

# NEWSLETTER

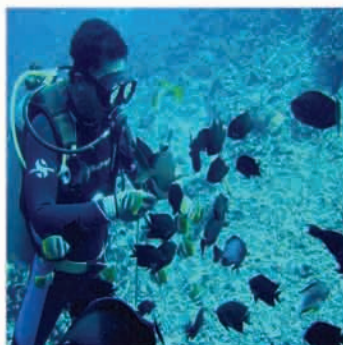
Yellow Sea Large Marine Ecosystem



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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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## First SAP Ad-hoc Working Group Meeting

The First Meeting of the Strategic Action Programme (SAP) Ad-hoc Working Group was organised in Hongchun, Republic of Korea, 10-12 April 2007, with the participation of regional experts from China and Republic of Korea (ROK). The objective of the Meeting was to identify the Ecosystem Quality Objectives (EcoQOs) or “regional targets” for environmental management actions in the Yellow Sea.

During the meeting, the experts presented preliminary regional targets with respect to the Project’s objectives (Biodiversity, Ecosystem, Fisheries, and Pollution), reviewing the historical data and trends and identifying the current situation of the Yellow Sea ecosystem. The legal experts from China also presented important considerations about regional target identification from the perspective of law and policy.

Following the presentations, the Meeting brainstormed and agreed on the targets, including reducing catch and fishing efforts by 25 to 30 percent from 2004 levels by the year 2020, to address the decline in landings of many commercially-important species. The agreed regional targets were compiled as the “SAP Reference Conditions and Regional Targets for Management Actions” in the Meeting Report which is available from the Project’s website at <http://www.yslme.org/>.

The Meeting also discussed SAP-related activities such as the “First Yellow Sea Regional Science Conference” (see article about the Conference in this newsletter). The Meeting agreed on the Conference programme with possible topics and invited speakers as well as the workplan for meeting preparation.



Yihang Jiang, Project Manager, facilitating discussion during the First SAP Ad-hoc Meeting.



## Gene-pool Workshop

The workshop was held primarily to address issues of genetic diversity in the Yellow Sea. The meeting took place in Busan, Republic of Korea on 14-15th May 2007, hosted by Yellow Sea Project. Twelve experts gave presentations illustrating the current state of research on genetic diversity in the Yellow Sea. The various techniques used in genetic analysis were reviewed and the development of micro-satellite markers and DNA chip technology were highlighted as promising. Other topics ranged from genetic diversity in microbes, differences in diversity between hatchery-raised and wild stocks of fish, shrimp and gastropods.

Any loss of genetic diversity may be significant, as it decreases a species resistance to disease and reduces its potential for evolutionary adaptation to changing conditions, which may be crucial given the impacts from both climate change and pollution. Moreover, the loss of locally adapted ecotypes could also result in decreased productivity of the system. Selective breeding can reduce genetic diversity as a result of genetic bottlenecks; this not only impacts on the fitness of cultured stocks, but genetically similar escapees from culture facilities and restocking programs can have a significant impact on the diversity in wild populations through interbreeding.

DNA barcoding and chip technology was proposed as a method to separate morphologically similar species, e.g. skate species. In the Yellow Sea, different species of skates command different prices, even though they look remarkably similar. Other important papers described the use of mitochondrial DNA for the separation of stocks. Fisheries management requires knowledge of the area used by each stock of commercial species in order to set exploitation levels that are sustainable.

One of the major problems facing cultured animals is the spread of disease; the identification of genes controlling disease response in scallops was described as a step towards the development of disease resistant stocks. Other researchers used *Amphioxus*, a possible ancestor of all chordates with a genome uncomplicated by extensive genetic duplication, in the study of the genetic control of development and disease response.

The final day was used to examine the threats to



genetic biodiversity, and the conservation measures necessary to preserve genetic diversity in the Yellow Sea. The main threats that specifically affect genetic diversity come from aquaculture as outlined above. Other threats that also affect biodiversity generally, come from pollution, over-harvesting and fishing, introduction of non-indigenous species and loss of habitat from reclamation and destructive fishing practices. Thus, for management, species and genetic diversity can be considered together as the threats and conservation measures are the same, with the exception of the threat from aquaculture. As the study of genetic diversity is relatively new and development of micro-satellite markers is expensive, there is insufficient data for most species to measure changes in heterozygosity that would indicate genetic degradation in wild stocks in the Yellow Sea. Lastly, the participants agreed that the study of genetic diversity could be aided by the compilation of a list of links to genetic data bases around the Yellow Sea that were not included in the more common genetic databases, such as that hosted by the IUCN. The Project Management Office would compile a list sent in by participants and construct a webpage that would be distributed to the participants' institutions. This will also be available on the project website in due course.



