

CCOP-DANIDA
Institutional Capacity Building Project ICB-CCOP1
1st Malaysia Workshop on Sulu Sea – East Sabah Basin & Yinggehai
– Song Hong Basin Case Study
Field Study in the Eastern Sabah
February 26 – March 5, 2006, Sabah, Malaysia

Report on proceedings and discussions at the Workshop

Date and Venue:

The workshop was held in Sandakan, Sabah, Malaysia from 27th to 28th February 2006 at the Sabah Hotel, Sandakan, Sabah Hotel, Address: KM 1, Jalan Utara, P.O. Box 275 90703 Sandakan, Sabah, Malaysia
Tel: (6089) 213 299, Fax: (6089) 271 271
Website: www.sabahhotel.com.my
E-mail: sbhhtlsm@streamyx.com
Local Organizer: Petronas

Participants:

Thirty-one participants from 8 CCOP Member Countries, Cambodia, China, Indonesia, Korea, Malaysia, The Philippines, Thailand, Vietnam and Denmark attended the workshop, detailed list of participants is attached as Annex 1.

The represented agencies/institutes were:

- ❖ Cambodian National Petroleum Authority (CNPA), Cambodia
- ❖ Qingdao Institute of Marine Geology (CGS, Qingdao), China
- ❖ Guangzhou Marine Geological Survey (CGS, Guangzhou), China
- ❖ China National Offshore Oil Corporation (CNOOC), China
- ❖ Research and Development Center for Oil and Gas Technology “LEMIGAS”, Indonesia
- ❖ Korea Institute of Geoscience and Mineral Resources (KIGAM), Korea
- ❖ Petronas, Malaysia
- ❖ Department of Energy (DOE), Philippines
- ❖ Department of Mineral Fuels (DMF), Thailand
- ❖ Vietnam Petroleum Institute (VPI), Vietnam
- ❖ Minerals and Geoscience Department Malaysia, Sabah (JMG), Malaysia
- ❖ Geological Survey Denmark & Greenland (GEUS), Denmark
- ❖ Royal Danish Embassy in Malaysia, Denmark
- ❖ CCOP TS

Agenda:

The detailed agenda of the workshop is provided as Annex 2.

Background and Purpose of the Workshop:

The ICB-CCOP1 1st Malaysia Workshop and Field Study is a planned workshop and field study. It is the first activity involved in all CCOP member countries during the ICB-CCOP1 Project implementation stage. The Petronas, one of our partner institutions took the responsibility of the local organizer. They did lots of preparing work for it, including workshop venue inspection and pre- reconnaissance for field study.

The workshop was planned to focus on the following objectives:

1. To build confidence between the Malaysian and Philippine, Chinese and Vietnamese research teams collaborating in the case study;
2. To present the current understanding and challenging issues in Sulu Sea-East Sabah Basin and Yinggehai—Song Hong Basin (including the review of E&P activities, successful experiences, current status, and potential challenges) by Malaysian, Philippines, Vietnamese and Chinese sides;
3. To find the common geoscientific interests and the expected outputs from the cooperation case-study based on discussion of the current unsolved issues;
4. Discussions and agreement on the appropriate geological and geophysical data to be made available for the implementation of the case-study
5. To discuss the methodology and the data for correlation;
6. Set up the agreed case study cooperation work plan in detail.

Record of the Proceedings and Discussions at the Workshop:

Secretary to Office of Director of CCOP Technical Secretariat, Ms Sansanee Wudhiwanich representing CCOP Technical Secretariat, served as the toastmaster of the opening ceremony held during the first morning.

Mr. Robert Wong Hin Fatt, Senior Manager, Petroleum Management Unit, PETRONAS gave his welcome speech on behalf of local organizer. He gave his warm welcome to all participants to this workshop and field study. He also gave a brief reviewing on the ICB-CCOP1 Project since the inception phase meeting which was held in May 2005 in Bangkok. The implementation of the project will benefit the cross-border partners to share the existing knowledge and experience. He expressed his sincere appreciation and thanks to both the Danish Government for supporting the ICB-CCOP1 Project and to CCOP Technical Secretariat for their assistance to hold this activity in Sabah, Malaysia. He gave also his best wishes for the success of the workshop (Annex 3 Mr. Robert Wong Hin Fatt's speech).

Mr. Alexander Yan Sze Wah, Director of Minerals and Geoscience Department, Sabah, Malaysia, on behalf of Mr. Yunus Abdul Razak, Permanent Representative of Malaysia to CCOP, delivered his valuable welcome speech and conveyed his warmest welcome to all participants. He is not only just briefly introduced the geology of Sabah, but also the beautiful natural scenery and the historical sites of Sabah. These helped the participants to understand more about the natural beauty, history, culture and custom of eastern Malaysia besides geoscientific scope. His speech promoted the cultural diversity within the CCOP Member Countries, enhance the relationship between Malaysia and other CCOP Member Countries, last but not the least, it conveyed the local the hospitality of Malaysia.

H.E. Mr. Borge Petersen, Ambassador, Ambassador Extraordinary and Plenipotentiary of Denmark to Malaysia and the Philippines gave his welcome address. He said that he was indeed honored to be invited to address the opening of this important workshop and field study in relation to the Institutional Capacity Building under the CCOP. He emphasized that the project is not only important for promoting the economic development but also for enhancing and strengthening the regional cooperation in the area and peacefully utilize the hydrocarbon in the specific cross-border area. He also mentioned Royal Danish Government has successfully supported Malaysia in environmental issues in the past decade before supporting the ICB-CCOP1 Project. He would like to mention that the environmental impact factor should be taken a serious consideration regarding the activities of petroleum industry. He also congratulated the CCOP Member Countries for taking the initiative to develop this regional network of decision makers and experts within oil, gas and mineral sectors. (Annex 4 H.E. Mr. Borge Petersen's speech).

In the following, Mr. Chen Schick Pei, Director of CCOP TS gave his welcome address on behalf of CCOP. He extended a warm welcome to 31 participants from 10 nations. He highlighted that the implementation of the ICB-CCOP1 Project. Besides the geoscientific aspects of the project, it has great significance in promoting cross-border understanding and cooperation that can contribute to building trust and confidence, and promoting close cooperation among CCOP Member Countries. He also would like to highlight several new CCOP milestones marking regional cooperation that have been made by the ICB-CCOP1 Project. It is the first time that a cross-border case study has been agreed to be jointly conducted by the neighboring countries. Although the initial idea of the project for the case study was to use available public information, with the excellent cooperation, trust, and understanding, all the case study host countries have agreed to go one step further by considering the use of some important data that are the propriety of the national oil companies and other concerned government agencies. He also expressed his sincerely thanks to the Royal Danish Government's generous support for this project, Petronas' support for this activity and Project Coordinator and CCOP TS staff's hard work for carrying out this activity. Finally, he expressed his best wishes for the success of the workshop (Annex 5 Mr. Chen Schick Pei's speech).

