

# NEWSLETTER

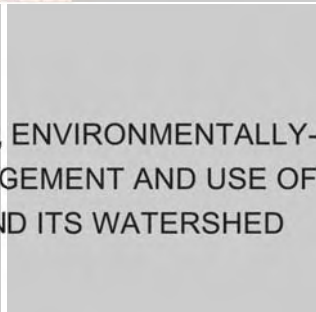
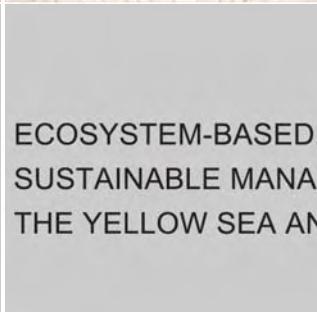
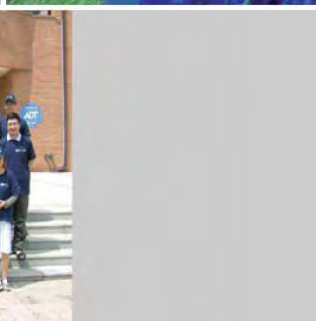
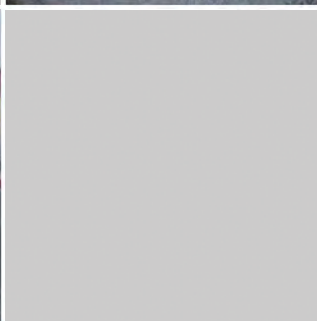
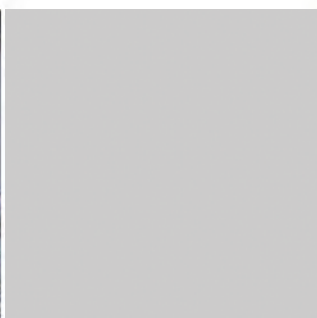
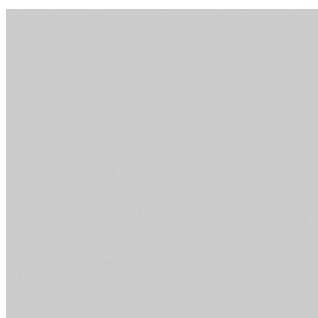


## Yellow Sea Large Marine Ecosystem

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ECOSYSTEM-BASED, ENVIRONMENTALLY-SUSTAINABLE MANAGEMENT AND USE OF THE YELLOW SEA AND ITS WATERSHED

UNDP/GEF Project Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem

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## Summer Co-operative Cruise

The second and final co-operative cruise in the Yellow Sea was successfully held in July 2008. Seven scientists from Republic of Korea and 14 scientists from China boarded the “Xiang Yang Hong 9” research vessel and completed their survey of 37 sampling stations. Similar to the winter co-operative cruise held in January, samples of plankton, benthos, and water samples were collected and are being analysed for nutrients, organics, trace metals, taxonomic composition of plankton, zooplankton, benthic organisms, pigments, and bacteria. Results will be available starting in October. Preliminary results showed some typhoon effects on seawater temperature. As a final product of this activity, regional cruise reports will be compiled by the Chief Scientists once all results are in.



Sediment sample.



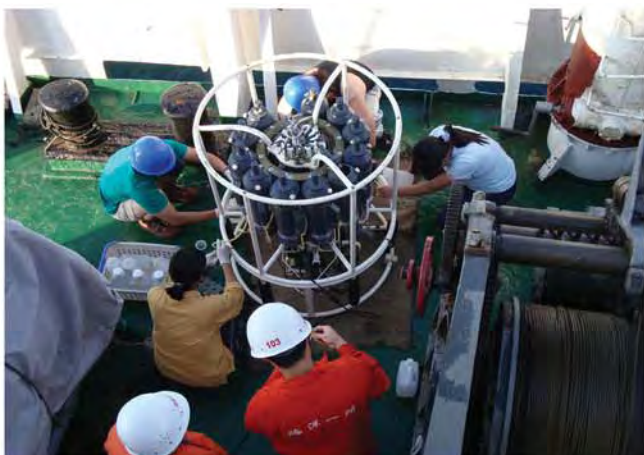
Benthic organisms.



The research vessel.



Sampling with continuous plankton recorder.



CTD and water sampling.



Jellyfish observation.





Carrying out on-board experiments and analyses.  
Photos courtesy of Dr. Wang Zongling, Summer Co-operative Cruise  
Co-Chief Scientist.