Some of the participants of the Gene Pool Workshop.



Ocean Colour  
Workshop 1

The "First YSLME Ocean Color Workshop" (YOC-1) was held on 4th June 2007 in Ansan, ROK. Scientists from China, ROK, and Japan gathered to examine available data to formulate or refine ocean colour algorithms for Yellow Sea turbid waters. Participants gave presentations showing the available data,

existing OC algorithms, current problems, and future directions. A working strategy was developed, where the currently scattered in-situ data sets would be merged and stored in a data server hosted by the PMO. These data are available for the scientists to download for validation of in-situ algorithm.

The YSLME PMO established an in-situ data sever which will be used exclusively by the Ocean Colour (OC) group members. "Exclusively" means each member has a personal ID to log in to the server site implemented by web technology. The site has user access policy for each account or group. All uploaded data are secure from other member's access before they agree to share the data. The overall control on the access to data is based on the decisions and agreement of OC members.

Considering characteristics of OC remote sensing and reliability of the in-situ parameters taken together with in-situ optical measurements, the OC-algorithms for retrieval of Chl-a (Chlorophyll-a), TSS (Total Suspended sediment), and CDOM (Colored dissolved organic matter) will be examined first. At a later stage of the activity, the OC atmospheric correction algorithm will be considered.

Two more workshops under this activity will be held to compare the validation results and to finalise the regional algorithm.



Participants of the First YSLME Ocean Color Workshop.





UNDP/GEF  
Yellow Sea  
Project Korea  
-China

## Symposium/Workshop on Sustainable Mariculture

The symposium was hosted by the West Sea Mariculture Research Centre, Taejeon, Republic of Korea (ROK) and beautifully organised by Dr. Jang In Kwon (18-19th June 2007).

More than a hundred scientists, mariculture farmers and policy makers listened to talks on "Aquaculture technologies for reducing environmental stress" covering polyculture experiences in ROK and China, fish culture seawater recirculation systems and open sea/deep sea cage culture. The afternoon session concentrated on "Best management practices for aquaculture" and included heterotrophic pond culture of shrimp, artificial food chain construction in pond culture, sustainable cage culture and advances in shellfish culture in ROK and China. On the second day, experts from both countries gave short presentations on the major obstacles to increased sustainability in mariculture in the Yellow Sea. The previously mentioned topics were revisited, and in addition, further presentations on best management practices for feeds and feeding and how mariculture scientists can contribute to the preparation of the Strategic Action Programme (SAP) for the Yellow Sea Large Marine Ecosystem were given. Scientists discussed the challenges faced by the industry and how these problems had been addressed on both sides of the Yellow Sea. The proceedings of the symposium/workshop, the presentations and the outcomes of the discussion are all available online at [www.yslme.org](http://www.yslme.org).



Left: Participants of the symposium. Right: Visit to mariculture facility in Taejeon.



First Yellow Sea  
Regional Science  
Conference  
(14-16 August  
2007)

Preparations for the First Yellow Sea Regional Science Conference are underway with the programme available online. The conference will consist of presentations focusing on the current knowledge of the ecosystem's provisioning, regulating, and cultural services. The papers will explain the status of the services with respect to fisheries, mariculture, biodiversity, pollution, and overall ecosystem structure and function. Papers will also provide scientific knowledge and suggestions on how to better manage the Yellow Sea in order for the ecosystem to continue providing its services. Both natural and social science topics will be presented, such as educational issues and public awareness and participation. The conference will allow scientists to exchange knowledge, learn experiences from other regions, and be updated on Yellow Sea's ecosystem status.

Abstracts have been received for oral and poster presentations.

The next newsletter will report on the conference's outcomes.







## The Project and Yonsei University sign MOU

To facilitate co-operation with a wide range of stakeholders, especially academia and youth, in March 2007, the Project signed a Memorandum of Understanding (MOU) with Yonsei University Graduate School of International Studies (GSIS). The MOU serves as a foundation to build and strengthen collaboration between the two organisations to promote conservation and sustainable use of marine and coastal resources in the Yellow Sea. The Project and GSIS agreed on future joint activities in organising voluntary internships, symposiums, and researches relevant and contributing to the protection of the Yellow Sea's ecosystem.

