

A WORLD OF DIFFERENCE



FORTY YEARS OF THE COORDINATING COMMITTEE FOR
GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA (CCOP)
1966 – 2006



Sathorn District 1960



Sathorn District 2006

Anthony Reedman
Yoshihiko Shimazaki

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PREFACE

FROM THE CHAIRMAN OF THE CCOP STEERING COMMITTEE

This year (2006) marks the 40th Anniversary of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP). To commemorate this important event, the CCOP Steering Committee, during the 46th Steering Committee Meeting in China, September 2005, endorsed a proposal to publish a book on the history of CCOP. Two senior members of the CCOP 'family', Dr Anthony Reedman and Dr Yoshihiko Shimazaki, both CCOP Honorary Advisers, offered to research and write the book. This saw the start of the 'History of CCOP Project'. Fittingly, one of the authors, Dr Shimazaki, was himself present at the actual birth of CCOP in 1966.

Exactly a year has passed since the two distinguished authors embarked on their task and now we see the fruit of their labours with the publication of this valuable book—"A World of Difference: 40 Years of CCOP". We must first congratulate the authors on a job excellently and expertly done. Not only are the facts of the forty years of our Organization's distinguished past presented, but also included is the human side of the history gathered from the contributions and fond memories of various members of the CCOP 'family'. As one of these contributors states, the call for contributions to this 40th anniversary publication "had upon me the same effect as opening a box full of photographs of the past". These photographic glimpses of the history of CCOP brought back many happy memories of the Organization. They are the pictorial milestones of CCOP's forty years of achievement and progress.

The birth of CCOP in 1966 within UN-ECAFE (now UN-ESCAP), and the twenty years of UNDP support that nurtured CCOP into a fine organization that could well stand on its own feet when it became an Intergovernmental Organization in 1987 are all documented. The long list of projects and activities supported by the Cooperating Countries, other donor countries and bodies and international agencies that have brought tremendous benefits to the Member Countries are described.

An Organization is made up of people. CCOP is unique in that all those who are involved are members of a CCOP 'family'. The truth is that when at the CCOP's Annual Session, whether working together or mixing socially after work, the feeling is of a gathering of family members. We may be from different countries, different ethnic, cultural, religious and lingual backgrounds, but we treat each other with the greatest respect, courtesy, trust, and goodwill. It is not an exaggeration to say that CCOP has provided a unique platform for promoting regional cooperation, building trust and networks, and facilitating sharing and exchange of information, knowledge, and experience that are all so vital to Member Countries to accelerate their development.

This publication on the history of CCOP is dedicated to the many people who, during the past forty years, have contributed to create a "world of difference" for both our Organization and the geoscientific community in the region. Here, we record our deepest appreciation to all the constituents of CCOP, the Member Countries, the Cooperating Countries, the Cooperating Organizations, the Advisers and all the distinguished people who represented these constituents, for their unwavering support to CCOP. The successive Chairpersons of the Steering Committee and the Advisory Group, together with their colleagues, have provided a clear vision, wise guidance and charted the right course for the Organization. We also express our thanks to the Royal Thai Government for so generously hosting the CCOP Technical Secretariat in Bangkok, Thailand. We honour all the Directors of the CCOP Technical Secretariat who, together with their staff, bear the heavy burden of discharging all their duties and responsibilities in an equitable, unbiased and transparent manner. These are the vital foundations upon which CCOP, as an intergovernmental organization, is built. They must stand firm in the future as they have for the last forty years.

Let us together celebrate our past achievements on this memorable occasion and look forward to even greater success in the future.

Dr. Ekichi Tsukuda
Director-General
Geological Survey of Japan, AIST

FROM THE CHAIRMAN OF THE CCOP ADVISORY GROUP

It is a distinct and great honour to offer sincere congratulations, as Chair of the Advisory Group, on the publishing of this history of CCOP in celebration of the 40th Anniversary of the organisation. Our dear colleagues Drs Reedman and Shimazaki deserve all our heartfelt thanks for their wonderful compilation of memories and archival materials that comprise the anniversary volume. All will agree they have carefully captured the true essence of this wonderfully unique international organization which has served its Member Countries so well for four decades.

It has also been my privilege to serve CCOP since 1994, originally as the representative of Canada, while Director of the Atlantic Geoscience Center. After becoming Dean of the College of Geosciences at Texas A&M University, I was honoured to be asked by the Steering Committee to serve as a CCOP Honorary Adviser on a lifetime basis. Later, in 2000, the Cooperating Countries and Organizations elected me to the Chair of the Advisory Group.

Thus for a mere twelve of the forty years it has been my pleasure to work with the Secretariat, the Member Countries, and the Cooperating Countries and Organizations towards realizing CCOP's mission in East and Southeast Asia. This mission has set lofty goals towards bringing state-of-the-art geoscience concepts and technologies to resource development, environmental stewardship, and human resource development in the region.

Indeed one of CCOP's many strengths is the clarity of these objectives, organized most recently into the three main Geo-resources, Geo-environment and Geo-information Sectors. Another fundamental strength continues to be the willingness of the Member and Cooperating Countries to work together across national and cultural boundaries. Another is the demonstrable impact that myriad CCOP projects have had over the years, in technology transfer, personnel training and influence on public policy. Yet another is the dedication, and sheer hard work, of the Secretariat Staff in Bangkok upon whom fall the innumerable day-by-day, month-by-month, and year-by-year tasks of implementation of innumerable meetings, workshops, symposia, publications and data dissemination. CCOP has indeed been extremely fortunate to have such staff, ably led by successive CCOP Directors who, in turn, have had a true sense of service to the entire international organization.

As Chair of the Advisory Group I would be remiss in not fully acknowledging those who have freely given of their time, energy and experience in an advisory capacity, both at the annual meetings and throughout the years. One special example comes to mind, now routinely referred to rather grandly as the "brainstorming session" in which representatives from seven Cooperating Countries voluntarily gathered in Bangkok for a week to develop a total of fifty-seven recommendations on future challenges and directions for CCOP. A report entitled "How should CCOP build on existing strengths and evolve its activities to take advantage of new contexts and opportunities" was submitted to the Steering Committee for consideration. Of the total, as many as fifty-three of the recommendations were accepted by the Steering Committee and an elegant action plan was designed and implemented by the Director and the Secretariat. This example shows several additional fundamental strengths of CCOP. First the Advisory Group's recommendations were sincere objective contributions, freely offered and based on wide international experience; second they were offered to CCOP in a helpful, non-pejorative, manner recognizing that any actions were solely the prerogative of the Member Countries; thirdly the resulting actions show that CCOP is a healthy, evolving organization, open to change and continuous improvement.

There have been many spectacularly successful CCOP projects over the years; many documented elsewhere in this volume and the past year has yet again demonstrated the absolute value of geoscience information to society. Global, regional, and local issues of energy and water supply; the growing evidence for climate change; the extreme vulnerability of highly populated coastal areas to natural hazards such as tsunamis and hurricanes – all point to the value and importance of geoscience knowledge and data for policy development and planning. CCOP is an extraordinary example of real partnership between different nations and experts that has simply no parallel – in focus, in cooperation and in effectiveness.

And yet there is more. CCOP is sometimes described as a ‘family’ with a wide network of friends and colleagues through Asia, Europe, North America, and indeed worldwide. CCOP meetings are at once businesslike and extremely cordial. Lasting contacts and friendships have been, and are continuing to be made. Traditions such as the annual meeting songs (no matter how tuneless) serve to create bonds of good humour. The CCOP song, built anew each annual meeting – offers irreverent commentaries and good-natured, personal insults enjoyed by all. CCOP is a geoscience organization that makes a difference – not least to those who have had the opportunity to share deep friendships, and develop new perspectives, built upon the richness of cultural diversity.

Dr. David B. Prior

Executive Vice President and Provost
Texas A&M University

FOREWORD

Throughout its relatively short life of just forty years to date, the Coordinating Committee for Geoscience Programmes in East and Southeast Asia has assiduously preserved records and related documents from all its Annual Sessions, Steering Committee Meetings, other important events and publications. The result is an orderly and extensive archive that we have been able to use in compiling this history of the organisation. Whilst for us the existence of such an archive has been a huge advantage it has also posed its own problems. To use all the information would have resulted in a history of not one, but several, lengthy volumes, and faced potential readers with a daunting task. Inevitably therefore we have had to be selective, choosing to include those topics, discussions, programmes, projects and events which we believe have most influenced the course of the organisation's development. This is a highly subjective process and no doubt other authors would have made some significantly different choices.

To those who feel that either they or the country they represent have not been given the prominence they deserve, we apologise. We have mentioned relatively few individuals by name but acknowledge that hundreds of dedicated supporters of CCOP have played important roles in nurturing and developing it into the thriving organisation that exists today. It is to all those unnamed supporters and CCOP participants that this volume is dedicated.

We would like to give special thanks to all the Country Representatives and Honorary Advisers who have sent us their recorded memories of past events many of which we have been able to include in this volume. In particular we would like to mention the contributions of Mr Fateh Chand, Dr Deryck Laming, Dr Erno Oele, Mr Somsak Potisat, Dr Henk Schalke, and Mr E H Yin. Many of the current Permanent Representatives of the Member Countries contributed data for the final chapter on the "World of Difference" in which their respective geoscience organisations are nowadays required to operate. The Geological Survey of Japan is especially thanked for their support to one of the authors and for providing some valuable archival information. Some photographic material, not already in the CCOP archive, was specially provided by the Korean and Malaysian representatives.

Your authors have a combined experience of working with CCOP in advisory roles for a total of fifty six years, and one of us (Y S) was privileged to be present at the birth of CCOP forty years ago. In spite of this depth of experience, however, it would have been impossible to produce this account of the first forty years of CCOP's existence without the dedicated assistance of Mr Chen Shick Pei, the Director of the Technical Secretariat, and all his staff. Amongst them we would specially like to thank Ms Marivic Pulvera-Uzarraga who with great skill and unfailing courtesy met every deadline in completing the unenviable task of guiding the compilation and production of this book through its final stages. However the authors alone accept entire responsibility for any mistakes, inaccuracies or omissions from the final publication.

Dr Anthony Reedman
Dr Yoshihiko Shimazaki

August 2006.

CONTENTS

1. THE ORGANISATION

Conception, Birth and Infancy (1965-1971)

Early International Geoscientific Cooperation in Asia	1
The National Geological Survey Organisations of the ECAFE Regional Member Countries in the 1950s and 1960s	3
New Ideas for Co-operation through ECAFE	4
The ECAFE Expert Working Group	5
An Important Decision in Tokyo	6
A Birth in Quezon City	7
A Call for Help	10

The UNDP Years (1972- 1991)

UNDP's Leading Role.	11
First Steps Towards Self-Reliance	15
Finding a New Home	17
Coming of Age and the Hopes of Independence	18
Independence Achieved	19
Learning to Stand Alone	19

Charting a New Course (1991-2000)

Revised Rules and Objectives	23
------------------------------	----

Policies for a New Millennium (2000-2006)

A New Strategy	23
Advice for the Future	29

2. THE ANNUAL SESSIONS (1966-2006)

The Time for Talking

The Early Sessions	31
First Permanent Representatives (1968)	33
Striving for Efficiency (1970s and 1980s)	34
Thematic Sessions	37

3. THE PROGRAMME

Actions Speak Louder than Words

Setting Sail 41

New Horizons (1972-1985)

A Decade for Development 44
Hidden Depths 50
Environmental Concerns 50
Focus on the Quaternary 52

Crossing the Shoreline (1986-2006)

The UNDP Story: A Final Chapter 53
In Sight of the Coast 54
Better Resources Assessment 57
Going Digital 61
Safety in the Offshore Environment 61
The CCOP Programme and Evolving Aid Policies 62
SANGIS: Increasing the Availability of Information 63
Minerals for the Future 65
Maintaining Relevance: A Tragic Reminder 65

4. TRAINING

The Key to Progress

Everything as Training 69
A Training Centre for Offshore Prospecting 69
Training by Magnet 70
UNDP Fellowships 70
Working is Training 73

5. PUBLICATIONS

Spreading the Word

First Words 74
Launch of a Newsletter 74
Publication Problems 74

A Digital World

Going Beyond Printing 77
Information for the World 77

6. TECHNICAL CO-OPERATION BETWEEN DEVELOPING COUNTRIES (TCDC)

Helping Hands

An Important Acronym	79
The UNDP Project and TCDC	79
TCDC in a Changing World	79

7. A WORLD OF DIFFERENCE

Then and Now

All Change	81
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APPENDICES

APPENDIX 1: TERMS OF REFERENCE OF CCOP	88
APPENDIX 2: CCOP PUBLICATIONS	101
APPENDIX 3: ATTENDANCE LIST, FIRST SESSION OF CCOP, QUEZON CITY, 1966	120

LIST OF FIGURES

Figure 1. Instruction in progress at the United Nations course on Techniques for Aerial Surveys in 1961.	3
Figure 2. The Japanese Delegation at the first Session of CCOP in Quezon City, The Philippines, 27 May to 2 June, 1966.	8
Figure 3. Dr H Closs, first Chairman of the CCOP Technical Advisory Group.	9
Figure 4. Dr C Y Li, often described as the “father of CCOP”, addresses a meeting in Hawaii in 1974.	11
Figure 5. The Republic of Vietnam signs the Project Document for Phase 2 of the UNDP/CCOP Project, March 1974, in the presence of the Executive Secretary of ECAFE, Mr Maramis and Dr C Y Li.	13
Figure 6. Mr Saman Buravas, Director-General of the Department of Mineral Resources, Thailand, shakes hands with Mr Maramis (Executive Secretary of ECAFE) after signing the UNDP/CCOP Project (Phase 2) Document on behalf of the Government of Thailand, March 1974.	13
Figure 7. Mr S K Chung, Project Manager/ Coordinator of the UNDP/CCOP Project and Temporary Director of CCOP in 1985-1986.	16
Figure 8. Mr Sermsadki Kulvanich (Thailand), the first elected Director of CCOP, 1986.	17
Figure 9. The Offshore Mining Organisation Building in Bangkok. The CCOP Technical Secretariat occupied the second floor of the building from 1986 to 2001.	20
Figure 10. The Thai CC Tower in Bangkok. The CCOP Technical Secretariat currently occupies offices on the twenty-fourth floor.	20
Figure 11. Signing ceremony of the CCOP Memorandum of Understanding to establish CCOP as an Intergovernmental Organisation. Hosted by the Deputy Prime Minister of the Royal Government of Thailand at Government House on 25 March, 1987.	21
Figure 12. The Republic of Korea signs the Memorandum of Understanding with CCOP, 1987.	22
Figure 13. Malaysia signs the Memorandum of Understanding with CCOP, November 1987.	22
Figure 14. The CCOP acronym at the gate of the Offshore Mining Organisation Building, frequently mistaken for the Russian Embassy (CCCP) which was situated next door.	26
Figure 15. The CCOP Strategic Plan, “Geoscience for a Sustainable Future”, published in 2002.	27
Figure 16. CCOP’s three Sectors and seven Programmes within which all its projects are operated and managed. From 2006 each Sector will have its own Sector Manager on the Technical Secretariat.	28
Figure 17. Special Advisers to CCOP in 1973.	33
Figure 18. Representatives from Denmark and the UK at the 1998 Annual Session of CCOP continue their work by lamplight following a power-cut during a typhoon in Subic Bay in the Philippines.	35
Figure 19. Dr Erno Oele, Special Adviser to CCOP, 1974 to 1990.	36
Figure 20. Mickey Mouse science: CCOP delegates, all born in the “Year of the Rat”, held a celebratory party at the 33rd Annual Session in Shanghai in 1996.	38
Figure 21. The Chinese delegation to the 1997 Annual Session, in Daejeon, Korea, enthusiastically take their turn to sing at the Farewell Party.	40
Figure 22. A “choir” of Special and Honorary Advisers sings the 1997 version of the CCOP song.	40

Figure 23. Launching ceremony of the very first CCOP project in Pohang, Republic of Korea, 1966.	42
Figure 24. One of the most significant of CCOP's early publications.	44
Figure 25. IDOE Planning Session in Tokyo. Prof. Katili fifth from left in the back row.	45
Figure 26. Plan showing the position of the SEATAR Transects.	46
Figure 27. Report on a SEATAR Crustal Transect VII.	49
Figure 28. Dr Oystein Berg (1987).	51
Figure 29. A field party studying Quaternary geology in Malaysia.	52
Figure 30. Leaflet publicising the COASTPLAN Project.	56
Figure 31. Ms Petcharat Sarawisutra of the CCOP Technical Secretariat presents a garland of flowers to the King of Norway at the Offshore Northern Seas Conference in 2002 in Stavanger, Norway.	59
Figure 32. The Asian Multilingual Thesaurus of Geosciences was published in 2006.	64
Figure 33. A fishing boat washed inshore by the 26 December 2004 tsunami. Ban Nam Khem, Thailand.	67
Figure 34. Report on "Tsunami Risk Reduction Measure with a Focus on Land-use and Rehabilitation", a project funded by the Royal Norwegian Government in 2005/6.	68
Figure 35. Offshore Prospecting Training based at the Regional Training Center for Offshore Geophysical Prospecting, Tokyo, Japan. (a) Training at sea during a course in 1974 and (b) Training flight for airborne geophysical survey during the same course.	71
Figure 36. Dr John Ringis, Senior Marine Geophysicist on the UNDP/CCOP Project instructing Chinese geologists at China's National Centre for Quaternary Geology in Qingdao, 1987.	73
Figure 37. The changing face of the CCOP Newsletter: a) The first Newsletter published in 1973. b) A Newsletter from 1986. c) A Newsletter from 2005.	75
Figure 38. The Home Page of the CCOP Website.	78
Figure 39. The growth in the Gross Domestic Product (GDP) <i>per capita</i> in USD of the individual CCOP Member Countries.	83
Figure 40. Comparison of the Gross Domestic Product (GDP) <i>per capita</i> for individual CCOP Member Countries in 1970 and 2004.	84
Figure 41. The Tamhae II, the current research vessel of the Korea Institute of Geoscience and Mineral Resources.	85

1. THE ORGANISATION

Conception, Birth and Infancy (1965-1971)

“Rome”, as the old adage goes, “wasn’t built in a day” and, needless to say, neither was the Coordinating Committee for Geoscience Programmes in East and Southeast Asia. In the year 2006, more than forty years after the Committee’s first formal meeting, work still continues to extend its scope and enhance its effectiveness. Nevertheless, laying the foundations of the Committee, an ambitious intergovernmental project, was completed in the surprisingly short period of just over a year during 1965 and 1966.

Early International Geoscientific Cooperation in Asia

Geosciences are inherently international in nature and although there had been many cases of international cooperation in the geosciences in Asia since the late 19th Century these were mostly between individuals, at best sporadic, and not very systematic. The first examples of systematic multinational co-operation in the geosciences were initiated by the Mineral Resources Section of the Economic Commission for Asia and the Far East (ECAFE) of the United Nations in the early 1950s.

At that time, the countries in Asia were struggling to recover from the devastation of World War II, and were not capable of conducting such co-operative projects on their own. Co-ordination of such efforts would be required. That this became possible was largely due to the remarkable insight, organizational capability, and enthusiasm of a Chinese geologist, Dr. C Y Li (see **Figure 4**), who was then the Chief of the Mineral Resources Section of ECAFE. Looking back, it can safely be said that he laid the foundation of what was subsequently to become an extremely successful organization for facilitating systematic multilateral geoscientific cooperation.

