2008)
 - ✧ YSLME
 - ✧ IOC/WESTPAC
 - ✧ IOCCG
 - ✧ PEMSEA
 - ✧ PICES

5 Expected outcome

Implementation of the second NOWPAP training course on remote sensing data analysis is expected to contribute to capacity building of the NOWPAP Member states for utilizing remote sensing data for marine environment conservation. It is also expected to obtain useful information to consider future directions of CEARAC activities related to remote sensing.

6 Schedule

Schedule of this activity and main body are as follows.

Time		Actions	Main body
2008	Q1	<ul style="list-style-type: none"> Preparation of workplan for development of educational materials 	CEARAC / consultant
	Q1	<ul style="list-style-type: none"> Review of prepared workplan by WG4 experts 	WG4 experts
	Mar (6 th CEARAC FPM)	<ul style="list-style-type: none"> Review of workplan and budget for the second NOWPAP training course on remote sensing data analysis. 	CEARAC / CEARAC FPs
	Q2	<ul style="list-style-type: none"> Preparation of the draft training program 	CEARAC
	Q2	<ul style="list-style-type: none"> Review and approval of the draft training Program 	WG4 experts
	Q2	<ul style="list-style-type: none"> Finalization of implementation plan 	CEARAC and KORDI
	Q4	<ul style="list-style-type: none"> Second NOWPAP training course on remote sensing data analysis. 	CEARAC/ WG4 experts/ national experts / KORDI

7 Budget

15,000 US\$

Annex 1

Tentative program of the second NOWPAP training course on remote sensing data analysis as of July 18, 2008

Day	Time	Program (L) = Lecture and (H) = Hands-on exercise
Oct 31		Registration
Nov 1.	9:00-9:20	Welcome address
	9:20-10:50	Introduction to Ocean Color Remote Sensing (L)
	11:00-12:30	Remote sensing application for eutrophication in Europe (L)
	13:30-14:00	Remote sensing activities in CEARAC
	14:00-14:50	Basic digital image processing (tentative name)
	15:10-17:00	Level 2 data processing (level 2 to level 3)
Nov 2	9:00-10:30	Remote sensing application for eutrophication monitoring and assessment in the NOWPAP region (L)
	10:45-12:15	Primary production (L)
	13:30-17:00	Time Series Analysis of Ocean Colour data (H)
Nov 3	09:00-10:00	Estimation techniques of Chlorophyll-a concentration by remote sensing (L)
	10:00-11:00	New approach of ocean color techniques: Neural network (L)
	11:15-12:15	Atmospheric correction (L)
	13:30-17:00	Match up (validation) analysis with sea truth measurement data (H)
Nov 4.	9:00-10:30	Monitoring of marine and coastal environment by multi sensors (L) A case study in Russia.
	10:45-12:15	Monitoring of marine and coastal environment by multi sensors (L) A case study in Korea.
	13:30-14:30	Detection of red tides (L)
	14:30-15:30	Introduction of satellite data distribution system (NFRDI, NASA Ocean Color Web, KOSC, NEAR-GOOS, NPEC/Marine Environmental Watch and JAXA) (L)
	16:00-17:30	Ocean monitoring activities by remote sensing in Korea (L)
Nov 5	9:00-10:30	Introduction to SeaDAS (H)
	10:30-12:15	WIM excise (or PC SeaDAS excise) (H)
	13:30-17:30	Assignment for trainees (H) (by team: time series in different are of interest)
	17:00-17:30	Closing
		Farewell party

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The Second NOWPAP Training Course on Remote Sensing Data Analysis

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1-5 Nov 2008, Cheju National University, Cheju, KOREA

The Special Monitoring & Coastal Environmental Assessment Regional Activity Centre (CEARAC), one of the four Regional Activity Centres (RACs) of the Northwest Pacific Action Plan (NOWPAP), will conduct an intensive training course on the remote sensing data analysis in the Northwest Pacific Region, at Cheju National University, Cheju, Korea from 1-5 November 2008. The course will consist of lectures by specialists and hands-on practical sessions on analysis of satellite data. The course will provide an overview of remote sensing of ocean colour with special emphasis on applications of ocean colour relevant to the Northwest Pacific Region.

The training course is targeted at postgraduate students, professional researchers and local government officers working in the fields of marine sciences and coastal-zone management in the Northwest Pacific Region. Applications from advanced undergraduates may also be considered. The number of participants in the training course is limited to a maximum of 30. Participants will be chosen based on their demonstrated ability to be able to transfer the knowledge and skills gained in the course, back to their respective schools and institutions.

Objectives

- To conduct an intensive training course on remote sensing data analysis for students, young researchers and coastal managers to obtain useful skills and knowledge to utilize remote sensing data in monitoring and assessment of marine environment.

Course Outline (tentative as of July 18, 2008):

Topics to be addressed will include:

- Lectures sessions
 - Introduction to ocean color remote sensing
 - Remote sensing application for eutrophication
 - Estimation techniques of Chlorophyll-a concentration by remote sensing
 - New approach of ocean color remote techniques: Neural network
 - Atmospheric correction
 - Monitoring of coastal and marine environment by multi sensor approach
 - Introduction of satellite data distribution system
 - Introduction to ocean monitoring activities by remote sensing in Korea
- Hands-on practice sessions
 - Basic digital image processing
 - Level 2 data processing
 - Validation of remote sensing data
 - Time series analysis of ocean color data
 - Introduction to SeaDAS
- Case study report
 - Conducting time series analysis by teams

By the end of the training, participants will acquire the knowledge and skills on:

- utilization methods for the remote sensing data in the open ocean and coastal environment;

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- advantages of the use of remote sensing in monitoring of the marine and coastal environment;

Details of the course are referred to tentative program in [Annex I](#).

Location:

The course will be held at Cheju National University, Cheju, Korea.

Sponsors:

The course is being sponsored by NOWPAP CEARAC.

Course Fee

Training course is provided for free of charge. However, the cost for traveling and accommodation should be borne by participants. Limited scholarship will be available for 4 participants (one from each NOWPAP member country (China, Japan, Korea and Russia) to help defray the cost of traveling and accommodation.

Language:

Training course is conducted in English.

How to apply:

Those interested in attending the course should complete the application form (Annex 2) from the following link. Applicants are also requested to submit a statement (1-2 paragraphs) outlining the suitability of their backgrounds and the reason(s) for their interests in the course. Those wishing to apply for a scholarship should complete the scholarship application form (Annex 3).

[Download application form](#)

Application form should be submitted to:
CEARAC Secretariat,
5-5 Ushijimashin-machi, Toyama city, 930-0856 JAPAN
Tel: +81-76-445-1571, Fax: +81-76-445-1581
E-mail:cearac@npec.or.jp

Electronic submissions is required.

Submission deadline is 31 August, 2008

Successful applicants will be notified by September, 2008.