

COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA

CCOP

**Report of the Committee
(PART I)**

**PROCEEDINGS OF THE 32ND CCOP
ANNUAL SESSION
Tsukuba, Japan**

NOVEMBER 1995



*An Intergovernmental Organization for Promotion
and Co-ordination of Geoscientific Programmes in
Offshore and Coastal Areas in East
and Southeast Asia*

Member Countries: Cambodia, China, Indonesia, Japan, Malaysia, Papua New Guinea, Philippines, Republic of Korea, Singapore, Thailand, and Vietnam

Cooperating Countries: Australia, Belgium, Canada, Denmark, France, Germany, Japan, The Netherlands, Norway, Sweden, Switzerland, The United Kingdom, The United States of America, and The Russian Federation/Commonwealth of Independent States

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ORGANIZED BY:

SUPPORTED BY:



CCOP Technical Secretariat



Geological Survey of Japan

The Government of Japan

Ministry of Foreign Affairs

Ministry of International Trade and Industry

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ABBREVIATIONS AND ACRONYMS

A	AAPG	American Association of Petroleum Geologists
	AG	Advisory Group (of CCOP)
	AGID	Association of Geoscientists for International Development
	AGSO	Australian Geological Survey Organisation
	AIDAB	Australian International Development Assistance Bureau
	AIT	Asian Institute of Technology
	ASEAN ASCOPE	Association of Southeast Asian Nations ASEAN Council on Petroleum
B	BGD	Belgian Geological Survey
	BGR	Bundesanstalt Für Geowissenschaften Und Rohstoffe
	BGS	British Geological Survey
	BPPT BRGM	Ministry of Science and Technology (Bureau de Recherches Géologiques et Minières)
	BMZ	Bunderministerium Für Wirtschaftliche Zusammenarbeit Und Entwicklung
C	CCOP	Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia
	CIDA	Canadian International Development Agency
	CMG	Commission on Marine Geology of IUGS
	COGEO DATA	IUGS Committee on Storage, Automatic Processing and Retrieval of Geological Data
	CONOCO	Continental Oil Company of U.S.A.
	CPC CPMP	Circum-Pacific Council for Energy and Mineral Resources Circum-Pacific Map Project
D	DANIDA	Danish International Development Agency
	DCCGM	Digital Compilation of Geoscientific Maps
	DGGMR	Directorate General of Geology and Mineral Resources
	DGU	The Geological Survey of Denmark
	DMR	Department of Mineral Resources (Thailand)
	DTCD	Department of Technical Co-operation and Development (UN)
E	EEZ	Exclusive Economic Zone
	ESCAP	Economic and Social Commission for Asia and the Pacific
	ETI	The Earth Technology Institute
	EWC	East-West Center
G	GEOSEA	Regional Congress on Geology, Mineral and Energy Resources of Southeast Asia
	GETECH	Geophysical Exploration Technology
	GRDC	Geological Research and Development Centre
	GSJ	Geological Survey of Japan
	GSM	Geological Survey of Malaysia
	GSVN	Geological Survey of Vietnam
I	ICOGS	International Consortium of Geological Survey
	ICZM	Integrated Coastal Zone Management
	IDRC	International Development Research Centre (Ottawa, Canada)
	IGC	International Geological Congress
	IGCP	International Geological Correlation Programme
	IGS	Institute of Geological Sciences (UK)
	INQUA	International Union for Quaternary Research
	IOC	Intergovernmental Oceanographic Commission (of UNESCO)
	IPOD/AODP	International Programme of Ocean Drilling/Advanced Ocean Drilling Programme
	ISOT	International School of Offshore Technology (Oslo, Norway)
	IUGS	International Union of Geological Sciences

J	JECF	Japan-ESCAP Co-operation Fund
	JICA	Japan International Co-operation Agency
	JNOC	Japan National Oil Company
K	KIGAM	Korea Institute of Geology, Mining and Materials
L	LDGO	Lamont Doherty Geophysical Observatory (of Columbia University)
	LEMIGAS	Oil and Gas Technology Development Centre (of Indonesia), Ministry of Mine and Energy
M	MGMRC	Ministry of Geology and Mineral Resources China
	MMAJ	Metal Mining Agency of Japan
	MTDC	Mineral Technology Development Centre (Bandung)
N	NORAD	Norwegian Agency for International Development
	NPD	Norwegian Petroleum Directorate
	NRD	Natural Resources Division (ESCAP)
O	OETO	Ocean Economic and Technology Office (UN)
	OGRM	Working Group on Oil and Gas Resource Management
	OMO	Offshore Mining Organization (Thailand)
	OPMC	Oriental Petroleum and Minerals Corporation
P	PEDCO	Korea Petroleum Development Corporation
	PETRAD	International Programme for Petroleum Management and Administration (Norway)
	PNOC	Philippine National Oil Corporation
	PTIT	Petroleum Institute of Thailand
	PTT	Petroleum Authority of Thailand
R	REP	Resource Evaluation and Planning
S	SEAM	Southeast Asia Aeromagnetic Project
	SEATAR	Post-IDOE Studies of East Asia Tectonics and Resources
	SEATRAD	Southeast Asian Tin Research and Development Centre
	SGU	The Geological Survey of Sweden
	SIDA	The Swedish International Development Cooperation Agency
	SOPAC	South Pacific Applied Geoscience Commission
T	TCDC	Technical Co-operation among Developing Countries
U	UNCED	United Nations Conference on Environment and Sustainable Development
	UNCLOS	United Nations Convention on Law of the Sea
	UNDP	United Nations Development Programme
	UNEP	United Nations Environment Programme
	UNESCO	United Nations Educational, Scientific, and Cultural Organization
	USGS	United States Geological Survey
	USM	University Sains, Malaysia
W	WESTPAC	IOC Sub-Commission for the Western Pacific
	WGHF	Working Group on Heat Flow
	WGPG	Working Group on Petroleum Geology
	WGRA	Working Group on Resources Assessment

TABLE OF CONTENTS

	Page
<u>Attendance and Organisation</u>	1
Venue.....	1
Attendance.....	1
I. <u>Opening of the 32nd CCOP Annual Session</u>	2
1. Opening Addresses.....	2
2. Election of Officer.....	3
3. Adoption of the Agenda.....	3
4. Report of the Director, CCOP Technical Secretariat..... (covering the period 1 November 1994 - 31 August 1995).....	3
II. <u>Country/Technical Presentations</u>	8
5. Review of the 1995 Activities.....	8
5.1 Activities in the 3 sectors (Energy, Mineral and Coastal Zone).....	8
5.1 a) Member Countries' Reports.....	8
5.1 b) CCOP Technical Secretariat's Report.....	16
5.2 Activities of Publication and Information Services.....	20
III. <u>Advisory Group Meeting</u>	22
Report of the Advisory Group	
IV. <u>General Consultative Meeting</u>	24
6. Report of Technical Activities.....	24
6.1 Report of Activities of Cooperating Countries/Organizations in the CCOP Region.....	24
7. Discussion and Approval of the Report of the Advisory Group.....	29
8. Consideration of New Proposals.....	29
8.1 Proposals of Member Countries and CCOP Technical Secretariat.....	29
9. Statements by cooperating countries and organizations on support and assistance to be provided to CCOP for 1996 and future years.....	30
10. Consideration of the Draft CCOP Work Plan for 1996.....	34
V. <u>Venue of the 33rd CCOP Annual Session</u>	36
VI. <u>Adoption of the 32nd CCOP Annual Session Draft Report</u>	36
VII. <u>Closing of the 32nd CCOP Annual Session</u>	36

ANNEXES

Annex I: Agenda	Annex III: List of Documents and Technical Papers
Annex II: List of Participants	Annex IV: Opening and Closing Addresses
Annex V: 1996 Draft Work Plan	



ATTENDANCE AND ORGANISATION

VENUE

The thirty-second session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (CCOP) was held at the Hotel Grand Shinonome, Tsukuba, Japan, from 27 to 30 September, 1995. Host facilities were provided by the Government of Japan through the Ministry of Foreign Affairs, the Ministry of International Trade and Industry, and the Geological Survey of Japan.

ATTENDANCE

The session was attended by representatives of the following Member Countries: Cambodia, the People's Republic of China, Indonesia, Japan, the Republic of Korea, Malaysia, the Philippines, Thailand and the Socialist Republic of Vietnam.

Representatives of the Co-operating Countries of Belgium, Canada, Denmark, The Netherlands, Norway, Sweden, the United Kingdom, and the United States of America also attended the session. Technical and Honorary Advisers to CCOP were also in attendance.

The following organisations were also represented: ASCOPE, AGID, CPCEMR, IOC/WESTPAC, IUGS. Some private company representatives attended as observers. The Embassies of Canada and The Netherlands were represented by their scientific officers.

Staff of the CCOP Technical Secretariat and from the Government of Japan through the Ministry of Foreign Affairs, the Ministry of International Trade and Industry, and the Geological Survey of Japan provided necessary conference services.

The List of Participants is appended to the report as **Annex II**.



I. OPENING OF THE 32nd CCOP ANNUAL SESSION

1. OPENING ADDRESS

The opening ceremony commenced with a welcoming address by **Mr. Fateh Chand**, Permanent Representative of Malaysia to CCOP, and Steering Committee Chairman for 1993-1995. He expressed the gratitude of CCOP to the Government of Japan for hosting the annual session. He stressed that during the last 29 years of its existence, CCOP has withstood the test of time as an entity with an effective mechanism to facilitate international cooperation that has brought highly tangible benefits to its member countries. He observed that the Secretariat had managed to harmonize the diverse and evolving needs of the member countries. He thanked the member countries for their cooperation, and the cooperating countries and correspondent organisations for their continuing and steadfast support over the years.

On behalf of the Government of Japan, **Mr. Keigo Tabira** of the Ministry of Foreign Affairs of Japan stressed that time had been witness to the achievements of CCOP. He reconfirmed the commitment of Japan to continue her support both financially and technically to CCOP as this is in line with the policy of the country.

Mr. Kjell Reidar Knudsen on behalf of the Chairman of the Advisory Group, welcomed **Dr. Sahng-Yup Kim** as the new Director of the Technical Secretariat. He repeated the support of Norway and other cooperating countries and organisations to CCOP and noted that the cooperation had resulted in a win-win situation in terms of the attitude to the value of data and in data sharing. He was pleased with the level of cooperation between member countries and the cooperating countries. He stressed that networking is important and regarded the CCOP organisation as very effective in this field.

The **Executive Secretary of ESCAP** in a message read by Dr. Kim commended CCOP for its achievements in promoting activities related to the energy and mineral resources sectors, including the development of human resources. He noted that the new mandate of CCOP will enable a better and effective coordination between the two organisations in the evaluation and sustainable development of coastal and offshore non living resources. This entrance of CCOP into "Integrated Coastal Zone Management" is in accord with Agenda 21 of the United Nations.

In his inaugural address, **Mr. Hiroshi Mitsukawa** of the Ministry of International Trade and Industry of Japan commended CCOP for its significant contribution to the sustainable socio-economic development of the region. This CCOP meeting, held for the sixth time in Japan, marks the continuous support of Japan for CCOP. He stressed that the experience of Japan in dealing with natural hazards can be shared among the member countries. Similarly, the advanced status of Japan in handling and processing geoscientific data may help the other CCOP member countries.



2. ELECTION AND APPOINTMENT OF OFFICERS

Mr. Keigo Tabira, Head of Delegation, Japan and **Dr. Takeo Sato**, Delegate of Japan were elected Co-Chairman of the Annual Session. **Mr. Wang Xionglin**, Head of Delegation of China, was elected Vice-Chairman. **Dr. A.J. Reedman**, Representative of the United Kingdom and **Mr. Yunus Abdul Razak**, Delegate of Malaysia were elected as General Rapporteurs.

For the Advisory and General Consultative Meetings, **Dr. Naz Ahmed Shaikh**, Representative of Sweden, was elected Chairman.

3. ADOPTION OF THE AGENDA [documents COOP(XXXII)/1, 2]

The agenda was adopted as proposed (see Annex I).

4. REPORT OF THE DIRECTOR, CCOP TECHNICAL SECRETARIAT [document COOP(XXXII)/3]

The Director of the CCOP Technical Secretariat presented his report covering the activities of the CCOP Technical Secretariat for the period 1 November 1994 to 31 August 1995 (document COOP(XXXII)/3).

He stated that the reporting period was marked by considerable changes in personnel. **Mr. Wang Daxiong**, who served the Secretariat for 3 years as Director, completed his term of office at the end of March 1995. A coastal zone management expert, **Dr. Bert van der Valk**, provided by The Netherlands Government to CCOP, joined the Secretariat in April 1995. His main responsibility is to coordinate and implement the **CCOP COASTPLAN** - Geoscience for Integrated Resources Management and Development of Southeast and East Asian Coastal Zones. This programme, financially supported by The Netherlands Government, consists of 3 phases. The first phase is the provision of the said expert to CCOP for an initial period of 3 years from 1995 to 1997.

In August 1995 (6th-20th), the services of **Dr. Yasumasa Kinoshita** of the Geological Survey of Japan were made available to CCOP, initially as a short-term expert, to implement the next Japanese supported two-year programme of mapping of marine geology and mineral resources. He will officially take up a two-year assignment with CCOP, on secondment from the Geological Survey of Japan, in October 1995.

Against the backdrop of the above staff additions, the Secretariat unfortunately lost in August an experienced professional staff member, **Mr. Sakda Chantanalertvilai**, who looked after the COOP Documentation and Information Services Unit. He was replaced by **Ms. Piyachanid S. Sukchan**. In the same month, the Secretariat also discontinued the service of one driver in order to maintain an appropriate manpower complement for the present situation.



The Secretariat continued to avail itself of the services of **Dr. H. Fontaine** of France for 4-5 months every year to assist in the Pre-tertiary and Palaeontological research studies of the member countries.

To maintain the technical strength of the Secretariat, the Steering Committee, at its 25th meeting in May 1995, unanimously endorsed the Secretariat's proposal for the renewal of **Prof. He Qixiang's** term of duty as both regional Expert on Petroleum Geology and Chief, Technical Services Unit until October 1997.

Another important decision made by the Steering Committee at the aforesaid meeting was the endorsement of a fund-raising plan proposed by the Secretariat, which will have a significant bearing on the future of CCOP. That plan appears as ATTACHMENT-I to the Director's Report (document COOP(XXXII)/3).

Following the Steering Committee's approval of the above plan, the new Director of the CCOP Technical Secretariat, who assumed his duties on 1 April 1995, undertook fund-raising missions to several CCOP cooperating countries in Europe and North America. From 7 to 24 June 1995, he visited Belgium, Denmark, the Netherlands, Norway, Sweden, and the United Kingdom. Approximately one month thereafter, from 14 July to 4 August, he visited Canada and the United States. The report on his missions, together with a set of recommendations on follow-up actions to be taken, are given in ATTACHMENT-II to his report (document COOP(XXXII)/3).

The Secretariat has continued to maintain a sound financial base, thanks to regular contributions and support, both in cash and in-kind, from the member countries, cooperating countries and organisations. Up to 31 August 1995, cash contributions totalling USD 251,818 were received from the following member countries: China (USD 50,000), Indonesia (USD 50,000), Thailand (USD 40,000), Philippines (USD 26,818), Social Republic of Vietnam (USD 15,000), Singapore (USD 10,000 for 1993 and 1994) and Republic of Korea (USD 60,000). As at 31 August 1995, CCOP registered a favourable balance of **USD 456,667.12** from its various sources of funds.