ECAFE was an organization established with the aim of assisting the countries of Asia to revive their economies after the devastation of the World War II. It was founded in 1947 as one of the five regional economic commissions under the umbrella of the United Nations Economic and Social Council. The regional members of ECAFE in the 1950s were: Afghanistan, Burma, Cambodia, Republic of China, India, Indonesia, Iran, Japan, Republic of Korea, Laos, Malaysia, Nepal, Pakistan, The Philippines, Sri Lanka, Thailand, and Vietnam, and non-regional members included France, The Netherlands, Soviet Union, United Kingdom, and the United States of America.

The Mineral Resources Section of the Industry and Natural Resources Division was one of the most active units of ECAFE in its early days. The activities were implemented through two conference units serviced by the Mineral Resources Section, known respectively as the Subcommittee for Mineral Resources Development and the Working Party for Senior Geologists. The former consisted mostly of representatives of the mine bureaus of the region and the latter of the geological surveys, and they met simultaneously every two to three years. They were the only international fora in the region for the senior staff of the relevant organizations.

Activities at that time, which were carried out almost entirely on UN funds, were:

- Study tours (during the 1950s) to European and North American mine bureaus and geological surveys by director-level personnel of the regional member countries.
- Seminars and workshops on a variety of topics such as mining legislation, resources geology and new techniques such as photogeology, which were conducted by internationally known scientists, engineers and administrators of various organizations of industrialized countries.
- Implementation of co-operative projects such as compilation and publication of regional geologic and thematic maps, mostly on the scale of 1:5 million.
- Compilation and publication of regional statistics of mineral resources (including hydrocarbons).
- Compilation of a mineral inventory of the region.
- Publication of studies of specific areas and resources.

Box 1

**United Nations Course on Techniques for Aerial Surveys
1961**

An example of fairly large-scale technical training course sponsored by ECAFE in those early days was the one on aerial survey techniques. It was carried out over a fifty-day period in 1961 at the Geological Survey of Japan.

The geological community of the ECAFE region was acutely aware that one field of geoscience which had made very rapid progress during the 1950s was that concerned with the use of aerial survey methods. These techniques were being applied by European and American geological surveys and the mineral and petroleum industries in various geological and mineral exploration projects with considerable success. It was thought that their application in Asia might have equal success but the geological survey organisations of the region lacked the knowledge to utilize them.

After a series of negotiations between ECAFE and UN Headquarters, it was reported that the UN would be willing to hold an international workshop on airborne survey methods in the ECAFE region if a member country would agree to host it. The Geological Survey of Japan was gradually becoming aware of what these methods might mean to the future of the geological sciences in general and Japan offered to host the workshop. It was carried out during fifty days in October and November, 1961, with instructors Dr W A Fischer from the United States Geological Survey (geological methods) and Dr L W Morley from the Geological Survey of Canada (geophysical methods). There were a total of eight participants from China, Republic of Korea, Indonesia, Philippines, and Thailand together with a further ten from Japan. This was the very first systematic introduction of the use of airborne survey techniques in Asia (**Figure 1**). The ground laid by this workshop can be said to have kick-started geoscientific remote sensing in Asia. Many of the participants later became leading figures in geoscientific research and resources exploration in their respective countries. It is considered to have been one of the most successful training exercises carried out under the auspices of ECAFE in those early years. Dr Fischer later served as a CCOP Special Adviser and he played a pivotal role in founding the EROS Data Centre. His ideas formed the specifications of the Landsat System which enabled world-wide distribution of satellite remote sensing data.

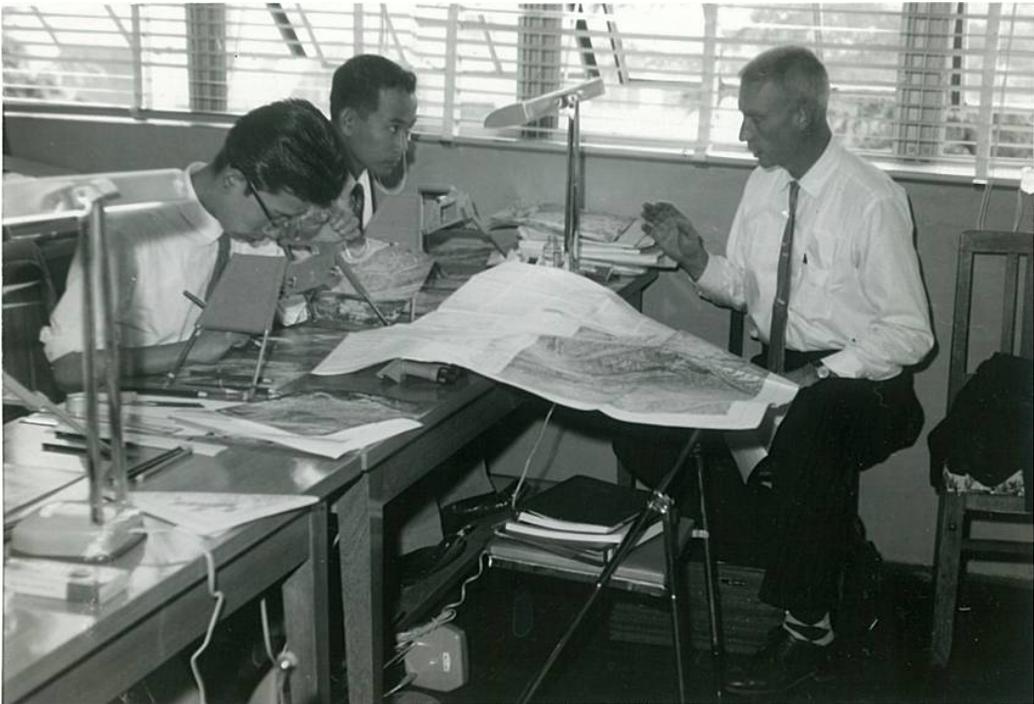


Figure 1. Instruction in progress at the United Nations course on Techniques for Aerial Surveys in 1961.

The emphasis in these activities tended to be more on geology rather than mining. This was partly due to the fact that most mining in the region, apart from fossil fuels, was carried out by the private sector and it was difficult for the UN to be directly involved in assisting private enterprises. Also the mine bureaus of different countries had very diverse mandates and priorities, while the geological surveys of the region were all involved in more or less similar programmes of work so that cooperative projects such as regional map compilation could be implemented more easily. It may also have been the case that the Head of the Section, C Y Li, being a geologist by training, encouraged the emphasis on geology.

The National Geological Survey Organisations of the ECAFE Regional Member Countries in the 1950s and 1960s

The decade between 1955 and 1965 was a foundation-building or re-building period for many geological surveys of the region. All of the ECAFE activities mentioned above were extremely beneficial to the mine bureaus and national geological survey organisations of the regional member countries at that time. By the mid-1960s, various requirements for the future development of many of the geoscientific institutions in the region had become more or less clear and plans were being prepared by these institutions to cope with them. By then the institutions had been reconstructed and revived to a certain degree and their technical capabilities had improved considerably. With focus on their specific needs, the institutions were now able to acquire the benefits of communicating with internationally known scientists and engineers through bilateral means. Also, many of their scientists and engineers who had acquired advanced training in industrialized countries now returned to their home countries. International geoscientific organizations, such as the Commission for the Geological Map of the World, the International Union of Geological Sciences and the United Nations Educational, Social and Cultural Organisation resumed or started their activities in earnest. At the same time, the workload arising from involvement in ECAFE co-operative projects, such as revision of national

maps to fit the requirements for regional maps and preparing inventories of mineral resources of the country in a prescribed format, though originally extremely useful in upgrading the scientific capabilities of the institutions, was gradually becoming more of a burden. It became clear that the institutions were no longer satisfied with conventional involvement in the ECAFE projects; operational assistance had become a necessity.

The Mineral Resources Section of ECAFE, partly because of the success of its past efforts, had reached the stage where a change of course was required. Various ideas were floated, such as establishing a super-geological survey for the entire ECAFE Region, or implementing joint surveys and mineral exploration along national boundaries. Many of these were talked about but were not taken very seriously.

New Ideas for Co-operation through ECAFE

In the early 1960s, the term 'plate tectonics' was not yet in existence, but a series of remarkable discoveries in marine geology became evident and the geologists of the ECAFE region were well aware of this most exciting frontier of geoscience. At the same time, they also knew that many offshore oil fields were being discovered and developed in various parts of the world, and that offshore geophysical surveys were being carried out or planned in many areas off the coast of North and South America; in the North Sea and along the west and east coasts of Africa. It had also been reported that the Soviet Union had carried out surveys in the Black Sea, the Caspian Sea and parts of the Ohotsk Sea.

In the ECAFE region, the intensive work being undertaken in the Persian Gulf was well known. Some offshore surveys for oil and gas were also being carried out in the shelf areas of Brunei, Indonesia, Iran, Japan, New Zealand, Pakistan and The Philippines. Limited work on offshore tin, heavy detrital minerals, and coal had also been carried out in the region. The Asian geoscientific community was becoming increasingly aware of the importance of marine geosciences and offshore resources. The majority of geoscientists of the geological surveys of the region, who were not directly involved in petroleum exploration, however, viewed most of these activities and their exciting results as the achievements of geologists blessed with a favourable scientific environment in far away rich countries. Direct involvement by their individual institutions was unthinkable, with the exception, perhaps, of those in oil-producing countries.

It was against this background that a proposal regarding the possibilities for conducting joint offshore geophysical surveys of the continental shelf areas of the ECAFE region was submitted by the ECAFE Secretariat to the 17th session of its Committee on Industry and Natural Resources which convened in February 1965 in Bangkok. In the proposal the ECAFE Secretariat referred to the offshore geophysical surveys which had been carried out in the initial stages of exploration in many parts of the world and to the fact that these activities had been receiving increasing attention in other parts of the world. Attention was also drawn to the geophysical surveys in the shelf areas of the ECAFE Region including the well-known intensive activities in the Persian Gulf area. The proposal was an ambitious one; it envisaged the acquisition of an exploration vessel together with the necessary equipment and staff, to undertake the surveys. The venture would require the approval of the governments of the interested countries in the region. It was suggested that funding might be provided by the UN Special Fund and by developed countries.

After discussion, the Committee on Industry and Natural Resources recommended that an *ad hoc* Working Group of Experts from interested countries be convened to study the proposal further and work out the ways and means for facilitating exploration of oil, gas and other types of mineral deposits in the shallow marine shelf areas of the ECAFE region. The Committee's recommendation was approved by the ECAFE Commission at its 21st session at Wellington in March 1965.

The ECAFE Expert Working Group

The *ad hoc* Expert Working Group met in Bangkok in July 1965. Experts from member countries of the region formed the Working Group itself, and experts from countries outside the region, together with the United Nations experts and additional experts sent by member countries within the region, served as advisers to the Group. The chairman was Dr. Hari Narain, the Director of the National Geophysical Institute of India.

The Group made a very comprehensive review of offshore geophysical surveys of the ECAFE Region. It included the current status of offshore exploration, resources potential of the marine shelves, possible future reconnaissance surveys that would be of immediate interest to the countries of the region and various offshore survey methods and their costs.

The following conclusions were reached from the above deliberations.

1. Only a few extensive areas in the region have yet been reasonably explored for oil and little has been done in the way of exploration for offshore deposits of other minerals.
2. Large scale programs over a period of years will be necessary to evaluate the prospects in the region as a whole and it should be possible to undertake these more economically by coordinating programs and activities and by promoting joint operations where feasible. It is likely that some outside assistance will be required.
3. In offshore areas where little or nothing of geologic conditions is known, an evaluation of the potentialities should be first made by systematic reconnaissance that will outline areas of special interest warranting more detailed studies. This systematic approach should be encouraged, and where the burden might prove too heavy for any one organization, joint operations should be promoted.
4. In order to achieve the above objectives, it would be necessary to have a coordinating committee consisting of government representatives of member countries in the region which desire to participate in cooperative or joint geophysical and other means of prospecting for mineral resources in the Asian offshore areas. This committee could regularly review all activities in this field; recommend measures for coordination of programs that would result in reduced costs; consider possible sources of financial and technical assistance for joint projects; prepare and submit requests for technical, financial and other assistance to the United Nations agencies and other organizations; promote plans for basic and applied research relating to offshore prospecting; and promote the establishment of training programs for personnel.
5. The Group felt, considering the importance of offshore prospecting for mineral resources and the shortage of experienced personnel in the field, that a regional institute specializing in all phases of offshore prospecting should be established, using the facilities of an existing institute in the region and expanding its functions as appropriate. The Group had in mind particularly the Institute of Applied Geology in the Philippines, which was established about three years earlier with the assistance of the United Nations Special Fund, and which could be suitably strengthened to offer training courses in offshore prospecting methods and techniques.

In item 4, above, the Group recommended that a 'coordinating committee' consisting of representatives of the Governments of interested countries should be established. They went on to submit proposed detailed draft terms of reference for such a committee.

An Important Decision in Tokyo

The recommendations of the Working Group were to face close scrutiny at a meeting convened in Tokyo in November 1965 in conjunction with the ‘Third ECAFE Symposium on Development of Petroleum Resources’. There the Executive Secretary of ECAFE invited representatives of the governments of all interested countries in Asia to consider what action might be taken in connection with the establishment of a “Committee for Co-ordination of Prospecting for Mineral Resources in Asian Offshore Areas”. It is notable that the original wording of the title of the proposed committee did not refer specifically to hydrocarbons and was not restricted to any particular region of Asia.

The Tokyo meeting was attended by representatives of the governments of ten Asian countries; Burma, Ceylon, China¹, India, Iran, Japan, the Republic of Korea, Malaysia, The Philippines and Thailand. It was chaired by the Managing Director of the National Petrochemical Company of Iran.

The proposal to establish a committee to coordinate offshore activities of the ECAFE region came as a surprise to many delegates from the geological surveys with the minor exception of those intimate with the deliberations of the earlier Expert Group Meeting. Although operational international cooperative projects in geosciences had been expected to be sponsored by ECAFE by many geological surveys of the region, and marine survey was an extremely timely and necessary field, most of the geological surveys were not involved in petroleum exploration and were wary of the direction of the discussion.

There were many discussions regarding the merits and demerits of establishing such an organization. One line of thinking in favour, mostly held by some geological surveys in East Asia, was that this organization would provide an extremely strong stimulus for promoting marine geosciences, an activity which would not be possible without outside assistance because of the lack of capability of the institutions in the area and the very large expenses involved. The new organization might be used for actually implementing such surveys because offshore oil exploration cannot be carried out without basic geological surveys; in short, these people could see that the interest in offshore oil and the resulting proposal might provide the possibility for the member country geological surveys to “join the advanced marine geology club” through this so-called coordinating committee.

Many, government administrators, accepted the facts underpinning the proposal, recognising the increasing importance of offshore hydrocarbon and other mineral resources and also the fact that the institutions of the ECAFE region were lagging behind their European and North and South American counterparts.

Arguments against such a proposal were more diverse. It was a strong opinion that there was so much on land which was still unknown, and so much work still to do with the necessary skilled personnel and funds in such short supply, now was not the time for such dreamy and uncertain new ventures. Also the fact that petroleum exploration was mostly carried out by national or private corporations with extremely large exploration budgets and the geological surveys, from whom most of the ECAFE correspondents in the mineral resources field were drawn, were rarely involved, the emphasis on oil raised questions as to the incentives in such a proposal for the geological surveys and mine bureaus. There were questions from the administrative units of various governments concerning the wisdom of expanding UN organisations. They felt that they were feeding enough international civil servants as it was, and a new and ambiguous organization was not in line with their thinking. In the early stages of the discussions outside the

¹ At that time ‘China’ was represented in the United Nations by The Republic of China, to be replaced in 1971 by the Peoples Republic of China as the only legal representative of ‘China’.

meeting, a source of strong opposition came from parts of the oil industry: their argument was that the UN did not have a mandate to carry out exploration, and that the industry did not wish to experience interference or meddling in oil exploration by international authorities, particularly in promising areas. However this opposition from outside dissipated as the feeling spread that the UN was not capable of any oil exploration which would constitute a serious threat to the industry.

Although several sceptical views had been expressed, when the individual delegates reported to their Governments those represented agreed to approve the recommendations of the Expert Group Meeting with the proviso that the new organization would concentrate on more basic marine geoscientific efforts. There were undoubtedly various different reasons lying behind individual governments being recommended to approve the proposal. One example would be the Geological Survey of Japan which strongly wished to establish a marine geology unit and conduct their own marine surveys. This had been a long-standing issue and the possibility through the proposal to be engaged in marine activities was indeed a most welcome opportunity for them.

It was agreed that the new committee to be established would in effect be an operational arm of the Mineral Resources Development Section of ECAFE with a status similar to that of the Subcommittee on Mineral Resources Development and the Working Party for Senior Geologists. It should be serviced by its own technical secretariat within the Mineral Resources Section. Though the meeting concluded that a coordinating committee, as suggested, would be necessary, it was agreed that a start should be made by a small group of geographically related countries operating as a nucleus for growth at a later date. Draft Terms of Reference for the Committee were agreed upon (See Appendix 1). These were substantially the same as those proposed by the Expert Group with one significant alteration. The Expert Group had proposed that the “Committee shall elect a chairman and vice chairman who will hold office for one year”. This was removed and replaced by a clause stating that “The Committee shall have a technical secretary and shall be assisted by an advisory group consisting of high level experts to be recruited from within and outside the region. The technical secretary was to be designated by the Executive Secretary of ECAFE”. Perhaps the feeling of the meeting was that the potential member countries of the Committee were not yet ready for leadership of such an ambitious international venture. Whatever the reasons, it would be twenty years before the organisation that was taking shape would elect its own officers and Director.

In Bangkok, in February 1966, at the 18th session of the ECAFE Committee on Industry and Natural Resources, the Governments of China, Japan, the Republic of Korea and the Philippines agreed to become the founding members of the Coordinating Committee for Offshore Prospecting in Asia, just one year after the idea had been first discussed.

A Birth in Quezon City

The Government of the Philippines invited the newly established Committee to meet in Quezon City from 27 May to 2 June, 1966 (**Figure 2**). This very first session, representing the birth of the Committee, was inaugurated by then Minister of Education of The Philippines who was subsequently to become the first Asian President of the General Assembly of the United Nations. Present at the session were the representatives of the four founding-member Governments together with their expert advisers. Also present were representatives of the ECAFE Secretariat, including the Chief of the Mineral Resources Division, C Y Li, who was to play a particularly prominent role during the early years of the Committee, and also two Regional Advisers on Offshore Prospecting from ECAFE. The Resident Representative of the United Nations Development Programme (UNDP) in Manila also attended.



Figure 2. The Japanese Delegation at the first Session of CCOP in Quezon City, The Philippines, 27 May to 2 June, 1966.

In all, over forty people took part during the seven days of the meeting (see Appendix 3 for list of main participants). The organisation of the ensuing discussions must have been extremely rigorous as a surprising amount of progress was made. At the outset, draft terms of reference for the Committee, as originally proposed at the Tokyo meeting of November 1965 (see Appendix 1) were formally adopted. Furthermore it was agreed that, as stated in the Terms of Reference, the Committee should have a Technical Secretariat and that the Mineral Resources Development Section of ECAFE could form the temporary core of such a body. The Japanese Government was quick to offer funding for the services of an experienced geophysicist to be attached to the Technical Secretariat for one or two years under the auspices of ECAFE. In view of this generous offer, the Committee suggested that a technical representative of each of the countries of the Committee be attached to the Secretariat under the same conditions as Japan had proposed. This, it was hoped, would be achieved “as soon as each (country) was in a position to do so” but in fact this was never completely achieved in the way that the Committee envisaged at this first session.