## The Joint Regional Stock Assessment

Currently, West Sea Fisheries Research Institute (WSFRI), Republic of Korea and Yellow Sea fisheries Research Institute, China, are cooperating to conduct a joint regional stock assessment of selected fish species in the Yellow Sea Large Marine Ecosystem. During the 1st Stock Assessment workshop in China earlier in the year participants agreed to harmonise the methodology and trawl gears used for this stock assessment activity, they selected the fish species, and agreed on the composition and format for data exchange.

After the 1st survey performed by national research vessels, members used the opportunity to increase the level of cooperation by conducting an expert exchange programme. Scientists from YSFRI and WSFRI visited each others' institutions to work together to harmonise fish ageing techniques and

analysis of fish stomach contents, and to exchange data.

The 2nd Stock Assessment Workshop was held 19-20 September at WSFRI, part of the National Fisheries Research and Development Institute, ROK. Members exchanged and reviewed the data collected by the 1st surveys, discussed the harmonisation exercises and the future use of the methodology agreed during the expert exchange, finalised the format for data exchange for the 2nd Survey, and set the survey stations.

The final stock assessment workshop will be held in China April 14 to 16, 2009 to discuss the final reports and future cooperation.



## Introduction of TDA and SAP to DPRK experts and government officers

Following the agreement at the 2nd Special Meeting of the PSC, a workshop was organized in Dalian, China for the governmental officers from DPR Korea to enhance their knowledge on the TDA and SAP development under the UNDP/GEF Yellow Sea project. Five government officers from DPR Korea participated in the workshop, and PMO staff provided presentations and information to the workshop.

Before the workshop, the participants translated the TDA and SAP documents into Korean language, which helped them for better understanding of the process. Some interesting questions were asked regarding various issues in the development. In particular, the questions that were relevant to the full involvement of DPR Korea were well received and responded to. The workshop facilitated, to a large



Some participants at the TDA/SAP Introduction.



extent, the understanding of the development of TDA and SAP, and furthermore provided necessary information on involvement of DPR Korea in the second phase of the project: the implementation of SAP.

The workshop received financial support from R. Korea, and logistical assistance from NMEMC, China.



## 1<sup>st</sup> Phase 2 Working Session

This activity was held following the discussion and agreement at the 2nd Special Meeting of the PSC (8 May 2008), where the participating countries recognised the importance to start preparations for implementing the Strategic Action Programme (SAP), and recommended the establishment of a working group to carry out the required tasks for planning the project's next phase. The working session had the following objectives:

- Prepare an activity list for implementing the Yellow Sea SAP;
- Prepare associated financial requirements from GEF for implementing each activity;
- Identify the co-financing resources for each activity from each participating country; and
- Provide a list of expected outputs and outcomes from Phase 2 to be included in the PIF and the Phase 2 Project Proposal.

The working session consisted of a total of 11 regional experts from China, RO Korea, and SHMA-DPR Korea, and 3 project staff, who put together proposed activities for SAP implementation based on the stated management actions and ecosystem services mentioned in the SAP. The working session also agreed on a general outline to present the project next phase based on a combination of ecosystem carrying capacity, Yellow Sea Commission, governance issues, and capacity building. The outputs from the working group were used to draft the Project Identification Form for submission to the GEF.

Working Group  
For Provisioning  
Services.



## Regional Mariculture Conference

The Regional Mariculture Conference was held at the Yellow Sea Fisheries Research Institute, Qingdao, China 9-11 September 2008. During the conference more than 30 scientists from Republic of Korea and China presented talks on 4 main themes: Environmentally friendly mariculture techniques; Reducing disease and use of drugs; Reducing the chemical control of pests; and Economic benefits of the sustainable mariculture.

Amongst the highlights were presentations on the progress of the YSLME projects demonstration activities. Dr Fang Jianguang's group at the Yellow Sea Fisheries Research Institute gave talks on novel species mixtures for integrated multi-trophic aquaculture (IMTA) including seacumbers stocked inside abalone cages to remove faecal material, and the use of shrimp and sea urchins to reduce biofouling in scallop lantern nets. Dr Kim Jongsheek presented recent developments in the limited water-exchange culture systems for shrimp using bio-floc technology at the West Sea Mariculture Research Centre. Initial results were promising, suggesting that yields were 10 times that of conventional nursery systems, and when used for growout, a density of approximately 500 shrimp/m<sup>2</sup> resulted in a production of up to 9.25kg shrimp/m<sup>2</sup> after a 94 day culture period.