The Technical Secretariat has continued to maintain its present office premises provided by the Royal Thai Government, through the kind arrangements of the Department of Mineral Resources (DMR), on the second floor of the Offshore Mining Organisation (OMO) Building. DMR has also kindly provided space within another office compound for a new storehouse for CCOP publications, construction of which was finished in January 1995. The new storehouse entails savings of USD 1,400 in annual storage costs.

CCOP had continued to enjoy vigorous support for its programme activities from its cooperating countries/organisations. Such support included financing of projects and technical activities, as well as provision of full-time and part-time technical experts and advisory services.



During the reporting period, major assistance obtained from the cooperating countries/organisations was as follows:

FRANCE

The services of Dr. H. Fontaine, Senior Pre-Tertiary Geologist, has continued to be provided by the French Government to CCOP, on a regular basis, for a period of 4-5 months annually. During December 1994 - February 1995, he provided advisory services to Thailand and Malaysia.

JAPAN

The Government of Japan has continued to provide significant support to CCOP's technical and related administrative activities, as well as its publication programme. These include the Regional Heat Flow Mapping Project, the Digital Compilation of Regional Geoscientific Maps of East and Southeast Asia (DCGM) Programme, the East Asia Geotectonic Map Project, digital database development, support for a full-time technical assistant and printing of technical proceedings of CCOP.

Experts provided by Japan were one long-term non-reimbursable loan expert based at the Secretariat to coordinate the DCGM programme and three short-term non-reimbursable experts based at the Geological Survey of Japan to complete the Regional Heat Flow Mapping Project and the DCGM Programme.

NORWAY

Under the third cooperation agreement between the Norwegian Agency for Development Cooperation (NORAD) and CCOP covering the period 1992-94, the Oil and Gas Resources Management (OGRM) programme started in 1992 with the Norwegian support of NOK 7,300,000 was successfully completed on schedule in December 1994.

While approval of financial support for the entire project on Resource Evaluation and Planning (REP), a 3-year programme (1995-98), is still pending, it is heartening to note that funding confirmation (approx. NOK 2,000,000) for phase I of this project, covering technology transfer and human resource development in some member countries, has already been approved by the Norwegian Government. As a result, two training courses on basic petroleum geology and basic geophysics would be organized by the Secretariat during October - November 1995. With Norwegian support, a one-day CCOP-PETRAD-GSJ Workshop on Hydrocarbon Resource Data Management was held on 29 September 1995 in conjunction with the 32nd CCOP Annual Session.



UNITED KINGDOM

In 1994, the United Kingdom Overseas Development Administration granted the British Geological Survey (BGS) an amount of USD 75,000 to support a Seismic Sequence Stratigraphy project; USD 15,000 for the Shallow Seismic Atlas for the Coastal Waters of East Asia; and USD 60,000 for database development under the Geoscience Database for Coastal Zone Management project. All these projects were implemented by the BGS as part of the CCOP programme. The first two projects were completed in 1995 whereas the last project is ongoing and will be finished in 1996.

DENMARK

Denmark provided funding support for the three-year (1995-1998) project "Dynamic Basin Analysis and Description in the CCOP Area Using High Resolution Sequence Stratigraphy and Quantitative Basin Modelling" with a pilot area study in Vietnam. The Danish mission visited the Secretariat in February to discuss details of the project which started in August 1995.

THE NETHERLANDS

Phase I of the Geoscience for Integrated Resources Management and Development of Southeast and East Asian Coastal Zones (known in brief as COASTPLAN) has been approved by the Dutch Government. Phase I covers provision of a senior expert (Dr. Bert van der Valk) with extensive experience in coastal zone management to CCOP. An agreement for this project was concluded between The Netherlands Embassy in Bangkok and CCOP in May 1995. The budget for his initial 3-year assignment to CCOP has been allocated. The Secretariat were also informed that Phase II of the COASTPLAN, i.e. roving seminars (budget: USD 400,000), and Phase III, i.e. case studies (budget: USD 900,000) have been approved in principle. Establishment of a regional working group for COASTPLAN involving member country representatives and the Secretariat expert has been made, and its first meeting took place in Bangkok on 30 August - 2 September 1995.

CANADA

During the 31st Annual Session of CCOP last October, the Memorandum of Understanding (MOU) on cooperation in geoscientific programmes between CCOP and Canada was signed. The MOU serves as a framework for cooperation between Canada and the CCOP member countries in geological sciences mainly by way of training and technical assistance. Covering a five-year period from October 1994, the MOU is expected to strengthen Canada-CCOP cooperation. Some project proposals are currently being developed. In the initial stage, one of the cooperative activities was participation in the first CCOP COASTPLAN working group meeting (see above).



UNITED STATES GEOLOGICAL SURVEY (USGS)

USGS has published the East Asia Geographic Map Series on the scale of 1:2,000,000 as a contribution to its cooperative programmes with CCOP. To date, printed copies of Sheet No. 3, covering the Indochina Peninsula, have been made available to CCOP for sale on an equal revenue-sharing basis. Sheets Nos. 5 and 6, covering Malaysia and Indonesia, were expected. Cooperation was also given by USGS for the distribution of leaflets prepared by the Secretariat, as a promotional medium for the sale of the said map sheet, as well as other CCOP publications, at the AAPG Conference and Exhibition in Houston, March 1995.

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)

IOC financed one representative from CCOP to take part in the Data Compilation Workshop for Late Quaternary Paleogeographic Maps of the WESTPAC Region, which was held in Bali on 20-21 November 1994.

The DIRECTOR completed his report by stating that further details were to be found in the full report, tabled as document CCOP(XXXII/3).

The head of the MALAYSIAN delegation congratulated the Director on his comprehensive and positive report. He pointed out that Malaysia's annual contribution of USD 50,000 was not listed because of a technical delay in the transfer of the funds but this would shortly be overcome. He added that he perceived a particular challenge to CCOP in fulfilling the varying needs of its Member Countries in view of their different levels of technical and economic development. He stated that he would like the Cooperating Country representatives, through the Advisory Group, to consider how this might be achieved. In particular he noted that some activities in the region were repeated by different donor countries and some by the same donor for the benefit of different Member Countries.

The representative from UNITED KINGDOM added to the remarks of the Malaysian delegation by stating that there was considerable overlap and duplication between the programmes of the various Cooperating Countries in the CCOP region. He urged that the Technical Secretariat endeavor to keep its database of technical cooperation projects in the region up to date in order to highlight and thereby mitigate duplication and to encourage greater collaboration between the various executing agencies.

The INDONESIAN delegation also congratulated the Director on his report and asked for clarification concerning the lack of annual contributions from Singapore in 1994 and Cambodia in 1994 and 1995.

The DIRECTOR replied that the problem of financial contributions from Cambodia was urgently under discussion and he hoped to clarify the matter during a visit in the near future.



II. COUNTRY AND TECHNICAL PRESENTATIONS

5. REVIEW OF THE 1995 ACTIVITIES

A summary review of 1995 activities is given below. More detailed accounts are given in the various papers tabled by the appropriate representatives and these are listed in the text for further reference with a complete list in **Annex III** to this report.

5.1 Activities in the Energy, Minerals and Coastal Zone Sectors

5.1 a) Member Countries' Reports

CAMBODIA [documents CCOP(XXXII)/15, 16, 17;
CCOP-TECH(XXXII)/1, 2, 3, 33]

The delegation from CAMBODIA reported that in the **Energy Sector** the exploration period from 1992 to 1993 was limited to geophysical studies with drilling beginning in 1994 up to 1995. The acquisition of 2D Seismic lines had been more than ten thousand km and the acquisition of 3D Seismic lines more than fifty thousand Km² in blocks I, II, III and IV of Khmer basin. Four exploration wells have been drilled with three being successful and one well dry.

In the **Mineral Sector**, the delegation reported that the geological mapping of Cambodia, which began at the end of the last century, is still in arrears for lack of specialists, funding sources and security. Moreover old existing documents were almost all destroyed during the years 1975-79. After the foundation of the present Department of Geology and Mines, all geological activities were resumed. Thanks to the new technology received from CCOP, last year field mapping had moved into a new stage.

As a member of the DCGM Project, Cambodia has compiled a map at a scale of 1:2,000,000. This geological map was based on data extracted from old existing materials including the Geological maps of 1:200,000 scale made during the 1970's and of 1:1,000,000 scale made during 1989. Now the map has been completely compiled in digital form.

A future activity is to make a geological map at 1:100,000 scale and a mineral resource map of 1:500,000 scale. But the first thing to be done is to create a cartography section which will be responsible for completing this goal. Equipping this section with new technology and training of qualified specialists is a pressing need.

The delegation stated that in the **Coastal Zone Sector**, Cambodia has a coastline of 435 km., supporting 20% of social and economic activities but a coastal zone management policy has not yet been comprehensively considered and there is no legislation concerning the coastal zone. The coastal zone has played a critical role in



planning and development so a coastal zone management policy is very much needed as are other emergent activities such as laws, regulation, multi-disciplinary investigation, plans for development in the coastal zone, morphological maps and competent staff for coastal zone management. The assistance of CCOP is urgently required through COASTPLAN.

CHINA [documents CCOP(XXXII)/12, 13, 14, CCOP-TECH(XXXII)/4,5,32]

The delegate of CHINA reported on their activities in the **Energy Sector** stating that a total of 119499 line-kms of 2D seismic and 6397 km² of 3D seismic data were acquired in 1994. During this period, 923 exploration wells and 9056 development wells were drilled. This resulted in a series of significant oil and gas discoveries in the East China Sea, Southeastern Hainan, Yinggehai, Tarim, Jungeer, Songliao, Erlian, Luliang and Shanganning basins.

The total crude oil and gas production in 1994 rose to 147.07 million tons and 16.67 billion cubic meters respectively, of which the offshore crude oil production increased to 6.48 million tons, approximately 40.0% higher than that of the year before. It is expected that the annual offshore oil production may reach more than 7 million tons in 1995.

In addition to oil and gas, in the coalbed methane testing area in the Liulin region, Shanxi, 6 wells, drilled by the North China Petroleum Geology Bureau, flowed 1500-7050 m³/d of coalbed methane from the Permian - Carboniferous coal seams at a depth of 350-400 m in 1994. In 1994-1995, the Ministry of Geology and Mineral Resources signed 3 agreements with foreign companies to explore and develop the coalbed methane resources in Shanxi and Shaanxi provinces.

In the **Mineral Sector** particular attention was focused on the "Investigation of Polymetallic Nodules on the Northeast Pacific Basin" project (1991-1995) sponsored by the China Ocean Mineral Resources Research and Development Association (COMRA). The DY85-3 cruise survey (from May 5 to November 29, 1994) and the DY85-4 cruise survey (from April 8 to November 18, 1995), were carried out by R/V "Haiyang 4" of MGMR, and R/V "Xiangyanghong 9" of SOA, respectively.

Nineteen nodule-mining blocks were identified with an average abundance of nodules of 6.99 kg/m² and an average grade of nodules of (Cu+Co+Ni) of 2.94%. Further research included the following topics: study of the law of distribution; geochemistry and genesis of polymetallic nodules; sedimentation and composition of sediments on the C-C area of the Northeast Pacific. In addition China trained technicians from Belorussia, Republic of Korea, Sudan and Algeria.

The Liaoning Provincial Bureau of Geology and Mineral Resources has been conducting exploration for alluvial diamond in Fuzhou Bay.



CHINA also conducted an "investigation and resources assessment of offshore placer gold of Laizhou Bay". A research report was completed and the following results were achieved: the Quaternary stratigraphic sequence, geomorphological features of the sea floor and the conditions for formation and laws of distribution of offshore placer gold were ascertained.

In the **Coastal Zone Sector** the delegation from China stated that the coastal zone is an important area in China. In order to develop and utilize her coastal zone, China has been paying much attention to studies of the geological environment and coastal zone management. Particularly, since the 1980's, more and more activities related to the fields above have been carried out. A great deal of helpful progress has been made. In the future, the project of "the Development and Utilization of the Yellow River Delta of China" is planned to be promoted. For this project, China would like to get assistance from CCOP in technical support and funds.

The Chinese delegation also reported in detail on various environmental geological studies in the coastal zone of China (see document CCOP-TECH(XXXII/32).

INDONESIA [documents CCOP(XXXII)/32, 33]

The delegation from INDONESIA reported on their activities in the various sectors in terms of their participation in CCOP related programmes. In the **Energy Sector**, activities concerned two programmes: Oil and Gas Resources Management (OGRM) and Thermal Studies. Under the OGRM programme, data collection consisted of:

- Prospects and leads data;
- Reservoir parameters of existing production fields and discovery wells

Thermal studies were implemented in sedimentary basins and in geothermal areas. Thermal studies of the sedimentary basins were focussed on hydrocarbon analysis based on numerical modelling. Three sedimentary basins were studied: the Northwest Java, South Sumatra and Ombilin basins. The studies aimed to:

- Summarize the regional geology and determine key oil wells of the basin;
- Calculate index maturation for each sample based on heat flow;
- Estimate the kinetic parameters of hydrocarbon generation derived from kerogen by using hydrocarbon index supplied from routine Rock-Evaluation analysis;
- Provide hydrocarbon generation curves

Studies in geothermal areas were concentrated on heat flow measurement for estimating the top of hot fluid reservoirs. The heat flow measurements were conducted in at least 100 shallow boreholes in the Kalianda geothermal field, Lampung (Sumatra).

During the review period of January to June 1995, the Delegate for Indonesia reported that a total of 41 exploration wells for oil and gas were drilled and resulted in



14 discoveries. In the same period 3.8 thousand line kms. of 2D and 3D exploration seismic survey were acquired. In addition some of 10.8 thousand kms. of non exclusive 2D seismic has been acquired in the Andaman Sea, Timor Sea and Natuna Sea. Oil production was 271.2 million barrels and gas production was 1,499.30 billion standard cubic feet.

Activities in the **Mineral Sector** were summarised as follows:

- In 1994/1995, the Marine Geological Institute of Indonesia conducted a preliminary survey for detrital minerals in three offshore areas in the waters of Asembagus, Sapudi and Celukan Bawang;
- During the 1994 field season the State Tin Company conducted drilling in the waters of Kundur Island and east of Bangka Island based on seismic data as guidance. The drilling campaign in 1994, discovered a new prospect area at Kenipaan, in Rebo and Pedukang Waters (document COOP-TECH(XXXII/31).

Coastal Zone studies included activities in the fields of Marine geology, Quaternary geology, Hydrogeology, Engineering geology, Environmental geology and computer applications in geoscience.

Coastal erosion is a serious national problem with long term economic and social consequences. The erosion of the shoreline is the most visible result in a complex system of sediment transport and redistribution. Quaternary geological studies are very important in presenting basic physical information on land and spatial quaternary rock distribution. Consideration of the physical properties of land is one of the important aspects in evaluating the conditions of the land and the related environment which will be an input to the strategy for land-used planning.

Coastal geological studies were carried out at :

1. Asembagus Waters, East Java;
2. Celukan Bawang Waters, North Bali;
3. Gayam Islands, Madura;
4. North Coast of Sulawesi;
5. South Coast of Sulawesi;
6. West Coast of Lombok

Quaternary geological mapping were carried out at :

1. Muarabadak Quadrangle, Kutai, East Kalimantan;
2. Tanjungkeli Quadrangle, Berau, East Kalimantan;
3. Tanah Grogot Quadrangle, Pasir, East Kalimantan;



Geomorphological mapping were carried out at :

1. Muara Sekatak Quadrangle, Tarakan, East Kalimantan

Seismotectonic studies were carried out in :

1. Banyuwangi, East Java

JAPAN [documents COOP(XXXII)/9, 10 and 11]

The JAPANESE delegation reported that in the **Energy Sector**, during the last five years, the main new targets for oil and gas exploration in Japan were deep volcanic reservoirs of Miocene age along the Sea of Japan coastal and offshore areas, and deep Paleogene and Cretaceous reservoirs in the Hokkaido and Tohoku regions.