After the opening ceremony, the workshop continued with a presentation of updated information about the ICB-CCOP 1 Project since entering the implementation phase by Mr. Liu Liqun, who

gave also a status on the current progress of the project. He briefed the work plan of 2006 and 2007. The case study research plan and activity schedule have been highlighted.

After the presentation, all the participants took the group photo together.

In the afternoon, Mr. Awalludin Harun from Petronas as one of research team members of Sulu Sea-East Sabah basin case study, made the presentation on the current achievement of the case study from Malaysia side. They interpreted the 4 major horizons i.e. seabed, Upper Miocene, Mid-Miocene and basement and compiled the depth structure maps of seabed, Upper Miocene, Mid-Miocene and basement. Now, they are doing the seismic sequence stratigraphy analysis on line SB30604-06.

Subsequently, Mr. Redentor D. Pascual from Department of Energy, Philippines and his colleague Ms. Isabel Adjani B. Nicolas reported the case study progress in Philippine side. Their presentation covered by the following topics:

- ❖ Sulu Sea Structural Province and Tectonic Setting of Sulu Sea Basin
- ❖ Sedimentation History of Sulu Sea Basin
- ❖ Tectonic History of the Basin
- ❖ Structural Geology of the Basin
- ❖ Regional Structural Trend Analysis and Geologic Mapping
- ❖ Regional maps of Middle and Upper Miocene unconformities
- ❖ Regional map of basement including structures
- ❖ Regional geo-seismic sections (offshore)
- ❖ Work Plan
- ❖ Publication of the Past Activities
- ❖ Award of Research Grants
- ❖ Petroleum Systems Analysis

Dr. Cai Feng, from Qingdao Institute of Marine Geology, under his capacity of National Coordinator of China to ICB-CCOP1 Project, gave a report on the research progress of the project from Chinese side. He reported the progress on the project implementation, project current achievements, work plan and requirement for case study. He briefly reviewed the activities on the Yinggehai-Song Hong basin case study, he also showed the new conducted the map of free air gravity abnormality, the map of Bouguer gravity abnormality and the depth map of the basement of Yinggehai-Song Hong basin. The interpretation of selected seismic cross sections from Chinese side and the relevant time-depth velocity curve have been done which are ready to correlate and merge with another half counterpart from Vietnamese side. Then, he focused on the implementation of the Yinggehai-Song Hong basin work plan which was agreed during the ICB-CCOP1 Project 1st Vietnam workshop in December 2005. He emphasized the research team of the case study from China would like to work efficiently according to the agreed work plan and carry out the output in time. He introduced the forth coming on shore field trip activities in the Chinese side and the Vietnamese side of the Yinggehai-Song Hong basin which will be kindly sponsored by China and Vietnam. Finally, he presented his geoscientific interests and challenging issues on the Yinggehai-Song Hong basin case study, especially on

reservoir evaluation and CO₂.

Following the Dr. Cai's presentation, Dr. Nguyen Trong Tin from Vietnam Petroleum Institute, National Coordinator of Vietnam to ICB-CCOP1, reported that the work on the Vietnamese side was conducted according to the work plan. His presentation included a brief description of the exploration history within the Vietnamese sector of the case study area. He referred also to the structural set up, lithostratigraphy and potential petroleum system. The map of residual Bouguer gravity, the map of Bouguer gravity, the map of RTE magnetic anomaly, four structural maps (Top Lower Miocene, Top Middle Miocene, Top Miocene, and Top Oligocene) and one structural elementary map of the Yinggehai-Song Hong basin Vietnamese part were presented. In addition, one gravity model cross-section map, one geological cross-section and stratigraphic column of the basin were shown too. He also dissertated the current understanding of the petroleum system(s) of Yinggehai-Song Hong basin, including source rock and kerogen type, reservoir types and seal. Finally, he proposed implementation of work plan during this workshop including:

- ❖ Data correlation: Vietnam-China case study: including Maps (data base, structure, tectonic, gravity, magnetic), Seismic sections (selected 3 connected lines), Lithostratigraphic column (selected 12 key wells);
- ❖ Basin tectonic evolution report;
- ❖ Petroleum system;
- ❖ Play analysis, etc.

After the presentation, the participants divided into two groups basined on the two case studies. The Indonesia, Malaysia, Philippines and Thailand worked together in one group on Sulu Sea-East Sabah basin case study. The Cambodia, China, Korea and Vietnam composed another group discussed on Yinggehai-Song Hong basin case study.

During the discussions the geoscientists from CCOP Member Countries exchanged a series of questions and answers and they initiated their efforts in establishing a common workflow for the case studies.

The Sulu Sea-East Sabah basin group made discussion on the available data preparation, common scientific interests and expected outputs through this case study. This is the first time to let the research group members from Malaysia and Philippines, two case study host countries, work together since the inception phase meeting of the ICB-CCOP1 Project in May 2005, in Bangkok, Thailand. They worked hardly and discussed until late night. They worked together seriously and hardly on picking the available seismic lines and wells as the input for the case study. They expected to have another opportunity to work together with available data which was figured out by the discussion.

The group people of Yinggehai-Song Hong case study, gathering in another meeting room, the research team members from China and Vietnam worked together on how to merge their research output. Since they met each other twice after the inception phase meeting for data preparation, most of the work during this workshop are focused on correlation and merging of the current

achievement from their partners. They also made a maneuverable plan for carrying out the on shore field study of Yinggehai-Song Hong basin in China and Vietnam, which is kindly supported by the Chinese and Vietnamese institutes.