The Committee also decided that a Technical Advisory Group (TAG) should be formed to review a programme to be drafted by the Technical Secretariat and to advise on technical matters. Considerable thought and discussion quickly refined this proposal such that one of the future cornerstones of the Committee (CCOP)², and its mode of operation, was quickly defined. In view of the reported offers of assistance from several ‘advanced’ countries, it was suggested that experts from those countries should be invited to join the TAG as ‘Special Advisers’ and ECAFE was requested to explore the possibility of the contribution by the Governments of the relevant countries of the services of Prof. J. McG. Bruckshaw (UK), Prof Dr H Closs (Germany), Dr K O Emery (USA), Dr M Hayakawa (Japan) and Dr Obermuller (France), all eminent marine geologists or geophysicists. This was an impressive line-up of international expertise and though it was originally envisaged that the Special Advisers would normally serve on the TAG for only one year, in fact they all helped to steer the Committee successfully through most of its early

² The acronym CCOP first appeared in the report of the 1968 Session of the Committee and has been retained ever since. In this account the terms “The Committee” and CCOP are synonymous.

years of activity. It was further agreed that the TAG should include one technical representative from each Member Country of the Committee, one technical representative of UNESCO and the Technical Secretariat. The Technical Advisory Group (TAG), it was decided, would meet immediately before each session of the full Committee so that its recommendations to the Committee could then be considered.

After the very considerable progress made at the inaugural meeting of the Committee in May 1966, a second session was held in Tokyo in October. This occasion also saw the first session of the newly formed Technical Advisory Group with its five special advisors as listed above. Dr Closs of Germany (**Figure 3**) was elected as its first chairman. The participation of the Special Advisors was significant as it laid the foundation for those countries providing the advisers to eventually be officially designated as 'Cooperating Countries'. Japan, the only developed Member Country was designated as both a Member Country and Cooperating Country. The number of Cooperating Countries was to grow in succeeding years as the number of Member Countries was also to grow. The combination of Member Countries and Cooperating Countries was to become one of the great strengths of the Committee's future activities.



Figure 3. Dr H Closs, first Chairman of the CCOP Technical Advisory Group.

In the midst of the very considerable enthusiasm generated at this second session, a note of caution was also sounded; in particular delegates warned against "spreading its activities over too wide an area". It was agreed, however, that other countries within the ECAFE region and in proximity to the Pacific Ocean would be welcome to join CCOP "at the appropriate time". As we shall see, the "appropriate time", for several countries, proved to be sooner rather than later.

Box 2

Siblings for CCOP ?

In 1971 there were discussions in Manila to consider the establishment of a Committee for the Southern Pacific region of ESCAP which would be known as CCOP/SOPAC. This initiative developed quickly so that in 1972 the first session of the newly established committee met in Suva, Fiji. With this development, and subsequent clarification of the political future of the Pacific Islands Trust Territory, the latter, a member of CCOP since 1975, left CCOP in 1981. The thriving organisation for the Southern Pacific region eventually dropped the CCOP qualifier in its original title.

As CCOP and its work became more widely known, membership seemed increasingly attractive to a number of other Asian countries which were not included in the East and Southeast Asian Region of ESCAP. For example Bangladesh applied for Membership in 1980, and in 1984 Sri Lanka expressed its wish to become an 'Associate Member'. Also in 1984, Hong Kong let it be known that it would like to join but here the views of China, to which Hong Kong would eventually revert, needed to be sought and further action was not pursued. However, with the success of CCOP widely acknowledged in ESCAP, there had been a number of moves made to propose similar Committees within other regional groupings of the ESCAP countries. A consultation by ESCAP concerning the establishment of a similar organisation for countries bordering the Indian Ocean, first mentioned in 1967 and referred to again in 1980 with respect to Bangladesh, does not appear to have led to any positive outcome.

A Call for Help

At the first session of the Committee, in 1966, it had been recognised that a Technical Secretariat would be needed to run the day-to-day business of the organisation and it was agreed that the temporary core of this body was to be formed within the Mineral Resources Development Section of ECAFE. However, by the fourth session, the second of two held during 1967, it was recognised that the expanding programme meant that the work-load of the temporary secretariat was increasing at a very rapid rate and, with only one of its present personnel dedicated full-time to CCOP, some new administrative arrangements would soon be required. This led to a proposal to establish a Technical Operations Bureau with assistance from the United Nations Development Programme (UNDP) though it was recognised that this would take at least eighteen months to become a reality. This was first official indication that the UNDP might become intimately involved with the ongoing administration and operation of the Committee's programme.

In 1968, at the fifth session of CCOP, there were further lengthy discussions concerning the proposal to seek UNDP assistance to establish a technical bureau which would replace the Technical Secretariat as now constituted. There had been encouragement from the fact that at the full session of ECAFE in April, the representative of UNDP had said they would welcome such an application though it was subsequently pointed out that there was currently a reluctance to dedicate UNDP funds to financing petroleum exploration. Later in 1968 an initial draft of a request to the UNDP Special Fund for support for a full-time technical bureau was submitted and following initial comments from the UNDP a revised draft was prepared and copies circulated to the Governments of CCOP Member Countries for a discussion held in March 1969. On the advice of the UNDP, the Technical Secretariat was asked to further revise the draft application to indicate more specifically how CCOP would ensure continuation of its activities after the proposed UNDP support ended. It was noted that the request must be submitted individually by participating Governments to their local UNDP representatives. It says much for the growing maturity of CCOP and the hard work of the temporary secretariat that all these hurdles were surmounted and the request finalised and signed by six Member Country Governments by the time of the seventh session of CCOP in May 1970. Japan was not a signatory because as an 'advanced' country it was not eligible for UNDP support.

The UNDP Years (1972- 1991)

UNDP's Leading Role

The proposed UNDP project, 'Technical Support for Regional Offshore Prospecting in East Asia', was endorsed by the Governing Council of UNDP and became operational on 1 April, 1972, under the leadership of its Project Manager/Co-ordinator, Dr C Y Li (see **Figure 4**).

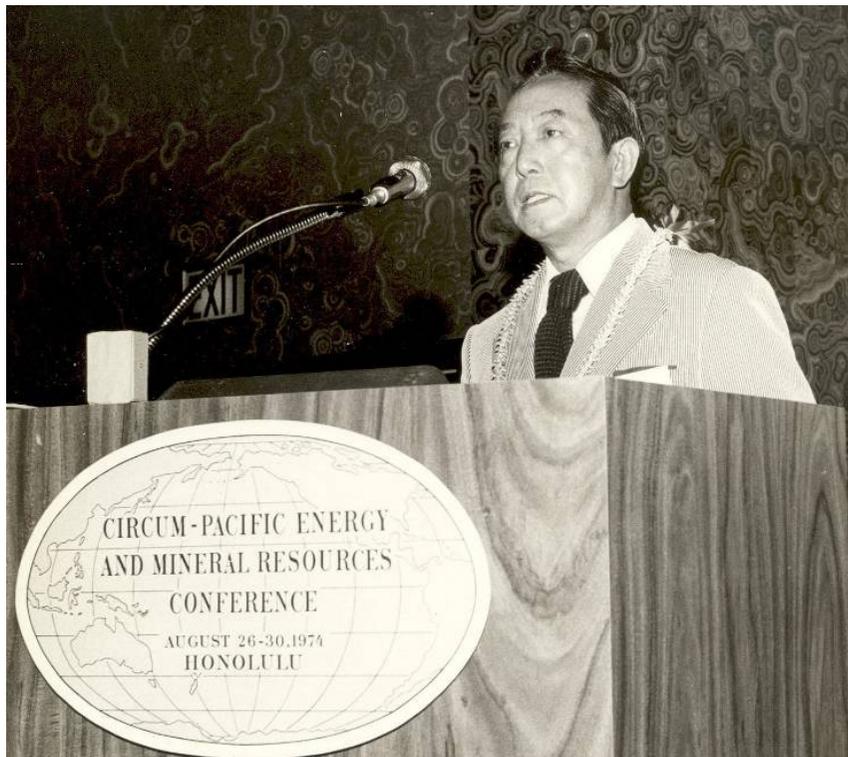


Figure 4. Dr C Y Li, often described as the “father of CCOP”, addresses a meeting in Hawaii in 1974.

This proved to be a vital step in the future development of CCOP, and the ninth Session of CCOP in November 1972, heard that already a project office had been established, staffing of the project was almost complete, training programmes had been formulated and consultant services were being provided to Member Countries. The staff included the Project Manager/Coordinator, two Senior Geophysicists, a Senior Marine Geologist, a Senior Geologist/Technical Editor, a consultant on the International Law of the Sea, a Consultant on the establishment of data centres, and an Administrative Assistant. Although initially approved for only two years the UNDP project, with various modifications, was to continue through several phases for almost twenty years and was to play a crucial role in CCOP's long-term development.

Although the UNDP project had only become operational the previous year, by 1973 a UNDP Mission had already visited six CCOP Member Countries in order to evaluate the early progress of the project and ascertain the needs of the countries for future assistance. During this process the Mission had formed the view that the regional undertaking “had the potential to rank

alongside the best of all the regional projects supported by the UNDP". Accordingly they recommended that support be extended until 1979. A new project document (Phase 2, 1974-79) was signed (**Figures 5 and 6**) which committed the signatory countries to provide cash contributions to the UNDP project as specified in the document. Because Japan, being a developed country, was not a signatory to the original project document, the Government of Japan would make its contributions through a separate account of ECAFE with the money being "at the disposal of the (UNDP) Project Manager for the work of CCOP". By 1975 a draft proposal for a further extension to 1981 had been prepared with the justification for expanding and extending the project stated in the following words,

"New impetus and direction to offshore prospecting in East Asia is evidenced by gradual strengthening of the capabilities of the developing member countries to carry out their offshore survey programmes and by recent oil discoveries and intensified exploration efforts. More staff, resources and funds are being provided by the countries for this purpose. New areas of work have been defined and initiated such as development of offshore tin deposits, investigations of all types of offshore solid minerals, application of satellite remote sensing to marine environmental studies, investigation of mineral resources beyond the continental shelves, a new phase of Project Magnet (1974 to 1979), establishment of national offshore data storage/retrieval centres and compilation of maps and geological syntheses of petroliferous basins.

The project has brought about effective co-operation among the developing member countries, demonstrated the economy and efficiency of pooled efforts in surveying large regions, and introduced and executed fellowships and personnel exchanges within the region.

In order to continue to undertake their increasingly complex tasks, the developing member countries of CCOP need additional specialised advisory and consultancy services and education of their personnel in new fields of work and new techniques through increased formal training as well as through seminars and/or working groups."

Having stressed the proposed main mode of operation in the final paragraph of the justification, above, the proposal went on to outline both the immediate and the longer term objectives of the extended project. While the former stressed the further investigation and assessment of hydrocarbon resources beneath the marine shelves, the latter referred to offshore mineral resources in general and to augmenting the capabilities of the developing member countries of CCOP to carry out their own offshore surveys. With considerable foresight these long-term objectives also included the recognition that the development and management of their marine resources by the member countries had to be carried out "with proper consideration for rational, optimal uses of all types of marine resources and seafloor space, and the preservation of the marine environment and the coastal zone". This look to the future correctly anticipated the environmental pressures that would increasingly come to shape the CCOP programme over the next thirty years.

In 1977, Dr C Y Li resigned from his post as Project Manager/Co-ordinator of the UNDP project after successfully guiding it through its first five years of operation. Also in 1977 a revised project document had been drawn up requesting UNDP support for a further four years from 1978 to 1982. The indicated budget was just over \$11m. This comprised contributions in cash (\$300,000) and in kind (valued at \$4m) from participating Member Countries, a UNDP contribution (\$3m) which was partly covered by a special donation from the Organisation of Petroleum Exporting Countries (OPEC) to UNDP, and contributions by the Cooperating Countries in cash and in kind (valued at \$4m). Ten Member Countries were named in the proposal, excluding Japan as explained above. The project proposal was accepted.



Figure 5. The Republic of Vietnam signs the Project Document for Phase 2 of the UNDP/CCOP Project, March 1974, in the presence of the Executive Secretary of ECAFE, Mr Maramis (left), and Dr C Y Li (right).



Figure 6. Mr Saman Buravas, Director-General of the Department of Mineral Resources, Thailand, shakes hands with Mr Maramis (Executive Secretary of ECAFE) after signing the UNDP/CCOP Project (Phase 2) Document on behalf of the Government of Thailand, March 1974.

By 1980 the Committee was already considering a further draft project document for UNDP to support a third phase of the UNDP project from 1982 to 1986. With the indication that UNDP were prepared to extend assistance at the level of \$900,000 per annum for three years (1982-84 inclusive) with a further review in 1984, a revised document was prepared. Significantly, however, after more than ten years of UNDP support, there was pressure to limit any UNDP financial support from 1985 solely to programme activities and for steps to be taken for the Member Countries to fully underwrite the institutional costs of CCOP. At the Annual Session in 1983 it fell to the Executive Secretary of ESCAP³ to issue a serious warning. He pointed out that UNDP funding for the post of Project Manager and for institutional support would cease after 1984 and continued UNDP support after that period would depend on an assessment of the efforts of Member Countries to maintain the CCOP work programmes and to transform CCOP into a truly intergovernmental body. Present Member Country contributions, however, would not be sufficient to maintain the administrative support for such services or to implement the present work programmes and if funding from elsewhere were not forthcoming Member Countries would have to increase their annual contributions. Failure to do this could spell the end of CCOP in its role as a leading organisation for resource exploration and development. Seventeen years after its birth, CCOP was facing some serious questions about its future.

Since its inception in 1972, the UNDP Project of technical support to CCOP had evolved in a variety of ways. In May 1978 Mr A Johannes of Indonesia had become the Project Manager and the Project Office, which acted as the Secretariat of CCOP, supported by the UNDP, comprised the Project Manager/Co-ordinator, a Petroleum Geologist, a Senior Marine Geologist, a Senior Marine Geophysicist, a Technical Editor and an Administrative and Project Officer. Additional experts were provided by the Cooperating Countries and included a Principal Marine Geologist (USA) a Senior Geologist (Japan) and a non-resident expert on pre-Tertiary geology (France). In 1979 a Senior Petroleum Geologist was appointed to the Project Office.

A team of this size and competence was able to provide extremely valuable support to the Member Countries and a document (CCOP/XX-18), reviewing the Project and presented at the 1983 Annual Session, indicated that the total value of services supplied by CCOP to the Member Countries during the six years from 1977 to 1982 amounted to about \$16.75m. It also listed the value of services provided through the UNDP project office to the individual Member Countries during the six years in question. In all cases this far exceeded their Government's cash contributions to the project.

The future of the UNDP support project, and the legal position of CCOP, that had become key issues by 1983, had already been in the minds of delegates at the Annual Session of 1977 when they adopted new Terms of Reference for CCOP. In these Terms of Reference it was stated that *"the Committee shall have a secretariat with a Co-ordinator and supporting staff. The Co-ordinator shall be appointed by the Secretary General of the United Nations upon the recommendation of the Executive Secretary of ESCAP after consultation with the Committee"*. This could be seen as putting the UNDP Project and UN/ESCAP at the heart of CCOP. However, in 1978, comments from the UN Office of Legal Affairs caused some dismay. The UN Office noted that CCOP had been established as a separate intergovernmental entity and not as a subsidiary body of ECAFE/ESCAP in spite of the latter's role in establishing CCOP. Most significant was the fact that the Office reminded CCOP that UNDP assistance could not be provided to UN bodies and if CCOP were such a body it could not receive its present assistance. Also, United Nations regulations and rules would apply to the Committee. This opinion had the potential to cause serious difficulties but for the moment the Committee took the view that, though designed to strengthen their collective activities under CCOP, the current UNDP project was a project of the various individual developing Member Countries and they could continue to

³ ECAFE became the Economic and Social Commission for Asia and the Pacific (ESCAP) in 1974.

seek the support of UNDP. Though the issue of whether CCOP was a separate intergovernmental body rather than a subsidiary body of ESCAP was not to effect the UNDP project in the short term, it was to become a much more important issue a few years later.

First Steps Towards Self-Reliance

During the late 1970s and early 1980s, though the general focus of CCOP continued to be on the UNDP Support Project, several steps were taken to strengthen the advisory and decision-making mechanisms of CCOP. The organisation of CCOP affairs within the individual Member Countries was also discussed. For example, at the 1976 Annual Session the Committee noted that Indonesia had put in place an efficient means for expanding their participation in CCOP activities through a National Working Group and other Member Countries were urged to adopt this approach. Also in 1976, the tenth anniversary of CCOP, the Committee decided that a number of experts who had made substantial contributions to CCOP's activities but who had now retired should be nominated as Honorary Advisers. The first six Honorary Advisers were named and this practice of nomination has continued to the present day. The Honorary Advisers were to be invited to attend the Annual Sessions and sit with the Special Advisers on the Advisory Group (see page 9).

Most significantly, in 1982, discussions commenced on the formation of a Steering Committee that was to become the main policy making forum for CCOP. Terms of Reference for the Steering Committee were proposed and accepted at a meeting of the Permanent Representatives of the Member Countries in December of 1982. The Steering Committee was to consist of all the Permanent Representatives to CCOP. They were to meet at six monthly intervals and were to undertake the following tasks:

- Review and analyse the existing work programme in the light of current constraints faced by the Committee.
- Consider and analyse the individual needs of Member Countries to serve as a broad base for programme planning for the mutual benefit of Member Countries.
- Prepare a revised work programme for 1983 and beyond, taking into account the changing needs of the CCOP Member Countries and the resources expected to be available.
- Explore possibilities for new sources of financial and other forms of support in view of the probable reduction of UNDP support.
- Discuss any changes which may be considered necessary in the original terms of reference in the light of the probable changes in UNDP support for CCOP's activities, its revised work programme, recommended changes in methods of implementing the work programme and obtaining alternative sources of support for that programme.

The newly established Steering Committee immediately confronted some of the most pressing issues. In 1982 about \$155,000 from the Member Countries cash contributions were budgeted to meet the costs of existing support staff, rental of premises, maintenance and operation of equipment and miscellaneous items. From 1983, funds would be needed to pay for the services of a full time accountant-cum-office-manager for CCOP and after December 1984, funds would also be needed for the Project Manager/Co-ordinator of the present UNDP Project and possibly for other expert posts. Realising that substantive measures would be necessary to ensure the future continuation of CCOP activities, the Steering Committee endorsed the proposed actions summarised below:

1. It accepted, in principle, that monies should be charged for services rendered by CCOP in order to share the costs of depreciation, maintenance and transportation of equipment and other direct costs.

2. It authorised the Project Office to employ an accountant-cum-office-manager at a cost not exceeding \$17,500 per annum to be paid from CCOP funds.
3. It requested the Project Office to urge the Netherlands to provide two associate Quaternary geology experts and one electronics technician on a non-reimbursable loan basis rather than three associate Quaternary geology experts.
4. It authorised the Project Office to increase the sales price of CCOP publications.
5. It requested the Project Office to prepare a (costed) work programme for 1983 and 1984 based on the expressed needs and priorities of the Member Countries. This was to be submitted to Cooperating Countries and other agencies for consideration and support. Such a programme would be the basis for Permanent Representatives to request additional contributions from their respective Governments
6. It requested the UNDP Project Office to write to the Permanent Representative of Thailand to urgently consider the provision of adequate host facilities such as free premises as well as to provide or pay for costs of all, or at least some of the support staff.