The Japan National Oil Corporation (JNOC) has conducted basic geophysical and drilling exploration in order to prompt private company exploration for oil and gas in Japan, sponsored by the Ministry of International Trade and Industry (MITI). In 1994 fiscal year, two wells were drilled at Tenpoku in northern Hokkaido for Paleogene to Cretaceous exploration and in the Ishikari Bay off western Hokkaido for volcanic reservoir exploration.

The Geological Survey of Japan (GSJ) has continued basic research on petroleum geology, geochemistry and geophysics, and the Technology Research Center (TRC) of JNOC has carried out project research on hydrocarbon exploration and production mainly for the special subjects related to volcanic reservoir and Paleogene to Cretaceous reservoirs, in cooperation with the Japanese oil and gas industries.

As a result of these activities, the total amount of commercial oil and gas production in Japan in 1993 fiscal year is equivalent to about 3 million kiloliter crude oil, which represents a nearly 15% increase in comparison with that in 1990 fiscal year.

The Geological Survey of Japan is investigating the potential of natural gas hydrate in the offshore areas around Japan by experimental work on methane hydrate synthesis to clarify interrelations among related physical factors, and correlation of the Bottom Simulating Reflectors (BSR) on seismic reflection profiles to the methane hydrate phase diagram resulted from the experiments.

Coal Production in Japan in fiscal year 1993 was 7.21 million tons, which was 5.0% less than that in fiscal year 1992 and this supplied 6.2% of domestic coal demands. Though 14 producing coal fields were distributed in Japan, only two coalfields (Ishikari, and Kushiro/Taiheiyo) in Hokkaido and two coalfields (Matsushima/Ikeshima, and Miike) in Kyushu produced more than 500 thousand tons of output in fiscal year 1993. The four fields produced 91% of domestic coal output. In March 1994, 3,433 labourers worked in the coalfields of Japan, and coal productivity was 162 tons per worker per month.



Major research activities of GSJ for coal include the study of coal properties and the depositional environment of coal. It is important for strategic coal explorations and coal utilization to analyze coal properties which are controlled by depositional environments. Through international cooperation, GSJ intends to extend these research subjects to East and SE Asia countries where big potential of coal are expected. Other research works related with coal in GSJ are coal petrographical and organic geochemical studies concerned with for the issues of oil and gas generation from coal.

In the **Mineral Sector**, the delegation gave details of the programme of the Metal Mining Agency of Japan (MMAJ) which has executed domestic and overseas mineral exploration and given financial assistance for Japanese mining companies, stockpiled rare metals, undertaken technological research and development, and pollution control related to the mining activities.

The domestic mineral exploration programme by MMAJ consists of regional and detailed geological surveys, including geochemical and geophysical surveys, and drilling and tunnelling surveys. The programme has additional styles of surveys available for rare metal resources. In FY 1995, regional and detailed geological surveys will be undertaken in 9 and 6 selected districts respectively. One of the major targets of the regional survey is the Seta area of the Northern Hokkaido district. Many gold-bearing quartz veins have been discovered by drilling conducted by MMAJ in the Seta area. The biggest discovery in this area is a vein, 18 m in width, with ore grades of 8 g of Au per ton and 110 g of Ag per ton. As to the detailed survey, the Hida district including the Kamioka mine area looks very promising for Pb Zn exploration. A drillhole in this programme in 1993 intersected a large mineralized zone of 13.4% Zn with a width of 44.4 m. Following this result a tunnelling survey started from FY 1994.

The Geological Survey of Japan, assumes responsibility for fundamental parts of national mineral development activities. The Mineral Resources Department of GSJ is conducting a wide range of research work including mineral resource analysis, genesis of ore deposits and exploration methods for metal and non-metal resources. As to the mineral resources analysis, the department of GSJ has accumulated basic data on Japan's mineral resources and has a new plan to compile metallogenic maps of Japan (1 to 500,000 map series). In FY 1995, two sheets, the Northern islands of Hokkaido 1 and 2, will be published.

The Japanese delegation reported on its activities in the **Coastal Zone Sector** by concentrating their report on a planned schematic map titled "Coastal Erosion and Deposition during the Twentieth Century in Japan". This is being prepared by the Geological Survey of Japan with the assistance of the Public Works Research Institute, Ministry of Construction. The map shows the situation of erosion or deposition at sand and gravel beaches along the coast of the Japanese islands with a total length of 8,000 km. The distribution of retreated and advanced coastal areas for the period of 70 years before 1978 and that for 15 years after 1978 have been compiled. They are based on the comparison among the three topographic maps of 1:50,000 scale: the oldest map published at the beginning of this century, the second map derived from aerial



photographs taken about 70 years later and the last one published by the Geographical Survey Institute, Ministry of Construction, in 1993.

The draft map shows that sand and gravel beaches are distributed more extensively in northeast Japan than in southwest Japan, reflecting the difference of the geologic setting. It is also shown that the erosional tendency has been dominant in Japan during this century, being accelerative, especially after 1978.

KOREA [document COOP(XXXII)/34]

The delegation from KOREA reported that in the **Energy Sector** in late 1994-early 1995, two wells (Gorae 1-1 & 1-2) were drilled in Block VI-1 with an approximate average depth of 3,800 m. However, they resulted in dry holes. A total of 21,857 L-Kms of 3D seismic survey data were acquired over the Gorae I & V structures. In addition, the geological and geophysical data of the Cheju basin were analysed and interpreted in 1994. Geochemical data of the wells in the basin showed favourable conditions for hydrocarbon source rock development with fairly high organic matter content generally compared to type III.

In 1995, KIGAM conducted three projects related to offshore and coastal **Mineral Resources**. The first one was a submarine geological mapping project continued since 1976. The second comprises a 5-year project of assessment of marine sand and gravel resources for construction and the third is a 5-year project of coastal and shallow marine mineral resources investigation started this year. A mapping project will be ended in 2009, with complete surveying around the Korean Peninsula at a scale of 1 to 250,000.

The delegation reported that, in recent years, the Korean government has paid great attention to "sustainable development of the **Coastal Zone**" after considering several occurrences of pollution in the coastal or near seashore area. In 1995, several projects concerning coastal zone management were continued from 1994 and also new projects were launched; i.e., projects on application of mudflats for reclamation, site characterization of the tidal mudflats for waste disposal, change of coastal morphology and sea-level during the Holocene, change of sediment dynamics due to human impact, the application of remote sensing techniques for coastal environment monitoring and aggregate resources mapping for construction materials.

MALAYSIA [documents CCOP(XXXII)/18, 19, 20]

The delegate from MALAYSIA reported that in the **Energy Sector**, during the period October 1994 - July 1995, a total of 88,327 line-km of new seismic data were acquired and 18 exploration wells drilled resulting in four oil discoveries and one gas discovery. A total of 78 development wells were drilled over 6 oil fields and 2 gas fields. Crude oil and natural gas production averaged about 659,000 bpd and 3,122 MSCF/d, respectively. As at 1.1.1995, the total hydrocarbon reserves in Malaysia are 4.1 BSTB crude oil, 71.37 TSCF of non-associated gas and 13.68 TSCF of associated gas.



Activities in the **Mineral Sector**, included the acquisition of a total of 617 line-km of geophysical data in the waters of East Sabah. Seabed sampling was conducted in East Sabah (355 sites) and Sarawak (117 sites) waters. Preliminary results indicated the occurrences of offshore sand deposits in the Sarawak whereas gold concentrations range from 1 to 6 ppm in 2 areas in Sarawak waters. No encouraging finds were recorded in Sabah waters.

A **Coastal** and offshore ORACLE database was set up in late 1994 with the assistance of the British Geological Survey. Data entry will be done in 1996 and GIS map generation will be in 1997. As for the DCGM/CCOP Project, Malaysia had completed compiling and digitizing the geological map of Malaysia, Singapore and Brunei. Quaternary mapping was continued in 3 areas in Peninsular, Sarawak and Sabah. A digitized paleogeographic map (18,000BP) of Malaysia was submitted to IOC/WESTPAC. Groundwater monitoring continued to be carried out in several active fields. In addition, several other groundwater investigations were conducted in various places. A geophysical survey was conducted in the alluvial area of Selangor to identify potential aquifers and demarcate the fresh-saline water boundary.

The PHILIPPINES [documents COOP(XXXII)/27, 28, 29]

The delegate of the PHILIPPINES reported that; during the review period of September 1994 to July 1995, activity in the **Energy Sector** included the drilling of a total of 10 wells. In addition, a total of 9,995 line-km of geophysical studies were conducted in several areas. The total production of petroleum was 1.13 million barrels while gas field in Central Luzon produced 203.922 MSCF.

As for the **Mineral Sector**, marine geophysical and sampling surveys were conducted in the Manila Bay and Subic Bay areas. The delegate also reported that the Philippines had just completed the first phase of its 3-year programme on the application of remote sensing data in **Coastal Zone** management. An environmental degradation study was undertaken in the southwest of Zambales area using a series of images taken from 1988 to 1993. An environmental study with emphasis on geological, geomorphological and hydrogeological characteristics was undertaken in the coastal environments of Ligayan Gulf and Western Luzon.

THAILAND [documents CCOP(XXXII)/21, 22, 23]

In the **Energy Sector**, THAILAND reported that during the period of July 1994 to June 1995, the country produced 84,958,817 barrels of crude oil equivalent and of this the crude oil output totalled 8,654,930 barrels, and natural gas and condensate production was 382,534 million cubic feet (MCF) and 11,539,920 barrels, respectively. This production is equivalent to 32% of Thailand's petroleum consumption. A total of 41,769 line km of offshore and onshore seismic data acquisition was made. Fourteen exploration, 32 appraisal and 66 development wells were made during the period. These led to the discoveries of 3 gas prospects and one oil prospect.



In the **Mineral Sector**, the meeting was informed that as part of its offshore mineral exploration, Thailand conducted a mineral assessment study of beach deposits in the Rayong area. A total of 121 holes were sunk along 50 km of coastline, of which 242 samples were collected and analysed.

As for the **Coastal Zone** activities, Thailand through its Geological Survey Division of the Department of Mineral Resources conducted geological mapping to provide geoscientific input for planning development of the new Government Administrative Centre and Chachoengsao New Township areas. In addition, Quaternary mapping was continued in the coastal area of Chonburi province. The country also started a study on environmental aspects related to the conservation of a Tertiary Fossil beds in the Krabi province and a study on land-used planning in Nakon Nayok province.

VIETNAM [documents CCOP(XXXII)/24, 25,26]

The representative from VIETNAM informed the Session that in the **Energy Sector**, a total of 28 PSC has been signed to develop 30 offshore and onshore Blocks in Vietnam. A total of 2,000 km² of 3D seismic and 25,000 km of 2D seismic have been acquired and 25 exploration wells were drilled during the reporting year. The current production rate of petroleum is 8.1 million tonnes. The country is in the process of setting up 2 oil refinery plants and 2 gas utilization plants. It was reported that, to date, only 25% of the waters have been explored for petroleum potential.

In the **Mineral Sector**, Vietnam has conducted a 1:500,000 reconnaissance geophysical-geological survey over an offshore area of 15,000 sq. km in West Nam Bo. Four boreholes with a total depth of 273 metre were sunk. The survey revealed that the Quaternary deposits in this area are similar to the Gulf of Thailand. In addition, Vietnam also reported that offshore mineral prospecting work was conducted in the Spratly Islands. The country is seeking assistance in the aspects of seismic interpretation and offshore drilling for mineral assessment.

Vietnam also reported the completion of environmental geology studies of the Da Nang-Hoi An area while field studies in the areas of Hai Phong, Ha Long, Ho Chi Minh-Bien Hoa-Vung Tau had been completed and reports are being prepared. The geologic input to the Da Nang-Hoi An area was highly appraised by the planners. The delegates also reported that fieldwork had been carried out in several township areas. Vietnam is seeking assistance to develop a GIS database.

5.1 b) CCOP Technical Secretariat Report (document CCOP(XXXII)/5)

The DIRECTOR of the Technical Secretariat prefaced the report of the Technical Secretariat by outlining the schedule, itinerary and achievements of his fund-raising mission to Europe (June) and to America (July). He was congratulated by several delegates on his efforts, the results of which are reflected in several other reports to the Annual Session.



The Technical Secretariat then reported that in the **Energy Sector** the technical activities planned for OGRM were officially completed by the end of 1994. The main output of the project, a CD-ROM, which includes the Phase I and, Phase II maps, play atlas and bathymetric maps, has been produced with the help of the Mapping Group of The Cambrian Consultant Company. One thousand copies of the CD-ROM have been produced and are ready for sale.

The printed map could not be produced prior to the CD ROM but the map at the scale of 1:8,000,000 should be ready for sale in the first quarter of 1996. The preparation of the explanatory text is proceeding.

During the Director's mission to Norway, NORAD confirmed their support to Phase I of REP, which amounts to NOK 2,000,000 and includes a set of training programmes specially designed for Cambodia, the Philippines and Vietnam. Two of the training programmes have been scheduled in late October and early November, 1995, respectively. Another two including one for all CCOP member countries for enhanced training on resource assessment/management will be accommodated in the first quarter of 1996. NPD and Statoil will provide resource persons to run the training courses in close cooperation with the CCOP Technical Secretariat.

In conjunction with the Annual Session, A PETRAD CCOP GSJ Workshop on Resource Data Management was organized and attended by all concerned member countries. The Workshop was financially supported by PETRAD. GSJ made a significant in-kind contribution to ensure its success.

The Training Manual and Atlas of the Seismic Sequence Stratigraphy of the CCOP Region was printed in August, 1995 by BGS. The Manual and Atlas have been distributed to member countries and the project is now completed.

The Project on an East Asian Geotectonic Map is still ongoing. With the support of GSJ, Sheet 5 is digitised, and the drafts of Sheet 3 and 6 completed. The draft of Sheet 4 will be completed later this year. But drafts of the Sheet 1, 2 and 8 have not been prepared. The budget for digitisation of sheet 5 has been allocated and for 3, 4, 6 is expected to be allocated.

The Heat Flow Map of East and Southeast Asia has been digitised and a diskette is in preparation. A collection of technical papers prepared by the participants as the explanatory text of the map was published in the CCOP Technical Bulletin Vol.25 early this year. However, map publication has been postponed to next year.

Dr. Fontaine, Senior Expert supported by the French Government, continued his technical service to Malaysia and Thailand. In Malaysia, he undertook fieldwork and laboratory examination for both Petronas and the Geological Survey of Malaysia. In Thailand he extended his service for DMR to some new areas. His contribution has been highly appreciated by the recipients.



Big efforts have been made to seek new project support. Since the fund-raising mission of the Director to Norway, the Technical Secretariat has revised the proposal on REP according to the changing situation. However, the main components remain unchanged. According to the new aid policy of the Norwegian government, NORAD is prepared to support regional environmental projects. In this regard, PETRAD has formulated a project proposal named CCOP-ASCOPE-PETRAD Programme on Environmental Issues in The Hydrocarbon Sector. Dr. Oystein Berg travelled to China, Vietnam, Indonesia and Thailand in August to ask for comments. The CCOP Technical Secretariat talked with Dr. Sudibia, Secretary-in-charge of ASCOPE, during his visit to Bangkok in late August. Both sides agreed that CCOP and ASCOPE will make a joint effort to establish a tripartite cooperation with Norway in environmental programmes related to oil exploration and production for the next few years.

In the **Mineral Sector** the 2nd Working Group Meeting on Digital Compilation of Geological Maps in East and Southeast Asia was held in Manila in February, 1995 in conjunction with the GEOSEA Conference. The meeting reviewed the progress of the project and discussed the workplan for the year to come. The participants also attended the GEOSEA Conference to strengthen international relationship with other geological communities.