In the morning of second day of workshop, two group people went back to one meeting room, they started to present their finding through the workshop discussion. Mr. Zulhaimi Bin Abdulrahman, geoscientist from Petronas, research team member, made the presentation on the workshop finding of Sulu Sea-East Sabah group. They agreed to four conjunction seismic lines and 7 wells for case study. The guidelines are described as follow:

Deliverable jobs

- ❖ Common TZ curve for depth maps
- ❖ Gravity-Magnetics maps of each country with interpretation
- ❖ Synchronize biostratigraphy control for seismic horizons (Upper Miocene, Mid-Miocene & basement)
- ❖ Each host country will search their database for biostratigraphic analysis and basement dating
- ❖ Geochemistry data search (in file)
- ❖ Merging Maps - Kingdom VS Landmark: Zmap Plus
- ❖ Onshore to offshore cross section. To be decided based on available data from both side

Project Guidelines

- ❖ Maps Projection System: WGS84 Zone 50 (Philippines) & WGS84-Zone 49 (Malaysia).
- ❖ Standardize color schemes
Basement (*20.5Ma): Purple
Middle Miocene Unconformity (15.5Ma/TB2.6): Orange
Upper Miocene Unconformity (8.6Ma/TB3.2): Yellow
Top Pliocene (2.0Ma/TBxx): Green
Seabed: Light Blue
Faults: Red
(*Numbers in brackets refer to approx. age in Million Years according to Haq,1987)
- ❖ Standardized scales
Maps 1:500 000
Seismic V=5cm/sec, H= 1:50 000
Wells 1:1000

Dr. Cai Feng made a presentation on behalf of the Yinggehai-Song Hong basin case study group. His presentation about the workshop discussion output focused on three aspects as follow:

- ❖ The working time schedule of seismic lines interpretation result and structural map merging from both Chinese and Vietnamese sides.
- ❖ The forthcoming field study on shore of Yinggehai-Song Hong basin in China and Vietnam, supported by Chinese and Vietnamese initiations
- ❖ The challenging of CO₂ issues during the E&P activities, requested technical transfer and experience sharing.

Before the end of the workshop session, the delegates from CCOP Member Countries made the valuable comments on the workshop, as follow:

- ❖ Cambodia, very glad to attend the workshop and get the knowledge from the workshop, ask for the possibility of purchasing the basin modeling software licenses for non case study host countries;
- ❖ China, very happy to attend the workshop, will carry out work according to the plan as usual;
- ❖ Indonesia, learnt more from the Sulu Sea-Sabah basin case study that can contribute to Tarakan basin study, expect to learn about fractured basement reservoir from our regional experts;
- ❖ Korea, participants learnt more from workshop;
- ❖ Malaysia, glad to have the opportunity to share their information, knowledge, experience through the case study with geoscientists from CCOP Member Countries. They are also willing to share their experience in CO₂ and regional geology of the Sabah basin. It is a good opportunity to come to work with their Philippines partner together to get the output through synergic efforts;
- ❖ Philippines, learnt more from others, the presentation about the basin evolution of the Sulu Sea basin is available for sharing;
- ❖ Thailand, valuable information and fieldtrip data, expect to have opportunities to work with Indonesia in Andaman sea and Cambodia in the overlapping area when the political issues are solved;
- ❖ Vietnam, they will do their best for the cooperation to achieve the success;
- ❖ Mr. Ioannis Abatzis, appreciate to the local organizer and geoscientists from CCOP Member Countries. He is gratefully to see the success of the project.

Finally, Mr. Chen Shick Pei, director of CCOP Technical Secretariat, made a short comment of this workshop. On behalf of CCOP, he expressed his sincere congratulations to all delegations for their dedication and efforts which resulted in a very successful workshop. During the discussions, all the geoscientists whatever come from case study host countries or non case study host countries shared their geoscientific views and experiences. The research scientists from our CCOP Member Countries showed their scientific enthusiasm and cooperation desires. CCOP is willing to continually provide the platform for the research cooperation serve as bridges among the partner institutes to facilitate the cross-border geoscientific cooperation in the region. He also expressed the sincere appreciation to the contributions from the local host organizer Petronas. The success of the ICB-CCOP1 Project will be a new milestone in CCOP's history.

After the concluding of the workshop, the activity continued with the brief introduction of the local geology of the eastern Sabah. Our fieldtrip guide, Dr. Allagu Balaguru, from Petronas made a presentation on the regional geology of the eastern Sabah. The field trip local organizer, Mr. Awalludin Harun, from Petronas introduced the field trip route and logistic arrangement. The field trip started after lunch, and went through the following four days. Due to the good weather and unexpected amazing geological outcrops, especially the rich knowledge of the fieldtrip guide, who did field study for 18 years before and perfect arrangement by local organizer, the fieldtrip

was conducted very successfully.

Obviously, the impact of the above mentioned activity is not just constrained to the activity itself, most of the achievements are beyond the activity. The existing knowledge of two case study areas has been shared during the workshop. Effective communication mechanisms have been set up among the case study host countries as well as the non case study host countries. It strengthened the relationships among the geoscientists from our CCOP Member Countries and enhanced their friendships. The new connection has been built up and the spirit of the team work and cooperation has been established among the participants from different countries and different nations through this workshop and field study although they have different religious beliefs and different culture backgrounds. The trust and confidence have been built among the case study host countries' partners. The geoscientific information, knowledge and experience have been shared through the discussion, view exchanging, and working together. The fieldtrip participants got samples during the field study. These samples will be tested in the different countries' laboratories as well as the GEUS's laboratory. The testing result will be exchanged and shared together. This will be one of the most important direct inputs to the Sulu Sea – Sabah basin case study. From the comments of the participants from our CCOP Member Countries, we are happy to see that:

- ❖ The Sulu Sea-Sabah case study groups from Malaysia and Philippines want to have an extra workshop for them to work together closely so that they can catch up the progress of the Yinggehai-Song Hong case study. Actually, during the workshop, they already borrowed the idea of cooperation implementation from the Yinggehai-Song Hong case study which was gotten in the last Hanoi workshop.
- ❖ The geoscientific information, knowledge and experience can be used directly in the Tarakan basin, another adjacent case study area.
- ❖ The non case study host country starts to take a serious consideration of the possibilities to follow up the model of current cross-border case studies to host the future case studies in the cross-border region, such as Andaman Sea and the offshore area between Thailand and Cambodia.
- ❖ During the workshop discussion, the delegates from China brought the issue of CO₂ which is a prevalent challenging in the southeastern Asia offshore area. As response, the geoscientist from Petronas, Malaysia would like to kindly offer to share their successful experience in this domain.