In view of the important changes which were anticipated as a consequence of the Steering Committee's decisions it was also suggested that the existing terms of reference of CCOP should be amended and that the proposed amendments be submitted to the appropriate officials of the Japanese Government for comment. This was deemed necessary because of the special position of Japan with respect to CCOP and the UNDP Project. Discussion of the Terms of Reference of CCOP was to be a recurring theme for the next few years. This particularly related to the status of CCOP, whether it was in reality a legally constituted intergovernmental organisation or rather a UN committee; an issue which was to be of great importance to its future.

Also in 1984 several other important matters concerning the future management and administration of CCOP were being discussed by the Steering Committee. Hitherto most of the day to day management responsibility lay with the Project Manager/Coordinator of the UNDP



Figure 7. Mr S K Chung, Project Manager/ Coordinator of the UNDP/CCOP Project and Temporary Director of CCOP in 1985-1986.

Project. The Steering Committee now agreed that the position of the officer-in-charge of a new CCOP Technical Secretariat should be designated the 'Director'. They requested that ESCAP consider employing the Director for an interim period of one year using a trust fund formed from Member Country Contributions but ESCAP intimated that such a request would have to be referred to UN Headquarters as such a decision would require legal clarification. In the meantime the Member Countries agreed that the Steering Committee should decide the salary, terms of employment and job description of the prospective Director. ESCAP was requested to give urgent consideration to employing the current Project Manager/Coordinator of the UNDP Project (Mr S K Chung, see **Figure 7**) as temporary Director of CCOP until a permanent Director could be appointed. As an interim measure it was also agreed that an accounts officer, a secretary and a driver should be retained on their present salaries until March, 1985, and ESCAP be requested to pay their salaries from the CCOP Trust fund. In this manner, an embryonic Secretariat, separate from the UNDP Project was to be born.

In 1985 Dr J Ringis, a current member of the UNDP Project, was appointed as the project's Team Leader and the team now comprised four UNDP technical experts, one draughtsman, two secretaries and one senior clerk. The new CCOP Technical Secretariat with its three staff, as outlined above, was headed by Mr S K Chung. Applications had been invited for the post of Director of CCOP whose minimum qualifications should be:

- A geoscientist interested in CCOP.
- Must possess adequate administrative ability and diplomacy which will enable effective co-ordination of CCOP regional projects and secure necessary funds from all possible sources.
- Must be familiar with CCOP.
- A candidate's nationality should not be a factor against his (sic) appointment, capability and competence being more important.

The Director was to be elected in a secret ballot with each Member Country having a single vote. Applications were received from candidates in Malaysia, Thailand and Korea and subsequently Mr Sermsakdi Kulvanich (**Figure 8**) of Thailand was elected as the first Director of the CCOP. Priority duties for the new Director were to complete legalisation of CCOP, seek approval for a headquarters agreement with the Thai Government, evaluate staff requirements for the new Secretariat, relocate the Secretariat to new premises, develop a work programme and seek funding for its implementation. Inevitably, all these would take time to accomplish.

Many of the tasks set for the new Director were closely interlinked and their resolution was necessary if CCOP was to become a viable, independent organisation when, as eventually would happen, the UNDP Project came to an end. However, this was not to take place immediately as, in 1985, the delegates to the Annual Session were gratified to hear that \$3m had been tentatively budgeted by UNDP for continuation of UNDP/CCOP project activities in the 1987–1991 UNDP programming cycle.



Figure 8. Mr Sermsakdi Kulvanich (Thailand), the first elected Director of CCOP, 1986.

Finding a New Home

Since the formation of CCOP, its Secretariat, first provided by the Mineral Resources Development Section of ECAFE and then, since 1972, by the Project Office of the UNDP Project, had been housed in various offices of ECAFE/ESCAP or premises rented by them. However, in 1985, with the imminent appointment of its own Director, it was thought fitting that the new Director and Secretariat should have their own premises so as to form a distinct Headquarters location for CCOP. This was a priority task to be given to the new Director (see above).

In 1982 the Steering Committee had requested the UNDP Project Office to write to the Permanent Representative of Thailand to urgently consider the provision of adequate 'host country' facilities such as free premises as well as provide or pay for costs of some support staff. In 1983 the delegation of Thailand had informed the Annual Session that it would provide premises for the CCOP Project Office at a new building due to be constructed for the Department of Mineral Resources and this would represent a further contribution to CCOP worth \$70,000 per

annum, in addition to Thailand's annual cash contribution of \$30,000. There was, however, an unforeseen delay in construction of the new building and eventually it was decided that an approach to the Ministry of Foreign Affairs of Thailand would be made through ESCAP, with a request for premises in the old ESCAP building. Meanwhile, pending further developments, the Project Office was instructed to stay in the ESCAP rented accommodation known as the 'White Inn'. A new home would have to wait.

In 1985, the Ministry of Foreign Affairs of Thailand made it clear that the legality of CCOP as an intergovernmental organisation had to be clarified before any Headquarters Agreement could be reached under which 'host country' facilities could be extended by Thailand to CCOP. Although UNDP had said they believed that the existing Terms of Reference of CCOP were adequate to legalise CCOP as an intergovernmental organisation, nevertheless, CCOP, acting on the advice of ESCAP, decided to accept the services of a legal adviser from UNDP who was to hold discussions with Member Countries and the Thai Government and draft revised Terms of Reference. The search for new and more permanent premises had thus activated an important process that was to change the face of CCOP for the foreseeable future.

For the Secretariat of CCOP, the immediate upshot of the actions outlined above, which were subsequently to have diverse and profound consequences, was that in 1986 they moved into new 'temporary' accommodation on the second floor of the Thai Offshore Mining Organisation building (**Figure 9**) generously provided by the Thai Government. From this 'temporary' accommodation they were in fact to operate efficiently for the next fifteen years. The Thai Government's generosity was to continue in the future and in 2001 CCOP moved into more spacious accommodation on the twenty-fourth floor of the strikingly modern Thai CC Tower in Bangkok (**Figure 10**).

Coming of Age and the Hopes of Independence

Nineteen eighty seven was a watershed year for CCOP; it was not only the twenty-first birthday of the organisation but also, as befits a 'coming of age', it saw a radical change in CCOP's international status.

Although UNDP support for projects was set to continue until 1991, the question of what should happen after UNDP financial support for the institutional costs of CCOP ended in 1987 had already been debated for some time. At the Annual Session of 1986 there had been a lengthy discussion on the future legal status of CCOP. There seemed to be two alternatives; either it should be incorporated into ESCAP, or it should become an independent organisation. Japan strongly supported the former option as for many years they had been contributing very substantially to ESCAP with part of the contribution channelled to CCOP. Such an arrangement might be threatened if CCOP became independent. Other Member Countries tended to favour the route to independence and the Director pointed out that though previously it had been CCOP's intention to be part of ESCAP this was not compatible with continued UNDP support.

Because of the problems posed by any decision concerning the future, a meeting between the Director of CCOP, a CCOP legal consultant provided by UNDP and officers of the Japanese Ministry of Foreign Affairs had already taken place in Tokyo. The main purpose of the meeting was to brief the Japanese officials on the draft Memorandum of Understanding and new Terms of Reference of CCOP, prepared with the legal consultant's help, in order to establish CCOP as an independent organisation. It was important to hear the views of Japan on the current drafts and on how CCOP should proceed to solve its legal problems. Japan was strongly in favour of CCOP continuing under the ESCAP umbrella and following the meeting a report by the legal consultant suggested several alternative ways forward. These were either for Member Countries to proceed to signing the new MoU and Terms of Reference for CCOP as soon as possible, or to attempt to reverse ESCAP policy and include CCOP under ESCAP without any ESCAP funding

obligations, or to merge with some other intergovernmental organisation or, finally, to stop work towards forming an intergovernmental organisation and preserve the status quo. The first of these options was strongly recommended by the legal consultant.

At the Annual Session in November, 1986, the Steering Committee reported that five Member Countries (China, Indonesia, Korea, Papua New Guinea and Vietnam) had already expressed acceptance in principle of a short form of the draft Memorandum of Understanding to confirm the status of CCOP as an intergovernmental organisation and Thailand, the Philippines and Malaysia, subject to certain comments they had submitted, were expected to follow. Singapore would accept the views of the majority though Japan still favoured CCOP as part of ESCAP. It was agreed that as soon as the required minimum of seven acceptances of a short form of the MoU (see Appendix 2) were received, the UNDP would assist in arranging a signing ceremony for the participating Member Countries. After the establishment of CCOP as a legal entity it was expected that it would take about one year for the Royal Thai Government to approve a Headquarters Agreement.

Independence Achieved

The Memorandum of Understanding to confer on CCOP the status of an Intergovernmental Organisation (IGO) was signed by China, Democratic Kampuchea, Indonesia, Papua New Guinea, The Philippines and Thailand in Bangkok on the 25 March, 1987 (**Figure 11**). Signing ceremonies for Korea and Malaysia took place later in the year (see **Figures 12 and 13**, respectively) and the Socialist Republic of Vietnam was to sign in 1989. The redrafted Terms of Reference of CCOP were also attached to the MoU in which CCOP is officially referred to as the “Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas”, confirming that the offshore emphasis to its work was still being maintained. The Memorandum of Understanding was put into force from 29 August, 1987.

All the diplomatic activities of the previous eighteen months meant that at the opening ceremony of the 24th Session of CCOP in Thailand in October 1987, ESCAP was able to note the change in status to CCOP and state that the evaluation of the ESCAP/UNDP Project, planned to take place in 1989, would determine if transfer of responsibility for project execution could be made to the CCOP Secretariat when ESCAP’s role would shift from direct support to complementarity. The UNDP representative also expressed satisfaction with the new status of CCOP. Delegates were informed that since 1972, UNDP had provided almost \$6m to assist CCOP and 1987 was not to be the end of UNDP involvement with CCOP as \$3m had already been allocated for assistance to the work programme during the next four years. It was, however, the beginning of the final chapter in a story which lasted for a total of twenty years.

Learning to Stand Alone

From 1986 the Secretariat of CCOP operated from offices in the premises of the Thai Offshore Mining Organisation (see page 18). By the same year, additional technical expertise in the Secretariat comprised three non-reimbursable experts provided respectively by Japan, France and The Netherlands while the Government of the Federal Republic of Germany made available through ESCAP the services of an Associate Expert. In 1988, the Secretariat consisted of the Director, an Assistant to the Director/Editor of the Newsletter, an Accountant/Office Manager, three secretaries, a driver and a handyman with technical expertise provided by the non-reimbursable experts from Japan, The Netherlands and Germany all supplemented by the three experts working on the UNDP Project. Japan was to send an additional non-reimbursable expert in 1989 to be engaged in the CCOP’s resource assessment programme.



Figure 9. The Offshore Mining Organisation Building in Bangkok. The CCOP Technical Secretariat occupied the second floor of the building from 1986 to 2001.



Figure 10. The Thai CC Tower in Bangkok. The CCOP Technical Secretariat currently occupies offices on the twenty-fourth floor.

The new 'independent' status of CCOP was already having a modest impact on discussion of potential collaborative programmes between CCOP and some of its Cooperating Countries as aid from the latter, with the exception of Japan, would no longer be channelled through ESCAP. Responsibility for Norway's technical assistance to CCOP for example now passed to the Norwegian Agency for Development Cooperation. Fortunately, Norway's continuing commitment to CCOP was signalled by an agreement being prepared to support work in the area of basin studies and data technology together with activities related to offshore safety and the environment, with finance amounting to the order of \$1m over a three-year period. This agreement was signed in 1989 and though support for CCOP's programme activities seemed assured for the time being, CCOP in its capacity as a management and coordinating unit would increasingly have to stand on its own two feet. The Chairman of the Steering Committee, Celso Roque, at the Annual Session of 1989, was prompted to pose the somewhat rhetorical question, "Should self-sufficiency in finance and expertise be an important goal for CCOP considering the much reduced support from UNDP in the coming years?"



Figure 11. Signing ceremony of the CCOP Memorandum of Understanding to establish CCOP as an Intergovernmental Organisation. Hosted by the Deputy Prime Minister of the Royal Government of Thailand at Government House on 25 March, 1987.



Figure 12. The Republic of Korea signs the Memorandum of Understanding with CCOP, 1987.



Figure 13. Malaysia signs the Memorandum of Understanding with CCOP, November 1987.

Charting a New Course (1991-2000)

Revised Rules and Objectives

To complete the transition to full independence, new Rules of Procedure and Administration and Financial Codes were approved by the Steering Committee in 1989 and implemented in 1990. In addition, as suggested by the Special Advisers, an Interim Programme Development Committee (IPDC) was formed in 1991 to make recommendations as a basis for redefining CCOP's long term objectives and planning the relevant actions for their achievement. The IPDC comprised representatives of Malaysia (Mr E H Yin, Chairman), Thailand, ESCAP and Norway, with the Director of CCOP as Secretary. Their draft report was endorsed by the Steering Committee and finalised in two volumes dealing with objectives and strategies and institutional and administrative considerations respectively. Subsequently, a special consultant was recruited for five months to investigate the restructuring of CCOP's management and finance systems in order to become financially self-sustaining after 1991. The consultant's report formed the third volume of the IPDC recommendations. Though many of the report's recommendations were never fully implemented in detail, they had the invaluable effect of reminding CCOP's members that the world was changing and CCOP had to change with it if it was to survive as a meaningful and effective organisation (see Box 3). This form of self-examination set against the broader context of international cooperation and economic developments in the geosciences was to become even more important in subsequent years.

Also important in 1991 was the finalisation and signing of an Interim Headquarters Agreement between CCOP and the Government of Thailand which effectively legalised the position of the Headquarters of CCOP in Bangkok and ensured certain privileges for the organisation.

The remainder of the decade saw CCOP consolidating its institutional position as a stable and effective intergovernmental organisation with a tradition of achievement and eyes firmly fixed on the challenges of the future. It was attracting increased interest from the aid agencies of several of the donor countries who saw the successful coordinating role of CCOP as an excellent means of channeling development aid on a regional, rather than individual country, basis. This was to be reflected in the further development of the CCOP work programme (see page 62).

Policies for a New Millennium (2000-2006)

A New Strategy

There is still some disagreement as to whether the year 2000 should be regarded as the first year of a new Millennium or the last year of the old one. Whatever the answer, in 2000, CCOP was preparing for its future with confidence. Fittingly, the 37th Annual Session was held in Bangkok, the city in which CCOP had been based since its formation under ECAFE thirty-four years previously. A new Director of the Technical Secretariat, Mr Chen Shick Pei, a former Director-General of the Geological Survey of Malaysia, had been elected earlier in the year and was to lead CCOP through a significant programme of organisational changes during the next few years.

Early in 2001 a specially convened Steering Committee Workshop was held to discuss a framework for a new strategic plan for CCOP. The main strategic change to be determined was how to reorganise what was becoming an increasingly varied and diversified list of technical activities embracing both offshore and onshore geoscience. The three-day-long workshop,

involving either the Permanent Representatives or their deputies of all the Member Countries, was facilitated by an Honorary Adviser (Dr A J Reedman) and after more consultation with the Member Countries the restructured programme, “Geoscience for a Sustainable Future”, was published in January, 2002, as the new Strategic Plan of CCOP (**Figure 15**). The programme was divided into three ‘Sectors’; the Geo-Resources Sector, the Geo-Environment Sector and the Geo-Information Sector. Together the three sectors contained a total of seven distinct programmes (see **Figure 16**) and the rationale and strategic aims of each were described in the published plan. At the same time a new mission statement for CCOP was agreed. This aimed to be a clear re-statement of CCOP’s current aims, which broadly reflected those in force since the organisation’s original conception:

“The Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP) is an intergovernmental organization whose mission is to facilitate and co-ordinate the implementation of applied geoscience programmes in East and Southeast Asia in order to contribute to economic development and improved quality of life within the region.

To this end, the CCOP promotes capacity building, technology transfer, exchange of information and institutional linkages for sustainable resource development, management of geo-information, geo-hazard mitigation and protection of the environment”.

The slightly modified title of the organisation, seen in the first line of the statement above, was adopted in 2001 but the acronym ‘CCOP’ was preserved. Now CCOP unequivocally embraced all geoscience activities in the region, whether concerned with marine, coastal or land-based geoscience.

Box 3

Waking Up to Reality

When I first became involved with CCOP as the Permanent Representative of Malaysia in the 1980s, it never occurred to me then that reaching the age of forty was worthy of a celebration. And yet here we are, in the case of CCOP, doing just that. You may very well ask why.

The early 1970s through to the early 1980s was a period of high geological activity in a region where, for the most part, relatively little was known of the offshore mineral potential of East and Southeast Asia. This was the reason why CCOP had been formed, with most of its members in the early stages of economic and technological development. Regional studies and regional cooperation were the key phrases in the discussions of how to progress. In this respect, Member Countries were to benefit greatly from technical advice and more tangible assistance from the Cooperating Countries and The United Nations through CCOP. In effect, CCOP was to become an adopted child of UNDP. As that ‘collective child’ we felt secure and even positively spoiled. Like untroubled and spoilt children we were not ready for the rude awakening to reality that was to come.

On reflection, we cannot say that we were not warned. By the mid-eighties, marking the end of our metaphorical childhood, clear signals were already being sent indicating that CCOP must prepare itself to become an independent adult. This would mean that to survive we had to run CCOP more like a commercial enterprise and become an Intergovernmental Organisation rather than a programme under the auspices of the UN. This would be a totally new environment for us. We were like a child, successfully nurtured and grown, but not yet ready, and therefore unwilling, to leave home and face the world outside on its own.

At this point we have to remember that CCOP remained a very loosely-knit group of neighbouring, but diverse, countries. We had never had to earn our collective keep. Our annual monetary contributions to CCOP were voluntary, each country pledging an amount it felt it could afford but the amount was certainly not based on CCOP's actual needs. I particularly remember one occasion when the Director of CCOP requested, apparently to the surprise of many, increased contributions in order to tackle normal inflationary pressures. All Member Countries were approached and some increased their contributions without too much fuss but as was normal practice, though all were urged and many responded, none were coerced. On another occasion, when recession was being felt in the region, at least one country volunteered to suspend its membership because it was not able to contribute its pledged amount. It was a happy moment for all concerned when the Steering Committee unanimously voted to request the country concerned to continue as an active member; its inability to contribute at the moment was of no consequence. This was CCOP, a happy loosely-knit family, not ever having to earn its own living, not ever having to really worry. However, we were soon to realise that though our Cooperating Countries would continue to contribute in kind, they would not send cash for the day to day administration of CCOP, also the eventual end of UNDP funding, though it would be fought tooth and nail, was appearing increasingly inevitable. This, we suddenly felt, would sound the death knell of CCOP.

Perhaps it was because I was one of the more vocal spokesmen, stubbornly, and now I as I think, stupidly, fighting against the inevitable, and also one of those most fearing change, I was asked to help formulate the policy changes that might help CCOP to survive. This was most ironic, but I felt honoured. The Interim Programme Development Committee (IPDC) was formed in early 1990 and was to present its final recommendations later that year in Seoul. I was to act as Chairman. It was both enjoyable and exhilarating working with such a capable group of people as Mr Einar Bandlien (Norway), Mr Pieter Bakker (ESCAP) and Mr Napadon Mantajit (Thailand) with Dr G R Balce (Director of CCOP) as secretary. Hopefully its recommendations helped shape future decisions. How times have changed. How difficult it is to foresee the future. It is now more than fifteen years since IPDC met and CCOP is not dead but very much alive and kicking. I remember at one of our meetings I had made a bet with Einar, for a bottle of wine, that the price of crude oil would exceed US\$33 per barrel by the end of the year. What price a barrel of oil now, or a bottle of wine for that matter?