In line with the MOU, the Project and GSIS will organise the "Voluntary Internship Programme" in summer and autumn 2007. The Programme will provide university students with hands-on experiences in implementing Project activities. Students will have an opportunity to obtain the latest scientific as well as managerial information about the Yellow Sea, work with Project staff members to organise international conferences and workshops, and communicate with professionals and decision-makers who deal with marine ecosystem management. Through the Programme, it is expected that participants will develop a basic understanding of not only managing marine ecosystems in a sustainable manner, but also some procedures for implementing UN's international environment projects. The Voluntary Internship Programme 2007 will invite university students to the "Parliamentary Conference" to be organised in autumn 2007.



Staff and students from Yonsei University Graduate School of International Studies, PMO staff, and UNDP-Seoul representative.



## Regional Collaboration (NOWPAP DINRAC, GMA, MPP)

Collaboration of the Project with other partners continued with several important activities, which greatly enhanced co-operation and co-ordination among the partners. The Project Manager attended the 6th NOWPAP DINRAC Focal Points from 24 - 25 May 2007. Extensive discussions were held on potential co-ordination between the Project's GIS database and NOWPAP's regional activity centre on data and information. A Letter of Co-operation between the PMO of the Project and Regional Co-ordinating Unit of NOWPAP was signed during the meeting (see article on "Co-operation with NOWPAP").

In order to prepare a regional Assessment of Assessment (AoA) of Global Marine Assessment (GMA), an experts consultation meeting was organised in Hangzhou, China, with participation of the experts from PEMSEA, NOWPAP, IOC/WESTPAC and YSLME, together with a number of national experts from China. The meeting discussed the contents of the AoA, and the mechanism to prepare the document. A closer co-operation had been ensured through this process led by UNEP and UNESCO/IOC.

An international symposium entitled "Marine Peace Park, a Vehicle for the Cooperative Development of Transboundary Coastal Areas in East Asia" and the 2nd International Advisory Group (IAG) for the Marine Peace Park project were organised in Seoul, 20-22 June. As a member of IAG, the Project Manager attended the meeting together with members from IUCN, NOWPAP, and UNESCO. The meeting made valuable suggestions on further development of the marine peace park project. The Project Manager suggested that close co-operation between the Project and Marine Peace Park would maximise benefits to both projects. During the International Symposium, a presentation of YSLME was given to the symposium.

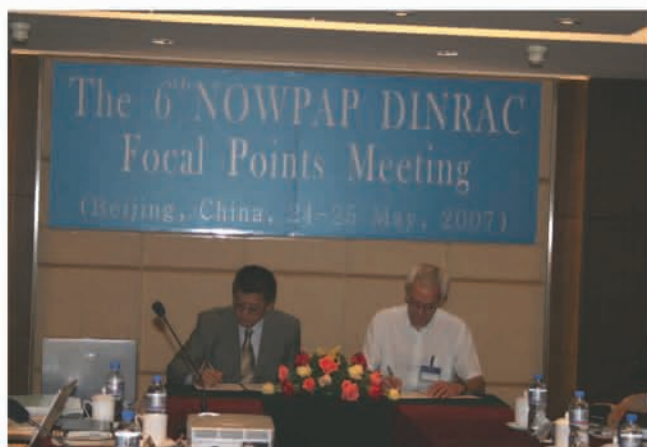




## Co-operation with NOWPAP

PMO strengthened co-operation with NOWPAP RCU through the signing of a Letter of Co-operation on 24th May 2007, in Beijing, China, during the 6TH NOWPAP DINRAC Focal Points Meeting.

The YSLME PMO and NOWPAP RCU agreed to form the Yellow Sea Environment Partnership for more effective co-operation in protection of marine and coastal environment, and sustainable use of marine and coastal resources in the Yellow Sea by identifying the potential areas for co-operation and co-operation mechanisms. These include sharing data and information, exchanging information on each other's activities, and participating in the meetings and workshops organised by each organisation. This co-operation is expected to contribute to broadening the partnership and lead initiatives for marine environment protection in the Yellow Sea region.



YSLME Project Manager and NOWPAP Co-ordinator, Dr. Alex Tkalin signing the Letter of Co-operation on behalf of the two organisations.