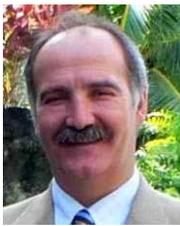
Annex 1

**CCOP-DANIDA Institutional Capacity Building Project ICB-CCOP1
Sulu Sea-East Sabah Basin & Yinggehai-Song Hong Basin Case Study Workshop
Field Study in the Eastern Sabah
February 26 - March 5, 2006, Sabah, Malaysia**

DISTINGUISHED GUESTS

NAME	POSITION / ADDRESS
1) H.E. MR. BØRGE PETERSEN 	Ambassador Extraordinary and Plenipotentiary of Denmark to Malaysia and the Philippines Embassy of Denmark Wisma Denmark 22nd Floor, 86 Jalan Ampang, 50450 Kuala Lumpur, Malaysia Tel: (603) 603 2032 2001, Fax: (603) 2032 2012/15
2) MR. ALEXANDER YAN SZE WAH 	Minerals and Geoscience Department Malaysia, Sabah Jalan Penampang, Locked Bag 2042 88999 Kota Kinabalu, Sabah, Malaysia Tel: (6088) 260 311, 252494, 252496, 215855 Fax: (6088) 240 150 E-mail: alex@jmg.gov.my

RESOURCE PERSON

1) MR. IOANNIS ABATZIS 	Senior Geophysical Advisor Representative of Denmark to CCOP Geological Survey Denmark & Greenland (GEUS) Oester Voldgade 10, 1350 Copenhagen K, Denmark Tel: (45) 3814 2516, Mobile: (45) 2030 7012 Fax: (45) 3814 2050 E-mail: ia@geus.dk
---	---

LIST OF PARTICIPANTS

NAME	POSITION / ADDRESS
CAMBODIA	
1) MR. CHEA SOCHEAT 	Deputy Chief Office Cambodian National Petroleum Authority # 13-14 Russian Federation Blvd., Sankat Kakab, Khan Dangkor, P.O. Box 1442, Phnom Penh, Cambodia Tel: (855-12) 852 780, Fax: (855-23) 890 569 E-mail: socheat63@hotmail.com

CHINA	
<p>2) DR. CAI FENG</p> 	<p>Chief Researcher Qingdao Institute of Marine Geology 62 Fuzhou Rd., Qingdao, Shandong, 266071 People's Republic of China Tel: (86-532) 8575 5821, Fax: (86-532) 8572 0553 E-mail: qdcfeng@cgs.gov.cn</p>
<p>3) DR. WANG LIAOLIANG</p> 	<p>Deputy Director Guangzhou Marine Geological Survey, CSG No. 188, Guangzhou Road, Huangpu District, Guangzhou, People's Republic of China Tel: (86-20) 8225 1626, Fax: (86-20) 8776 5102 E-mail: liaoliangwang@163.com</p>
<p>4) MS. WANG YAN</p> 	<p>Manager Cooperation & Contract Block Exploration Department China National Offshore Oil Corporation (CNOOC) No. 6 Dongzhimenwai Xiaojie, Beijing, 100027, People's Republic of China Tel: (86-10) 8452 1498, Fax: (86-10) 6460 2563 E-mail: wangyan1@cnooc.com.cn</p>
<p>5) DR. ZHU GUANGHUI</p> 	<p>China National Offshore Oil Corporation (CNOOC) No. 6 Dongzhimenwai Xiaojie, Beijing, 100027, People's Republic of China Tel: (86) 1391121497 Fax: (86-10) 6460 2563 E-mail: zhugh@cnooc.com.cn</p>
<p>6) MR. ZHANG YINGZHAO</p> 	<p>Senior Geologist China National Offshore Oil Corporation (CNOOC) P.O. Box 22, PoTou District, Zhanjiang City, Guangdong Province, People's Republic of China Tel: (86-759) 390 0556, Fax: (86-759) 391 0300 E-mail: zhangyingzh@cnooc.com.cn</p>
<p>7) MR. TONG CHUANXIN</p> 	<p>Exploration Manager Technology Department China National Offshore Oil Corporation (CNOOC) P.O. Box 22, Potou, Zhanjiang, Guangdong 524057, People's Republic of China Tel: (86-759) 390 1957, 13692325993 Fax: (86-759) 391 0300 E-mail: tongchx@cnooc.com.cn</p>

<p>8) MR. XUE YONGAN</p> 	<p>Manager of Exploration Department China National Offshore Oil Corporation (CNOOC) P.O. Box 609 Tanggu, Tianjin People's Republic of China Tel: (86-22) 2580 9273, Mobile: 13752513004 Fax: (86-22) 2580 9273 E-mail: xueya@cnooc.com.cn</p>
<p>INDONESIA</p>	
<p>9) MR. SUDARMAN SOFYAN</p> 	<p>Geologist Research and Development Centre for Oil and Gas Technology "LEMIGAS" Jalan Ciledug Raya Kav. 109, Cipulir, Kebayoran Lama, Jakarta Selatan 12230, Indonesia Tel: (62-21) 739 4422 ext. 1338 Fax: (62-21) 724 6150 E-mail: sudarmans@lemigas.esdm.go.id</p>
<p>10) MR. SRI WIJAYA</p> 	<p>Researcher Team Member Geologist Research And Development Centre For Oil And Gas Technology "LEMIGAS" Jalan Ciledug Raya Kav. 109, Cipulir-Kebayoran Lama-Jakarta Selatan 12230, Indonesia Tel: (62-21) 739 4422 ext. 1361, Fax: (62-21) 724 6150 E-mail: sriwijaya@lemigas.esdm.go.id</p>
<p>KOREA</p>	
<p>11) DR. BYEONG-KOOK SON</p> 	<p>Principal Researcher Korea Institute of Geoscience and Mineral Resources 30, Gajeong-dong, Yuseong-gu, Daejeon, Korea Tel: (82-42) 868 3208, Fax: (82-42) 862 7275 E-mail: sbk@rock25t.kigam.re.kr</p>
<p>12) DR. JAE-HONG KO</p> 	<p>Principal Researcher Korea Institute of Geoscience and Mineral Resources 30, Gajeong-dong, Yuseong-gu, Daejeon, Korea Tel: (82-42) 868 3218, Fax: (82-42) 862 7275 E-mail: kojhong@kigam.re.kr</p>

MALAYSIA

13) MR. ZULHAIMI BIN ABDUL RAHMAN



Geoscientist
Petroleum Management Unit,
PETRONAS
Level 22, Tower 2, Petronas Twin Towers
Kuala Lumpur, Malaysia
Tel: (6-03) 2331 5788, Fax: (6-03) 2331 3238
E-mail: zulhaimi_ar@petronas.com.my

14) DR. ALLAGU BALAGURU



Senior Geologist/Geoscientist
PETRONAS Carigali Sdn. Bhd.
Level 14, Tower 2, Petronas Twin Tower
Kuala Lumpur City Centre
50088 Kuala Lumpur, Malaysia
Tel: (6-13) 867 0593, Fax: (6-03) 2331 1859
E-mail: allagu_b@petronas.com.my