The 3rd in-house training on Digitisation was held for Malaysia, Indonesia and China during 7 November - 31 December and for the Philippines, Vietnam and Cambodia during 17 April to 23 May. The participating countries completed digitisation and editing of their respective geological maps. Computer technology on GIS was transferred. So far, Cambodia, China, Japan, Korea, Malaysia, the Philippines, Thailand and Vietnam have finished compilation, digitisation and editing of their own maps. Indonesia and Papua New Guinea are expected to complete their work by the end of this year. The geological map of North Korea has been compiled and digitised by Korean, the geological maps of Far East Russia and Myanmar by Japanese and the geological map of Laos by Vietnamese compilers. A Technical Bulletin will be published as the explanatory text of the regional geological map. National coordinators have been requested to submit their papers.

During the reviewed period, Dr. Okubo, Coordinator of the project, visited Indonesia and Malaysia and Ms. Maria Joy Daigo, CCOP GIS specialist, visited Korea and China for technology transfer.

The Japan-supported project on "Digital Compilation of Geoscientific Maps" consists of two phases. The first phase involves the geological map of the region which provides the fundamental data for geological research and resources assessment. The second phase includes digital compilation of thematic maps. The CCOP Technical Secretariat, in cooperation with the Geological Survey of Japan, has proposed the marine geological and natural resource map be compiled during the period of 1996-1997. The map will not only provide information on spatial distribution of bottom sediments and their resource potentials but also help the CCOP COASTPLAN acquire information for offshore environmental management. The new Japanese expert, Dr. Kinoshita who will



replace Dr. Okubo and will be based in Bangkok, has visited CCOP and prepared the project document for the consideration of the Japanese Government.

With the revenue from the disposal of CCOP geophysical equipment, the Secretariat has purchased a CD-Recorder (Philips PC-CDD52/W GR-ROM Recorder), a Controller (Compaq CONTURA 410C), a Printer (HP LAZERJET 5P), an Ink-Jet Plotter (HP SCANJET IIIC) and a Scanner (HP SCANJET IIIC). The total budget involved is around 28,221.14 USD. The newly purchased computer facilities have greatly enhanced the capabilities of the Technical Secretariat in implementation of CCOP projects and database development. An INTERNET system and a LAN system (local Area Network) have been established in the Secretariat.

As instructed by the 24th CCOP Steering Committee Meeting, to allocate part of the revenue of the geophysical equipment for human resource development, the Technical Secretariat organized In-house Training on Computer Literacy in Geosciences on 4-8 and 11-15 September, 1995, in the CCOP office. Dr. Noro, CCOP short-term expert provided by Japan, lectured for the course, which was highly appreciated by the participants.

The UK-supported project on Seismic Atlas for Coastal Waters of East and Southeast Asia has been completed as scheduled. The output of the project, "Shallow Seismic Reflection Profiles from the Waters of East and Southeast Asia (An Interpretation Manual and Atlas)" has been distributed to all member countries.

The **Coastal Zone Sector** has seen increased activities during the reporting period. By the end of February, 1995, the Ministry of Foreign Affairs of The Netherlands approved Phase I of COASTPLAN. In April, Dr. Bert van der Valk, the senior expert seconded by the Dutch Government, assumed his post as the Project Coordinator, based in the CCOP Technical Secretariat. Since then, the following activities have been undertaken by the Secretariat:

- Drafting of the Implementation Plan which was finished by the end of July;
- Fact-Finding Mission to Cambodia, Indonesia, Malaysia, Thailand and Vietnam in July;
- The 1st COASTPLAN Regional Working Group Meeting was held in Bangkok on 30 August - 2 September 1995. The meeting was attended by participants from Cambodia, China, Indonesia, Korea, Malaysia, the Philippines, Papua New Guinea, Thailand and Vietnam. The Netherlands, Canada and UK provided resource persons for keynote lectures. ESCAP and UNEP representatives observed the meeting. The meeting expressed its appreciation to the Dutch Government for its kind support to the CCOP COASTPLAN. An excursion was organized by the Department of Mineral Resources (DMR), Thailand together with the CCOP Technical Secretariat. In conjunction with the working group meeting, a Task Force Meeting was held attended by the Task Force members, i.e., representatives of Canada, The Netherlands, UK and CCOP Technical Secretariat, as well as



representatives from a few member countries. Guidelines for project implementation have been set up by the Task Force Meeting. Canada and UK have expressed strong support for COASTPLAN in various way; A project document on COASTPLAN phase II and phase III was handed over to the Embassy of The Netherlands for approval;

The project, "Geoscience Database for Coastal Zone Management", organized by the British Geological Survey, aims to examine some datasets useful for coastal zone management and to incorporate them into a computerised database. The project has been carried out with the support of the Marine Geology Group of the Geological Survey of Malaysia. Although focused on Labuan off western Sabah, the database is designed for region-wide applicability. The database design work in Malaysia is near to completion and a final report will be issued by March 1996 and will include a full description of the database and the value of the other investigated techniques to coastal zone management

BGS has also looked at the use of remote sensing images (in particular of western Sabah and Labuan) in aiding coastal mapping, and the identification of coastal changes deduced from historic charts.

5.2 Activities of Publication and Information Services (Document CCOP(XXXII)/6)

The Technical Secretariat reported that during the period 1 November, 1994 - 31 August, 1995, the Documentation and Information Services Unit stepped up its efforts towards the promotion and marketing of CCOP publications in a cost effective manner. Initially, a direct mail strategy was employed to enlarge the customer base. Following this, other strategies are planned to be launched, including:

- Introduction of CCOP membership card for buyers of CCOP publications. The card, to be produced in-house, will be issued to any buyer of CCOP publications worth USD 100 upward. The holder will be entitled to a 10-15% discount for his/her next purchase. The card will be valid for one year only;
- Commissioning interested private enterprises (including public and academic institutions, if possible) to market CCOP publications and data on behalf of the Secretariat at a certain brokerage fee. This serves to expand the existing distribution channels and increase the outlets for CCOP publications and data;
- Boosting of CCOP profile and the wider dissemination of information on new CCOP publications and data through advertising in journals, periodicals or newsletters issued by government agencies involved in CCOP activities. With their kind cooperation, advertising will be undertaken on a mutual basis, i.e., CCOP Newsletter will publicize their activities and products. To make this possible, the kind assistance of the Permanent Representatives of member countries and Representatives of the



cooperating countries/organisations is required to play a coordinating role in this matter;

- Participating in international geoscientific conferences and exhibitions to promote publication sales, bearing in mind the cost-effectiveness for doing so;
- Revision of the prices of CCOP publications to most realistically reflect their true value, within the framework of CCOP Publication Policy;
- Exploring the possibilities of the Secretariat serving as distributor for publications of other geoscientific organisations both in the public and private sectors. Currently, the Secretariat is playing that role for USGS in the marketing of the East Asia Geographic Map series on an equitable income-sharing basis;
- Exploring the possibilities of the Secretariat serving as a regional data bank for offshore and coastal resources. The Secretariat could generate income from the trading of such data at a certain reasonable cost to the buyers.

Besides continued endeavours to boost its publication sales, the Unit also continued to expand its exchange programme with other geoscientific organisations and institutes, both national and international.

The Technical Secretariat has continued to upgrade the management, storage and retrieval of information as well as production of publications and documents. It is now connected to an electronic mail network to enhance its communications and exchange of scientific and other information with other organisations. Its e-mail code is **ccop@external.ait.ac.th**.

Construction of the new store-house at a site provided by the Thai Department of Mineral Resources within the compound of another office in the periphery of Bangkok was completed at the beginning of 1995. The new store-house offers a much better storage condition, including ventilation. All publications previously stored elsewhere were removed to the new store-house. This arrangement resulted in savings of USD 1,400 per annum from rental of commercial storage facilities. The Secretariat would like to take this occasion to express its profound thanks and appreciation to the Royal Thai Government for its provision of the said space and other host facilities to CCOP.

Publications issued during the year up to August have been listed together with those in press (see document CCOP(XXXII/6). Sales of publications for period 1 November 1994 - 15 August 1995 amounted to **US\$ 6,417.81**.

In the ensuing discussion the delegate of MALAYSIA expressed his general thanks to all the Cooperating Countries and Organisations that had contributed to the various projects mentioned in the reports of the Technical Secretariat. He also congratulated the Director and Technical Secretariat of CCOP on their bold and aggressive approach to marketing the CCOP products and in fund-raising.



The delegate from INDONESIA asked what the percentage increase in sales revenues was as a result of implementation of the new sales policy. The Director replied such a comparison would be made when a full year had lapsed but early results were encouraging.

The representative of the UK, also Secretary General of the Association of Geoscientists for International Development (AGID), said both AGID and BGS would be happy to be involved the proposed CCOP scheme to advertise each other publications in their respective newsletters.

III. ADVISORY GROUP MEETING

REPORT OF THE ADVISORY GROUP

The Advisory Group of CCOP had its meeting on Thursday 28 September, 1995 and made the following recommendations:

1. In General Regarding the CCOP:

- 1.1 A clarification is needed of the responsibilities of CCOP regarding coordination of projects, standardization of digital data systems, nomenclature, analytical procedures, dissemination of results from ongoing projects, etc. A short mission statement of CCOP should be provided to funding agencies;
- 1.2 The accounting of the CCOP should include the value of both "cash" contributions and of the "in kind" contributions to CCOP. Both should be included in the yearly financial report of the CCOP. The Technical Secretariat should provide guidelines for the conversion of the "in kind" contributions to a "cash value". This should also be done for projects associated, for example, with COASTPLAN;
- 1.3 New guidelines for the Member Countries annual reports on the activities in the various sectors should be issued by the Technical Secretariat. The Technical Secretariat should consult on this matter with the current Rapporteurs.

2. Regarding the Technical Secretariat:

- 2.1 CCOP should increase the number of regional experts from member countries and thereby enhance the value of the expertise provided by the cooperating countries. This would increase the possibilities for getting funds from donor countries for the provision of short-term experts;



- 2.2 Clarification of the role of the Technical Secretariat of CCOP is needed. A mission statement for the Technical Secretariat should be prepared for the Member Countries, Cooperating Countries and funding agencies;
- 2.3 The Steering Committee of CCOP should fully support the Director in his efforts to manage the Secretariat efficiently, both technically and administratively.

3. Regarding Bilateral Projects:

- 3.1 Member Countries, Cooperating Countries and donor agencies should be encouraged to include in appropriate projects an element for dissemination of results. This could be achieved by providing, for example, funding for seminars and workshops open to the CCOP Member Countries. The Technical Secretariat should produce guidelines for such workshops and seminars to be used by funding agencies, etc. For this reason advance information on the preparation of bilateral projects should be sent by Cooperating Countries to the Technical Secretariat;
- 3.2 To further disseminate the results of bilateral projects, information on such projects should be included in the CCOP Newsletter. The Technical Secretariat should provide a format for the reporting of bilateral projects.

4. Regarding Regional Projects:

- 4.1 While the CCOP Secretariat should continue to be funded only from member countries and other governmental contributions, CCOP could encourage private sector support for individual project activities;
- 4.2 Cooperation between Cooperating Countries in co-funding projects should be encouraged. COASTPLAN is an example of a regional project that should be co-funded by different countries and from other sources of finance;
- 4.3 In order to address the problems of different levels of competence in member countries in the various disciplines, in all projects the competence level of the participating countries should be clearly stated and appropriate action taken to ensure inadequacies are dealt with at an early stage of the project.

5. Regarding the Work Sectors:

- 5.1 The titles of the sectors (HYDROCARBON, MINERALS, COASTAL ZONE) should be reformulated in order to make the environmental impact aspects more transparent. This is important for the funding agencies of the donor countries;



- 5.2 Environmental programmes of CCOP should take notice of ESCAP policies in the environmental sector;
- 5.3 The Technical Secretariat should consider how the aspect of Geohazards could be included in the CCOP-programme and what merits this could bring to the CCOP.

IV. GENERAL CONSULTATIVE MEETING

6. REPORT OF TECHNICAL ACTIVITIES

6.1 Reports of the Cooperating Countries and Cooperating Organisations Activities in the CCOP Region

BELGIUM

The Representative of BELGIUM reported that recently their activities in the CCOP region had been very modest in contrast to the very active and successful years of 1988 to 1991. Nevertheless, training at the IFAQ (UNESCO) international training course at the Earth Technology Institute (ETI) in Brussel continued and for the first time was being attended by scholars from Cambodia and Vietnam. Future plans, at a much increased level of activity, will be outlined under Agenda item 9.

CANADA

The Representative of CANADA confirmed their commitment to COASTPLAN and stated that the Geological Survey of Canada (GSC) has allocated funds for participation in the present year. Canada was represented at the 1st Regional Working Group Meeting in Bangkok and serves as a member of the Task Force.

Canada hosted a very successful visit of the CCOP Director in which visits were made to GSC Headquarters, CIDA and Department of Foreign Affairs. Dr. Kim also visited the GSC principal centre for its Marine Programme at GSC Atlantic in Halifax.

Canada intends to present outline proposals for new activities in CCOP in the areas of Regional Magnetic Compilations and Hydrocarbon Charge Modelling.

DENMARK

The Representative of DENMARK reported that the Director of CCOP, Dr. Kim, visited Denmark from 22-23 June, 1995, and the visit proved most useful.

Funding for COASTPLAN is still being sought from the Danish funding agencies but so far this has not been successful.



Phase I of a project entitled "Dynamic Basin Analysis and Description in the CCOP Area Using High Resolution Sequence Stratigraphy and Quantitative Modelling" commenced in August, 1995 when Dr. Lars H. Nielsen took up his post in Hanoi, Vietnam. Phase I comprises a pilot project in collaboration with PetroVietnam and the Vietnam Petroleum Institute which will terminate in early 1997. Particular emphasis is being placed on training both in Vietnam and in Denmark.

THE NETHERLANDS

COASTPLAN is a major initiative of THE NETHERLANDS in collaboration with the CCOP and the Representative reported that, after many years of talking, funding for Phase I has been approved and a Senior Expert has taken up his post in the CCOP Technical Secretariat in Bangkok. The Geological Survey of The Netherlands will give continuous support to CCOP in seeking funding for the next two phases of the project, the Roving Seminars and Regional Case Studies.

The Geological Survey of The Netherlands will chair the CCOP Task Force Group for COASTPLAN and has also established a COASTPLAN Support Group which will give assistance to the Senior Expert based in Bangkok. A member of this Support Group attended the Regional Working Group of COASTPLAN held in Bangkok in August 1995.

During the visit of the Director of CCOP to The Netherlands in June 1995, courtesy calls were made at the Ministry of Foreign Affairs and the Coastal Zone Management Unit of the Ministry of Public Works, Transport and Water Management. This has resulted in a better understanding of the mission of CCOP which will be beneficial in the future.

NORWAY

The representative of NORWAY reported that his Government had, through its Development Agency, evaluated the REP (Resource Evaluation and Planning Programme) and had indicated its willingness to support phase I initially and subsequently, phase II. In addition a special workshop on Resource Management will be held on 29 September, 1995 in conjunction with the Annual Session.

The Norwegian Government is also considering a programme of cooperation with Asian countries on Environmental Issues.

PETRAD in cooperation with CCOP and ASCOPE is preparing a regional project proposal to be submitted to the Norwegian Government by mid-December 1995. Inputs to project proposals have been received from Cambodia, China, Indonesia, Malaysia, Papua New Guinea, Philippines, Thailand and Vietnam. A workshop to discuss the final project proposal is probably to be held in November in connection with ASCOPE if financing is provided by NORAD - The Norwegian International Development Agency.