My time as a Permanent Representative with CCOP was such an exciting and enjoyable time but I am reluctant to mention too many individual names lest I unwittingly forget some that should be acknowledged. But for me Japan, as a country with a dual role in CCOP, always stood out for the number of experts it provided to CCOP. I was also struck by the fact that Switzerland, a landlocked country, became a Cooperating Country of CCOP and provided much training in geochronology to CCOP Member Countries. And the UK of course because one of its representatives had been a colleague of mine in the Geological Survey of Malaysia. These are of course just personal notes and not an official accolade.

May CCOP long remain as an effective Intergovernmental Organisation, serving its members and the entire region successfully under a strong, committed Director acceptable to Member and Cooperating Countries alike. 'Regional cooperation' must always be remembered as the key words of inspiration for CCOP.

E H Yin (Former Director-General of the Geological Survey of Malaysia and Permanent Representative of Malaysia to CCOP)

Box 4**Accolade for an Acronym.**

In 1994, recognising the broadening of the CCOP work programme, the Steering Committee considered that the time was ripe for an adjustment to the name of CCOP and also rewording of its mandate. The latter was amended to read, “The purpose of CCOP is to carry out joint applied geoscience programmes for sustainable development of the coastal and offshore areas of East and Southeast Asia”. This acknowledged the fact that the work programme was encroaching on the coastal zone, marking the first tentative steps by CCOP on to dry land. The question of a new title provoked lengthy debate as there was a great desire amongst members to retain the now well-known acronym CCOP so that words starting with those letters should at least appear somewhere in the title. The new title therefore became “Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia”. There were to be further slight changes in the future but CCOP remained as the well-loved acronym to take the organisation into the new Millennium.

Acronyms, though undoubtedly useful, do however have their drawbacks. C Y Li once related how, when he worked for ECAFE, he was paged in an airport by the loudspeaker announcing a message for “Mr Silly of NESCAFE”! Also, when occupying the offices at the Offshore Mining Organisation, the ‘CCOP’ sign at the front gate (Figure 14) was often mistaken for that of the Russian Embassy (CCCP) which was situated in the adjacent building.



Figure 14. The CCOP acronym at the gate of the Offshore Mining Organisation Building, frequently mistaken for the Russian Embassy (CCCP) which was situated next door.



Figure 15. The CCOP Strategic Plan, “Geoscience for a Sustainable Future”, published in 2002.

SECTORS						
GEO-RESOURCES			GEO-ENVIRONMENT			GEO-INFORMATION
PROGRAMMES						
MINERALS	ENERGY	GROUNDWATER	COASTAL ZONE	GEOHAZARDS	ENVIRONMENTAL GEOLOGY	GEODATA AND INFORMATION MANAGEMENT

Figure 16. CCOP’s three Sectors and seven Programmes within which all its projects are operated and managed. From 2006 each Sector will have its own Sector Manager at the Technical Secretariat.

Box 5

Member Countries

The foundation of CCOP, initially with four Members Countries comprising China, Japan, Korea and the Philippines took place with surprising speed and other Governments in the region quickly realised the potential advantages of supporting such an organisation. At CCOP’s third session, held in Seoul, Korea in 1967, it was noted that ECAFE had requested the Committee to consider inviting other countries of the ECAFE region whose territories bordered the Pacific to join as soon as possible. Later in 1967, representatives of Thailand and the Republic of Vietnam were welcomed as observers to the fourth session of CCOP. Both countries attended the 1968 session as full members, whilst Indonesia and Malaysia attended that session as observers prior to becoming full members. Cambodia was formally admitted in 1969. Within just four years CCOP had grown to include eight separate Member Countries. Further growth was set to continue. In 1973, Singapore was accepted as a member and two years later the Pacific Islands Trust Territory joined. In 1976 Papua New Guinea became the tenth Member Country. In 1979, The Peoples Republic of China attended their first Annual Session after becoming the accepted legal representatives of China in the UN in 1971.

With the passage of time, the observer of today may see the rapid early growth in membership of CCOP as part of a smooth progress towards the current total membership of eleven countries. Forty years ago however, parts of south-east Asia were experiencing far-reaching political change and this is mirrored in the names forming the membership list of CCOP, and the attendance at Annual Sessions during that time. In 1966 for example, China was represented in the UN by the government of the Republic of China and they therefore, as a member of ECAFE, were the ‘China’ referred to as a founding member of CCOP. In 1971, however, ‘China’ was to become represented in the United Nations by the Peoples Republic of China who became the sole legitimate representative of China at the UN and therefore at CCOP, attending Annual Sessions from 1979. Similarly the ‘Republic of Vietnam’, who became a member in 1968, was that part of Vietnam then known in the outside world as ‘South Vietnam’ and excluded the separately-governed north. This would change after the unification of the country in 1975 when it became ‘The Socialist Republic of Vietnam’ though it was not represented at the Annual Sessions on a regular basis until the 1990s. Its neighbour, Cambodia, experienced a coup d’etat in 1970, just a year after their admission to membership of CCOP, and took no further part in CCOP activities for almost twenty years. Then, following the years of absence, Cambodia, known during much of this time as the ‘Democratic Republic of Kampuchea’, attended the 24th session of CCOP in 1987 and has since played a full and active role in CCOP.

Box 6**Cooperating Countries**

When CCOP was first formed, those developed countries who were members of ECAFE and whose governments actively supported CCOP, were informally referred to in CCOP documentation as 'supporting countries' but were soon to be formally designated 'Cooperating Countries'. These countries supplied Special Advisers who attended the early CCOP Sessions and the subsequent Annual Sessions. The original Cooperating Countries were France, Germany, the United Kingdom, and the United States of America, together with Japan who, as the only 'developed' Member Country of CCOP in 1966, also provided a Special Adviser. Japan, therefore, attended the Annual Sessions both as a Member Country and a Cooperating Country but it should be noted that as Cooperating Countries have no voting rights in CCOP, Japan has just one vote on all policy-making decisions, the same as every other individual Member Country.

The number of Cooperating Countries has grown steadily since the early years of CCOP and currently the complete list comprises:

Australia, Belgium, Canada, Denmark, France, Germany, Japan, The Netherlands, Norway, Russia, Sweden, Switzerland, United Kingdom, United States of America.

The character of representation of the Cooperating Countries at Annual Sessions has changed over the years as most of the Special Advisers in the early days came from government organisations such as national Geological Surveys and could, with the appropriate authority of their Ministries of Foreign Affairs, officially represent their Governments. With time, although the Special Advisers remained technically relevant as experts, their organisations, still in many cases national Geological Surveys, had become more distant from the higher echelons of their own Governments. The Cooperating Country Representatives are nowadays rarely able to speak on behalf of their Governments but they are able to fulfil the vital role of helping CCOP to understand and adapt to changes in the international aid policies of their respective countries and thus help CCOP in applying for future support.

Advice for the Future

Having introduced greater clarity into the classification of its various work programmes there was still a need to consider how CCOP could best operate in the rapidly changing world in which it existed. The Advisory Group, at the 2003 Annual Session, in Kuala Lumpur, Malaysia, had offered their help to CCOP in identifying the main challenges facing CCOP, both organisational and financial, and suggest some possible ways of facing these challenges. They posed the following question: "How should CCOP build on existing strengths and evolve its activities to take advantage of new contexts and opportunities?". In February 2004 they held a specially convened 'brainstorming session' in Bangkok attended by seven of the Advisers under their chairman, Dr David Prior. After four days of intensive discussion a report was compiled listing fifty-seven recommendations, grouped into eight themes; changing contexts, changing role, funding, membership, the Steering Committee, the Technical Secretariat, the Annual Session and the Advisory Group. At the Annual Session in 2004 there was a joint discussion of the report between the Advisory Group and the Steering Committee and at its subsequent meeting the Steering Committee approved the majority of the recommendations and instructed the Secretariat to submit an action plan to the Steering Committee for discussion at its meeting in March 2005.

Many significant changes to the organisation of CCOP were to flow from the recommendations of the Advisory Group's brainstorming session and the subsequent decisions of the Steering Committee. Perhaps the most important was endorsement of the proposed re-structuring of the Secretariat involving the appointment of three 'Sector Managers' (**Figure 16**) with responsibility for co-ordination between the existing programmes within their Sector and generating new activities and the financial support necessary to undertake them. The intention was for CCOP to become much more proactive on behalf of its Members with the aim to have the new structure in place by mid 2006. This new attitude was also emphasised by the adoption by the Steering Committee of a detailed 'Business Plan' containing performance targets and criteria and systems for performance evaluation. After forty years of operation, CCOP is ready to face its future with a confidence forged from experience and tempered with the 21st Century realism.

2. THE ANNUAL SESSIONS (1966-2006)

The Time for Talking

The Early Sessions

The first two sessions of CCOP took place in 1966 and were followed by a further two sessions in 1967. Strictly speaking, therefore, these first four were not ‘Annual Sessions’. After 1967 a single session was held each year (see Table 1) with that of 1968 generally being referred to as the 5th ‘Annual’ Session. The numbering anomaly persists to the present day with the Annual Session of 2006, in the forty-first year of CCOP’s existence, being labelled the 43rd Annual Session.

Table 1. Full Sessions of CCOP and their locations

Formative Sessions (1966, 1967)			
1 st Session	Quezon City, Philippines	May/June	1966
2 nd Session	Tokyo, Japan	Oct/Nov	1966
3 rd Session	Seoul, Korea	June/July	1967
4 th Session	Taipei, China	November	1967
Annual Sessions (1968-2006)			
5 th Session	Tokyo, Japan	June	1968
6 th Session	Bangkok, Thailand	May	1969
7 th Session	Saigon, Vietnam	May	1970
8 th Session	Manila, Philippines	July	1971
9 th Session	Bandung, Indonesia	November	1972
10 th Session	Bangkok, Thailand	September	1973
11 th Session	Seoul, Korea	August	1974
12 th Session	Tokyo, Japan	August	1975
13 th Session	Kuala Lumpur, Malaysia	Nov/Dec	1976
14 th Session	Manila, Philippines	Sept/Oct	1977
15 th Session	Singapore	Oct/Nov	1978
16 th Session	Bandung, Indonesia	September	1979
17 th Session	Bangkok, Thailand	November	1980
18 th Session	Seoul, Korea	Sept/Oct	1981
19 th Session	Tokyo, Japan	Nov/Dec	1982
20 th Session	Kuala Lumpur, Malaysia	November	1983
21 st Session	Bandung, Indonesia	Nov/Dec	1984

22 nd Session	Guangzhou, China	November	1985
23 rd Session	Madang, Papua New Guinea	November	1986
24 th Session	Bangkok, Thailand	Oct/Nov	1987
25 th Session	Baguio City, Philippines	December	1988
26 th Session	Bangkok, Thailand	Oct/Nov	1989
27 th Session	Seoul, Korea	November	1990
28 th Session	Bangkok, Thailand	Oct/Nov	1991
29 th Session	Hanoi, Vietnam	November	1992
30 th Session	Bali, Indonesia	November	1993
31 st Session	Kuala Lumpur, Malaysia	October	1994
32 nd Session	Tsukuba, Japan	September,	1995
33 rd Session	Shanghai, China	Oct/Nov	1996
34 th Session	Daejeon, Korea	October	1997
35 th Session	Subic Bay, Philippines	October	1998
36 th Session	Hanoi, Vietnam	October	1999
37 th Session	Bangkok, Thailand	October	2000
38 th Session	Phnom Penh, Cambodia	October	2001
39 th Session	Jogjakarta, Indonesia	October	2002
40 th Session	Kuala Lumpur, Malaysia	October	2003
41 st Session	Tsukuba, Japan	November	2004
42 nd Session	Beijing, China	September	2005
43 rd Session	Daejeon, Korea	Oct/Nov	2006

The general procedures for the first sessions were closely based on UN practice as befits an organisation that was effectively an offshoot of ECAFE and which had, at least temporarily, a secretariat drawn from ECAFE. The Annual Sessions comprised several elements. The Technical Advisory Group (TAG), as formed during the first formative session in 1966 (see page 8), met prior to the full ‘plenary’ so that its recommendations could be discussed by the latter. By 1970, the Special Advisers who had been appointed to the TAG (see page 8, and **Figure 17**) also had their own meeting as part of the Annual Session. The Technical Secretariat was kept extremely busy; in addition to providing any necessary papers for discussion at the outset of the Annual Session they also had to produce minutes of the TAG meeting for the subsequent plenary and a final report of the latter meeting ready for approval by delegates before the formal closure of the Session. The task of the ‘rapporteur’, initially a member of the Secretariat, was therefore very important, as well as somewhat onerous. The discussions and the subsequent reports were all in English.

Special Advisers to CCOP



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Dr. W. Bullerwell, United Kingdom (Chairman of the Technical Advisory Group of CCOP)



PROF DR. H. CLOSS

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PROF M. HAYAKAWA



MR M. MAINGUY



MR L.C. NOAKES



DR A.G. OBERMULLER



MR J.M. RAYNER

Figure 17. Special Advisers to CCOP in 1973.

First Permanent Representatives (1968)

At the 1968 Session, the first real ‘annual’ Session each of the six Member Countries nominated their first Permanent Representatives to CCOP. Three of these were Directors of their respective national Geological Surveys (or equivalent geological organisations), one was a Director of a Bureau of Mines, one a Director of a Bureau of Natural Resources and one was a ‘Convenor for CCOP Projects’ based in a Ministry of Economic Affairs. They were to represent their respective countries at each session of CCOP. During the early years of CCOP, the sessions lasted for at least two weeks. This was a long time for the Permanent Representatives of the Member Countries and the Special Advisers, all of whom occupied important positions within their home countries, to be absent from their normal duties. However it is an indication of the importance that they attached to CCOP that they were all prepared to dedicate this generous amount of their time to its business.

Box 7

On being a 'Rapporteur'

Each year at the Annual Session of CCOP a Rapporteur is elected whose task is to record the proceedings of the session and produce a draft report to be scrutinised and adopted by the delegates before closure of the session. This is, and always has been, a very demanding job. Dr Deryck Laming, who was Senior Geologist (Technical Editor) with CCOP for two years from 1972-74 writes that a part of his duties was to act as Rapporteur at the Annual Sessions. He recalls that this was an eighteen hours-a-day job, gathering all the papers issued beforehand, taking notes of discussion during the meeting, preparing a daily record, talking with speakers to find out if they really meant what they had said and finally, at the end of the week, printing everything out in multiple copies so that the delegates could read through it and see what each had said, and amend things if they realised that they had said something they shouldn't have done. It was a daunting task but was rewarded by the triumph of presenting an acceptable document on the last day of the meeting.

Dr Tony Reedman was the Cooperating Country representative of the UK for the ten years from 1990 and acted as Rapporteur for many of the Annual Sessions during this period. He records that though the task was still a daunting one, the introduction of word processing and the skill of the Thai secretaries of the CCOP Secretariat were a great help. However, the individual papers being presented were becoming longer and unexpected hitches could throw the reporting process into confusion. In 1992, for example, the computers, specially brought to Hanoi from Bangkok for the task, dramatically failed just as the final report was being prepared and large parts of the text disappeared into the virtual ether. The hard-pressed but conscientious secretaries worked almost all night to re-process the pages but even so the final report was completed and approved by delegates only after the rapporteur had left Hanoi for another pressing engagement.

On another occasion, in 1998, the Annual Session took place in the shadow of the recently active Mt. Pinatubo at Subic Bay in the Philippines. Here the combination of a typhoon and an earthquake during the course of the meeting caused a breakdown in the power supply and work on report production had to continue by the light of a kerosene lamp and with the help only of a single lap-top computer until power was eventually restored (Figure 18). Nevertheless, in spite of these and various other unpredictable obstacles, the present CCOP archive contains reports of each and every Session since their inception in 1966.

Striving for Efficiency (1970s and 1980s)

The Annual Sessions of CCOP would always be the crucial meeting at which the Member Countries could discuss all aspects of CCOP business and set work programmes for the following year. The venue for each Annual Session continued to rotate between Member Countries (Table 1) and the attendance of the Special Advisers (**Figure 17**) representing the Cooperating Countries and, in later years, the Honorary Advisers, provided a valuable input of outside opinion and expertise. However, after the first few years, the Annual Sessions were becoming increasingly formal and somewhat cumbersome with a complex structure involving two plenary sessions, a TAG session and a session of the Special Advisers. By 1978 the Special Advisers reported that they were concerned with the amount of time required for each Annual Session which by now amounted to as much as sixteen days including two weekends.



Figure 18. Representatives from Denmark and the UK at the 1998 Annual Session of CCOP continue their work by lamplight following a power-cut during a typhoon in Subic Bay in the Philippines.

The Advisers suggested that by rescheduling the discussions at the Annual Session, increased preparation and distribution of documents in advance of the meeting, a sharper focus on the most significant items for discussion and greater use of *ad hoc* working groups, a great deal of time could be saved. They went on to propose a modified schedule, the main change being that items other than strictly formal CCOP business, such as practical and administrative details of ongoing projects, would be separately scheduled prior to the main meeting. Furthermore they suggested that working hours should be restricted to eight hours a day with Sundays free. On this basis they proposed a strictly controlled schedule comprising two preliminary days for related meetings but also including the opening ceremony of the full session to be followed by six working days for the main session and a day for report preparation together with the final plenary session. Together with a free Sunday this still amounted to eight days, or ten days including the two days for preliminary meetings. These proposals were largely accepted for the 1979 Annual Session in Bandung, Indonesia though the Advisers still thought that the agenda should be shortened to match the reduced time available and allow adequate time for discussion of substantive issues, with less time being spent on information items. To aid this, they proposed that circulated documents should clearly distinguish between 'information' and 'decision' documents. With the adoption of most of these proposals the pattern of the Annual Sessions was established for the future though some further modification was required when a Steering Committee of CCOP eventually came into operation in 1982.

The Steering Committee was required to meet at least twice a year and from 1983 one of the meetings was scheduled as part of the Annual Session and took place before the final plenary session of that meeting. Later this was to change so that the second biannual meeting of the Steering Committee took place immediately after the Annual Session.

Box 8

Memories of a Special Adviser

The call by CCOP's present director, Mr Chen Shick Pei, for a small contribution to this fortieth anniversary publication had the same effect upon me as opening a box full of photographs of the past: the photographs not neatly filed but, nevertheless treasured, with each of them a source of a special memory. For sixteen years, from 1974 to 1990, my regular work with the Dutch Geological Survey (RGD) and my advisory work for CCOP were closely intermingled, so that CCOP became almost a part of my daily life.

Only seven years after its foundation, in 1973, CCOP had accepted an offer by the Dutch government to participate in offshore surveys in the South China Sea and the Andaman Sea. Because of my involvement in these projects, Dr C.Y.Li invited me to attend the next Annual Session of CCOP. This was to be my introduction to the full CCOP family. It was on a very warm day in August, 1974, that I excitedly paid my respects to Dr. Li in the annex of the Tower Hotel in Seoul where the eleventh Session of CCOP was being held. In a quite different and sadder way, further excitement was to follow, when, one or two days later, the President of the Republic of Korea, President Park, was assassinated in the nearby Parliament building. All the CCOP participants felt touched by this sad event, which cast a shadow over the meeting.