15) MR. ROBERT WONG HIN FATT



National Coordinator of Malaysia to ICB-CCOP1
Senior Manager
Basin Studies
Petroleum Resource Assessment and Marketing,
Petroleum Management Unit, PETRONAS
Level 22, Tower 2, PETRONAS Twin Towers,
KLCC, 50088 Kuala Lumpur, MALAYSIA
Tel: (603) 23313135, Fax: (603) 23313238
E-mail: wonghf@petronas.com.my

16) MS. HARMINZAR MANSOR



Geoscientist-Basin Studies
Petroleum Resource Assessment and Marketing,
Petroleum Management Unit, PETRONAS
Level 22, Tower 2, PETRONAS Twin Towers,
KLCC, 50088 Kuala Lumpur, MALAYSIA
Tel: (603) 23315925, Fax: (603) 23313238
E-mail: harminzar@petronas.com

17) MR. BARRY BOYCE



Principal Geoscientist-Basin Study
Petroleum Resource Assessment and Marketing,
Petroleum Management Unit, PETRONAS
Level 22, Tower 2, PETRONAS Twin Towers,
KLCC, 50088 Kuala Lumpur, MALAYSIA
Tel: (603) 20515665, Fax: (603) 23313238
E-mail: barryboyce@petronas.com.my

<p>18) MR. AWALLUDIN HARUN</p> 	<p>Basin Studies Department Petroleum Resource Assessment & Marketing Division PMU, PETRONAS Level 22, PTT2, KLCC, 50088 Kuala Lumpur Malaysia Tel: (603) 2331 3113, Fax: (603) 2331 3238 E-mail: awallha@petronas.com.my</p>
<p>19) MS. NORHAFIZAH MOHAMAD</p> 	<p>Geoscientist-Basin Studies Petroleum Resource Assessment and Marketing, Petroleum Management Unit, PETRONAS Level 22, Tower 2, PETRONAS Twin Towers, KLCC, 50088 Kuala Lumpur, MALAYSIA Tel: (603) 23317081, Fax: (603) 23313238 E-mail: norhafizah_m@petronas.com.my</p>
<p>PHILIPPINES</p>	
<p>20) MR. REDENTOR D. PASCUAL</p> 	<p>Supervising Science Research Specialist Petroleum Resources Development Division Department of Energy (DOE) Energy Center, Merritt Road, Fort Bonifacio, Taguig City, Metro Manila 1201, Philippines Tel: (63-2) 812 4016, Fax: (63-2) 840 2206 E-mail: rpascual@doe.gov.ph;red_pascual@yahoo.com</p>
<p>21) MS. ISABEL ADJANI B. NICOLAS</p> 	<p>Science Research Specialist II (Geologist) Petroleum Resources Development Division Department of Energy (DOE) Energy Center, Merritt Rd., Fort Bonifacio, Taguig City, Metro Manila 1201, Philippines Tel: (63-2) 812 4016, 840 1401 ext. 345, 237, 285, 287 Fax: (63-2) 840 2206 E-mail: inicolas@doe.gov.ph;iabnicolas@yahoo.com</p>
<p>THAILAND</p>	
<p>22) MR. SUNTON SRIGULWONG</p> 	<p>Geologist National Coordinator to ICB-CCOP1 Director of Petroleum Potential Assessment Group Department of Mineral Fuels (DMF) Ministry of Energy, Shinawatra Tower III, 24th Floor Viphavadi-Rangsit Road, Chatuchak, Bangkok 10900, Thailand Tel: (66-2) 791 8345, Fax: (66-2) 791 8357 Mobile: (66-9) 968 1172 E-mail: sunton@dmf.go.th</p>

<p>23) MR. TANANCHAI MAHATTANACHAI</p> 	<p>Senior Geologist Department of Mineral Fuels (DMF) Ministry of Energy Shinawatra Tower III, 24th Floor Viphavadi-Rangsit Road, Chatuchak, Bangkok 10900, Thailand Tel: (66-2) 791 8300 ext. 5103 Fax: (66-2) 791 8357 E-mail: frank@dmf.go.th; tananchaim@yahoo.co.uk</p>
<p>VIETNAM</p>	
<p>24) MR. DO BAT</p> 	<p>Deputy Director Vietnam Petroleum Institute Yen Hoa, Cau Giay, Hanoi, Vietnam Tel: (84-4) 834 7403, Mobile: 0913202104 Fax: (84-4) 784 4156 E-mail:</p>
<p>25) DR. NGUYEN TRONG TIN</p> 	<p>Manager of Petroleum Geology of VPI Vietnam Petroleum Institute Yen Hoa, Cau Giay, Hanoi, Vietnam Tel: (84-4) 784 4011, Fax: (84-4) 784 1849 Mobile: 0904062646 E-mail: tinnt@vpihn.pv.com.vn</p>
<p>CCOP TECHNICAL SECRETARIAT</p>	
<p>1) MR. CHEN SHICK PEI</p> 	<p>Director CCOP Technical Secretariat Thai CC Tower 24th Floor, Suite 244-245 889 Sathorn Tai Road, Sathorn Bangkok 10120, Thailand Tel: (66-2) 672 3080, Fax: (66-2) 672 3082 E-mail: spchen@ccop.or.th</p>
<p>2) MR. LIU LIQUN</p> 	<p>Project Coordinator ICB-CCOP1 Project CCOP Technical Secretariat Thai CC Tower 24th Floor, Suite 244-245 889 Sathorn Tai Road, Sathorn Bangkok 10120, Thailand Tel: (66-2) 672 3080, Fax: (66-2) 672 3082 E-mail: liu@ccop.or.th</p>

3) MS. SANSANEE WUDHIWANICH



Secretary to Office of Director
CCOP Technical Secretariat
Thai CC Tower
24th Floor, Suite 244-245
889 Sathorn Tai Road, Sathorn,
Bangkok 10120, Thailand
Tel: (66-2) 672 3080, Fax: (66-2) 672 3082
E-mail: yui@ccop.or.th
Website: www.ccop.or.th

Annex 2

**CCOP-DANIDA Institutional Capacity Building Project
ICB-CCOP1
Sulu Sea-East Sabah Basin & Yinggehai-Song Hong Basin Case
Study Workshop
Field Study in the Eastern Sabah
February 26 - March 5, 2006, Sabah, Malaysia**

AGENDA

Day 1: 26 February

Traveling to Sandakan, Sabah.

Arrival of Participants / Check-in Hotel

Night: Icebreaker Dinner

Half Day Sightseeing:

A bus will take participants from the airport to visit the Sepilok Orang Utan Centre. We will witness the feeding of orphaned Orang Utans at 2.30 pm and walk along the jungle trail and observe the tropical lowland rainforest.