The endorsement of CCOP Annual Session is sought for this new Environment Programme Application.

SWEDEN (document CCOP(XXXII/30))

The Representative of SWEDEN noted that a changing world requires a different type of development assistance, more holistic and cooperative, using new flexible methods which can rapidly adapt support to new countries. For this reason the Swedish Parliament has made a decision to merge the five Swedish development assistance authorities into one. On 1 July, 1995, Bits, Sandö Course Centre, Sarec, Sida and SwedeCorp merged to form the new agency named SIDA (The Swedish International Development Cooperation Agency). The aim is to provide more effective and efficient development cooperation.

In order to discuss possible bilateral projects in the CCOP region the Representative reported that he had visited Malaysia and the Philippines in 1993 and Vietnam in 1994. Project proposals have been developed for China and The Philippines.

In April 1995, a delegation of 5 persons, headed by Director Wang Xionglin, Ministry of Geology and Mineral Resources, China, was hosted by the Geological Survey of Sweden (SGU). During their visit (10 days) the delegation visited various enterprises in different parts of Sweden and a long term agreement regarding cooperation in the geoscientific field was signed between DGMR and SGU. In May and June, 1995 a delegation from the Korea Institute of Geology, Mining and Materials (KIGAM) visited SGU to discuss issues of common interest. Unfortunately due to an airline strike Dr. Sahng-Yup Kim, Director CCOP, could not visit SGU during his trip to Europe in June this year.

The Representative concluded that he was convinced that CCOP has a very important role in coordinating and disseminating project results.

UNITED KINGDOM (document CCOP(XXXII/31))

The Representative from the UNITED KINGDOM drew attention to this tabled paper (see above) which gave details of 16 Technology Development and Research (TDR) Projects, funded by the UK Overseas Development Administration and being carried out by the British Geological Survey in the CCOP Region. Five of the projects involved China, three Indonesia, three Malaysia, three the Philippines, three Thailand and three Vietnam. Particular attention was drawn to 5 projects in direct collaboration with CCOP:

- Sequence Stratigraphy of Hydrocarbon Basins of Southeast Asia;
- Shallow Seismic Reflection Profiles from the Waters of East and Southeast Asia : An Interpretation Manual and Atlas;
- Geoscience Databases for Coastal Zone Management;
- Land-Ocean Contaminant Fluxes Study;



- **Geological Surveys in Developing Countries: Strategies for Assistance**

The Representative stressed that reports from all TDR projects were freely available on application to the British Geological Survey and lists would be made available to the CCOP Newsletter on a regular basis. The publications resulting from the first two of the BGS/CCOP projects listed above were on display at the Annual Session. The third and fourth projects listed were UK contributions to CCOP COASTPLAN.

UNITED STATES OF AMERICA (document CCOP(XXXII/37))

Dr. Maurice Terman (Honorary Adviser to CCOP) extended the apologies of the Representative of the USA who was unavoidably absent, but speaking on behalf of the USGS and the CPC updated the session on the status of the Circum-Pacific Map Project. He reported that 41 map sheets were published as of 1995 at 1:10,000,000 Scale for four quadrants and the two polar regions and 1:17,000,000 Scale for the Pacific Basin on 7 themes geography, geology, geodynamics, plate-tectonics, tectonics, mineral resources and energy resources.

Sixteen additional maps are being produced for printing and release in the next three years. This will complete that phase of the CPMP. In the production of hard-copy maps some of the data are digitised and future plans include digitising all data and publications in CD-ROM format.

Preparation of eight 1:2 million scale base maps for a basin evaluation/resources assessment study of Southeast Asia was initiated in late 1983 in cooperation with the International Union of Geological Sciences (IUGS) and the CCOP prior to 1990 all maps were published by the American Association of Petroleum Geologist. All maps are now published by the USGS.

He later reported that the USGS is formulating new multifaceted project activities under recently signed MOUs with related Chinese Institutions. Similarly, USGS has formed 'Brofucols' for cooperative studies with China on earthquakes, earth science, surface-water hydrology, surveying and mapping. Also, in Japan cooperative scientific studies are underway with the Geological Survey of Japan, the Public Works Research Institute, and the Japanese Earth Resources Satellite System.

ASCOPE

The Representative from ASCOPE pointed out that ASCOPE-CCOP cooperation has been conducted since 1980. The scope of cooperation was focused to carry out joint studies in the field of stratigraphic correlation, preparation of geological maps, establishment of a petroleum data bank, geothermometry and heatflow. In 1984, the cooperation was enhanced to involve the Norway Cooperation Fund to finance CCOP projects in the fields of Hydrocarbon Resource Assessment, Environment and Safety where ASCOPE member countries could participate bilaterally as well as multilaterally. The projects lasted until 1992.



Since 1992 CCOP has, in line with global trends, redirected its programme strategy with more emphasis on the coastal zone. However there is still room for cooperation with ASCOPE in the fields of environment and coastal pollution in relation to the hydrocarbon sector.

In 1993, CCOP carried out its Norway/NORAD financed project in Oil and Gas Resource Management (OGRM). The scope of the project covered Time-slice Mapping Series, Quality Control/Assurance and Play Atlas. Besides, there was one other CCOP project in Oil Drift Modelling which was not part of the OGRM. ASCOPE was invited to participate in both projects.

Currently, besides the OGRM, there is one proposed CCOP-Norway/NORAD financed project under consideration by NORAD, i.e., Resource Evaluation and Planning. This Phase II project is expected to be implemented in 1996. Up to this time, cooperation has benefited both parties in terms of enhancing knowledge and technology transferred and the human resource development programme within ASCOPE.

INTERNATIONAL UNION OF GEOLOGICAL SCIENCES (IUGS)

The representative of NORWAY also representing IUGS reported that the IUGS commission on fossil fuels had submitted to the IUGS Bureau a proposal for a joint CCOP-IUGS project on Comparative Study on Southeast-Asian Hydrocarbon Accumulations. This project was endorsed by IUGS and is now under formulation in cooperation with the CCOP Technical Secretariat on a CCOP project proposal form according to the CCOP procedures.

In general discussion following the various reports, the MALAYSIAN representative expressed their appreciation to the UK, particularly the BGS, for their assistance to the Geological Survey of Malaysia in jointly developing a coastal and offshore geoscience database under a BGS/CCOP collaborative TDR project. The Netherlands was also thanked for their assistance to COASTPLAN.

The representative of MALAYSIA expressed further interest in the topic mentioned in the report by Norway involving environmental issues in the CCOP region. He added that in view of the restricted CCOP mandate, he wondered how this project would be handled. In reply, the representative from NORWAY said that the environmental project, as given to the CCOP Representatives, will only involve CCOP Member Organisations and ASCOPE Members (the National Oil Companies of the six Southeast Asian countries) and will be relevant to the CCOP Energy Sector.



7. DISCUSSION AND APPROVAL OF THE REPORT OF THE ADVISORY GROUP

The report of the Advisory Group (see Agenda item III – Advisory Group Meeting) was briefly discussed and approved without dissent.

8. CONSIDERATION OF NEW PROPOSALS

8.1 Proposals of Member Countries and CCOP Technical Secretariat

The CCOP Technical Secretariat presented to the meeting, Document CCOP(XXXII)/8. In brief, it was stated that altogether a total of 35 new project proposals had been received by the Technical Secretariat before the meeting. These proposals which cover all the three main activities of CCOP, had been classified into 3 groups as follows:

- A. Proposals which are well prepared on the CCOP project proposal form and in the process of seeking funding sources;
- B. Proposals which are appropriately prepared on the CCOP project proposal form but for which some additional information is required;
- C. Proposals which are not well documented.

The proposals vary in scope, regional nature and objectives. They have been grouped under the three sectors of CCOP programmes as usual.

In order to process these proposals in a satisfactory way, the Technical Secretariat suggested the following:

1. For Category A, some of which have been endorsed by the Steering Committee, the Secretariat should continue its effort to seek funding sources. For the proposals which have not been officially endorsed by the Steering Committee or endorsed previously but essential amendments made, they should be reviewed and endorsed by the Steering Committee at its meeting following their Annual Session.
2. For Category B, it is suggested that the Steering Committee review the proposals and either endorse or refuse them in principle in order to allow the Secretariat to take follow-up actions;
3. Category C are mainly provided for reference. The Steering Committee may endorse them at its next meeting if the proposals are by then well documented;



4. After careful review of the proposals, the Secretariat has noticed that many deal with very similar topics, and are close to duplication. The Secretariat will provide advice to the proposers to group them into projects with a greater regional or subregional nature after the 32nd CCOP Annual Session. These new project proposals are expected to be available at the next Mid-year Steering Committee Meeting for review;
5. For more efficient development of project proposals, it is suggested that a Project Review Group be appointed by the Steering Committee. The group could consist of selected representatives of member and concerned cooperating countries as well as experts from the Technical Secretariat.

The group should meet once a year, one day earlier than the year-end Steering Committee Meeting. The group members should evaluate the proposals and provide advice for the Committee to consider. As a routine therefore, the Steering Committee will only discuss project proposals once a year.

In discussion, the Head of the MALAYSIAN Delegation, in considering the problems faced by the Technical Secretariat in compilation of these project proposals, proposed that:

- i) The Secretariat should send out 2 letters in a year calling for project proposals. This will avoid proposals coming too late for the Secretariat to review before the Steering Committee meets. Only category A and B proposals will be reviewed;
- ii) The Secretariat should establish an expert group that will technically review the proposals before the Steering Committee meeting. These experts can come from the member countries and from the cooperating countries.

The delegate from NORWAY suggested that the detail of the streamlining process of project submission should be left to the Technical Secretariat.

9. STATEMENTS BY COOPERATING COUNTRIES AND ORGANISATIONS ON SUPPORT AND ASSISTANCE TO BE PROVIDED TO CCOP FOR 1996 AND FUTURE YEARS

BELGIUM

The delegate of the BELGIUM reported that the recent fund-raising visit of the Director resulted in a closer contact between CCOP and Belgian Office of Cooperation in Development. It was proposed that:



- i. The Earth Technology Institute (ETI) with the UNESCO training course should act with private companies for fund-raising (HAECON N.V.). The Belgian Geological Survey will be involved;
- ii. The MOU between ETI and CCOP should be renewed;
- iii. That a Belgian junior expert should be sent to CCOP;
- iv. That a project entitled "Evaluation of Non-Living Resource in the CCOP Region" should be established;
- v. That efforts for funding of the five projects proposed in 1994, will continue;
- vi. According to the signing of a cooperation contract with GRDC (Bandung), a training programme for the "Quaternary Resource Stratigraphy" for the CCOP region should be set up;
- vii. Ongoing bilateral projects in Vietnam will be reported to CCOP.

Concerning the proposal of Prof. Paepe from Belgium, the DIRECTOR of CCOP Technical Secretariat expressed his appreciation for the proposal and principally welcomed the possible provision of a junior expert funded by the Government of Belgium. The Director asked Prof. Paepe to send detailed information, such as a C.V. and a brief job description including length of service, funding condition, etc., for further consideration of the Steering Committee.

CANADA

The representative of CANADA briefed the meeting about the Geological Survey of Canada's capabilities in Hydrocarbon Charge Modelling of offshore basins, developed in partnership with the oil industry. A document detailing opportunities for technology transfer through short courses and training was circulated. Five different opportunities were presented including, basin charge analysis, 2D multiphase fluid migration and structure/fault-real risk analysis. It was requested that the member countries forward expressions of interest to CCOP Director or the Canadian representative.

DENMARK

The delegate from DENMARK informed the meeting that fund-raising of Phase II of the Project E-95-1 "Dynamic Basin Analysis and Description in the CCOP Area" is still ongoing and similarly for the COASTPLAN related project in the Gulf of Thailand.



THE NETHERLANDS

The representative reported that the country has no other proposal apart from the COASTPLAN commitment as described under Agenda item 6.1.

NORWAY

The delegation from NORWAY confirmed the willingness of the Norwegian aid agencies to fund the Phase I of the Resource Evaluation and Planning (REP) programme and stressed the positive attitude toward the implementation of Phase II of REP as well as the environmental aspects of hydrocarbon developments. He suggested that a statement of strong support from the member countries of CCOP will enhance the chances of obtaining funds.

SWEDEN

The representative of SWEDEN stated that Sweden will continue to provide assistance via its cooperation programmes as long as the country proposals meet the requirements of the Swedish Government as outlined in his paper (see Document CCOP(XXXII)/30).

UNITED KINGDOM

The representative from UNITED KINGDOM stated that future cooperation with CCOP would follow the pattern of the previous years with collaborative BGS/CCOP projects forming the UK in-kind contribution. Several projects had been submitted for consideration by the UK Government and the outcome could be known early in 1996. The projects were mainly relevant to the Coastal Zone Sector of the work programme.

UNITED STATE OF AMERICA/CPC

The representative of USA stated that the visit of the CCOP Technical Secretariat Director to USA in July 1995 was instrumental to bringing together eight oil companies to discuss the feasibility of an industrial associates programme. Following the meeting, a proposal was made for such a programme, and its first project (Geological Unit Correlation in East and Southeast Asia) was eventually forwarded to 14 companies. Eight companies responded of which only one indicated it was not interested in continuing. The document (CCOP/XXXII/36) was read and amplified and will be discussed individually with the various delegations prior to the Steering Committee decision. The industrial associates programmes has been submitted to the Circum Pacific Council for Energy and Mineral Resources for approval and Dr. Shimazaki, representing CPC, added some words on the topic.



SOUTHEAST ASIA AEROMAGNETIC PROJECT (SEAM)

The meeting was informed that the SEAM project could enable training to be provided to CCOP member countries. A proposal was jointly presented by Prof. J.D. Fairhead of GETECH, University of Leeds (UK) and Dr. D.J.M. Misener of Peterson, Grant and Watson (PGW – Toronto, Canada) to promote a Training and Exchange of Technology programme for CCOP member countries. This programme parallels the South East Asia Magnetic (SEAM) Project which is currently being industrially funded by 10 oil and mining companies. Industrial funding of SEAM is considered only sufficient to carry out all the work necessary to compile, reprocess and map all the existing aeromagnetic data. To provide the necessary funds for training and exchange of technology it is proposed to seek part CCOP funding and CIDA funding. To obtain such funding from CIDA and/or other agencies requires a clear endorsement of the study by CCOP.

Prof. Fairhead outlined past collaboration between GETECH and PGW on similar studies in Africa and South America and how the SEAM project would extend and expand on the previous CCOP aeromagnetic study undertaken by Dr. Ishihara (Geological Survey of Japan).

Dr. Misener indicated the extent and nature of the training programme and the software release to member countries via CCOP. Funding of a part of the proposed programme was reported to being under discussion with CIDA and required CCOP endorsement to be successful.

Dr. D. Prior (Geological Survey of Canada) reported that the Geological Survey of Canada is interested in opportunities to expand the regional scale magnetic compilation using 5km grids. This would build upon completed digital data compilations extending from the North Atlantic through a recently completed Eurasia map, and including the Arctic Ocean. The advantages of including CCOP regional data to the development of new scientific concepts for the region, in a sub-global context were outlined. Expressions of interest from CCOP member countries were sought to enable further definition of a joint project.

ASCOPE

The ASCOPE representative stated that during the ASCOPE-CCOP-Norway Intersecretariat Meeting held in Singapore in May 1995, CCOP Technical Secretariat had forwarded a preliminary list of 6 project proposals for consideration of Norway/NORAD. They are:

- i) Resource Evaluation and Project Planning ;
- ii) Geothermometry/Heatflow;
- iii) Workshop on Hydrocarbon Resource Assessment in ASEAN Region;



- iv) Workshop on the Habitat of Oil and Gas in Carbonate Sediments of ASEAN Region;
- v) Reservoir Management Workshop; and
- vi) Petrophysics Workshop.

