

5th Technical Meeting for the Co-operative Cruise
10th to 12th June 2008
Yantai, China

Summary Report

1. The “5th Technical Meeting for the Co-operative Cruise” was held to report on Winter 2008 Co-operative Cruise results, and to discuss and finalise the pre-, post-, and during cruise agreements for the 2008 Summer Co-operative Cruise.
2. Mr. Yihang Jiang, Project Manager, opened the meeting, and informed participants on the meeting’s objectives, namely the reporting of winter cruise results and summer cruise preparations. Mr. Jiang also reminded the participants of the agreement by the governments on the co-operative cruises through the MoA, including sampling stations, parameters to be surveyed, and the data sharing.
3. Each group – Chemicals, Benthos, Biology – reported on its results from the winter co-operative cruise. A plenary discussion was held on the results, and suggestions for solving data discrepancies and further inter-comparison were given (working group reports are attached in [Annex I](#)).
4. There was a brief discussion held on how to report the winter cruise results as a group report. It was agreed that all results should be contained in the regional report, as well as comparison of results to historical data (where possible). Wherever possible, the illustration of results in a basin-wide map would be done.
5. The list of participants is attached as [Annex II](#).
6. **The agreements from the Meeting are as follows:**
 - Ship time – 22 days summer cruise, 37 stations
 - Summer Cruise dates – 29th July to 19th August 2008
 - Relevant budget items should be calculated based on 22 days
 - Scientists participating in the Summer Cruise should arrive Qingdao on 26th July 2008
 - 26-28 Jul. 2008 – familiarization and preparation of the research vessel
 - Chief Scientists – Dr. Wang Zongling from China, Dr. Yang Eun Jin from Republic of Korea
 - SOA North Sea Branch (SOA NSB) will assist with local transport from Qingdao hotel to Qingdao port; will book hotel in Qingdao for pre-cruise nights (26th to 27th Jul. 2008). The night of 28th July will be spent on the research vessel.
 - Customs clearance: All groups will ship their equipment to Qingdao well ahead of time for customs clearance. Provide list of equipment to Prof. Zhu Mingyuan (zhumingyuan@fio.org.cn) to facilitate customs clearance, copy all correspondence to Ms. Connie Chiang (connie@yslme.org).
 - Samples to take back to R.O Korea will undergo the same arrangements as those used for Winter Cruise 2008 samples

- Agreed personnel, responsibilities, etc. are attached in [Annex III](#).

Regional report:

- Chief scientists are responsible to produce the report, and will submit to 5th RWG-P and 5th RWG-E Meetings for comments.
- FIO will produce a base map for all groups to use - Zhang Xuelei will provide the map to PMO for distribution.
- Use Surfer software to make all graphics
- Plankton results – each net's results should be shown on its own graphic
- Chemical results – show in basin-wide maps
- All raw data are to be exchanged – give to PMO by 21 June 2008 for distribution.
- Open all data before project ends at the end of 2009.

The workplan for Winter Cruise reporting is attached as [Annex IV](#).

Annex I

Report of Data Discrepancies and Suggested Solutions

Biology Group

data	differences (Pattern/numbers)	sampling differences	analytic differences	interpretation	translation /synthesis	solution to reduce discrepancies
heterotrophic bacteria	no good relationship		flowcytometry vs. microscopy			--
cyanobacteria	good relationship					--
phytoplankton density (cell number; water sample)	among 57 samples, 46 are comparable, 3 has > 500% RE, 8 < 100%		possibly by cryptomonads and propocentrum identification			Making HPMA slides; cells < 5um
phytoplankton species diversity (water sample)	difficult to compare, data are not exchanged fully					further data comparison (Chinese data --> Korea)
phytoplankton species composition (water sample)	discrepancies in cryptophytes and prorocentrum sp.	no difference	similar shape and size, errors in identification			Making HPMA slides

data	differences (Pattern/numbers)	sampling differences	analytic differences	interpretation	translation /synthesis	solution to reduce discrepancies
mesozooplankton abundance	patterns: Chinese 505 data has North-south gradient; Chinese 150 data has NW-->SE gradient; Korean data has the maximum in NE sts.	mesh size was different; towing methods same		size fraction are different	differences are mainly due to 150-330, 330-505 fraction	check abundance list; check if the data are additive (Chinese data --> Korea)
mesozooplankton biomass	patterns: Chinese 505 data show some similarity with Korean data (K data has maximum NE); Chinese 150 data are different, max at H3	mesh size was different; towing methods same		size fraction are different	differences are mainly due to 150-330, 330-505 fraction	check abundance list; check if the data are additive (Chinese data <--> Korea)

Benthos Group

- Will check the data again
- Will check again the weighing and some sample contents
- Will exchange taxonomic references used by each country