Check-in at the Sabah Hotel by 4.00 pm for refreshing and Ice Breaker Dinner at 8.00 pm.

Day 2: 27 February

08:00 Registration

CCOP TS

08:30 Welcome speech, address and remark by

Mr. Robert Wong Hin Fatt, Senior Manager, on behalf of PETRONAS, local organizer

Mr. Alexander Yan Sze Wah will give speech on behalf of Mr. Yunus Abdul Razak, Permanent Representative of Malaysia to CCOP.

H.E. Mr. Børge Petersen, Ambassador Extraordinary and Plenipotentiary of Denmark to Malaysia and the Philippines

Mr. Chen Shick Pei, Director of CCOP Technical Secretariat

09:30 Briefing on the ICB-CCOP1 Project Mr. Liu Liquan

09:50 Group Photo

10:00 Coffee/tea break

10:35 Immigration Office Passport Processing

12:00 Lunch Break

13:30 Presentations by the Malaysia, Philippines, China and Vietnam Delegations

- ❖ Progress reports on the Project case study preparation, implementation activities and current achievements since ICB-CCOP1 the inception phase meeting
- ❖ Work plan and schedule on case study
- ❖ Requirement of the topic of coming experts visiting

Sulu Sea-East Sabah Basin Mr. Robert Wong Hin Fatt / Research team member

Sulu Sea-East Sabah Basin Mr. Guillermo H. Ansay / Research team member

Yinggehai-Song Hong Basin Dr. Cai Feng / Research team member

Yinggehai-Song Hong Basin Dr. Nguyen Trong Tin / Research team member

15:00 Coffee/tea break

15:15 Continue Geoscientific discussions between the case study researchers

Divided into two group:

Group1 Cambodia, China, Korea, Vietnam

Group 2 Indonesia, Malaysia, Philippines, Thailand

(Two separate room with two LCD projectors and two screen)

18:30 Dinner

20:30 Continue with the discussions

22:00 End of Day 2

(Two separate room with two LCD projectors and two screen)

Day 3: 28 February

08:30 Summarizing the achievements from discussions

Presentations by case study groups on workshop outputs

(Including the work schedule, detailed work plan, expected output on case study, etc.)

Summary of the workshop

End of the workshop

10:00 Coffee Break

10:15 Regional Geology of Sabah and Briefing on Field Study

12:00 Lunch Break

13:30 Field Study in Sandakan

17:30 End of day 3

18:30 Dinner

Day 4: 1 March

Sandakan, Sabah. Travel to Lahad Datu

Morning: Check out of hotel.

Field Study along the road to Lahad Datu

Check in hotel, Lahad Datu

Night: Dinner

Day 5: 2 March

Lahad Datu, Sabah

Morning: Briefing on the Field Study

Field Study around Lahad Datu Area

Crystalline Basement

Mélange (Ayer Formation)

Tanjung Formation

Afternoon: Carbonate

Tabanak Conglomerate

Night: Dinner

Day 6: 3 March

Lahad Datu, Sabah. Travel to Sahabat

Morning: Briefing on the Field Study

Field Study Along Lahad Datu to Sahabat Road

Tabanak Sandstone

Tungku Formation

Alluvial Conglomerate

Afternoon: Ganduman Sandstone

Sebahat Shale

Check-in Felda Sahabat Resort

Night: Dinner

Day 7: 4 March

Sabahat, Sabah. Travel to Lahad Datu

Morning: Briefing on the Field Study

Field Study around Sahabat

Ganduman Sandstone

Sebahat Shale

Togopi formation

Afternoon: Travel Back to Lahad Datu

Night: Dinner

Day 8: 5 March

Lahad Datu

Morning: Check out of Hotel

Flight to KK and home

(Propose LDU – BKI BKI – KUL

Flight) MH2685 08.10-9.05 MH2605 10.35 -13.00

Annex 3

SPEECH BY SENIOR MANAGER, PETROLEUM MANAGEMENT UNIT, PETRONAS

MR. ROBERT WONG HIN FATT

**At the opening of the ICB-CCOP1
1st Malaysia Workshop on Sulu Sea – East Sabah Basin & Yinggehai – Song
Hong Basin Case Study
Field Study in the Eastern Sabah
February 26 – March 5, 2006, Sabah, Malaysia**

**Your Excellency, Mr. Borge Petersen, Ambassador Extraordinary and Plenipotentiary of
Denmark to Malaysia and Philippines,
Mr. Chen Shick Pei, Director of CCOP Technical Secretariat,
Mr. Ioannis Abatzis, Danish Representative to CCOP,
Mr. Alexander Yan Sze Wah, on behalf of En. Yunus Abdul Razak, Permanent
Representative of Malaysia to CCOP,
Mr. Liu Liqun, Project Coordinator, ICB-CCOP Project,
Fellow National Coordinators of the ICB-CCOP Project,
Fellow Delegates,
Ladies and Gentlemen,**

First of all, on behalf of the organizer, PETRONAS, I warmly welcome all of you to Malaysia and particularly to Sabah, the land below the wind, surrounded by South China Sea, Sulu Sea and Celebes Sea. Especially to those who have come for the first time, I wish you “Selamat Datang,” I hope you all had a safe and comfortable journey here. On the way here, if you looked over the window of the airplane, you would have noticed the majestic mountains of the Crocker Range. In fact, these mountains shed off sediments into the NW Sabah and East Sabah Basins. I believe both these basins offshore Sabah are blessed with abundant oil and gas reserves. The prolific NW Sabah basin is attested by the recent discoveries in the deepwater area of NW Sabah Basin.

The East Sabah basin is another story. There’s why we are meeting here today. We appreciate the effort by CCOP and Danida (Danish International Development Assistance) to bring together geoscientists from across the Sulu-Sea-East Sabah Basin as well as the Yinggehai-Song Hong Basin for mutual benefits. These two basins straddle the International boundaries of two nations. The western part of the Sulu Sea-east Sabah Basin is owned by Malaysia while the eastern portion falls into Philippines territory. We have the coastal plain and shelf facies. The Philippines possess the turbidite play. So we need to talk. China and Vietnam each share part of the Yinggehai-Song Hong Basin. Hence, they too need to work together. Previously each country conducted geoscientific studies on their part of the basin and wanted to know the other part of the basin but could not do so solely because they could not obtain the data from their neighboring country. Hence, this project provides the splendid opportunity for both parties to come together to complete the geoscientific work so that a coherent picture of the whole basin

emerges at the end of the project. Besides sharing geological and geophysical data, the geoscientists will also be sharing ideas, which would ultimately upgrade the prospectively of their sides of the basin.