He mentioned that the ASCOPE publication on sedimentary basins in the South China Sea could be obtained from the ASCOPE office in Jakarta for USD50.

IOC/WESTPAC

The representative of IOC said that inter-secretariat co-ordination would be a useful mechanism for future cooperation and coordination of the activities of the two organisations, taking the advantage of the fact that both secretariats are located in Bangkok. A regular consultative meeting between the secretariats of CCOP, ESCAP and IOC/WESTPAC has been discussed and should be scheduled in the near future.

10. CONSIDERATION OF THE DRAFT CCOP WORK PLAN FOR 1996

The DIRECTOR of CCOP Technical Secretariat presented the provisional work programme for 1996. He pointed out that it contained only items for which a source of funding had been identified. In particular he highlighted reductions in the proposed budget for the activities of the Technical Secretariat which reflected efficiency savings. He took the opportunity to thank the various Cooperating Countries for their promised project support in 1996 and beyond.

In the ensuing **discussion** the delegate from INDONESIA congratulated the Technical Secretariat on a very clear presentation but asked why the "status column" on the publications chart remained blank and asked how the administration budget had been reduced by almost USD 46,000 when everyone had to cope with inflation. The DIRECTOR agreed that the publication status needed to be more clearly stated and commented again on the manner of the efficiency gains in Headquarters costs which had been enforced by no more funds being available from the sale of redundant equipment. In answer to a question from THE PHILIPPINES regarding a lack of detail in certain items of the budget including an explanation of savings and of Cooperating Country contributions, the DIRECTOR said all these details would be provided to the forthcoming Steering Committee Meeting.

The delegate from CHINA asked if the Norwegian Government could submit a new version of the play data quality control software to Member Countries as part of one of their new programmes such as Phase II of REP. They would also like Dr. Fontaine to visit the Guangzhou Bureau of Marine Geological Survey in 1996. In the Energy Sector of the Work Programme, they strongly supported the BGS Coalbed Methane Project and suggested a number of detailed topics that could be addressed. These were noted by the



UK Representative who welcomed their comments but explained that this proposal awaited funding approval. China also strongly supported the Canadian Geological Survey proposal on "Hydrocarbon Charge Modelling" and the project proposal on environmental issues in the Hydrocarbon Sector proposed by PETRAD, Norway. They explained that they were making these comments on project proposals at this point in the agenda because the tight schedule on the previous day had not allowed enough time for discussion.

The UK representative supported this latter point and said the problem should be addressed by the Technical Secretariat when timetabling the next Annual Session. CANADA also supported the Chinese position, particularly to allow more time for the future plans and ideas for projects put forward by the Cooperating Countries to be discussed in open forum. The delegate from INDONESIA added his support, pointing out that thirty minutes was too short to allow each country to cover three programme sectors and allow time for proper discussion, particularly with regard to new project ideas and proposals.

The head of the MALAYSIAN delegation congratulated the CCOP Technical Secretariat for producing such an excellent document. He suggested that all bilateral projects should include a training element available to other Member Countries and this should be coordinated by the CCOP Technical Secretariat.

The delegation for CHINA stated that with regard to COASTPLAN they would welcome a visit by Dr. Van der Valk to discuss refinements to their proposal for a "case study" entitled, "Research and Management on the Geological Environment of Coastal Areas in the Yellow River Delta, China".

The VIETNAMESE delegation asked if the budget item 11-96-2, concerned with official travel expenses, covered expenses for the 33rd Annual Session. The DIRECTOR confirmed that this was so. They also suggested that CCOP must be involved in IGC and this should be included in the workplan for 1996.

All delegates agreed that the Technical Secretariat had made a clear and realistic presentation of the future programme and accepted that detail would be considered by the Steering committee. The Technical Secretariat invited suggestions for improvements and refinements in the way the information was presented in future Annual Sessions and for the inclusion of additional data.

The Draft Work Programme was therefore passed to the Steering Committee for their approval.



V. VENUE OF THE 33RD ANNUAL SESSION

The delegate from CHINA confirmed that they would be pleased to host the 33rd Annual Session and introduced a First Draft Circular for the meeting to be held in Shanghai (30 October - 5 November, 1996, including the 28th Steering Committee Meeting). They explained that they had arranged dates and a venue that clearly separated the Session from the International Geological Congress in Beijing. More details would be issued in a second circular. The CHAIRMAN and several delegates congratulated the delegation from CHINA for producing a first circular at this early date.

The delegate from INDONESIA suggested it would facilitate forward planning if the venue of the 34th Annual Session in 1997 were discussed.

The delegate from KOREA stated that they would be pleased to consider hosting the 34th Annual Session in Taejeon, Korea in 1997. This proposal met with general acclaim from the other delegates.

VI. ADOPTION OF 32ND CCOP ANNUAL SESSION DRAFT REPORT

The draft report was discussed and approved subject to minor amendments.

VII. CLOSING OF THE 32ND CCOP ANNUAL SESSION

The CHAIRMAN expressed his satisfaction with the large amount of work achieved during the 32nd Annual Session and thanked all the participants, the Technical Secretariat and the Rapporteurs for their efforts.

On behalf of the COOPERATING COUNTRIES, the representative of CANADA expressed their appreciation to all those responsible for the success of the meeting; in particular, Dr Takeo Sato, GSJ and his staff who had provided superb organisation and excellent hospitality. Thanks were also expressed to the CCOP Technical Secretariat for their contributions to all aspects of the Meeting. Appreciation was also given to the organisation of the AIST Symposium which directly complemented many of the research themes within the CCOP programme.

The TECHNICAL SECRETARIAT expressed its thanks to the Japanese Organising Committee, the Chairmen and Vice-Chairmen of the various sessions and all the delegates for their active contributions to the meeting. In addition the Technical Secretariat also added that the two Workshops in conjunction with the 32nd Annual Session were also acclaimed successful.

All delegates joined in thanking the Government of Japan for their generous hospitality in hosting the Session.

The CHAIRMAN then declared the 32nd Annual Session closed.

ANNEXES

Agenda	☞	ANNEX I
List of Participants	☞	ANNEX II
List of Documents & Technical Papers	☞	ANNEX III
Opening & Closing Addresses	☞	ANNEX IV
Work Plan 1996	☞	ANNEX V

CCOP(XXXII)/1
10 October 1995

**COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA (CCOP)**

Thirty-second Session
27-30 September 1995
Tsukuba, Japan

AGENDA

- I. Opening of the 32nd CCOP Annual Session (Wednesday, 27 September)
 1. **Opening Addresses**
 2. **Election of Officers**
 3. **Adoption of the Agenda**
 4. **Report of the Director, CCOP Technical Secretariat**
(covering the period 1 November 1994 - 31 August 1995)

 - II. Country/Technical Presentations (Wednesday, 27 September)
 5. **Review of the 1995 Activities**
 - 5.1 **Activities in the 3 sectors (energy, mineral and coastal zone)**
 - 5.1 a) Member Countries' Reports
 - 5.1 b) CCOP Technical Secretariat's report
 - 5.2 **Activities on publication and information services**

 - III. Advisory Meeting (Thursday, 28 September, AM)

Report of the Advisory Group

 - IV. General Consultative Meeting (Thursday, 28 September, PM; and Saturday, 30 September, AM)
 6. **Report of Technical Activities**
 - 6.1 Report of Activities of Cooperating Countries/Organizations in the CCOP Region
 7. **Discussion and Approval of the Report of the Advisory Group**
 8. **Consideration of New Proposals**
 - 8.1 Proposals of Member Countries and CCOP Technical Secretariat
 9. **Statements by cooperating countries and organizations on support and assistance to be provided to CCOP for 1996 and future years**
 10. **Consideration of the Draft CCOP Work Plan for 1996**

 - V. Venue of the Thirty-third Annual Session

 - VI. Adoption of the draft CCOP Annual Session Report (Saturday, 30 September)

 - VII. Closing of the Annual Session (Saturday, 30 September, PM)
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**COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA (CCOP)**

Thirty-second Session
27-30 September 1995
Tsukuba, Japan

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COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA (CCOP)**THIRTY-SECOND SESSION**

27-30 September, 1995

Tsukuba, Japan

LIST OF DOCUMENTS

Page 1 of 2

DOCUMENT NO.	TITLE	SOURCE	AGENDA ITEM
CCOP(XXXII)/1	Provisional Agenda	Tech. Sec.	3
CCOP(XXXII)/2	Annotated Provisional Agenda	Tech. Sec.	3
CCOP(XXXII)/3	Report of the Director on Activities of the CCOP Technical Secretariat (Covering the period of 1 November 1994 - 31 August 1995)	Tech. Sec.	4
CCOP(XXXII)/4	Implementation Status of CCOP Work Plan 1995	Tech. Sec.	4
CCOP(XXXII)/5	Report on Technical Activities of the CCOP Technical Secretariat in the Energy, Mineral and Coastal Zone Sectors in 1995	Tech. Sec.	5.1b
CCOP(XXXII)/6	Report of the Technical Secretariat on Publication and Information Programme	Tech. Sec.	5.2
CCOP(XXXII)/7	Draft Work Plan 1996	Tech. Sec.	11
CCOP(XXXII)/8	New Project Proposals	Tech. Sec.	9
CCOP(XXXII)/9	Review of Hydrocarbon Resource Activities in Japan	Japan	5.1a
CCOP(XXXII)/10	Review of Offshore and Coastal Mineral Resources Activities of Japan in 1995	Japan	5.1a
CCOP(XXXII)/11	Review of Coastal Zone Management Activities of Japan in 1995	Japan	5.1a
CCOP(XXXII)/12	Review of Oil and Gas Resource Activities of China in 1995	China	5.1a
CCOP(XXXII)/13	Review of Offshore and Coastal Mineral Resources Activities of China in 1995	China	5.1a
CCOP(XXXII)/14	Review of Coastal Zone Management Activities of China in 1995	China	5.1a
CCOP(XXXII)/15	Review of Oil and Gas Resource Activities of Cambodia in 1995	Cambodia	5.1a
CCOP(XXXII)/16	Review of Offshore and Coastal Mineral Resources Activities of Cambodia in 1995	Cambodia	5.1a
CCOP(XXXII)/17	Review of Coastal Zone Management Activities of Cambodia in 1995	Cambodia	5.1a
CCOP(XXXII)/18	Review of Oil and Gas Resource Activities of Malaysia in 1995 (1st October 1994 - 31st July 1995)	Malaysia	5.1a

LIST OF DOCUMENTS

Thirty-second CCOP Annual Session

Page 2 of 2

DOCUMENT NO.	TITLE	SOURCE	AGENDA ITEM
CCOP(XXXII)/19	Review of Offshore and Coastal Mineral Resources Activities of Malaysia in 1994-1995	Malaysia	5.1a
CCOP(XXXII)/20	Review of Coastal Zone Management Activities of Malaysia in 1995	Malaysia	5.1a
CCOP(XXXII)/21	Review of Oil and Gas Resource Activities of Thailand in 1995	Thailand	5.1a
CCOP(XXXII)/22	Review of Offshore and Coastal Mineral Resources Activities of Thailand in 1995	Thailand	5.1a
CCOP(XXXII)/23	Review of Coastal Zone Management Activities of Thailand in 1995	Thailand	5.1a
CCOP(XXXII)/24	Review of Oil and Gas Resource Activities of Vietnam in 1995	Vietnam	5.1a
CCOP(XXXII)/25	Review of Offshore and Coastal Mineral Resources Activities of Vietnam in 1995	Vietnam	5.1a
CCOP(XXXII)/26	Review of Coastal Zone Management Activities of Vietnam in 1995	Vietnam	5.1a
CCOP(XXXII)/27	Review of Oil and Gas Resource Activities of Philippines in 1994-1995	Philippines	5.1a
CCOP(XXXII)/28	Review of Offshore and Coastal Mineral Resources Activities of Philippines in 1995	Philippines	5.1a
CCOP(XXXII)/29	Review of Coastal Zone Management Activities of Philippines in 1995	Philippines	5.1a
CCOP(XXXII)/30	Review of Cooperation with CCOP Member Countries	Sweden	8
CCOP(XXXII)/31	United Kingdom (British Geological Survey) Activities in the CCOP Region	U.K.	8
CCOP(XXXII)/32	Review of Thermal Studies in Indonesia	Indonesia	5.1a
CCOP(XXXII)/33	Country Reports	Indonesia	5.1a
CCOP(XXXII)/34	Country Reports of three sectors of Republic of Korea	Korea	5.1a
CCOP(XXXII)/35	Review of Mineral Resource Activities in Indonesia	Indonesia	5.1a
CCOP(XXXII)/36	A Proposal for an Industrial Associates Programme	U.S.A.	9.2
CCOP(XXXII)/37	Status of Circum-Pacific Map Project	U.S.A.	8.1

COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA (CCOP)

Thirty-second Session

27-30 September, 1995

Tsukuba, Japan

LIST OF TECHNICAL PAPERS

Page 1 of 2

DOCUMENT NO.	TITLE	SOURCE	AGENDA ITEM
CCOP-TECH(XXXII)/1	Oil and Gas Exploration and Production in Cambodia	Cambodia	5.1a
CCOP-TECH(XXXII)/2	Resume of the Report on the Mineral Resources and Environmental Issues in Cambodia	Cambodia	5.1a
CCOP-TECH(XXXII)/3	Coastal Zone Management in Cambodia	Cambodia	5.1a
CCOP-TECH(XXXII)/4	Distribution Characteristics of Placer Gold in the Eastern Laizhou Bay	China	5.1a
CCOP-TECH(XXXII)/5	The Fractal Structural Characteristics of Modern Global Plate Boundaries	China	5.1a
CCOP-TECH(XXXII)/6	Seismicity and Volcano-activity in Japan	Japan	5.1c
CCOP-TECH(XXXII)/7	Eastern Asia Natural Hazards Mapping Project	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/8	The GSJ's Contribution to the Projects Related to Geology and Mineral Resources in Pakistan	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/9	New Relationships between Japan and Mongolia	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/10	Cretaceous Subduction, Accretion and Collision along the Southeastern Margin of Sundaland	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/11	Magnetic Map of the Japanese Islands	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/12	Marine Geology Activities of Geological Survey of Japan, 1995	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/13	Recent Activities of Geochronological Studies in Geochemistry Department, 1995	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/14	Geochemical Standard Reference Samples of the Geological Survey of Japan	GSJ/Japan	5.1a
CCOP-TECH(XXXII)/15	Play Analysis and Prospectivity of Oil & Gas in Nam Con Son Basin	Vietnam	5.1a
CCOP-TECH(XXXII)/16	Geological Characteristics and Mineral Potential in the Offshore Area of Thanh-Nghe-Tinh Area (Deo Ngang-Nga Son)	Vietnam	5.1a
CCOP-TECH(XXXII)/17	Review of Exploration & Production of Oil & Gas in Indonesian Offshore Areas	Indonesia	5.1a

