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**UNDP/GEF PROJECT ENTITLED “REDUCING ENVIRONMENTAL STRESS IN THE  
YELLOW SEA LARGE MARINE ECOSYSTEM”**

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UNDP/GEF/YS/JC.1/7  
Date: 10 September 2005  
English only

**Technical Meeting for the Co-operative Study Cruises  
In the Yellow Sea Marine Basin  
For the UNDP/GEF Yellow Sea Project**  
*Qingdao, China, 17-18 October 2005*

**Consideration of the Observation and Sampling requirements  
Of the Ecosystem Component**

The following is a description of the observation and sampling considerations provided by the Ecosystem Component for the winter (January 4<sup>th</sup> – 24<sup>th</sup>, 2006) cooperative study cruise.

**1 Background**

Since early 1990's, there has been no survey in the Yellow Sea with basin-scale coverage. The inter-governmental talks on EEZ in the YS prohibited a basin-scale survey by a single nation during the past decade. The lack of basin-scale data makes it impossible to make an up-to-date assessment of the status of fisheries resources, ecosystem and biodiversity, and the health of the YS ecosystem. Such assessment forms the core of the YSLME project, and without appropriate assessment, a TDA and an SAP with good scientific basis may not possibly be produced. Ecosystem Working Group will participate in such surveys, aiming at providing up-to-date assessment of productivity and structure of the lower trophic of the Yellow Sea ecosystem.

**2 Materials and Methods**

- a. Make samples and experiments for bacterial productivity and abundance.**  
**Methods: water samples, incubation using radioactive tracers**

**Responsible persons:**

Zongjun Xu  
Xisheng Fang  
Jung Ho Hyun

- b. Make samples of microzooplankton.**

**Methods: water samples**

**Responsible persons:**

Eun Jin Yang  
Hyu Chang Choi

**c. Make samples and experiments for phytoplankton productivity and abundance.**

**Methods:** water samples, net samples, size-fractionated samples, pigment samples, incubation using radioactive tracers

**Responsible persons:**

Hongping Wang  
Ping Sun  
Xuelei Zhang  
Roh Seung Mok

**d. Make samples and experiments for zooplankton**

**Methods:** Bongo net, Chinese standard, Korean standard

**Responsible persons:**

Hongjun Song  
Heo Seung  
Shon Jae Kyoung

**3 Follow-up work**

- a. Estimate bacterial production
- b. Estimate phytoplankton production
- c. Analyze abundance of bacteria
- d. Analyze abundance of phytoplankton, pigments and taxonomic composition
- e. Analyze abundance of microzooplankton
- f. Analyze abundance of mesozooplankton and species composition
- g. Synthesize and assess the overall status of lower trophic level

**4 workplan**

**Activity 1 Meetings of National Working Group for Ecosystem**

Meeting 1: Discuss and agree on the detailed methods and sampling plan.  
Timeline: at least one month before the cruise

**Activity 2. Collecting samples and other information**

Conduct basin-scale surveys specifically targeting bacterioplankton, phytoplankton, zooplankton, and benthos

**Activity 3. Sample and data analysis**

Timeline: Within five months after the cruise

**Activity 4. Assessment of current productivity and structure in the lower trophic level**

Meeting 2: Synthesize the results from different levels and discuss how to make an overall assessment.

Timeline: Within seven months after the cruise

**5 Budget**

Budgeting is difficult if not impossible at this moment, because stations and survey items are not finalized. Also, since the contracts will be given to national institutes and each nation has

different ways of estimating budget, it might be more appropriate to handle the matter on a national contract basis.

## **6 Things to consider**

We have to consider who will do observation of some basic oceanographic parameters, such as CTD, transparency, light-transmission, and optic measurements.