We had our first meeting in Bangkok in May last year where we agreed on the three-year work scope and schedule. The meeting today is part of the fulfillment of that agenda to conduct a workshop and fieldwork together to garner a better knowledge and understanding of the shared basin. We chose the town of Sandakan to meet because we want to get to as close to the basin as possible. In fact, just 50km. offshore from here, there is a well drilled previously with oil and gas shows, indicating the petroleum potential of the basin.

After the two-day discussions which include planning for the future work, we will also travel to Lahad Datu, to the south, to study the interesting outcrops in Dent Peninsula in order to have a closer look at the reservoirs, seals, potential source rocks and even the structural styles. Samples will also be collected for source rock potential and maturation studies. At the end of the field trip, I am sure the participants will return to their countries with a clearer picture of the sedimentary rocks in the subsurface.

Hence, to conclude, I hope all the teams will have a fruitful workshop and a productive field trip. It is my desire that your stay here in Malaysia, especially in Sabah will be an enjoyable and a memorable one.

Cheers!

Robert Wong, national Coordinator for Malaysia

Annex 4

SPEECH BY AMBASSADOR EXTRAORDINARY AND PLENIPOTENTIARY OF DENMARK TO MALAYSIA AND PHILIPPINES

H.E. MR. BORGE PETERSEN

**At the opening of the ICB-CCOP1
1st Malaysia Workshop on Sulu Sea – East Sabah Basin & Yinggehai – Song
Hong Basin Case Study
Field Study in the Eastern Sabah
February 26 – March 5, 2006, Sabah, Malaysia**

**Mr. Chen Shick Pei, Director of CCOP Technical Secretariat
Mr. Alexander Yan, Director, Minerals and Geoscience Department, Sabah, Malaysia
Mr. Robert Wong Hin Fatt, Senior Manager, Petroleum Management Unit, PETRONAS
Mr. Ioannis Abatzis, Representative of Denmark to CCOP
Distinguished delegates
Ladies and Gentlemen,**

A very good morning to all of you. I am indeed honored to be invited to address the opening of this important workshop and field study in relation to the Institutional Capacity Building under the Coordinating Committee for Geo-science Programmes in East and Southeast Asia.

The objectives of the CCOP project are ambitious and numerous. Within the main area of petroleum, the objectives include, i.a., the promotion of regional cooperation, the enhancement of research, the introduction of cutting-edge technologies and the dissemination of knowledge. Denmark is pleased to support the undertaking and in this manner contribute to achieving such important goals. And, indeed, a lot will have to be done and achieved over the next three years, before the project comes to an end.

Today's opening ceremony here in Sabah is an important milestone in the project. I understand, that the events launched today represent some of the major activities to be implemented under the project.

Better understanding of the geological background of the cross-border Sulu East Sabah Basin will bring more opportunities for locating additional oil and gas reserves. At the same time, specific knowledge will go a long way to ensure that the right decisions are made in regard to exploration and development of, for instance, petroleum resources.

This workshop and field study will help the geo-scientists from Malaysia and Philippines as well as other CCOP Member Countries to gain a much better understanding of the cross-border Sulu Basin-half of which is in Malaysia and half in the Philippines.

Denmark has over the years given substantial support to various environmental interventions in

Sabah under the Malaysian-Danish Environmental Cooperation Programme. Danish support to the environment sector in Malaysia was initiated in 1994. Over the last decade around 100 projects nationwide have been supported with a total budget of more than RM 300 million. The programme comprises Government-to-Government cooperation, support to NGOs as well as a private sector programme. In Sabah alone, Denmark has supported more than 10 projects with PM 75 million, including, i.a., biodiversity, coastal zones and cooperation with the university of Malaysia, Sabah (UMS)-Sabah has been a main focus area for the Danish environmental support to Malaysia.

Therefore, whatever interventions you plan under the CCOP project, please be mindful of the environmental implications!

The kind of cooperation to be implemented under the CCOP project will facilitate and contribute to regional understanding and cooperation. Hopefully, through the implementation of this project, the relationship of member countries will be further intensified, partnerships strengthened and personal friendship developed.

In economic terms, the production of oil and gas will impact significantly on the national and the regional economies. This will also contribute to reductions in poverty.

Ultimately, the project can help reduce disputes and create more cooperation opportunities. Cooperation and interaction across borders, in my view, are extremely, important elements to facilitate and promote peaceful regional development. In addition, the project does have the potential to impact significantly on the prosperity of the region.

This is clearly reflected in the earlier case study of Yinggehai-Song Hong Basin conducted last December. This case study carries the potential of economic and social benefits to both Vietnam and China. The basin has now been identified for bilateral cooperation in an agreement signed between the Governments of China and Vietnam.

Therefore, it is important that the implementation of the CCOP project will succeed in facilitating regional cooperation in the geo-resource sector as well as promote peaceful development of the regional hydrocarbon resources.

Ladies and Gentlemen,

The Danish Government, through Danida, is pleased to be associated with this effort and to be able to provide necessary technical assistance for the project.

The fight against poverty, and thus the contributions to improved living standards, are underlying principles of all Danish development assistance. Denmark considers access to energy services as an essential factor for economic growth and essential for the provision of basic living conditions for all human beings. The project surely has great potential to fulfill this principle.

Therefore, I would like to take this opportunity to congratulate CCOP for taking the initiative to develop this regional network of decision makers and experts within oil, gas and mineral sectors. The activities envisaged in the project will greatly facilitate the contribution of experience, know-how and technological resources as well as strengthen the capacity in public authorities, so that they are able to better access their hydrocarbon resources.

I trust, that the next days will be interesting and contain fruitful discussions and knowledge sharing. With these few words I wish you all a good workshop and field study.

Ladies and gentlemen, thank you very much.

Annex 5

SPEECH BY DIRECTOR OF CCOP TECHNICAL SECRETARIAT

MR. CHEN SHICK PEI

**At the opening of the ICB-CCOP1
1st Malaysia Workshop on Sulu Sea – East Sabah Basin & Yinggehai – Song
Hong Basin Case Study
Field Study in the Eastern Sabah
February 26 – March 5, 2006, Sabah, Malaysia**

H.E. Mr. Borge Petersen, Ambassador, Ambassador Extraordinary and Plenipotentiary of Denmark to Malaysia and the Philippines

Mr. Robert Wong Hin Fatt, Senior Manager, Petroleum Management Unit, PETRONAS

Mr. Alexander Yan, Director, Minerals and Geoscience Department, Sabah, Malaysia

Mr. Ioannis Abatzis, Representative of Denmark to CCOP

Mr. Liu Liqun, ICB-CCOP 1 Project Coordinator

Distinguished participants

Ladies and Gentlemen

Good Morning and Selamat Pagi

On behalf of CCOP, I would like to extend a very warm welcome to everybody to this first Institutional Capacity Building in CCOP Member Countries, ICB-CCOP 1 Workshop and Fieldtrip. In this august gathering this morning, we would like to express our deep appreciation to HE Mr. Borge Petersen for giving us his valuable time to grace this opening ceremony and to deliver an opening speech.