At the Session it was a great surprise to me to find, that in that short time span of seven years after CCOP's establishment, Dr. Li had created such an extensive network of outstanding geologists from the region as well as from many Cooperating Countries. Apparently he had used all available diplomatic and technical channels of ECAFE (now ESCAP). My own presence was the result of such a contact with the Dutch ECAFE representative who fortunately attached great value to natural resources and related research. Before travelling eastward I had little idea of the full meaning of co-operation with East Asian countries but assumed it merely implied the introduction of new specializations and techniques already developed in advanced countries.

I was immediately nominated as a Technical Adviser to CCOP and a year later as a Special Adviser, much like the stepwise inauguration as member of a respected society. The binding element, I felt, was enthusiasm for the field of earth sciences in general and the belief in the social and economic importance of its practical application. Sharing this conviction, CCOP penetrated deeply into my work within the RGD. Many of my staff were recruited to assist in CCOP projects, not only in the CCOP region, but also in The Netherlands itself. Quite a number of geologists from the CCOP region came to The Netherlands for practical courses in Quaternary geological mapping and surveying techniques. Several of my staff stayed for years in the region. It was remarkable to observe how warm the mutual relations between the Dutch and CCOP geologists became, stimulating further participation in CCOP activities and recurrent meetings with dear friends from the CCOP region. We all were fully aware of working for a justified and important cause. The results of these and others efforts as shown in the increasing respect for CCOP throughout the region and adjoining areas was to confirm this view.

By the middle of the "1980s" however, it had become difficult to raise Dutch funds for the CCOP cause so Dr. Li visited Holland on a fund raising mission to see his old Dutch friend who had supported him through ECAFE so strongly in the past. A meeting was firmly scheduled, but the former ambassador did not turn up. Occupied by local problems he had completely forgotten this appointment, keeping Dr Li and myself waiting in vain in his office. There was, however, a fortunate outcome to this unfortunate incident as the ambassador felt he could only counterbalance his mistake by obtaining an impressive amount of funding for new CCOP projects sponsored by The Netherlands.

All in all CCOP has enriched my own life, for which I thank all people related to this organisation. Now, for the time being, I close the box containing all those good memories, only to reopen it whenever I receive CCOP's Newsletter and other publications.

Dr. Erno Oele, The Netherlands

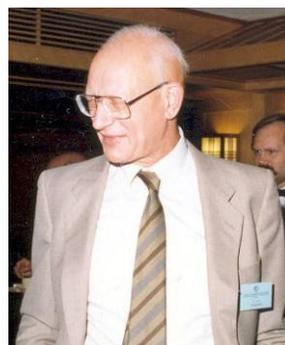


Figure 19. Dr Erno Oele, Special Adviser to CCOP, 1974 to 1990.

All Member Countries submitted written reports of their previous activities to the Annual Session and an important agenda item was the oral presentation of their report by each Permanent Representative. This item was of particular significance ever since the Working Party for Senior Geologists at ESCAP was deleted from the ESCAP conference system in the late 1970s and ceased its regional annual meetings. The CCOP Annual Session was now the only regular forum within the region for the high level discussion of geological problems and the exchange of information.

By the mid-1980s the pattern followed by the Annual Sessions was well established and was to change very little over the next fifteen years. Its roots in the UN system had served it well, though in 1985 the Special Advisers suggested that creation of a less formal atmosphere during the meeting might encourage a better exchange of views. Furthermore, distribution of the Member Countries written reports to delegates at the time of registration might allow a less formal style of oral presentation and encourage discussion. This was to be a theme that was to be repeated in future years and gradually led to a more relaxed atmosphere.

Thematic Sessions

At the 37th Annual Session in 2000 the Advisory Group suggested there was scope for further streamlining the meetings. In particular they considered the timetable for presentation of Country Reports could be reviewed with the aim of freeing up more time for discussion. The written reports were very valuable records and should be submitted as before but the oral presentation of reports during the Session should concentrate on specific highlights and new developments. More fundamentally, Denmark proposed that contributions to a discussion of a selected theme be invited at each Annual Session, a different theme to be selected each year in order to promote interactive discussion of technical, managerial or other topical issues. This idea was widely supported and in 2002, at the 39th Annual Session, half of one day was devoted to a special Thematic Session on “Policies and Geoscientific Issues for Sustainable Development of Geo-resources: Energy, Minerals and Groundwater”. The Thematic Session proved very popular and became a regular feature of the Annual Session with a selection of the contributions being published as Part II of the Proceedings of the Annual Session. Subsequent ‘themes’ for these special thematic sessions were as follows:

2003: Raising Awareness of the Importance of Geoscience and the Promotion of Geoscience Information and Services.

2004: Geo-environment of Deltas and Groundwater Management in East and Southeast Asia.

2005: Sustainable Development of Geo-resources and Geo-environment.

2006: New Sources of Energy in the CCOP Region: Gas Hydrates and Coal-bed Methane.

Box 9

What's in a Name?

Geoscientists, accustomed to controversy about how rocks, fossils and other geological items should be classified and named, like to be accurate with their nomenclature. It is not surprising therefore that CCOP would, from time to time, have its own problems in the naming of things and even the usage of its own acronym, CCOP. In 1984 the Steering Committee heard that the Indian delegation at the ESCAP meeting in Tokyo had insisted that the acronym CCOP should be changed to CCOP/EA to make clear the organisation's eastern Asian affinities. However, after sixteen years of usage the Steering Committee decided that, India's objections notwithstanding, CCOP would remain its chosen designation. Geographic names can also be controversial. A longstanding disagreement between Japan and Korea centred on the name of the expanse of sea between the two countries which the Japanese insisted was the Sea of Japan whilst the Koreans referred to it as Donghae (East Sea). A CCOP publication of an atlas of high resolution offshore seismic profiles, the results of a joint project between CCOP and the British Geological Survey, caused heated argument at the CCOP Annual Session of 1995. The Japanese Head of Delegation from the Japanese Ministry of Foreign Affairs insisted only the term Sea of Japan should appear in the Korean section of the atlas, a change that would delay publication. However, several diplomatic meetings later the atlas was published with a compromised solution for the Korean section which avoided using any formal name for the sea in question.



Figure 20. Mickey Mouse science: CCOP delegates, all born in the “Year of the Rat”, held a celebratory party at the 33rd Annual Session in Shanghai in 1996.

Box 10**Sing a Song of CCOP**

The delegates to the CCOP Annual Session work extremely hard throughout their meetings but an air of relaxation, even frivolity, is necessary at times. On the penultimate evening of the session a farewell dinner usually takes place after which it has become customary for each of the delegations to be called upon to render a song pertaining to their own country. This has led to the discovery of some unexpectedly talented performers (Figure 21). For the last fifteen or so years however, a highlight of the evening has been the rendition by members of the Advisory Group of the current version of the CCOP song (Figure 22). The song, first introduced when CCOP still had 'offshore' in its title, is appropriately sung to the tune of 'My Bonny lies over the ocean' and has verses, most newly composed each year, to reflect recent events within CCOP and the current Annual Session. As an indication that it is not to be taken seriously, the performance normally opens with the verse:

We come from various countries
We come from both near and far
We spend long hours in the meetings
And even more time in the bar

The difficulties in obtaining 'aid' funding for projects is referred to in another often repeated verse:

Searching for funds is not easy
It's really an ongoing chore
Our embassies all hear the story
Then stand up and show us the door

Unsuspecting delegates may have some unfortunate circumstance of the current session recorded by the songwriters. In Bangkok in 2000, a popular and longstanding delegate had the misfortune to be seen, and heard, having a quick nap in the meeting after lunch. This incident was duly recorded in the following verse:

Our sessions are never too boring
Our thinking is earnest and deep
But silence is broken by snoring
The sound of an after-lunch sleep

Normally the song ends with an affectionate reference to the hosts of the current session as was the example for Cambodia in 2001:

We're happy we came to Cambodia
Delighted to be in Phnom Penh
And now that we know how to spell it
We'll surely be coming again



Figure 21. The Chinese delegation to the 1997 Annual Session, in Daejeon, Korea, enthusiastically take their turn to sing at the Farewell Party.



Figure 22. A “choir” of Special and Honorary Advisers sings the 1997 version of the CCOP song.

3. THE PROGRAMME

Actions Speak Louder than Words (1966-1972)

Setting Sail

During the meetings of 1965, followed by the first two sessions of the newly inaugurated CCOP in 1966, a great deal of earnest discussion had successfully resulted in the establishment of an administrative framework and a mandate for the new organisation. Prior to 1966, with the exception of the petroleum regions of east Malaysia and Japan, offshore exploration for hydrocarbons was virtually non-existent in East and Southeast Asia. CCOP had as its first task the challenge of attempting to change this situation; it was therefore important that its practical activities should start as soon as possible. The aim was to sponsor regional and sub-regional marine geological surveys that would encourage more detailed follow-up work by private oil companies.

CCOP's first undertaking in pursuance of these aims was in 1966 when a geophysical survey (**Figure 23**) along the southeast coast of the Republic of Korea was conducted with the support of the United Nations Development Programme (UNDP). In July 1967, as part of a technical co-operation project between China and Korea, a drilling rig and crew arrived from China to further follow-up the survey. Although not yielding positive results as far as hydrocarbon discoveries were concerned, the survey was historically important as representing the first project launched under the banner of CCOP.

A future work programme, now known as the "Co-ordinated Survey Programme", was discussed at the second of the two 1967 sessions of CCOP. It contained an ambitious series of project proposals including three surveys around Taiwan, six in Korea one each in the intermediate zones of Taiwan-Korea and Taiwan-Philippines, four in the Philippines, two in Thailand and two in the Republic of Vietnam. During 1967 three of the Korean projects had already commenced.

In 1968, seismic profiling, totalling more than 12,000 line-kilometres, was carried out in the East China and Yellow Seas by the US Government with participation by geologists and geophysicists from Japan, Korea and China. As reported at the sixth session of CCOP, the survey indicated that the shallow sea floor between Japan and Taiwan "might contain one of the most prolific oil and gas reservoirs in the world". A similar but slightly more guarded claim was made in the published report of the survey. These results did much to encourage CCOP in its efforts. An aeromagnetic survey of the Taiwan Strait was completed in May 1968, with compilation and interpretation carried out in the USA and the Federal Republic of Germany, and a reconnaissance aeromagnetic survey between Taiwan and Korea was carried out in June. Both these surveys were undertaken for CCOP under the auspices of the United States MAGNET Project, an important initiative of the US Navy partly concerned with aspects of marine navigation.

With the help of the supporting countries, extensive areas of the seas around the CCOP countries were now being subjected to examination on a reconnaissance basis by various CCOP projects. At the Annual Session of 1969, the Special Advisers were able to report that in CCOP's short life to date, its survey activities had aroused considerable interest; requests for data were constantly being received by the Technical Secretariat and exploration concessions were now being sought in CCOP Member Countries in which no previous interest had been displayed. Offshore concessions had already been granted in the Gulf of Thailand, and concessions applied for in Korea, Malaysia and Thailand.



Figure 23. Launching ceremony of the very first CCOP project in Pohang, Republic of Korea, 1966.

By 1970 discussion had developed as to whether CCOP should consider sponsoring some fundamental and basic research projects “which might eventually lead to some as yet unforeseeable economic application”. It was eventually decided that any proposals of this nature might be considered at subsequent sessions under an agenda item concerning CCOP’s longer-term planning. For the moment however, the prevailing mood seemed to favour the type of data-gathering projects currently proving so successful though news that the Project MAGNET operations had been temporarily suspended so far as CCOP involvement was concerned was received with some dismay.

In 1971, entering the sixth year of its existence, the Committee was able to note that the CCOP offshore surveys and the early publication of their results had helped to attract to the region some of the large sums of risk capital now being expended by the hydrocarbons industry on further exploration. This was welcomed as an indication that some of CCOP’s original objectives were already being achieved. It was now proposed that serious consideration should be given to future activities so that they would play an increasingly useful role in the upcoming ‘Second UN Development Decade (1971-1980)’. CCOP’s part in the latter would be connected with the implementation of the International Decade of Ocean Exploration (IDOE) in the eastern Asia region. It was apparent that activities here might well provide the link between basic and more strategic research as had been discussed in 1970. Looking ahead it was agreed that CCOP should promote and co-ordinate the preparation of a variety of compilation maps at various scales and including regional maps at the scale of 1:5,000,000. Also, consideration should be given to the establishment of a data bank covering all disciplines related to the geology and mineral potential of the coastal and continental margins of eastern Asia and the oceanic areas beyond. These various strands of programme policy were to be brought together into a systematic whole with the implementation in 1972 of the CCOP/UNDP project “Technical Support for Regional Offshore Prospecting in East Asia” (see page 11).

Box 11**Geophysical Survey of the East China Sea and the Yellow Sea.
(October – November, 1968)**

Through the discussions of the second, third, and fourth sessions of CCOP and the Technical Advisory Group, it became clear that the stratigraphy and the structure of the shallower parts of the East China Sea and vicinity might be favourable for accumulations of oil and gas. The evidence was based on previous studies of several hundred sediment and rock samples, extrapolation of structures known on land in Japan, Korea and Taiwan, and preliminary results of an airborne geomagnetic survey by the US Naval Oceanographic Office. Geophysical survey, particularly seismic survey, was considered necessary to determine the thickness and nature of the sediments and to acquire further definitive information.

An offer to ECAFE (CCOP) of joint participation in such a survey was made by the US Naval Oceanographic Office. This offer was accepted and a geophysical survey was carried out in the East China Sea and the Yellow Sea from 12 October to 29 November, 1968, aboard a survey vessel chartered by the US Oceanographic Office. Joint participation of scientists from China, the Republic of Korea, and Japan with American scientists was provided through CCOP. Dr. Emery, the Special Adviser to CCOP, represented the Committee and the chief scientist was Dr. John M. Wageman.

During the cruise more than 12,000 line-km of continuous seismic reflection profiles were run with a 30,000-joule sparker. Continuous geomagnetic profile was made simultaneously. Oceanographic data were measured at two-hour intervals with some observations being restricted to daylight hours. Preliminary analyses of data were made on board ship, and charts of each kind of measurement were kept up-to-date in order to guide the planning. Final analyses, compilations, and illustrations were completed onshore in the United States.

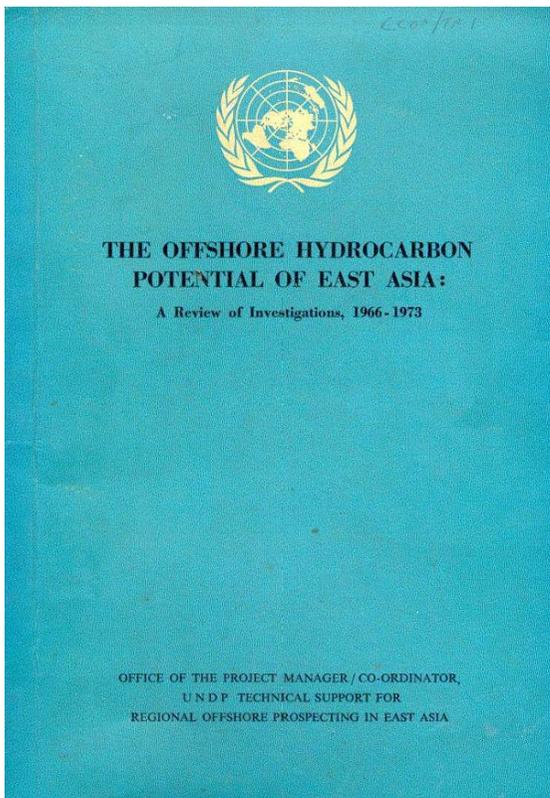
The results showed that sediments beneath the continental shelf and in the Yellow Sea might have great potential as oil and gas reservoirs. Large areas with sediment thickness exceeding two kilometres were found. Most of these sediments were believed to be Neogene in age, similar to the oil-producing strata on land. It was concluded that “the shallow sea floor between Japan and Taiwan appears to have great promise as a future oil province”, and this needed to be tested by drilling.

A full report was published in 1969 in the CCOP Technical Bulletin (volume 2). This was the very first large-scale international marine geophysical survey carried out jointly through CCOP, and the results became the basis for many subsequent undertakings in this area.

New Horizons (1972-1985)

A Decade for Development

During its first few years of existence CCOP had successfully co-ordinated several reconnaissance surveys in the region with the aim of encouraging further exploration for sources of petroleum in the territorial waters of its early Member Countries. By the early 1970s offshore exploration by the hydrocarbons industry was showing rapid growth in the region with some exciting discoveries. Though CCOP would not claim undue credit for these developments, it was with some pride that in a supplementary report to the Annual Session in 1973 (Figure 24) it could review the many positive developments in its individual Member Countries⁴ and also note that the vast majority of the reported petroleum exploration and production ventures had occurred since 1966 when CCOP began its activities. Exploration was now actively taking place in all the Member Countries, numerous concessions had been granted and several oil or gas fields had already been discovered. This was certainly not a time for CCOP to reduce its emphasis on offshore hydrocarbons but rather to broaden and extend the scope of its activities in the area. As CCOP grew it was acquiring sufficient confidence in its international stature and its organizational capability to consider embarking on a significantly large-scale cooperative state-of-the-art geoscientific project. This was a remarkable development in such a short period of time for an organization of this kind, and this can be attributed to a large extent to the organizational skills of C Y Li.



It had been known for many years that parts of the CCOP area provided some of the most significant regions of the globe for the study of the present-day tectonic processes and of their effects in the relatively recent past. In this area, three major lithospheric plates and many smaller plates interact with each other and offer a unique field for regional geological and geophysical research on crustal interaction. Also great efforts were being made in the search for mineral and hydrocarbon resources in this area. Thus CCOP was in an ideal position to implement and coordinate large-scale cooperative geoscientific studies of geotectonics and mineral resources.

Figure 24. One of the most significant of CCOP's early publications.

⁴ *The Offshore Hydrocarbon Potential of East Asia: a review of investigations 1966-73*

As it happened, an International Decade of Ocean Exploration (IDOE) had been launched by the President of the United States in 1966, the year of CCOP's birth. It was being supported by various UN bodies and was administered by the National Science Foundation of the United States of America (NSF). This partially overlapped with the Second United Nations Development Decade (1971-1980) and commencement of the latter in 1971 gave new impetus to CCOP's thoughts concerning participation in a large-scale project that would contribute to the IDOE programme. At its eighth session in 1971, CCOP recognised that it could play an extremely important role in the study of crustal interaction and tectonics and their relation to the concentration of metals and hydrocarbons in East and Southeast Asia with the participation of the Member Countries in the IDOE programme.

At its ninth session in 1972 CCOP agreed a project on "The tectonic development of east and southeast Asia in relation to metalliferous ore and hydrocarbon genesis", which would involve all the Member Countries of CCOP, could be the first project for inclusion in the IDOE programme. Dr John A. Katili, Deputy Chairman of the Indonesian Institute of Sciences, was unanimously elected as the principal program coordinator and several Special Advisers offered to render assistance to the Member Countries in planning their national projects. A planning meeting was held in Tokyo and a programme which became known as "Studies of East Asian Tectonics and Resources" (SEATAR) was mapped out.

A first SEATAR workshop on the "Tectonic Development of East and Southeast Asia and its Relation to Metalliferous Ore and Hydrocarbon Genesis" was convened immediately following the tenth CCOP session in September 1973. Like the earlier planning meeting in Tokyo, it was sponsored jointly by CCOP and the Intergovernmental Oceanographic Commission (IOC/UNESCO), and supported by the IDOE Office. The workshop attracted a very impressive group of almost one hundred prominent geoscientists from over twelve countries. Many of the participants attended with strong interests in geologic and geophysical research and there was significant emphasis on mineral and hydrocarbon exploration. The deliberations were carried out in five groups or panels representing broad subject areas; namely geophysics, tectonics, sedimentary processes, metallogenesis and petrogenesis, heat flow and hydrocarbon maturation. These panels assessed the present state of knowledge, outlined problems and critical areas of study in East Asia, and presented general recommendations for research in their specific field.



