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

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English only

**Second Meeting of the Regional Working Group  
for the Pollution Component**  
*Busan, Republic of Korea, 7 – 10 November 2005*

**Inter-calibration Exercise**

At the first two Regional Technical Meetings and the First Regional Working Group (RWG-P) Meeting – Pollution, members discussed and agreed on the importance to inter-calibrate methods and laboratory equipment to analyse pollutants. This would allow comparison of data from different sources, as well as stimulate better analytical performance of laboratories. Inter-laboratory exercises can also allow each participating laboratory to check the accuracy of his results.

During the first RWG-P Meeting, members finalised a list of parameters that they felt are the most important in the region, and should be tested in the inter-calibration exercise (table 1). Members from China further refined this list, and proposed the laboratories that intend to participate in this activity (Tables 2 and 3).

In the meantime, the PMO has begun discussions with agencies that can supply some of the reference materials. The International Atomic Energy Agency's (IAEA) Marine Environmental Studies Laboratory in Monaco has been contacted to gauge their interest in being contracted to implement this activity. A positive reply was received, but further discussions are needed to ensure that IAEA can supply all the required reference materials. Further discussions are contingent upon the agreement of RWG-P members on the parameters to inter-calibrate, and also on the tasks for this activity.

Thus, the outcomes of this agenda item are to:

1. Finalize the parameters to test and the list of laboratories to invite;
2. Finalize the TOR for this activity (draft attached as Appendix I); and
3. Provide recommendations on how and whom to contract for activity implementation.

Table 1. Prioritised parameters for inter-calibration exercise.

Medium	Target Pollutants	Korea	China	Regional	Priorities		
					Korea	China	Regional
Water	NO2	●	●	●	1	1	1
	NO3	●	●	●	1	1	1
	Ammonia	●	●	●	1	1	1
	Total dissolved N						
	Total particulate N						
	Total dissolved P						
	Phosphate	●	●	●	1	1	1
	Total particulate P						
	Silicates	●	●	●	1	1	1
Sediment	Trace metals	●	●	●	3	2	2
	PCBs	●	●	●	2	2	2
	OCPs	●	●	●	2	2	2
	PAHs	●	●	●	2	2	2
	Organotins	●	○	○	4	4	4
	Phenolic compounds	●	○	○	5	5	5
	PBDEs	●	○	○	6	6	6
	Organic carbon						
	Grain size						
	Oil	●	●				
Biota (bivalves)	Trace metals	●	●	●	3	2	2
	PCBs	●	●	●	2	2	2
	OCPs	●	●	●	2	2	2
	PAHs	●	●	●	2	2	2
	Organotins	●	○	○	4	4	4
	Phenolic compounds						
	PBDEs	●	○	○	5	5	5
	Lipid						

Note ● : Compulsory  
○ : Optional  
1 = high priority; 6 = low

Table 2. Detailed list of inter-calibration parameters in sediment from China side.

<b>Priority PAHs (16)</b>	<b>OCPs (16)</b>	<b>PCBs (10)</b>	<b>Heavy metals</b>
Naphthalene	Aldrin	CB 52	Cu
Acenaphthylene	Chlordane	CB 101	Pb
Acenaphthene	DDT and metabolites (4)	CB 105	Zn
Fluorene	Dieldrin	CB 110	Cr
Phenanthrene	Endrin	CB 118	
Anthracene	Heptachlor	CB 128	
Pyrene	Heptachlor epoxide	CB 138	
Benzo[a]anthracene	Hexachlorbenzene	CB 153	
Chrysene	Hexachlorocyclohexanes (4)	CB 180	
Benzo[b]fluoranthene	Pentachloronitrobenzene	CB 189	
Benzo[k]fluoranthene			
Benzo[a]pyrene			
Indeno[1,2,3-cd]anthracene			
Benzo[ghi]perylene			

Table 3. Proposed Labs on China Side for Inter-calibration Exercise.