Chemicals Group

- Will re-check the data to determine the differences
- Inter-comparison of samples from 5 stations to be analysed on-board should be done with scientists from both sides present to determine any difference in analytical methods

Annex II

List of Participants

PARTICIPANTS

Mr. BANG Jaehyun

Hanyang University
1271 Sa 1-dong, Sangnok-gu Ansan-si
Gyeonggi-do 426-744
Republic of Korea
Tel: 82-31-400-4158
Fax: 82-31-408-4493
Email: log555@hanmail.net

Mr. CHOI Joong Ki

Professor
Department of Oceanography
Inha University
253 Younghyun-dong, Namgu
Incheon 402-751
Republic of Korea
Tel: 82-32-860-7704
Fax: 82-32-874-2023
Email: jkchoi@inha.ac.kr

Ms. LEE Young Ju

Department of Oceanography
Inha University
253 Younghyun-dong, Namgu
Incheon 402-751
Republic of Korea
Tel: 82-32-860-7704
Fax: 82-32-874-2023
Email: polykrikoides@hotmail.com

Ms. LI Ruixiang

Research Professor
First Institute of Oceanography, SOA
6 Xianxialing Road, Hi-Tech Industrial
Park Qingdao, Shandong 266061
Tel: 86-532-8896-7451
Fax: 86-532-8896-7447
Email: liruixiang@fio.org.cn

Mr. SON Daesun

Marine Ecology Team/Assistant Manager
ECOCEAN Co., Ltd.
503, Industrial Technology R&D Center
7-27, Songdo-Dong, Yeonsu-Gu
Incheon 406-840
Republic of Korea
Tel: 82-32-260-7473; 82-11-9885-4315
Fax: 82-32-260-7470
E-mail: dsson@ecocean.co.kr

Mr. SONG Sung Joon

General Manager
Marine Ecology Team Leader
ECOCEAN Co., Ltd.
Room 101-403, 503
Industrial Technology R&D Center
7-27, Songdo-dong, Yeonsu-gu
Incheon 406-840
Republic of Korea
Tel: 82-32-260-7463 : 82-16-688-0787
Fax: 82-32-260-7470
E-mail: sjsong@ecocean.co.kr

Mr. Wang Juncheng

Science and Technology Department
North China Sea Branch of SOA, (NCSB, SOA)
22 Fushun Road
Qingdao, China 266033
Tel: 86-532-8563-5406
Fax: 86-532-8561-4742
E-mail: wjuncheng@163.com

Mr. WANG Zongling

Research Professor
First Institute of Oceanography, SOA
6 Xianxialing Rd
Qingdao, China 2660061
Tel: 86-532-8896-7447
Fax: 86-532-8896-7548
Email: wangzl@fio.org.cn

Mr. WEN Quan

SOA Key Lab of Coastal Ecosystem and
Environment Research
National Marine Environment Monitoring Centre
42 Linghe Street
Dalian 116023
China
Tel: 86-411-8478-2522
Fax: 86-411-8478-2522
Email: qwen@nmemc.gov.cn

Mr. YAO Ziwei

National Marine Environmental Monitoring
Center
42 Linghe Street
Dalian 116023
Tel: 86-411-8478-2526
Fax: 86-411-8478-2522
Email: zwyao@nmemc.gov.cn

Mr. ZENG Demei

Director, Senior Engineer
Science & Technology Division
North Sea Branch of SOA
22 Fushun Road, Qingdao 266033
China
Tel: 86-532-8562-5513 (213)/ 8563-5406
Fax: 86-532-8562-1244 / 8563-5406
Mobile: 86-139-5320-2937
Email: Zengdemei@163.com

Mr. ZHANG Zhaohui

Department of International Co-operation
State Oceanic Administration
1 Fuxingmenwai Avenue
Beijing 100860
China
Tel: 86-10-6801-9791
Fax: 86-10-6804-8051
Email: zhang@fio.org.cn

Mr. YANG Dong Beom

Principal Research Scientist
Korean Ocean Research and
Development Institute
1270 Sa-dong Sangnok-gu Ansan-si
Gyeonggi-do 426-744
Tel: 82-31-400-6157
Fax: 82-31-408-4493
Email: dbyang@kordi.re.kr

Mr. YOO Sinjae

Senior Research Scientist
Marine Living Resources Research
Division
Korea Ocean Research and Development
Institute
1270 Sa-dong Sangnok-gu Ansan-si
Gyeonggi-do 426-744, Republic of Korea
Tel: 82-31-400-6221
Fax: 82-31-408-5934
Email: sjyoo@kordi.re.kr

Mr. ZHANG Xuelei

Professor
First Institute of Oceanography, SOA
6 Xianxialing Road Hi-Tech Industrial Park
Qingdao, Shandong 266001
China
Tel: 86-532-8896-7476
Fax: 86-532-8896-7548
Email: zhangxl@fio.org.cn