Figure 25. IDOE Planning Session in Tokyo. Prof. Katili fifth from left in the back row.

The proposal which most attracted the attention of the meeting was the recommendation that future research should be concentrated along a series of transects (**Figure 26**). Six transects were finally agreed upon, each cutting across island arc system from the ocean basins to the continents and crossing a diversity of tectonic elements. Research along the transects would be multidisciplinary and include both land and marine studies and would involve all the countries of the East Asia region.

The transects for multidisciplinary geoscientific studies were:

1. Burma - northern Thailand Transect

The transect crosses a subduction zone of the Indo-Australian Plate under the Eurasian Plate, on-land studies including petroleum-bearing Tertiary basins and some extinct volcanic activity.

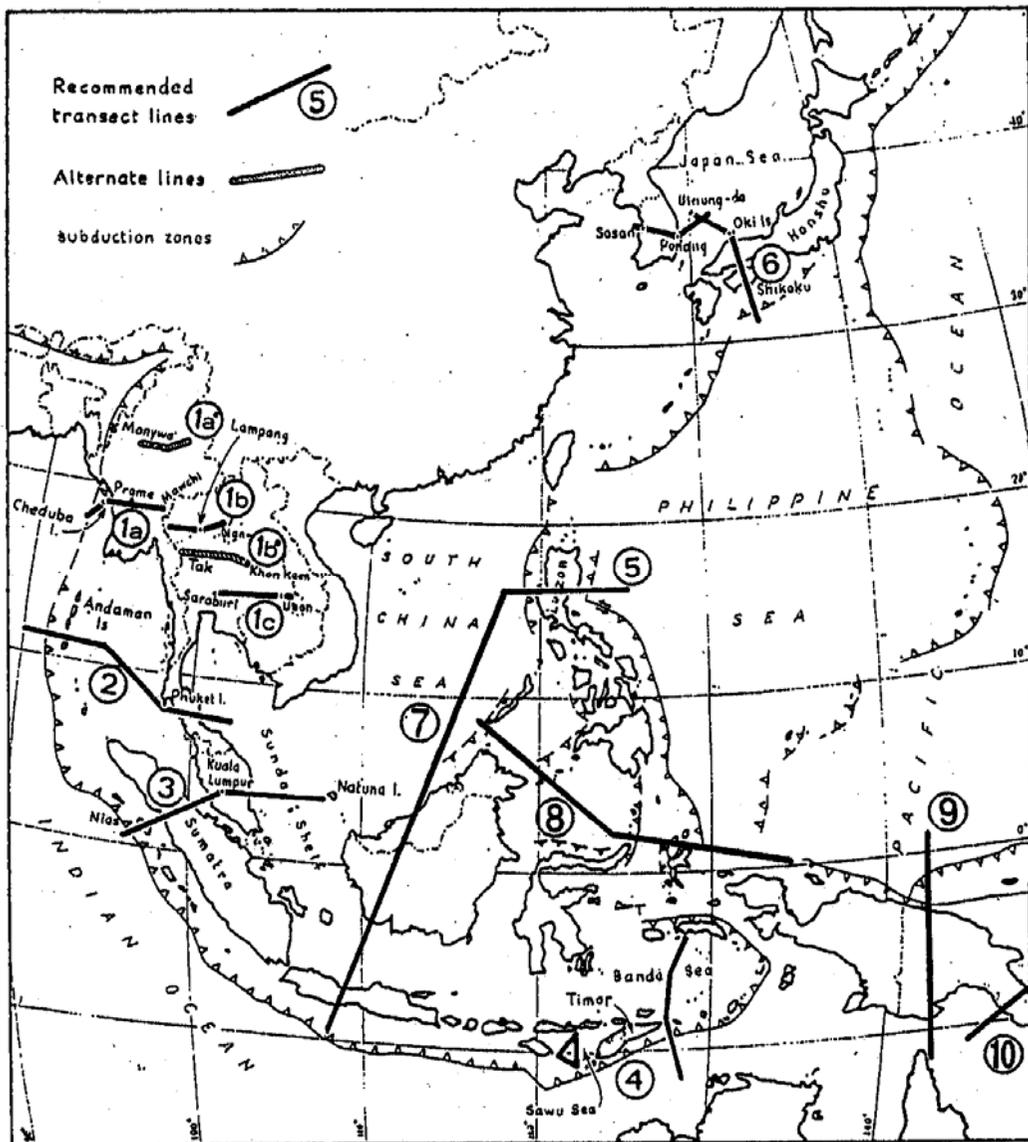


Figure 26. Plan showing the position of the SEATAR Transects.

2. Andaman Sea – Gulf of Thailand Transect

The transect crosses a marginal sea that may include a spreading axis behind an island arc, goes across an area in southern Thailand known for tin mineralization, and ends in a major hydrocarbon-bearing Tertiary basin.

3. Sumatra – Malay Peninsula – Sunda Shelf Transect

The transect runs through a tin mineralization area, an active subduction zone, and outer arc chain, mountainous area with transcurrent faulting, and petroliferous basins.

4. Timor - Banda Sea Transect

The transect crosses an area where three plates collide and the Timor Island may be a product of continent-island arc collision. It crosses promising mineral and hydrocarbon prospects.

5. Northern Philippines Transect

The transect crosses two opposing subduction zones and an area of rich porphyry copper mineralization.

6. Southwest Japan – Korean Peninsula Transect

The transect crosses the Nankai Trough a possible active subduction zone and then across the mature island arc into the marginal Japan Sea which may be the site for ocean spreading, then it extends westward through Tsushima Basin and on to the Korean Peninsula. Zones of metal mineralization are involved.

At the fifth session of the Executive Council of IOC in March 1975, a Joint CCOP-IOC Working Group was established and its first meeting was held in Tokyo, in August 1975, concurrently with the 12th session of CCOP. Activities and progress of the SEATAR program of Member Countries were reviewed. Also recommendations were made regarding exchange of data and information with other relevant international bodies, particularly with the International Program of Ocean Drilling (IPOD) so that it could take into consideration the scientific objectives of the SEATAR program in selecting drilling sites. It was agreed that the following sessions of this Working Group would be held in conjunction with the annual sessions of CCOP to review and discuss the progress of the program.

It was proposed at the third meeting of the Joint CCOP/IOC Working Group in 1977 that a second SEATAR Workshop be arranged and to review and evaluate the past achievements of the SEATAR program with a view to determine additional work required in the region to achieve the initial objectives during the rest of the decade.

The services of Dr A J Barber and Dr D Jongsma were obtained to review the research carried out in the past along the six transects and to make the results available to the participants of the workshop.

The Workshop was convened in Bandung, Indonesia in October 1978, five years after the first Workshop. The concept of multidisciplinary and international cooperative geoscientific study of specific transects attracted a great deal of interest amongst the international geoscientific community and more than a hundred scientists, many of whom were internationally distinguished, attended the session. The pre-workshop review by the project office was introduced followed by detailed reviews of the research completed along the transects facilitated by discussion leaders who had been responsible for some aspects of the transects.

It was the impression of the geoscientists present that multidisciplinary research along transects involving all available methods and a large number of institutions and organizations was indeed a surprisingly effective approach for integrating the results of all aspects of geology and geophysics, to understand the extremely complex and interesting tectonics of the region. It was considered that the research during the past five years had increased scientific knowledge of the geology, tectonics and resources of the region by an order of magnitude.

An illustration of the complexity of the working operations can be given from 'Transect III: Sumatra – Malay Peninsula'. This was reported at the workshop as involving some of the most successful research to date. Eighteen organizations from ten different countries had been involved in the study. The marine part of section from the Indian Ocean floor, the Sunda Trench, the forearc basin had been studied in a very well integrated land and sea survey by the National Institute of Geology and Mining, Indonesian Institute of Science (LIPI), Scripps Institution of Oceanography and Cornell University. On the Sumatra land section, the Geological Survey of Indonesia and the Institute of Geological Sciences, UK were in the process of preparing geological and geochemical anomaly maps. Paleomagnetic studies had been made by the Universities of Malaya and Kyoto. On land in the Malay Peninsula, a previously published review of geology had been revised in the light of the recent progress in geosciences including radiometric dating of rocks and plate tectonic theory. Gravity traverses and heat flow measurements had been made.

Also at the workshop, recommendations regarding the work to be carried out along each existing transect and the addition of the four new transects was proposed and agreed (see **Figure 26**). They were:

Transect VII – Java Transect

This transect extends from the Indian Ocean through Java, Kalimantan and into the South China Sea.

Transect VIII – Sulu Sea Transect

This was designed to cross two inactive trenches and two volcanic arcs, and it extends from the South China Sea to the Celebes Sea.

Transect IX – New Guinea Transect

This transect is located on a poorly known area of the Pacific Ocean Basin extending north-south across the New Guinea Trench through Papua New Guinea – Iran Jaya border to the North Australian Shelf.

Transect X – Bismark Sea – Solomon Sea Transect

One branch of this transect extends from the Pacific Basin southwards through the Bismark Sea and New Britain into the Solomon Sea; and the second branch commences in the Pacific Ocean Basin further to the south and extends WSW across Bougainville and meets the other branch in the Solomon Sea.

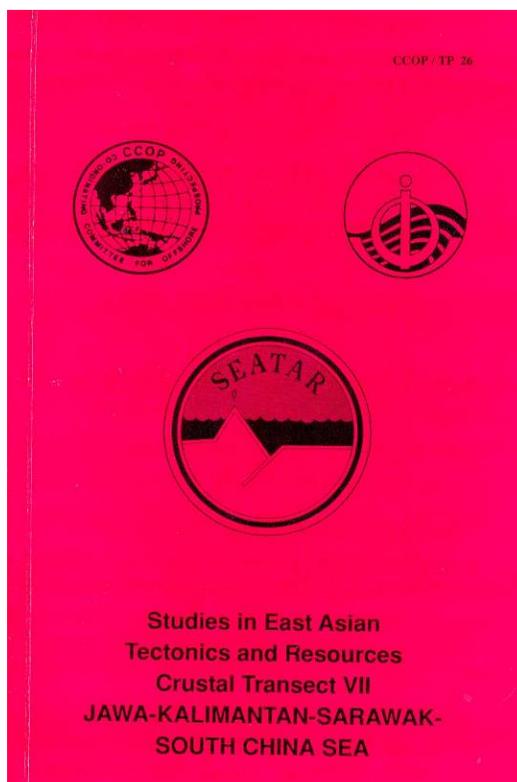
Research along transects proved to be very successful, attracting a large number of regional and international geoscientists who collaborated very actively and contributed greatly to an understanding of the tectonics of the region and its relation to the concentration of metals and hydrocarbons. These results were published as individual papers in numerous scientific journals.

The involvement of CCOP in this extraordinary international venture was highly significant for the organisation. After five years of operation (1973-1978) approximately \$20m had already been spent, much of it on surveys benefitting CCOP Member Countries. With the end of the International Decade of Ocean Exploration in December 1980 the CCOP/IOC Working Group was renamed the “Joint CCOP-IOC Working Group on post-IDOE Studies of East Asian Tectonics and Resources” and a new mandate was adopted to continue co-operative work following an expert review which assessed the value of the project’s work in identifying mineral and hydrocarbon resources (CCOP Technical Publication 7).

Compilations of three transects were completed for publication much later, in the early 1990s. They were; Transect IV – Banda Sea – Indonesia (Transect Coordinator Hartono) which was published in 1991, Transect VII Java – Kalimantan – Sarawak – South China Sea (Transect Coordinator Untung) in 1991 (see **Figure 27**), and Transect VI – Japan – Korea (Transect Coordinator Teraoka).

At its 28th session in 1992 at Bangkok, CCOP noted that SEATAR was successfully terminated in December 1991. As Prof. Hutchison the Overall SEATAR Transect Coordinator and Prof. Katili the Chairman of the Joint CCOP-IOC Working Group on SEATAR pointed out in the preface of the above completed and published transect compilations, “During the IDOE, crustal transects were very fashionable, but have subsequently fallen out of favor. It was therefore most unfortunate that not a single one of the SEATAR transects could be completed and published within the IDOE. Indeed the transect compilations have been delayed for so long that most geologists and oceanographers have forgotten their existence”. This project started with a very BIG BANG and produced spectacular results, but for those associated with the project it was with a feeling of slight nostalgia to see it end in such a manner. It is now inconceivable that multinational and multidisciplinary geoscientific endeavors of such scale and scope could be undertaken again in this region in the foreseeable future.

Figure 27. Report on a SEATAR Crustal Transect VII.



Hidden Depths

There were other new initiatives taken by CCOP during the 1970s in order to enhance the hydrocarbons programme. In 1976 a study on the prospects for petroleum discoveries in the pre-Tertiary sedimentary basins of the CCOP region had been started by the UNDP project and in 1977 the Special Advisers recommended that more attention should be given to this topic. Although prospects did not appear particularly bright the Committee considered their task to draw attention towards programmes that might be overlooked by industry and to provide more information to attract exploration. Intensification of a 'pre-Tertiary' programme was therefore agreed. The Government of France offered to provide an expert (Father Henri Fontaine) for this purpose, an offer that was to lead to a long and productive relationship between Fr Fontaine and CCOP. In more recent years, the discovery of important reserves of hydrocarbons in pre-Tertiary sediments in the region have shown the CCOP's earlier decisions to have been fully justified.

Environmental Concerns

With hindsight it is easy to recognise the significance of an item that first appeared on the agenda of the 1974 Annual Session. This was an item entitled, "Recommendations for Environmental Protection in Drilling and Mining Operations in Asian Offshore Areas". A report on this subject had been prepared by the CCOP/UNDP Project Office and at the Annual Session several Member Countries were able to outline their activities in this area with Indonesia being particularly advanced. Here it must be remembered that, unlike today, such phrases as "environmental protection" and "sustainable development" were not part of the common language of either geoscientists or of most Governments at that time. After 1974, however, issues concerning the interaction of resource exploitation and the environment were to become increasingly important for CCOP and in 1975, perhaps fearing too wide a remit in this area, the Committee reaffirmed that in relation to offshore environmental studies, their attention would be strictly confined to those aspects of the management of the coastal zone that had a bearing on operations for exploration and exploitation of hydrocarbons or seabed minerals.

Box 12

Treading Carefully

The CCOP's programme did from time to time raise sensitive political issues. For example, in 1977, the Annual Session heard that at the previous meeting of ECAFE, the Chinese delegation, alluding to the report of CCOP's thirteenth Session, had reiterated its Government's position that the seabed resources of the sea areas off China's coast and around its islands all belonged to China and only China had the right to prospect and exploit those resources. CCOP was able to confirm that the report cited by China referred only to a Member Country's own activities and any CCOP sponsored activity could only be conducted with the permission of the relevant coastal states. The UN Office of Legal Affairs had also commented with respect to the CCOP contribution to the IDEO programme SEATAR, noting that "as it appears that the Peoples' Republic of China does not participate in the CCOP/IDOE project while it also claims that one of the areas of the proposed activities includes a portion of Chinese territory – an area also claimed by other states – it is in accordance with (the foregoing) legal analysis that no project activities be initiated in the areas concerned".

Also at the ECAFE meeting an informal enquiry was made by the Chinese delegation regarding several geographic names such as "South China Sea", "East China Sea" and "Yellow Sea" which had appeared in the report of the 1976 Session of CCOP. Following this, the Committee decided that more precisely defined geographic names should be used in CCOP publications. The need for CCOP to take care in negotiating these stormy diplomatic waters was therefore underlined.

In 1976 representatives of the UNDP Project attended an international workshop on marine pollution in East Asian waters and in 1978 the Special Advisers urged CCOP to pay more attention to environmental problems related to offshore petroleum and minerals development in the region. In the following year CCOP, noting that its Member Countries were attaching increased importance to marine environmental problems, was able to attract limited funds from the United Nations Environmental Programme (UNEP) for its work on environmental issues in Southeast Asia, but the need to plan for longer term action was recognised and it was proposed that a small *ad hoc* group of experts be organised by the Special Adviser from IOC to assist in assessing Member Country requirements.

The momentum for action in the environmental area was growing and at the Annual Session of 1980 the Technical Advisory Group spent much time discussing the Marine Environment Programme. The *ad hoc* Working Group (see above) had recently met and had suggested that the scope for marine environmental studies in the CCOP area should “include the water masses of the marine areas of the CCOP region, including estuarine and tidal areas, continental shelves and margins and adjoining deep-sea regions including the seabed and subsoil, and those coastal zone areas which are affected by or have an effect on shoreline and near-shore processes”. This statement, which seems to ignore earlier misgivings of too wide a remit, was endorsed by the Committee with the added statement that the studies should also “include the identification, mapping, and evaluation of potential natural hazards to offshore and coastal zone exploration, whether (these be) geological, oceanographic or atmospheric”.

The scene had now been set for positive action and when the proposed programme was further discussed at the plenary session, highest priority was given to three proposed joint CCOP/UNEP projects concerning the importance of the impact of seabed exploration and exploitation on the non-living marine environment, the use of marine environmental data of East Asian marine waters and, together with ASCOPE, environmental protection, safety regulation and pollution control in relation to offshore prospecting. Based on the *ad hoc* Group’s suggestions a number of conclusions were reached which effectively added detail to the above three topic areas. Possibly the most significant of these for the future concerned the emphasis that should be placed on co-operation between CCOP and ASCOPE, both in implementation of the programme and in seeking international finance.

By 1984, approaching the twentieth anniversary of CCOP, very positive steps were emerging to place more emphasis on practical matters of the marine environment through an Offshore Safety Programme. A workshop on offshore safety sponsored by CCOP/UNDP, ASCOPE and the Norwegian Engineering Committee on Oceanic Resources (NECOR) was held in Jakarta and it was subsequently proposed that the Deputy Director of the Norwegian Petroleum Directorate (NPD), Dr Oystein Berg (**Figure 28**), should act as adviser to CCOP and assist in the establishment of a Standing Working Group on Offshore Safety. Dr Berg consulted with Member Countries and later in the year proposed draft terms of reference for the Working Group and a proposed programme of activities. This was to be the start of a long and fruitful relationship between the Norwegian Government, NPD, CCOP and ASCOPE in the field of petroleum development and safety.



Figure 28. Dr Oystein Berg (1987).

Focus on the Quaternary

A further new direction taken by the CCOP programme in the 1970s was to increase studies on Quaternary and recent sediments. As mentioned above, CCOP had taken the initiative to pay serious attention to pre-Tertiary sequences at the time when hydrocarbons exploration offshore was predominantly targeted on sedimentary basins of Tertiary age. Now, for different reasons, CCOP decided to look more carefully at the sediments younger than about two million years that blanketed much of the seafloor. The engineering geology of these sediments would be important in siting drilling platforms and harbours in connection with a developing offshore hydrocarbons industry. In addition, by 1977 the Special Advisers meeting had stated that “it seems desirable (for CCOP) to start studies to assess resources of sand and gravel which are steadily growing in value” and shallow sea-bottom sediments were a potential source of such resources.