Code	Organizations	Contact person	Phone/cell	Address	e-mail
1	National Marine Environmental Monitoring Center (NMEMC)	Dr. Yao Ziwei	86-411-84782505  13842696196	No.42, Linghe Street, P.O. Box 303, Dalian 116023 China	zwyao@nmemc.gov.cn
2	North China Sea Environmental Monitoring Centre, SOA	Prof. Cui Wenlin	86-532-85635692  13853223837	No.22, Fushum Road, Qingdao 266033 China	<a href="mailto:wenlin001@sina.com">wenlin001@sina.com</a>
3	East China Sea Environmental Monitoring Centre, SOA	Prof. Xu Ren	86-21-58675224  13311806070	No.630, Dongtang Road, Pudong New District, Shanghai 200137 China	xrhyp@163.com
4	The First Institute of Oceanography (FIO, SOA)	Dr. Wang Xiaoru	86-532-8963253  13573224907	No.6, Qixialing Road, Hi-tech Zone, Qingdao 266061, China	xrwang2003@yahoo.com.cn
5	Ocean University of China (OUC)	Prof. Wang Jiangtao	86-532-82031761  13605325850	No.5, Yushan Road, Qingdao 266003, China	<a href="mailto:jtawang@ouc.edu.cn">jtawang@ouc.edu.cn</a>

## Appendix I Draft Terms of Reference for Inter-Calibration of Pollutants

### 1. Background

In the approved Implementation Plan of the UNDP/GEF Yellow Sea Project, "Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem," one of the activities of the Pollution Component is a regional inter-calibration exercise between select laboratories that monitor and analyse pollution in the Yellow Sea. The parameters for inter-calibration were agreed by the members of the Regional Working Group-Pollution (RWG-P) at its first meeting (Qingdao, China, 6-9 April 2005).

**Geographic Scope:** The Yellow Sea Large Marine Ecosystem is defined in this Project Document as the body of water delineated at the south, by a line connecting the north bank of the mouth of the Chang Jiang (Yangtze River) to the south side of Cheju ; at the east, by a line connecting Cheju Island to Jindo Island along the coast of the ROK; and to the north, a line connecting Dalian to Penglai (on the Shandong Peninsula). This latter line separates the Bohai Sea from the Yellow Sea and as a result is not included in this study.

### 2. Description of Required Services

[Name of institution co-ordinating the activity], will be contracted to co-ordinate the inter-calibration activities of the participating laboratories. The activities to fulfil the task will include:

1. Identifying and inviting appropriate laboratories to participate in the inter-calibration exercises.
2. With assistance from the Project Management Office (PMO), obtain the inter-calibration standards and distribute to participating labs.
3. Co-ordinate and monitor the inter-calibration exercises of the participating laboratories.
4. Collect, collate, and synthesise the results of inter-calibration from the laboratories, for submission to the PMO and RWG-P. The report should contain an analysis of the results and recommendations for improvement and problem solving for future inter-calibration exercises.

#### Qualifications:

The incumbent to carry out this task should have the following qualifications:

- At least 20 years track record in the area of coastal and marine environmental management and/or research.
- Strong natural science background with knowledge of marine environmental pollution analytical techniques.
- Knowledge of regional laboratories working in analysis of pollutants.
- Well-versed in inter-calibration techniques.
- Appropriate academic qualifications and good interpersonal skills to liaise with the participating institutions.

### 3. Duration and Timing

The commissioned assignment should be carried out from November 2005 through March 2006, according to the following schedule:

<u>Task</u>	<u>Deadline</u>
Contract signature	November 2005
Identify and contact labs to participate	November 2005
Obtain the inter-calibration standards and distribute to participating labs	November 2005
Inter-calibration exercises	November – December 2005
Progress report on status of calibration exercises	31 December 2005
Final synthesis report and financial statement submitted to UNOPS	31 March 2006

### 4. Monitoring/Progress Control

The PMO will assume overall supervision and co-ordination of this task. Programmatic guidance should be sought from the Project Manager, Mr. Yihang Jiang ([yihang@yslme.org](mailto:yihang@yslme.org)), copied to Ms. Connie Chiang ([connie@yslme.org](mailto:connie@yslme.org)) at the Yellow Sea PMO. All deliverables should be submitted to Ms. Connie Chiang.

### 5. Expected Outputs/Results

The final product should be a report following the “suggested table of contents” as listed below.

A progress report should be submitted to the PMO by 31 December 2005 to enable both parties to monitor the progress of the task, and assist where necessary, in completing the final task. Three copies of the final report should be submitted to the Yellow Sea Project Management Office by 31 March 2006.

### 6. BREAKDOWN OF COSTS (USD)

<<To be given by proponent>>

#### SUGGESTED FINAL REPORT TABLE OF CONTENTS

- I. Background of assignment
- II. Methods used to carry out assignment
- III. Results of inter-calibration from each laboratory
- IV. Assessment and synthesis of results
- V. Recommendations for any encountered problems and improvements for future calibration exercises