LIST OF TECHNICAL PAPERS

DOCUMENT NO.	TITLE	SOURCE	AGENDA ITEM
CCOP-TECH(XXXII)/18	Hydrocarbon Generation and Multiprocess Thermal Model in Oil Basins of Indonesia	Indonesia	5.1a
CCOP-TECH(XXXII)/19	Hydrocarbon Resource Assessment of Carbonate & Course Clastic Sediment Plays, Cenderawash Bay Area, Irian Jaya	Indonesia	5.1a
CCOP-TECH(XXXII)/20	Review of the Coastal Zone Management in the North Coast of East Java & Bali, Indonesia	Indonesia	5.1a
CCOP-TECH(XXXII)/21	Geochemistry & Magnetic Suceptibility of Toba Ash Layer in Indian Ocean (Preliminary Results of Barat Cruise 1994)	Indonesia	5.1a
CCOP-TECH(XXXII)/22	Marine Geology, Geophysics & Geotectonique of Madura Strait Coast, Surabaya, East Java	Indonesia	5.1a
CCOP-TECH(XXXII)/23 (Cancelled)	Coastal Management & Development of Jakarta Bay Coast	Indonesia	5.1a
CCOP-TECH(XXXII)/24	Age Assignment of 3 Piston Core Samples Based on Foraminiferal Biostratigraphy in Flores Basin, East Indonesia	Indonesia	5.1a
CCOP-TECH(XXXII)/25	Land Physical Aspect of Coastal Plain for Regional Planning	Indonesia	5.1a
CCOP-TECH(XXXII)/26	Tectonic & Climatic Influences to the Spatial & Temporal Development of Coral Reef Limestone in Indonesia Maritime Islands: Assessment on Quaternary Coastal Evolution	Indonesia	5.1a
CCOP-TECH(XXXII)/27	Submarine Landslides on the Bottom of Semangko Bay Based on the Analysis of Shallow Seismic Reflection Records & Seismicity Data	Indonesia	5.1a
CCOP-TECH(XXXII)/28	Vertical Movement of Quaternary Coastal Deposits in the Waingapu Area, East Sumba	Indonesia	5.1a
CCOP-TECH(XXXII)/29	Coastal Management & Development of Jakarta Bay Coast	Indonesia	5.1a
CCOP-TECH(XXXII)/30	Environmental Geological Impacts of the Fast Growing Development Coastal Area in Indonesia with Jakarta as an Example	Indonesia	5.1a
CCOP-TECH(XXXII)/31	The prospect of Tin Ore Deposit at Kenipzzn Waters, Riau Archpelago, Indonesia	Indonesia	5.1a
CCOP-TECH(XXXII)/32	Environmental Geology Study in Coastal Zone at China	China	5.1a
CCOP-TECH(XXXII)/33	Information on Oil & Gas Exploration in the Kingdom of Cambodia	Cambodia	5.1a
CCOP-TECH(XXXII)/34	Gas Hydrates and its Prospecting Status with Special References to Experiental Results on Methane Hydrate Phase Diagram and Distribution of BSR around Japan	Japan	5.1a

**OPENING ADDRESS BY MR. FATEH CHAND,
CHAIRMAN OF CCOP STEERING COMMITTEE FOR 1993-1995**

Mr. Keigo Tabera, Senior Assistant, Regional Policy Division, Asian Affairs Bureau, Ministry of Foreign Affairs, Mr. Hiroshi Nitsukawa, Director-General for Technology Policy Coordination, Ministry of International Trade and Industry,

Your Excellencies, Distinguished Representatives from
the CCOP Member Countries, Cooperating Countries,
Cooperating and Correspondent Organizations,
Technical and Honorary Advisers,
Ladies and Gentlemen.

A good morning to all of you.

On behalf of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia, I express our gratitude and profound thanks to the Government of Japan for hosting this annual session of CCOP and providing all the facilities to make this meeting a success. The science city of Tsukuba is an ideal setting for a geoscience meeting.

This year's session is different from the previous ones as it marks the first time that the meeting duration is shortened by one day. Hence, less time is allowed for discussion and consideration of several topics contained in the agenda. Despite the shortened time, I do hope that our deliberations will, as always, be productive and achieve fruitful results.

As you are all aware, CCOP has been in existence for the last 29 years. Its activities have grown in both scope and complexity as may be witnessed by the change in its mandate since May last year. It has withstood the test of time as an entity with an effective mechanism to facilitate international cooperation that brings highly tangible benefits to its member countries. With its proven track records and long years of accumulated experience, I strongly believe that this organization is well prepared to forge ahead in the

midst of new challenges in the changing world of today. To me, such challenges, to name just a few, include the restructuring in the economies of most countries in the East Asian region, the growth of private sector's geoscientific expertise, and the aid policies of donor countries. These, together with the heightened awareness of the need for international cooperation and environmental preservation to manage and sustain the development of national resources of the participating countries in CCOP, have driven the organization towards greater dynamism in its activities, particularly in the energy, mineral and coastal zone sectors.

From my observation, the CCOP Secretariat has over the years exerted its efforts in harmonizing the diverse and evolving needs of the member countries through focussing its outputs on specific issues with which the various countries were confronted. The training, manpower development and technology transfer components of CCOP work programmes have proven to effectively meet the urgent development needs of its member countries. It is therefore my conviction that the organization will continue to place great emphasis on such endeavours to further enhance its effectiveness.

Finally, on behalf of CCOP, I wish to extend our sincere appreciation to the constituent member countries for their consistent and continuing cooperation in the functioning of the organization and to the cooperating countries and organizations for their steadfast support over many years. Their continued support and contributions have, to a large extent, attributed to the success of CCOP projects. I am hopeful that this effective cooperation will be increasingly strengthened and will become even more fruitful in the future.

Thank you.

**WELCOMING ADDRESS BY MR. KEIGO TABIRA, SENIOR ASSISTANT, REGIONAL
POLICY DIVISION,
ASIAN AFFAIRS BUREAU, MINISTRY OF FOREIGN AFFAIRS, JAPAN
AT THE OPENING CEREMONY OF 32ND ANNUAL SESSION OF CCOP
ON WEDNESDAY, 27 SEPTEMBER 1995**

Honorable representatives,
Ladies and Gentlemen:

First of all, on behalf of the government of Japan, I would like to give a warm welcome to Japan to all the participants in this 32nd Annual Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia. I also would like to express profound gratitude to all the people concerned for their efforts in organizing this meeting.

The international community is continuing its relentless efforts toward the firm establishment of peace and prosperity after the end of the cold war, but nevertheless the world today still faces a mountain of problems that need to be tackled, including the continuation of regional conflicts, the problems of poverty and social instability, and global issues, such as the environment, population, refugees, drugs, and human rights. Centered on the United Nations, the international community must continue and build up its determined efforts to solve these issues.

In response to this situation, earlier this year, which is a commemorative year marking the fiftieth anniversary of the founding of the United Nations, we had the U.N. World Summit on Social Development, which issued an "Agenda for Development", and now the world is searching for a development strategy appropriate for a new age. Also, in April we had the 51st general assembly of ESCAP, which, reflecting this development, affirmed that it would make positive efforts to tackle the economic and social issues of the Asia-Pacific region.

The CCOP was established in 1966 with the aim of providing cooperation through financial and technical assistance, technical training, and the implementation of training programs for member countries in the promotion of the energy resources, mineral resources, and offshore management necessary to ensure the sustained growth of Asia, which has been achieving remarkable economic development. Since then, by steering clear of political debates and building up its modest activities, the committee has achieved many significant results.

During the 32nd Annual Session, in relation to the field of energy and mineral resources, I hear that you will be discussing such issues as the activities of each country and how to advance multilateral cooperation in East Asia from now on. In addition, there will be a technical symposium on the theme of how best to promote sustained development in the region. I sincerely hope that, through these discussions, the committee will be able to make a positive contribution to the economic and social development of the region.

From the perspective of promoting economic cooperation with developing countries through the activities of the committee, and especially cooperation in regional projects. Japan ever since the establishment of the CCOP has contributed by providing both financial and technical cooperation, such as through the disbursements, the dispatch of experts to the secretariat and the acceptance of trainees. We intend to continue from now on to extend as much cooperation as possible.

This year is a landmark year for Japan, marking the fiftieth anniversary of the end of the war. As a member of the Asia-Pacific region, by actively promoting our cooperation with international organizations, such as ESCAP and CCOP, we intend to make further efforts so that not only Asia but the international community as a whole can greet a sparkling twenty-first century full of hope.

Finally, let me say that I hope you enjoy your stay in Japan. Now that the fall has arrived, it is rather chilly in the early morning and evening, so please take care not to catch a cold.

Thank you.

Keynote address of Mr. Kjell Reidar Knudsen
on behalf of the Chairman of the Advisory Group for 1994-1995
at the Annual Session, on 27 September 1995

Mr. Keigo Tabira,
Mr. Hiroshi Mitsukawa,
Distinguished Delegates of the member countries and cooperating countries of CCOP,
Ladies and Gentlemen

I am certainly honoured, on behalf of Mr. Per Blystad, who was elected chairman of the Advisory Group for 1995, to address this large and distinguished audience attending the 32nd Annual Session here in Tsukuba in Japan. Mr. Blystad asked me to forward his most sincere regret for not being able to participate in this Annual Session.

His personal contact with CCOP is rather fresh, first meeting being the technical workshop under the Norwegian programme "Working Groups for Resource Management" in 1991 in Bangkok. Since then, he has had regularly contact through the cooperation agreement between the Norwegian Petroleum Directorate (NPD) and CCOP during the next programme "Oil and Gas Resource Management.

However, the Norwegian support to CCOP started already in 1978 through the UNDP Project. Later, when the UNDP project ended, this contact was continued through the Norwegian Agency for Development Cooperation, NORAD. This is not unique, also other cooperating countries has a long-lasting relationship with CCOP.

The relationship between CCOP and Norway has certainly been fruitful. Several projects focusing upon exchange of technical knowhow and competence have been carried out and we can all be proud of the performance and the output of these projects. To illustrate the fruitfulness, Mr. Blystad asked me to mention a few of his observations and experiences:

1. The attitude to the value of data has changed

Traditionally, raw data has been regarded as a valuable asset and treated accordingly with security and as a competing tool. The data was kept secret unless the other part could pay for it or entered into some kind of agreement for utilisation of the data.

Today's attitude is different: the competition is now rather on the use of data, not on the possession of data. This is a win - win situation which also is created here in CCOP. The marvelous Play Atlas is a good evidence for this.

2. The cooperation on the utilization of data has been very successful

The results achieved through cooperation and sharing of data between neighbouring countries in CCOP, are certainly remarkable. You have through cooperation achieved results here which we can not match equally in my part of the world. The nations straddling the North Sea Basin do not have the same attitude to share and cooperate on data. We certainly have a lesson to learn from you.

3. The cooperation between the member countries on purely technical matters strengthen the overall relationship between the countries

This is an important issue that we all experience in our daily life. Positive contact between neighbours will strengthen the friendship. As professional scientists and officials in charge, we tend to focus on technical matters and results in our projects. The stabilising effect of long term friendly and trusty relationship should not be underestimated. And it is wonderful to have a lot of friends!

During the last few years, cooperating countries have reduced funds and possibilities for support to technical assistance programmes . Also CCOP is facing tougher competition to get funding. However, CCOP is not taken aback by this trend as this has been foreseen in the long term strategic plans made a few years ago. Increased effort to facilitate for private companies to take business opportunities by utilizing the CCOP system, has been initiated. I am confident that this will be an important future income for CCOP.

Network is important. This is certainly true for scientists, officials and businessman and it is a good reason for us to continue already established contacts. We all know that creating network takes time and that a network needs to be refreshed and vitalised regularly. The CCOP Annual Session is a focal point for networks and this is one of the reasons that we all love to attend these wonderful events. The friendliness and hospitality from the host country, as well as the participating member countries and cooperating countries and organisations, are always remarkable and warming.

Before ending this introductory remark, I will also, on behalf of the Chairman of the Advisory Group, take the opportunity to welcome Director Sahng-Yup Kim as Director for the Technical Secretariat as this is the first Annual Session he is in capacity as Director of CCOP. Dr. Kim has a long relationship with CCOP and his large experience will be very beneficial for the organisation. We all look forward to a fruitful and constructive cooperation in the future.

On behalf of the cooperating countries I do wish all a successful Annual Session.

Thank you!

**MESSAGE FROM MR. ADRIANUS MOOY, EXECUTIVE SECRETARY OF ESCAP
TO THE THIRTY-SECOND ANNUAL SESSION OF CCOP
27-30 September, 1995, Tsukuba, Japan**

It gives me great pleasure to convey my warm greetings and best wishes to participants attending the Thirty-Second Annual Session of CCOP.

At the outset, I would like to commend CCOP for the significant progress made by it in promoting activities related to assessment of hydrocarbon and mineral resources in the offshore areas of member countries. We have noted with much satisfaction the remarkable achievements in regional geoscientific mapping of energy and mineral resources and their digitization, computerization of marine geological and geophysical data, establishment of databases in mineral and energy sectors and extensive programme on human resources development, which have contributed substantively in institution-strengthening and capacity-building of relevant national geological survey and mines departments of CCOP's eleven regional member countries. Such activities which have continued for the nearly 30 years of CCOP's existence have helped in creating an awareness of the energy and mineral resource base and potential in the nearshore, continental shelf and deep sea areas within the Exclusive Economic Zones of the member countries in east and southeast Asia. These activities have also guided state-of-the art exploration techniques and the successful exploitation of such resources by these nations for their economic and social development. In this regard, I am pleased to note the most recent ESCAP initiatives in the assessment of hydrocarbon and mineral resource potential in the coastal/offshore areas of Northeast Asia covering also some CCOP member countries, which provide grounds for joint implementation and coordination between the programmes of ESCAP and CCOP in evaluation and sustainable development of marine non-living resources.

It has also been noted that the new mandate of CCOP with a change in the name of the organization in 1994, was followed this year by commencement of its new project on Geoscience for Integrated Resources Management and Development of East and Southeast Asian Coastal Zone generally known as CCOP COASTPLAN with financial and technical assistance from the Government of the Netherlands. This project has been formulated jointly by CCOP and ESCAP as a result of continuous cooperation and collaboration between our two Organizations.

These efforts are timely and most appropriate since the coastal zone in Asia and the Pacific is presently under severe and increasing pressure from rapid urbanization, tourism development, industrialization, pollution and deterioration of the coastal ecosystem, which is reaching a crisis stage specially in fast-growing coastal cities of the sub-region. In addition, the awareness of the importance of coastal zone issues is further stimulated by the extension of national jurisdiction from territorial waters to the Exclusive Economic Zone (EEZ), stipulated in the 1982 United Nations Convention on Law of the Sea (UNCLOS) that has entered into force on 16 November 1994. All these challenges will continue into the next century.

Concerns for protection of coastal environment, conservation of coastal resources and sustainable development of coastal areas are now at the center of national and international agendas. After intensive efforts in the last few decades, it has been realized by many countries that the management of the coastal environment, coastal resources and coastal areas play a crucial role in resolving problems and that such efforts should be integrated to embark on an integrated coastal zone management (ICZM) plan. Regardless of whether its emphasis is placed on the protection/conservation of the coastal environment or on the development/utilization of the coastal resources, the ICZM plan or programme should integrate both areas, addressing both the developmental and environmental issues. The integrated management and sustainable development of coastal areas, including the EEZ's have been highlighted in Chapter 17 of the Agenda 21 of the United Nations Conference on Environment and Sustainable Development (UNCED) on protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection with rational use and development of their resources.

The efforts towards the ICZM in Asian coastal countries including CCOP members states have continued for about 15 years. These efforts of the regional countries as well as the work of the related UN bodies, multilateral development banks and other organizations and agencies have been reviewed recently in the ESCAP study on integrated coastal zone management aimed at examining the cross-sectoral ICZM issues with emphasis on non-living resources in the coastal/ marine environment, and to introduce the national and international efforts for ICZM especially those in the Asian countries, including CCOP member countries, in recent years.

I am also pleased to note that the cross-sectoral issues of ICZM and national policies and plans have been closely reviewed and addressed by the ESCAP/ADB/UNEP Regional Workshop on Coastal and Marine Environment Management held in Bangkok in March 1995 and attended by CCOP as well as by the First CCOP COASTPLAN Regional Working Group Meeting held on 30 August - 1 September, 1995 with ESCAP participation. Review of the experiences and lessons at those meetings will provide valuable guidelines to upgrade their ICZM efforts and to be used by other developing countries in the region.