Mr. ZHU Mingyuan

Professor
First Institute of Oceanography, SOA
6 Xianxialing Road Hi-Tech Industrial Park
Qingdao 266061
China
Tel: 86-532-8896-7447
Fax: 86-532-8896-7447
Mobile: 86-136-0898-3422
Email: zhumingyuan@fio.org.cn

PROJECT MANAGEMENT OFFICE

Mr. Yihang JIANG

Project Manager
UNDP/GEF Yellow Sea Project
Korea Ocean Research and Development
Institute
1270 Sa-dong Sangnok-gu Ansan-si
Gyeonggi-do 426-744
Republic of Korea
Tel: 82-31-400-7825
Fax: 82-31-400-7826
Email: yihang@yslme.org

Ms. Connie CHIANG

Environment Officer
UNDP/GEF Yellow Sea Project
Korea Ocean Research and Development
Institute
1270 Sa-dong Sangnok-gu Ansan-si
Gyeonggi-do 426-744
Republic of Korea
Tel: 82-31-400-7833
Fax: 82-31-400-7826
Email: connie@yslme.org

Mr. Sungjun PARK

Admin. & Finance Officer
UNDP/GEF Yellow Sea Project
Korea Ocean Research and Development
Institute
1270 Sa-dong Sangnok-gu Ansan-si
Gyeonggi-do 426-744
Republic of Korea
Tel: 82-31-400-7828
Fax: 82-31-400-7826
Email: sungjun@yslme.org

Annex III

Agreed Personnel, Responsibilities

On-board Scientists

ID	COMPONENT	NATIONALITY	NAME	Confirmed	Gender	RESPONSIBILITY /FUNCTION	INSTITUTE	POSITION IN INSTITUTE	INSTITUTE ADDRESS	TEL	EMAIL
				-	-	-	-	-	-	-	-
1	Pollution	Korea	RA Kong Tae	confirmed	Male	scientist	Hanyang Univ	scientist	Hanyang University, Sa 3-dong, Ansan-Shi, Gyeonggi-Do, 426-791, Korea	010-3278-8088	ktra75@hotmail.com
2			BANG Jae Hyun	confirmed	Male	scientist	Hanyang Univ	scientist	"	011-9797-3724	jhbang@kordi.re.kr
3		China	Mr. NA Guangshui	confirmed	Male	Chemist	NEMEMC	Analytical Engineer	Central Measurement Lab, NMEMC, No.42, Linghe Street, Dalian 116023	86-411-8478-2507	gsna@nmec.gov.cn
4			Mr. HE Guangkai	confirmed	Male	Chemist	NEMEMC	Analytical Engineer	"	86-411-8478-2507	gkhe@nmec.gov.cn
5			Ms.CHEN Sumei	confirmed	Female	Chemist	NEMEMC	Senior Engineer	"	86-411-8478-2586	smchen@nmec.gov.cn
6			Mr. JIN Hongtai	confirmed	Male	CTD operation	NEMEMC	Senior Engineer	"	86-411-8478-5715	
1	Eco	China	WANG Zongling	confirmed	Male	Co-Chief Scientist	FIO,SOA	Researcher	6 Xianxialing Road, Hi-tech Industrial Park, Qingdao, 266061, China	86-532-8896-7447	zhumingyuan@fio.org.cn ; wangzl@fio.org.cn
2					Male	all sections; sediment core,	FIO,SOA	Associate Professor	"	86-532-8896-	zhangxl@fio.org.cn

ZHANG Xuelei confirmed

					benthos & CPR		Researcher		7476	
3		WANG Hongping		Male	Water sampling & productivity	FIO,SOA	Researcher	"	86-532-8896-7476	
4		XU Zongjun		Male	Bacteria/primary productivity, CPR	FIO,SOA	Researcher	"	86-532-8896-7476	xzj@fio.org.cn
5		PU Xinming		Male	Net sample, CPR	FIO,SOA	Associate Professor Researcher	"	86-532-8896-7476	xmpu@fio.org.cn
6		SUN Ping		Female	pigments	FIO,SOA	Researcher	"	86-532-8896-7476	
7		XU Qinzeng		Male	Benthos	FIO,SOA	Researcher	"	86-532-8896-7476	
8	Korea	Yang, Eun Jin	confirmed	Female	Microzooplankton grazing	KORDI	Researcher	1270 Sadong Sangnokgu Ansan Kyunggido 423-744 Korea	82-32-400-7722	ejyang@kordi.re.kr
9		KIM, Sun Young	confirmed	Female	Bacteria production/microzooplankton	INHA UNIVERSITY	Researcher	Dept of Ocean. , 253 Younghyundong, Namgu Incheon 402-751 Korea,	82-32-860-7704	osd21st@hotmail.com
10		Lee, Young Joo	confirmed	Female	all section/Primary production/Pigments	INHA UNIVERSITY	Researcher	Dept of Ocean. , 253 Younghyundong, Namgu Incheon 402-752 Korea,	82-32-860-7704	polykrikoides@hotmail.com
11		Seo, Ji ho	confirmed	Male	Zooplankton grazing/Net sampling/benthos sampling	INHA UNIVERSITY	Researcher	Dept of Ocean. , 253 Younghyundong, Namgu Incheon 402-753 Korea,	82-32-860-7704	sjh1211@nat.e.com
12		Jeon, Suk Jin	confirmed	Male	All section/net sampling	INHA UNIVERSITY	Researcher	Dept of Ocean. , 253 Younghyundong, Namgu Incheon 402-754 Korea,	82-32-860-7704	wjstjrws@hotmail.net