Group Photo.



## 5<sup>th</sup> Regional Working Group Meetings



## 5<sup>th</sup> RWG - Biodiversity meeting

The 5th Regional Working Group meeting was held in Weihai, Shandong province, China 2-4 September 2008. The Chairperson of the RWG-Biodiversity Dr. Youn-Ho Lee chaired the meeting assisted by the head of the Chinese delegates Dr. Xuelei Zhang. Members focused on identifying the demonstration sites and selecting Strategic Action Programme (SAP) management actions. These actions will be implemented at one site in each country to demonstrate the effectiveness of the SAP.

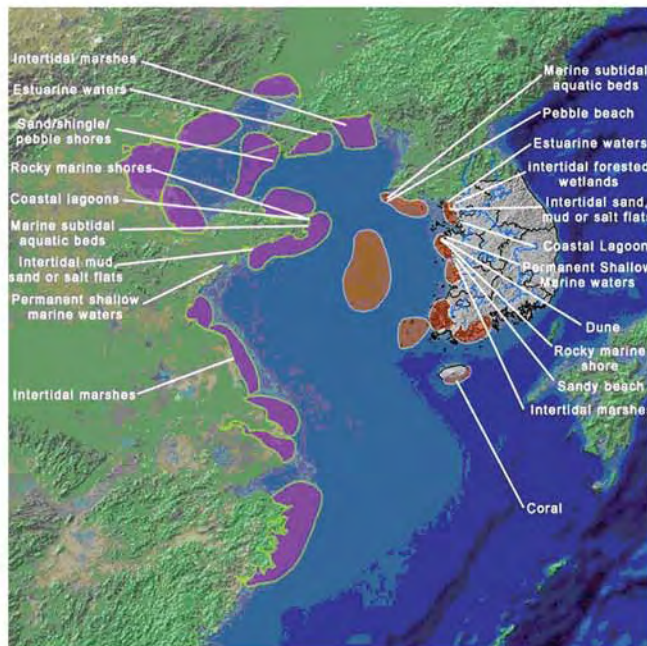
To this end, members reviewed the progress of the biodiversity experts' work in China and Republic of Korea (ROK). The experts presented their assessment of existing coastal wetlands, the selection of representative Ramsar habitats, and baseline surveys of biodiversity in the potential demonstration areas. While the project concentrated on the biodiversity aspects and selection of critical habitats using the Ramsar classification and previous data from the WWF/KORDI/KEI YSEPP project that identified potential priority areas based on species, the new WWF/KORDI Yellow Sea Ecoregion Support Project (YSESP) assessed the management in these critical habitats. This combination of assessment of the Yellow Sea in terms of biodiversity, habitats and management effectiveness permitted the informed selection of demonstration sites in critical habitats.

Two demonstration sites were selected, Ganghwa Southern Tidal Flat, a part of the Han River Estuary ecosystem in ROK, and Rongcheng Seagrass Beds including Swan Lake at the eastern tip of Shandong Province in China.

For further detail please see the online meeting reports at [www.yslme.org](http://www.yslme.org)



The 5th RWG-Biodiversity meeting.



Representative Ramsar habitats in the Yellow Sea.

## 5<sup>th</sup> RWG - Fisheries meeting

The 5th and final Fisheries Regional Working Group meeting was held in Shanghai, China 23-25 September 2008. Leading the Chinese delegates and chairperson of the RWG-Fisheries was Dr Xianshi Jin and head of the R. of Korea delegates was Dr Inja Yeon. During the meeting members focused on reviewing the ongoing activities, including those that are demonstrating the effectiveness of the SAP, and providing additional scientific and technical inputs for the potential second phase of the project.

During the past year, we have seen the implementation of: the Joint Regional Fisheries Stock Assessment projects and associated exchange of experts to further harmonise stock assessment techniques; the implementation of three capture fisheries demonstration projects to assess the effectiveness of stock enhancement, fishing boat buy-back and the use of closed fishing seasons/areas to rebuild fish stocks. Two mariculture activities are also currently underway to demonstrate innovative methods of increasing sustainability in the industry. The Yellow Sea Fisheries Research Institute is promoting the introduction of integrated multi-trophic aquaculture in Sanggou Bay, and the West Sea Mariculture Research Center is introducing heterotrophic shrimp culture, a method of limited water-exchange culture that reduces the nutrient outflows while boosting production.