This emerging trend of increased mutual participation in technical meetings related to resource assessment and coastal zone management is very encouraging and needs strengthening and continuation. ESCAP stands ready to cooperate with CCOP in activities related to the new mandate of the Committee through informal joint programming meetings, exchange of geoscientific data and publications as well as continued mutual attendance at relevant technical meetings.

I would also like to reiterate our commitment to continued ESCAP/CCOP cooperation, liaison and mutual support in realization of the objectives of our member countries related to sustainable development of the marine resources sector.

In conclusion, I wish the Thirty-Second Session of CCOP every success and hope that your deliberations will further strengthen the collaborative efforts of member countries in the advancement of coastal and offshore mineral exploration and exploitation and rational management of the coastal zone.

**INAUGURAL ADDRESS OF THE 32ND ANNUAL SESSION AND
THE 26TH STEERING COMMITTEE MEETING OF CCOP**

BY

**MR. HIROSHI MITSUKAWA
DIRECTOR-GENERAL
FOR TECHNOLOGY POLICY
MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY
THE GOVERNMENT OF JAPAN**

Distinguished Delegates,
Ladies and Gentlemen,

On behalf of the Government of Japan, I have the honor to present the inaugural statement to you all for the 32nd Annual Meeting and the 26th Steering Committee Meeting of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia.

This is sixth time that the CCOP Annual Meeting has been hosted by the Government of Japan. We are particularly pleased to host these meetings for the first time in Tsukuba Science City.

CCOP has been active for nearly 30 years, and has gained a high reputation in international circle for its significant contribution to sustainable social and economic development of the region of the East and Southeast Asia.

I understand that CCOP revised its title and mandate last year, and now its activities have been expanded to cover the subjects of applied geoscience in coastal areas. The Government of Japan welcomes this change for several reasons.

Firstly, Japan suffers from several types of natural hazards, such as earthquakes, volcanic eruptions, land slides, etc. We have also felt the effects of rapid changes in the urban environment during the course of very quick economic growth. We trust that during cooperation with CCOP countries, the experience of Japan in these topics may contribute much to other Asian countries that suffer from the similar problems.

Secondly, the establishment of new compilations and formats of basic information are essential for improved geoscientific cooperation among the CCOP countries. The ongoing cooperation of Japan with CCOP for the Digitization and Compilation of Geoscientific Maps in the CCOP region is in line with this goal.

Finally, I would like to emphasize the importance of multilateral cooperating in geoscientific studies. Geological phenomena are by nature regional, commonly crossing man-made national borders. Therefore, in order to improve the scientific understanding of many geological phenomena, geologists require a regional, and sometimes global, viewpoint. From this aspect, Japan has maintained a close relationship with CCOP, and will continue to do so in the future.

Distinguished Delegates,
Ladies and Gentlemen,

From your agenda, I see that you have many important items to be discussed and considered. I wish you every success in your deliberations.

Thank you.

**CLOSING ADDRESS FROM MR. FATEH CHAND,
CHAIRMAN OF THE CCOP STEERING COMMITTEE
FOR THE 32ND ANNUAL SESSION
27-30 SEPTEMBER 1995**

Distinguished delegates, ladies and gentlemen,

This brings us to the end of the 32nd Annual CCOP Conference.

Although this year's session is different from the previous ones, as it has been shortened by one day, yet we managed to successfully complete our agenda. However, I did note that the level of discussion was a little subdued. Nevertheless we achieved what we set out to do.

On the whole I find the Annual Session was very well organized and I wish to take this opportunity to thank the Japanese government for hosting a very successful meeting, particularly the Ministry of Foreign Affairs and the Ministry of International Trade Industry. Special thanks are due to Dr. Takeo Sato, Director-General of GSJ who is also the Chairman of the Organizing Committee, for a excellent job done. His team of organizers have painstakingly looked after all the details. The Symposium and Workshop also fitted in very well with the CCOP Annual Programme and the Japanese hospitality was superb.

I wish to take this opportunity to thank the rapportuers, Dr. Tony Reedman and Mr. Yunus Abdul Razak for having burnt the mid-night lamp to come up with an excellent report. Our thanks are also due to the Technical Secretariat who worked very hard.

Thanks are due to the Co-Chairman; Mr. K. Tabira, Mr. T. Sato and Vice Chairman, Mr. Wang Xionglin for chairing the Annual Session as well as the Chairman for the consultative group, Dr. Naz Ahmed Shaikh.

To the distinguished delegates, I wish to thank you for your cooperation and contributing to the success of the meeting.

The members of the cooperating countries and the correspondent organizations will be leaving soon. I wish them a pleasant and safe journey back. We hope to see them in Shanghai next year with renewed vitality.

Tomorrow we have a geological excursion. I wish you all a fruitful trip and a pleasant weekend. However, the member countries of CCOP will be meeting on Monday for the Steering Committee meeting. So till then recharge yourself. I now officially declare the 32nd Annual Session closed.

Thank you.



**COORDINATING COMMITTEE FOR COASTAL AND OFFSHORE
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA**

CCOP WORK PLAN 1996

**CCOP Technical Secretariat
as of 20 November 1995**

**SUMMARY OF FUNDING SOURCES AND BUDGETARY ARRANGEMENT PER PROGRAMME
IN CCOP 1996 WORKPLAN**

SUBJECTS FUNDING SOURCES	TECHNICAL ACTIVITIES			PUBLICATION AND INFORMATION	PERSONNEL SERVICES	MEETINGS	ADMINISTRATION			TOTAL (US\$)
	ENERGY	MINERAL	COASTAL ZONE				GENERAL ADMINISTRATION	SPECIAL EXPENDITURE	Technical Programme Support	
CCOP				12,350.00	289,000.00	70,000.00	60,000.00	30,000.00	20,000.00	481,350.00
CANADA			85,000.00							85,000.00
NORWAY	230,000.00									230,000.00
THE NETHERLANDS			840,000.00							840,000.00
JAPAN		129,160.00		5,650.00	18,080.00		10,170.00			163,060.00
UK			20,000.00							20,000.00
U.S. Industry Associates	90,000.00									90,000.00
TOTAL (US\$)	320,000.00	129,160.00	945,000.00	18,000.00	307,080.00	70,000.00	70,170.00	30,000.00	20,000.00	1,909,410.00

CCOP WORKPLAN 1996

I. TECHNICAL PART

SECTOR: ENERGY SECTOR

Page 2 of 7

PROJECT/ACTIVITY	SCHEDULE	BUDGET (US\$)	STATUS	REMARKS
Current Projects				
E-95-1. Dynamic Basin Analysis and Description in The CCOP Area Using High Resolution Sequence Stratigraphy and Quantitative Basin Modelling Phase I: Pilot Study in Vietnam (1995-1997)	1996	in-kind	Phase I is the bilateral cooperation between Denmark and Vietnam. Regional nature will be considered in subsequent phases.	Supported by Denmark
E-96-1. Training Course on Oil and Gas Resource Assessment (1996)	10-24 February, 1996 Bangkok	120,000	Phase I of REP. Mainly focus on Cambodia, the Philippines and Vietnam.	Supported by Norway
E-96-2. Advanced In-House Training on Resource Assessment and Management (1996)	25 February - 4 March, 1996 Bangkok	30,000	For all OGRM countries	Supported by Norway
E-96-3. Pre-Tertiary Geology of the CCOP Region	1996 China, Malaysia, Thailand	in-kind	Dr. Fontaine's service upon request	Supported by France
E-96-4. 30th International Geological Congress	August, 1996 Beijing, China		CCOP T/S will participate in the Symposium 22-4 (ICOGS)	Supported by CCOP
E-96-5. Workshop on Environment Management related to Offshore Oil and Gas Development	10-12 January, 1996 Pattaya, Thailand	50,000	1st Activity of CCOP/ASCOPE/PETRAD Cooperation Project on Environment and Safety	Supported by Norway
E-96-6. Comparative Study on Hydrocarbon Accumulations in East and Southeast Asia	to be clarified		IUGS project. Support and cooperation and expected from CCOP member countries	Supported by IUGS
E-96-7. Geological Unit Correlation in East and Southeast Asia 1st Working Group Meeting	22-26 January, 1996 Chiangmai, Thailand	45,000	CPGDP/CCOP Cooperation	Supported by US Industry Associates
Workshop on Geological Unit Correlation	Venue and date to be decided	45,000	In conjunction either with IGC or the 33rd CCOP Annual Session	

CCOP WORKPLAN 1996

SECTOR: ENERGY SECTOR

PROJECT/ACTIVITY	SCHEDULE	BUDGET (US\$)	STATUS	REMARKS
Projects To Be Wrapped Up				
E-89-1. East Asian Geotectonic Map (1989-1991) Expert visit to concerned member countries	1996	in-kind	Sheet 5 digitised. Drafts of sheet 3, 6 completed and sheet 4 will be completed late 1995. Sheet 1, 2, 8 not prepared. Budget for digitisation of 3, 4, 5, 6 allocated	Supported by Japan
E-92-1. Oil and Gas Resources Management (OGRM) Publication of the map sheets	1st quarter, 1996	30,000	CD-ROM produced.	Supported by Norway
Proposals under Consideration				
E-94-1. Resource Evaluation and Planning Phase I: Technology Transfer and Human Resource Development in the Least Developed CCOP Member Countries Phase II: Definition and Economic Evaluation of Hydrocarbon Potential and Resource Management Options	1995-1996 1996-1998		The phase I was approved by NORAD in early 1995, which includes the training courses of E-96-1 and E-96-2. The Phase II is under positive consideration.	Supported by Norway
E-96-8. Environmental Management and Safety	1996-1998		The workshop of E-96-5 is the first activity of the project.	Supported by Norway

CCOP WORKPLAN 1996

SECTOR: MINERAL SECTOR

PROJECT/ACTIVITY	SCHEDULE	BUDGET (US\$)	STATUS	REMARKS
Current Projects				
<p>M-94-1. Digital Compilation of Geoscientific Maps of East and Southeast Asia Phase II: Thematic Maps II-1. Digital Map of Marine Geology and Natural Resources in East and Southeast Asia (DCMN, 1996-1997)</p> <p>A. Working Group Meeting B. In-House Training on Compilation and Digitization C. In-House Training on Interpretation of Magnetic and Gravity Data D. Expert Mission</p>	<p>April, 1996 Bangkok Jul., Dec., 1996 Bangkok Sept., Oct., 1996 Bangkok Jan., Jun., 1996</p>	<p>89,485.70</p>		<p>Supported by Japan</p>
<p>M-94-2. Development of Data Management and Retrieval System in the CCOP Technical Secretariat A. In-House Training on Computer Application in Geosciences</p>	<p>1996 Time to be decided</p>	<p>36,357.00</p>	<p>CCOP provides the budget from the CCOP general funds for in-house training. Japan provides funds for software development and maintenance of GIS.</p>	<p>Supported by CCOP (15,000.00) and Japan (21,357.00)</p>
<p>M-95-2. Geological Surveys in Developing Countries: Strategies for Assistance (1995-1997)</p>	<p>1996</p>	<p>in-kind</p>	<p>CCOP member countries are required to assist BGS in the study.</p>	<p>U.K. Project</p>
Projects with Preliminary Commitment				
<p>M-96-1. East and Southeast Magnetic Project</p>	<p>To be clarified</p>			<p>Supported by Canada and U.K.</p>
Projects To Be Wrapped Up				
<p>M-94-1. Digital Compilation of Geoscientific Maps of East and Southeast Asia Phase I: Digital Compilation of Geological Map of East and Southeast Asia A. 3rd Working Group Meeting for finalisation of Geological Map B. CD-ROM production</p>	<p>May, 1996 Bali, Indonesia</p>	<p>18,317.30 in-kind</p>	<p>Map compilation and digitisation completed. Finalisation and CD-ROM production are scheduled for 1996.</p>	<p>Supported by Japan</p>

CCOP WORKPLAN 1996

SECTOR: COASTAL ZONE SECTOR

PROJECT/ACTIVITY	SCHEDULE	BUDGET (US\$)	STATUS	REMARKS
Current Projects: CCOP COASTPLAN (1993-1997)				
C-95-1. Geosciences for Integrated Resources Management of East and Southeast Asian Coastal Zones				Supported by The Netherlands
A. Fact-Finding Mission	1st quarter, 1996	60,000	Approved.	
B. 1st Roving Seminar	15-20 Jan., 1996 the Philippines	90,000		
C. 2nd Roving Seminar	Sep., 1996	90,000	To be approved.	
D. 1st Case Study	4th quarter, 1995 - 1st quarter, 1996	300,000		
E. 2nd Case Study	3rd-4th quarter, 1996	300,000		
C-95-2. Technical Support to CCOP COASTPLAN				
A. Support from Canada	1996	85,000	To provide expert service and resource persons for training programmes.	Supported by Canada
B. Support from U.K. *	1996	5,000		Supported by U.K.
Project To Be Wrapped Up				
C-93-1. Geoscience Database for Coastal Zone Management	1st quarter, 1996	15,000	A demonstration database has been established. Remaining work will be completed.	Supported by U.K.

* UK funds provided to BGS to support CCOP approved activities including attendance at CCOP Annual Session.

CCOP WORKPLAN 1996

II. PUBLICATION AND INFORMATION PART

Page 6 of 7

PROJECT/ACTIVITY	SCHEDULE	BUDGET (US\$)	STATUS	REMARKS
P-96-1. 32nd Annual Session Proceedings (Part I - Business of the Committee)	January, 1996	1,000.00		
P-96-2. 32nd Annual Session Proceedings (Part II - Technical Reports)	July, 1996	8,000.00		Supported by Japan (US\$5,650) and CCOP (US\$ 2,350.-)
P-96-3. CCOP Newsletter	Quarterly	4,000.00		
P-96-4. Technical Bulletin Vol. 26		(in-kind)		Supported by Japan
P-96-5. Phase II Map Sheets	1st quarter, 1996	(30,000)		Supported by Norway Ref. to E-92-1
P-96-6. Explanatory Texts of Phase II Map	1st quarter, 1996	To be decided		Supported by Norway
P-96-7. Production of Occasional Promotional Leaflets, brochure and and CCOP Membership Cards	January-December 1996	2,000.00		
P-96-8. Purchase of reference books, maps, periodicals and technical publications	January-December 1996	3,000.00		

CCOP WORKPLAN FOR 1996

III. ADMINISTRATION PART

ITEM	Request Budget for 1996	Approved Budget for 1995	Increase/(Decrease)	REMARKS
A-96-1. Personnel Services Expenses	289,000.00	281,514.00	7,486.00	a) from revenue of Disposal of Geophysical Equipment b) support from JECF Fund
Technical Assistant	^b 18,080.00	^b 15,820.00	^b 2,260.00	
A-96-2. Meeting /Official Travel Expenses	70,000.00	72,000.00	(2,000.00)	
A-96-3. General Administration Expenses	60,000.00	57,080.00	2,920.00	
Maintenance of equipment	^b 10,170.00	^b 4,439.00	^b 5,731.00	
A-96-4. Special Expenditure	30,000.00	40,950.00	(10,950.00)	
A-96-5. Publication and Information	12,350.00	7,920.00	4,430.00	
	^b 5,650.00	^b 4,680.00	^b 970.00	
Sub total	481,350.00	459,464.00	1,886.00	
A-96-6. Technical Program Support	20,000.00	49,500.00 ^a	(29,500.00)	
Sub total	20,000.00	49,500.00	(29,500.00)	
GRAND TOTAL	481,350.00	508,964.00	(27,614.00)	