## PMO Gets New Office Again

On 7th June 2007, PMO moved to a new office within the KORDI Compound. PMO is now located in Research Building #3, room number 3113. The new office is bigger and brighter than the previous one because of many windows. There is enough space for the PMO to host 2 interns at the same time. All staff member are grateful to KORDI for providing a larger and brighter office space.

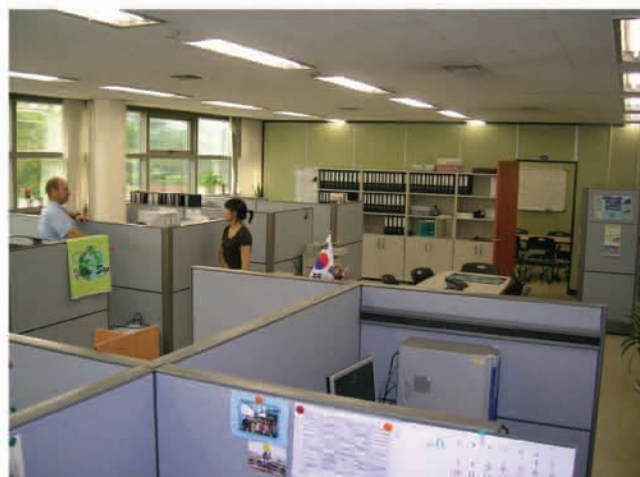
PMO also has a warehouse to store old documents and unused items, thus allowing more space in the new office.

Telephone numbers have not changed, but the new physical address is as follows:

Rm 3113, Bldg R3, KORDI Compound, 1270, Sa2-dong, Sangnok-gu, Ansan-si, Gyeonggi-do (426-744), R. Korea.

Once again, PMO would like to express appreciation to KORDI for providing a new office.

We invite everyone to visit PMO's new office.



Address: Rm 3113, Bldg R3, KORDI Compound, 1270, Sa2-dong, Sangnok-gu, Ansan-si, Gyeonggi-do (426-744), R. Korea.



## Kyungsuk returns as a mother

After 16 weeks of maternity leave, the Finance and Admin Assistant returned to work at the PMO. Kyungsuk says:

*Hello.  
I'm really happy to come back to my office.  
Am I looking exactly the same as I did before the  
baby? Yes? Thank all of you so much.*

*Last four months were great opportunity for me  
to be a stay-at-home mom with my son. I thank  
our PMO staff for the lovely time. My heart  
thrilled with joy when I met my son for the first  
time. And I felt I have made a significant  
contribution to the declining birth rate in Korea.*

*Actually I couldn't imagine how difficult it is to be  
a mom. But it's wonderful to watch my son  
playing with toys these days even though I  
couldn't sleep over 4 or 5 hours a day.*

*It might be extremely difficult for working women  
with baby to maintain a career. But I personally  
believe that women are an important asset. I'll  
do my best not only as a mom but also as a  
PMO staff to meet everyone's expectation.*



Kyungsuk with husband and son.

## Upcoming Events in 2007

Youth Programme	Dandong, China	Aug. 11 - 12
Regional Science Conference	Hangzhou, China	Aug. 14 - 16
SAP Ad-hoc2	Hangzhou, China	Aug. 18 - 20
Ocean Colour-2	Nagasaki, Jpn	Sep. 1 - 2
4th RWG Investment	Jeju, ROK	Sep. 4 - 7
Carrying Capacity wkshp	Rongcheng, China	Sep. 4 - 6
4th RWG Biodiversity	Soegwipo, ROK	Sep. 17 - 19
Intercalibration wkshp	Jeju, ROK	Oct. 8 - 10
4th RWG Pollution	Jeju, ROK	Oct. 11 - 13
Reg'l_Mariculture Disease	Busan, ROK	Oct. 8 - 12*
Parliamentary Cnfr.	Incheon, ROK	Oct. 12 -13*
VIP	Ansan, ROK	Oct. 17
Report Writing wkshp	Ansan, ROK	Oct. 22 - 23
4th RWG Fisheries	Soekcho, ROK	Oct. 29 - 31
4-RWG Ecosystem	Ningbo, China	Nov. 5 - 7
4 RSTP/PSC	China	Nov. 26 - 30
Ocean Colour-3	Sendai, Japan	Dec. 10 - 12
DIM	Qingdao, China	Dec. 10 - 11
Assesing Marine Env't Quality	China	Dec. 17 - 19*

\* Tentative