Members also reflected on the two conferences that the YSLME project organised, a special session "Reducing the environmental impacts of mariculture" at the World Aquaculture Society meeting in Busan



held earlier this year, and the Regional Mariculture Conference. Members agreed to organise one final mariculture workshop in 2009, to ensure the continued exchange of information and cooperation between China and R. of Korea, to increase sustainability and prevent disease outbreaks in the regional mariculture industry.



The 5th RWG-Fisheries meeting.

## 5<sup>th</sup> RWG - Ecosystem meeting

This group reviewed the results from the 2 co-operative cruises, and listened to the progress of SAP demonstration activity implementation (jellyfish monitoring, monitoring impacts of climate change, and investigating N:P:Si changes and effects on the ecosystem). The jellyfish activity has started, and will use ship of opportunities as part of the monitoring events, along with visual counting, acoustics, and underwater acoustic camera. As the jellyfish bloom is a transboundary problem, this activity will aim to establish an international monitoring network for jellyfish blooms in the Yellow Sea, consisting of institutes from Republic of Korea, China, Japan, and France. Technical guidelines on jellyfish monitoring will be produced as an output.



Video system under development for monitoring jellyfish on ship of opportunities.

The demonstration activities on climate change and N:P:Si have just begun, with the former investigating changes in the Yellow Sea Cold Water Mass, and the latter having started enclosed experiments to examine how changes in the nutrient concentrations and ratios affect community structure and ecological characteristics, such as chlorophyll a, primary productivity, and phytoplankton. Both activities will produce outputs focusing suggest to policy makers and scientists the best monitoring strategy, e.g. scope and variables to monitor.



## Data management and GIS Workshop

Based on the endorsement of Project Steering Committee (PSC), the technical workshop for Regional GIS and Meta Databases was organised by the China-Korea Joint Ocean Research Center in Qingdao, China on 23rd - 24th August 2008 to improve the project's Regional GIS and Meta Databases through technical discussion and agreement, and exchange information with Chinese, Korean and international marine data centres and suggestions from experts and users.

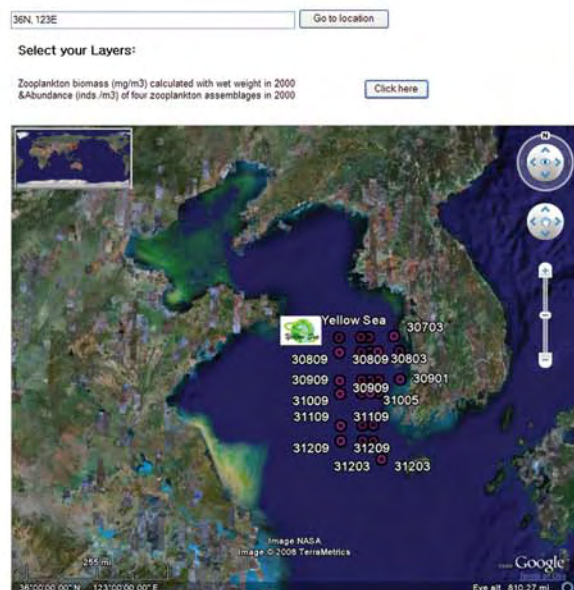
The current status with the case study of other relevant marine database development and the introduction of Regional GIS and Meta Databases development were presented by participants. They provided knowledgeable suggestions and comments on the implemented Regional GIS system and how to improve the database. The type of needs, services the databases should provide, and establishment of mirror site were discussed. A Prototype System of Digital Ocean in China was presented showing visual three-dimensional system to reappear and forecast the various states of real ocean world from Dr. Suixiang Shi of NMDIS. It demonstrated an advanced phase on GIS system compared to other projects.

The meeting discussed the detailed structure, operation, interface of the Regional GIS and Meta Databases, providing the direction for improvement henceforth. It covered the resolution of data without clear geo-coverage like social statistic, description and communications with technical feedback, linkage with other databases, application of Google Earth as interface and so on.