Ecosystem Equipment

	bacteria		nano-microzooplankton			phytoplankton					Zoo-plankton	Remarks
	abundance	production	abundance	grazing	Respiration	abundance/ water sample	net sample	pico/size fraction/CHL	HPLC	production	net sample	
# stations												
Inter-comparison stations												
who (Chinese)												
who (Koreans)	EJ Yang, SY Kim	EJ Yang, SY Kim	EJ Yang, SY Kim	EJ Yang	EJ Yang	YJ Lee, SJ Jeon	SJ Jeon, JH Seo	SJ Jeon	YJ Lee	YJ Lee	SJ Jeon, JH Seo	
equipments (China)	filtering apparatus						77um net	filtering apparatus	filtering apparatus, liquefied N storage		Chinese plankton Net (150, 505 um)	
equipments (Korea)	filtering apparatus	incubator	500 bottle	1L bottle, incubator	1L bottle, incubator	500 bottle	net (20um)	filtering apparatus (vacuum pump)	filtering apparatus	incubator, filtering apparatus	NORPAC 330um net	
Expend-ables (China)	200 vials, 200 filters, presser-vatives		200 vials, glycer-aldehyde			240 bottles, preservatives	60 bottles, presser-vatives	200 vials, 200 filters (5um) (GFF), screen (20um), preservatives	200 filters (GFF)	100 filters (GFF), C14	60 plastic bottles, formalin	

	bacteria		nano-microzooplankton			phytoplankton					Zoo-plankton	Remarks
	abundance	production	abundance	grazing	Respiration	abundance/ water sample	net sample	pico/size fraction/CHL	HPLC	production	net sample	
expendables (Korea)	20ml vials, 25mm filters, preservatives, Incubation set	thymidine, 50ml bottle, Filter set and vacuum pump	gultaradehyde , Lugol's solution, Boiun's solution	Peristatic pump, Incubation set (2set)	DO sensor	Filter set and vacuum pump	Plankton Net (20um mesh) : 2 set	Liquid nitrogen tank	3 pump required, ROK: HPLC, Liquid nitrogen tank	Filter set and vacuum pump, Incubation set, Water bath circulator, Photometer , Scalarmeter	Norpac net (2 set), 700 plastic bottles 60ea, formalin, Norpac net (2 set), 300 um small Zooplankt on net (1 set) for live	

Pollution Group Sampling Regimen

<u>ITEM</u>	<u>FORM</u>	<u>PURPOSE</u>
TOC	Filter	Measurement of TOC (total organic carbon)
nutrients	20ml seawater	Measurement of nutrients
PAHs, PCBs, OCPs	Organic solvent(100-250ml)	Analysis of PAHs, PCBs and organochlorine pesticides (OCPs)
	Filter Cartridge	Analysis of PAHs, PCBs and organochlorine pesticides (OCPs)
	Resin column	Analysis of PAHs, PCBs and organochlorine pesticides (OCPs)
Heavy metals	500-1000ml seawater	Analysis of Cu, Pb, Zn, Cd, Cr
Hg	250-1000ml seawater	Analysis of Hg
As	250-1000ml seawater	Analysis of As
PCBs, PAHs, OCPs, metals, TOC, TN, TP, grain size	250-500 g sediment	Analysis of PCBs, PAHs and OCPs

Annex IV

Workplan for Winter Cruise Reporting

<u>Task</u>	<u>Deadline</u>	<u>Responsible</u>
Submit all raw data to PMO	20 Jun 08	all groups
Distribute working map	20 Jun 08	Xuelei
Submit each component report to PMO for forwarding to chief scientists	18 Jul 08	all groups
Overall report	31 Aug 08	chief scientists
Discuss report at 5th RWG-E, P Meetings	23-25 Sept / 8-10 Oct 08	PMO and RWG members