The ICB-CCOP 1 project is of great importance for the region. Besides the geoscientific aspects of the project, it has great significance in promoting cross-border understanding and cooperation that can contribute to building trust and confidence, and promoting close cooperation among CCOP Member Countries. The fact that we can bring together personnel from different countries, to jointly work on a cross-border case study involving input of valuable and important data and information from both sides of the border, and discussing the petroleum resource of the case study area say a lot for the sincerity, commitment, fellowship, cooperation and trust among our colleagues from Member Countries under the umbrella of CCOP. CCOP is very fortunate to enjoy this support, mutual understanding, trust and cooperation among Member Countries and the ICB CCOP-1 project will no doubt further strengthen it. The fact that we are all gathered here this week to discuss the two case studies and other activities under the project is a strong testament to this strength of CCOP. I am sure that the Fieldtrip after the Workshop will further promote sharing of knowledge and experience and enhance friendship among the participants.

I am very pleased to say that with barely a year of implementation, with the capable and effective coordination of the project by Mr. Liu Liqun, the project is progressing well despite its inherent

complex nature. Both the Song Hong – Yinggehai and the Sulu Sea – East Sabah Basin case studies are on track according to plan. Other activities such as workshops, training courses, expert visits, technology transfer and the award of post graduate research grants have already been planned for 2006 and we can look forward to a high level of activities under the project until its conclusion at the end of 2007.

I would like to highlight several new CCOP milestones marking regional cooperation that have been made by the ICB-CCOP 1 project. It is the first time that a cross-border case study has been agreed to be jointly conducted by the neighboring countries. Although the initial idea of the project for the case study was to use available public information, with the excellent cooperation, trust, and understanding, all the case study host countries have agreed to go one step further by considering the use of some important data that are the propriety of the national oil companies and other concerned government agencies. This will no doubt contribute to making the results of the studies more useful in the understanding of the geological setting, and the petroleum resources of the Case Study areas. Here we warmly welcome the participation of the national oil companies, Petronas, PetroVietnam and China National Offshore Oil Corporations, besides the national petroleum research institutes and Government petroleum authorities of our CCOP Member Countries.

On behalf of CCOP, we would like once again to thank the Royal Danish Government through the Royal Danish Embassy in Bangkok for the generous support for this Project. Denmark, one of the top donor countries that support development assistance, has been very active in bilateral programmes in this region and several of the CCOP Member Countries are benefiting from it. However, I believe this is the first time that Denmark has given its support directly to CCOP, a multilateral regional intergovernmental organization and we deeply appreciate this kind consideration.

We would like to say a big thank you to PETRONAS for the support of the Project, the Malaysian National Project Coordinator, Mr. Robert Wong Hin Fatt and his colleagues from PETRONAS for the meticulous preparations and arrangements made for this Workshop and Fieldtrip. I would especially like to thank Mr. Liu Liqun, the ICB-CCOP 1 Project Coordinator and the staff of the CCOP Technical Secretariat for their hard work in the overall arrangement for this event.

Before I end, I would like to once again thank HE Mr. Borge Petersen for his interest and his gracious presence in this ICB-CCOP 1 Workshop, PETRONAS for the unwavering support of the project, as well as in hosting this Workshop and Fieldtrip. Our special appreciation goes to Mr. Ioannis Abatzis, Representative of Denmark to CCOP, Senior Advisor of the Geological Survey of Denmark and Greenland (GEUS) for his close interest and untiring efforts in rendering useful advice and guidance in the project's planning, implementation and management. I would also like to thank our CCOP Member Countries, particularly the national project coordinators and their colleagues for their cooperation, support and participation in the project activities and the case studies. Thank you also to the case study countries, China, Indonesia, Malaysia, the Philippines, and Vietnam for having so generously offered the case study areas,

and to host the studies.

I wish you a successful Workshop and Field trip. Thank you and terima kasih



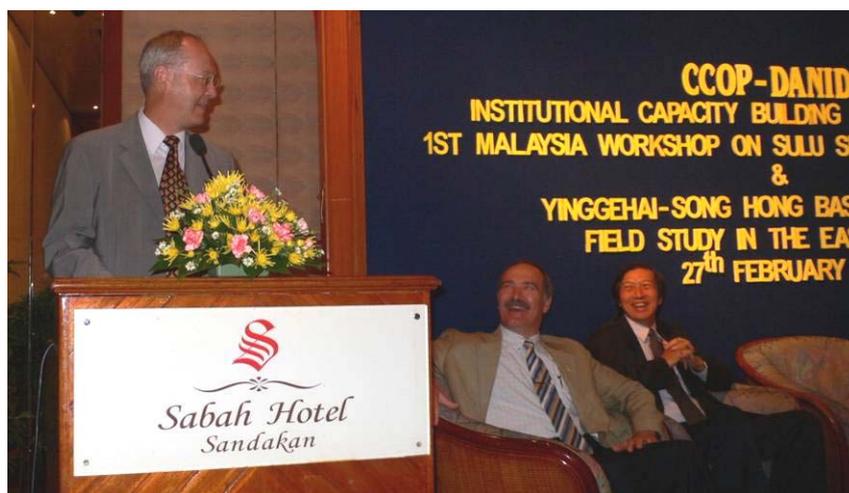
**INSTITUTIONAL CAPACITY BUILDING IN CCOP COUNTRIES,
PHASE 1 (ICB-CCOP1)**



Group photo of all the ICB-CCOP1, 1st Malaysia Workshop participants



The opening ceremony of the workshop was held at Sabah Hotel, Sandakan on 27th February, 2006.



H.E. Mr. Borge Petersen, Ambassador Extraordinary and Plenipotentiary of Denmark to Malaysia and the Philippines made an opening statement at opening ceremony on the first day of the workshop.

Geoscientists from our CCOP Member Countries discussion during the workshop



***Fieldtrip in East Sabah,
Sandakan, Sahabat, Iahad Datu
28 February-4 March, 2006***