## The Google Earth Web API in the Yellow Sea

The Google Earth API is accessible from the project website <http://www.yslme.org> with multi plug-ins based on MS Internet Explorer. It provides visual effects for this area with scientific data and can explore the Yellow Sea and other parts of the world. The site has default functions like Status Bar, Navigation Control, Grid, Overview Map, Scale Legend, Atmosphere, Mouse Navigation. Zooplankton biomass (mg/m<sup>3</sup>) calculated with wet weight in 2000 and Abundance (inds./m<sup>3</sup>) of four zooplankton assemblages in 2000 (inds./m<sup>3</sup>) in the surface of Yellow Sea is one layer which can be navigated. In further stages, several useful layers will be added to the site for anyone who is interested in the Yellow Sea, anonymous navigator. Without installing professional GIS tools, the Google Earth API gives opportunity to achieve geographical information.



## Regional co-ordination – EAS Partnership Meeting, Tokyo

The Second East Asian Seas Partnership Council Meeting was held at the Toranomon Pastoral Hotel, Tokyo, Japan, from 14-17 July 2008. The meeting was attended by PEMSEA Partner countries and non-

State Partners. As a non-State Partner, the YSLME was represented by the Project Manager at the meeting.

As PEMSEA project recently started its new phase in implementing SDS-SEA, the meeting discussed several important issues, including the legal personality of PEMSEA. Although the final agreement needs to be agreed upon by the state partners, progress has been made in this regard. Two documents, the Protocol and the Concept Paper, should be carefully reviewed by State Partners for identifying the legal process for ratification.

A presentation on YSLME project was given to the plenary session, including the development of the Strategic Action Plan, which is structured in accordance with the ecosystem based approach, and the Co-operative Cruises implemented by China and RO Korea.

PEMSEA has had a smooth start-up of the new GEF-supported project, including the recruitment of the Executive Director and the staffing of the PRF Secretariat and Technical Services.



## International Youth Programme, Buan, ROK

The third Youth Programme was organised in Buan, Republic of Korea (ROK), from 19 to 21 August 2008 in cooperation with a number of organisations, including the Buan Municipal Government, the Korea Marine Rescue Center, the Korea Ocean Research and Development Institute, the Northwest Pacific Action Plan, the China Ocean News, and the Sea Explorers of Korea.

Twenty middle/high-school students attended the Programme from the Yellow Sea's coastal provinces and cities: ten students from China and ten students from ROK. Scholars with expertise in marine ecosystem as well as officers from local government and international organisations were invited as lecturers.

The Programme -- a 3-day activity consisting of classroom lectures, field activities, and group work -- provided the students with an opportunity to understand the importance of the Yellow Sea and to observe and experience its ecosystem.

Through the Programme, the students achieved a



better understanding of the Yellow Sea, and were encouraged to actively think and act for conservation. The students also nurtured a friendship among each other by sharing and exchanging views and opinions.



Group Photo.



## ICC Vladivostok

2008 NOWPAP International Coastal Cleanup (ICC) and training workshop was held in Vladivostok, Russia, 26 – 28, September 2008. The meeting was well attended by NOWPAP member countries (Japan, Republic of Korea, China, Russia), regional programmes, international projects, COBSEA, NGOs, and YSLME. The objectives of the workshop were to build regional capacity in organising the ICC campaigns, to promote & increase public awareness of marine litter issues as well as to share experiences of NOWPAP member countries in organizing ICC activities. There were training sessions in ICC and workshop sessions about marine litter activities in NOWPAP and partner organisations/projects

A coastal cleanup was organised following the workshop and attended by the meeting participants who joined with NGOs, media representatives, local citizens including students, in an effort to raise public awareness on the problem of marine litter and to promote the international coastal cleanup campaigns in Russia. An Officer of the PMO contributed to this activity by giving a presentation and joining the coastal cleanup. The YSLME project has been enhancing collaboration between NOWPAP in a variety of areas, including marine litter.



Mr. Sungjun Park giving his talk at the ICC Vladivostok.



## A new Associate Expert Joins the PMO

Ms. LI Jing joined the YSLME project as an Associate Expert for 3 months from Sep. 2008. Trained in the field of Environmental Economics for the master degree, Jing is now working as a project assistant in another GEF marine project, which is also implemented by SOA.

Now, as the Associate Expert in the PMO, she is trying to have a better understanding of the UN project management system through YSLME's experience, and she is also happy to share experience on project management, and give her own contribution to enhance the relationship between China and RO Korea in YSLME.

Jing says that,

"It is very lucky to have the chance working with you. The PMO of YSLME is a very good team. I am trying to learn not only how to do things, but also how to be a member of a good team."



Ms. Li Jing