The move towards Quaternary studies had already been established in 1974 when The Netherlands, a Cooperating Country with great expertise in the study of Quaternary sedimentation, both onshore and offshore, provided a Special Adviser on Quaternary Geology to CCOP and allocated \$500,000 through ESCAP for activities until 1979. In 1975 a Senior Quaternary Geologist was provided for a three-year attachment to the UNDP Project Office and a Junior Quaternary Geologist was added in 1976 for a further two years. With this expertise available to give guidance, the Geological Survey of Malaysia established a Quaternary Geology Section. This was to prove important, not only for Malaysia but also for other CCOP Member Countries, as in 1977 the Technical Advisory Group suggested that the standards developed by the Geological Survey of Malaysia for legends and the representation of data on Quaternary Geology Maps could serve as a model for other CCOP countries. The contribution of The Netherlands was noted with gratitude by CCOP during the Annual Session of 1979. At the 1980 Annual Session, CCOP was pleased to note that the Indonesian Geological Research and Development Centre had also set up a unit dedicated to Quaternary Geology similar to that in Malaysia.



Figure 29. A field party studying Quaternary geology in Malaysia.

In 1979 The Netherlands allocated a further \$460,000 for the period 1980 to 1982 to allow the continued services of a Quaternary Geologist and two Associate Experts with a particular emphasis being given to training. Also, a fact-finding mission involving experts from the Federal Republic of Germany and the United Kingdom visited various Member Countries and Bangladesh to investigate the need for a Regional Centre for Quaternary Geology and possible locations for such a centre. China, Malaysia and the Philippines all expressed their willingness to host such a centre. By 1983, the increased interest in Quaternary studies led the Technical Advisory Group of CCOP to further discuss a Regional Centre, but it was quickly noted that UNDP would not provide funding for any new regional centres though it might be able to provide funding to upgrade the already established National Centre for Quaternary Geology in Qingdao, China, so as to accommodate the needs of other Member Countries of CCOP and ESCAP. Several CCOP training seminars and courses were subsequently held in Qingdao.

The assistance of The Netherlands during the 1970s and early 1980s had been vital in establishing Quaternary Geology programmes in the CCOP region and a decade later it was to play a similarly important role with respect to the integration of geoscience studies of the coastal zone.

The move further into Quaternary studies was also to foreshadow future moves of CCOP away from an exclusively offshore role. In 1982 the Special Advisers, commending the results achieved to date by the Quaternary Geology Programme, suggested that attention should now be given to onshore/offshore correlation of Quaternary sequences. This was entirely logical as fluctuating sea-levels during the Pleistocene Epoch had meant radical adjustments to shoreline positions during this time with many originally onshore sequences now situated offshore. Nevertheless, in the 1985 Session a question was raised as to whether CCOP, as an organisation dedicated to offshore programmes, should be involved in onshore activities. It was diplomatically decided that while CCOP should devote its “principal efforts” to offshore activities, the Director should seek funds from other sources to accommodate onshore programmes. This would have significant consequences for the future.

Crossing the Shoreline (1986-2006)

The UNDP Story: A Final Chapter

The UNDP Project for support to CCOP had been at the core of CCOP in terms of both organisational and operational affairs since 1972. With the establishment of CCOP as an independent intergovernmental organisation in 1987, UNDP support for institutional matters and the day to day management of CCOP was ended and the last phase of its operation (1988-1991), to which some \$3m was allocated, was concentrated on technical advice and services for Member Countries, training and the initiation and supervision of some geographically specific surveys. In these particular aspects the pace of the project and its output did not slacken. Particularly noteworthy were a number of nearshore, high resolution shallow seismic surveys of significance for pipeline, oil and gas installation, port development and placer mineral exploration. These surveys utilised the pool of equipment that had been acquired for CCOP in the earlier days of the UNDP Project and was available on loan by Member Countries. The pool included equipment for shallow high-resolution seismic surveys, positioning and navigation and map digitisation. There was often collaboration by the resident CCOP/UNDP staff on such projects involving both an individual Cooperating Country and a Member Country.

Box 13**Malaysia and CCOP: From Seasickness to Symbiosis**

Since the formation of CCOP 40 years ago, a symbiotic interaction has existed between CCOP and the Geological Survey Department of Malaysia (now named the Department of Minerals and Geoscience Malaysia). CCOP has provided technical assistance for numerous projects in Malaysia and Malaysia has reciprocated by contributing technical papers to the various seminars and conferences organized by CCOP.

Mr Fateh Chand, a past Director-General of the Geological Survey Department, recalls the time in the early 1970s “when CCOP assisted Malaysia in conducting marine geological investigations off the East Coast, along the Straits of Malacca and off Penang and Kedah. Our geologists were not exposed to the elements of the sea but nevertheless they were eager and raring to undertake the challenge. Enthusiasm however, was soon cast aside when the research vessel pitched and rolled in the rough seas. Nevertheless they soon adapted to the conditions and completed the job as scheduled”.

Phase II of these offshore studies were to continue in the early 1990s with the presence of Dr. Harding and Dr. Ringis from CCOP who helped Malaysia set up a Marine Geology Section. This section has since bloomed and is now capable of conducting offshore investigations independently. In fact, the Department is now playing a vital role in the demarcation of the EEZ of the country.

In the 1980s, CCOP facilitated the sourcing of two officers from the Netherlands (Drs. Bosch and Mr. Hilland) to assist Malaysia in conducting Quaternary geology studies, which was then a new field for the Survey. This led to technology transfer and capacity building. Numerous Quaternary geology reports were produced and the Department also published the first Quaternary Geology Map of the country and a Manual for Quaternary Geology Investigation. To undertake study on pollen, a sedimentary laboratory was established.

PETRONAS is another of the Malaysia agencies, which has benefited from the association with CCOP with studies being conducted on the petroleum and energy sectors. Likewise CCOP has also benefited through the exchange of data and ideas. PETRONAS is now in the forefront in investments in African countries such as Sudan and also in the former eastern Russian states such as Uzbekistan and Turkistan.

It can safely be predicted that the ‘symbiotic’ relationship between CCOP and Malaysia will continue for years to come and more interaction and exchange of ideas and knowledge can be expected.

In Sight of the Coast

At the 1987 Annual Session a new element appeared in the proposed CCOP Work Programme entitled, “Coastal Zone Resources and Management Studies”. It was explained that some Member Countries were already planning coastal zone management programmes in collaboration with Cooperating Countries or international organisations. Coupled with this, the meeting noted that recently a workshop on delta sedimentation had been held in Qingdao, China, organised by CCOP in collaboration with China and The Netherlands. In addition a further workshop on “Coastal Management” was planned to be held in Singapore in late 1988 for participants of all CCOP Member Countries. Again The Netherlands was also a key player in this venture. Meanwhile, on the ground, the Senior Quaternary Geologist from the Secretariat conducted a study of beach erosion and coastal stability in Thailand so that by the end of the 1980s CCOP activities were cautiously crossing the divide between sea and land.

Further leadership from The Netherlands was to follow when in 1992 a CCOP workshop entitled “Geoscience for Coastal Zone Management” was held in Harlem and attended by representatives of all Member Countries. By 1994 the increased attention being paid to coastal zones was recognised in the revised title of CCOP which became the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (see Box 4 page 26). The major breakthrough in this new area of interest for CCOP came in 1995 when, after five years of negotiation, funding from The Netherlands was finally agreed for a major CCOP project, “Geoscience for Integrated Coastal Zone Management and Development of the East and Southeast Asian Coastal Zone”, known as COASTPLAN for short (**Figure 30**). The project was launched in the same year, with an expert from The Netherlands attached to the Secretariat for three years from May 1995.

The COASTPLAN project incorporated several innovative features which were to be adopted by several other large CCOP projects in the future. Prominent amongst these was to be a division of project studies between three major topic areas, each to be pursued through a case study in a different Member Country. The selected case studies respectively focused on the topic of deltas in the Yellow River of China, coastal geo-hazards in the Lae area of Papua New Guinea and coastal urbanisation around Jakarta Bay in Indonesia . Numerous techniques were employed during the studies, many introduced by visiting experts, thus providing valuable training for the local participants who were responsible for completing the case studies and preparing final reports for publication aided by the resident expert in the Secretariat. At the beginning of the project a further innovation was the formation of a project ‘task-force’ comprising a number of CCOP’s Special Advisers who were to help the resident expert to monitor progress and provide guidance to the case studies.

Box 14

The Onshore/Offshore Controversy

Many of the Permanent Representatives of the Member Countries to CCOP occupied senior positions in their national Geological Surveys or equivalent organisations which historically had been responsible only for surveys of their onshore territory. More recently most of these organisations had extended their studies, including geological mapping, over their continental shelves and were therefore concerned with both onshore and offshore geology. Likewise, the hydrocarbons industry had both onshore and offshore interests. It was not surprising therefore that for several years there had been questions raised in Annual Sessions as to whether CCOP’s work programme should remain exclusively focused on marine areas and at the 1988 Annual Session this question again came to the fore during a discussion on the long-term objectives of CCOP.

In many of the suggestions for future programmes of CCOP an onshore element was already implicit. The Netherlands pointed out, for example, that in Quaternary mapping studies and in coastal zone management, both of which activities were being supported by delegates as new priority for CCOP, it would not be possible to exclude some onshore activities. This led to the suggestion by the Philippines that CCOP broaden its mandate to cover a variety of onshore activities, including onshore minerals. Whilst the view was expressed, as had been agreed in the past, that CCOP should restrict itself to studies of short to medium term practical significance, the general mood in the late 1980s seemed to be that their geographic location, whether onshore or offshore, was of diminishing importance and CCOP might in the future wish to further change its name to reflect this fact. Also, with the demise of the ESCAP Working Party for Senior Geologists in the late 1970s, CCOP had become the sole summit meeting of the geological survey organisations of the region and this provided another reason for expanding the scope of CCOP’s programme.

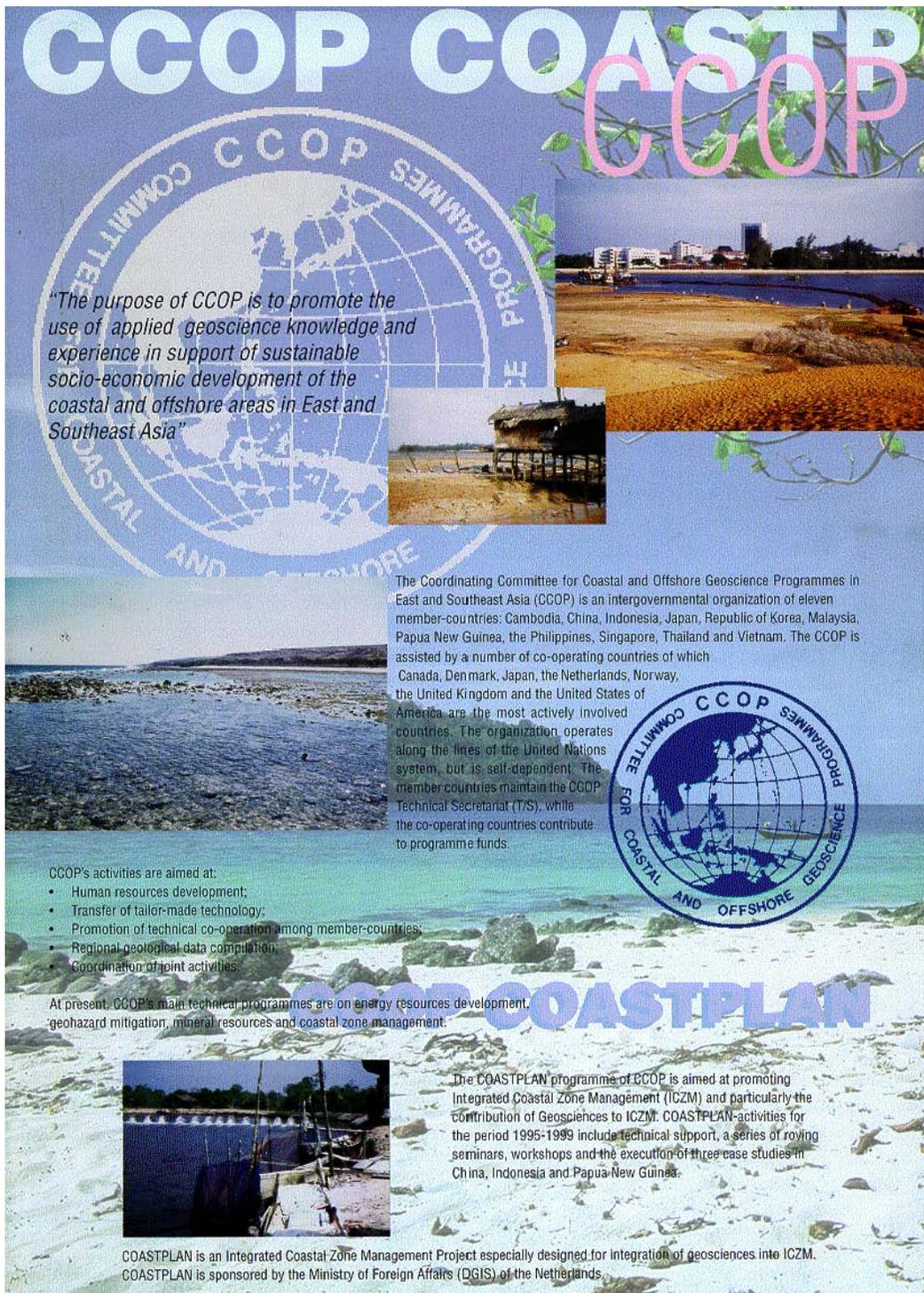


Figure 30. Leaflet publicising the COASTPLAN Project.

In order to maximise the training benefits of COASTPLAN for all the Member Countries, “roving seminars” were carried out by various experts from The Netherlands and other Cooperating Countries (Canada, the UK, USA and Japan). They were described as “roving” because each took part in a different Member Country (the Philippines, Vietnam and Japan) with participants invited from all the Member Countries. Reports and manuals were produced from the seminars which resulted in the dissemination of a large amount of training material in addition to much ‘hands on’ experience for the participants. In addition a workshop, “Integrated Coastal Zone Management for Decision Makers” was conducted in Thailand. The COASTPLAN project was completed in 1999. It had been a significant trend-setting project for CCOP both in its integration of information from different disciplines into coastal zone management plans and in modes of project implementation within CCOP.

Many of the seeds sown and successfully cultivated by the COASTPLAN Project have subsequently been further nurtured. For example, at the time of writing, in 2006, several projects between CCOP and the Geological Survey of Japan, AIST (GSJ/AIST) are in progress, one on “Integrated Geological Assessment of Deltas in Southeast Asia (DelSEA Project)” and another entitled “Research on Coastal Environment Management Strategies of Asian Delta Regions”. There is little doubt that coastal zone studies will continue to be an important element of CCOP’s programme in the future, made more urgent by the increased awareness of tsunami risk.

Better Resources Assessment

The great efforts being made in exploration for hydrocarbons in the CCOP region meant that huge amounts of data were being collected and in 1979 the Technical Advisory Group had decided that an *ad hoc* Working Group on Petroleum Data Collection, Storage and Retrieval should be established. By 1982 the Special Advisers were stressing that increasing emphasis should be given to petroleum data management in the individual Member Countries and their Governments should be urged to establish national hydrocarbon data centres following the initiative shown by the Government of Thailand. The successful Working Group on Petroleum Data and the previously formed Working Group on Petroleum Geology were merged in 1985 into a single Working Group on Resources Assessment (WGRA). This decision was partly aimed at providing effective guidance to a new East Asia Sedimentary Basin Analysis Project to be carried out in collaboration with IUGS, ASCOPE and CPC. The WGRA was to play a major role in the coming years across an ever widening CCOP Resources Assessment Programme and, as the Special Advisers commented at the time, this widening resources assessment programme would require fully co-ordinated compilation of maps (building on the cooperation already established in 1979 between CCOP and the Commission for the Geological Map of the World), demonstrations and consultations on data systems and assessment methodology as well as a broad range of training activities. It should be noted here that the Circum Pacific Council for Energy and Mineral Resources (CPC) and the United States Geological Survey (USGS) had already made an enormous contribution by compiling at 1:2,000,000 scale a series of East Asia Geographic Maps many of which were the bases for thematic maps compiled by CCOP. Technical meetings had been held regularly in conjunction with the CCOP Annual Sessions since the mid-1970s. A series of eight overlapping sheets had been published.

In the mid- and late 1980s moves were afoot to introduce new regional projects in CCOP’s traditional study area of energy resources. In one way these were a return to the broad-brush approach of the first years of CCOP but also with an increased emphasis on interpretation modelling and resource management. The proposed “East Asia Sedimentary Basin Analysis Project had been strongly endorsed by the Special Advisers in 1985.

The first meeting of the WGRA was held in 1986 and the proposed basin analysis project was discussed. The Annual Session of 1987 was informed in a tabled report that, following WGRA recommendations, the proposed project was designed to help the East Asian countries improve their capacity and procedures for regional-scale mapping and assessment of energy and mineral resources in sedimentary basins. It was not considered the purpose of the project to make detailed studies of individual deposits nor specific estimates of energy or mineral reserves in such deposits but rather the products of the project, including maps, cross-sections, and explanatory notes, were intended to help identify new areas for play prospects, encourage investment and facilitate management of national resource programmes. The project was to be part of a world-wide programme sponsored by IUGS. In East Asia it would be implemented in co-operation with CCOP and in order to initiate the project it was necessary for CCOP to secure the endorsement and co-operation of the Asean Council on Petroleum (ASCOPE).

The WGRA was to serve as the initial focal point and each CCOP Member Country participating in the project had already designated a principal co-ordinator, as well as other national representatives, to serve on the WGRA. The IUGS and CPC had nominated representatives to assist and advise the Working Group and The Norwegian Engineering Committee on Oceanic Resources (NECOR) was also to be a key player in the provision of expertise. The main source of funding was the Norwegian Government. Activities during the project were to include:

- Preparation of maps and cross-sections at a scale of 1:2,000,000.
- Demonstration of resources assessment methods in workshops etc.
- Workshops and training in the application of resources data-processing techniques.

The initial project made a successful start and in 1989 CCOP and Norway signed a three-year co-operation agreement, worth approximately \$3m, for work on the Resource Assessment and the Safety and Environment Programmes (see below). A Programme Co-ordinator was provided by Norway to work with the CCOP Secretariat. Examples of activities during 1989 were a 3D seismic workshop and an expert mission on play assessment modelling, made by NECOR and CCOP, to China, Korea, Indonesia and Vietnam. The WGRA completed a play modelling exercise which was published as a Technical Bulletin in the following year (see Appendix 2). These were new activities for CCOP.

In 1991 the Norwegian funding came to an end by which time the WGRA had already held eight meetings and the first map product, the “Total Sediment Isopach Map of Offshore Asia” (six sheets) had been printed by the Geological Survey of Japan and published by CCOP. This was a most important contribution to exploration for energy resources in the CCOP region and on a par with many of the pioneering publications of CCOP during its early years but now available to a much more mature industry in the region. Following this success a new project, “Oil and Gas Resources Management (OGRM)”, supported by Norway with funding of \$1,123,000 over three years, commenced in 1992. As well as organising and sponsoring several important training seminars and workshops for Member Country personnel, map compilation initiated under the WGRA (Phase I Maps) was continued by an OGRM Working Group (Phase II Maps). The output was impressive, comprising a time-slice map series of the Phase I “Total Sediment Isopach Map” consisting of eighteen sheets for each of three units to be produced on a CD-ROM (See Appendix 2). It was generally agreed at the Annual Session that the OGRM Project was one of the most successful and productive of all CCOP projects to date, possibly due to the involvement of experts with an intimate knowledge of the hydrocarbons industry, an example of “horses for courses”. The final action of the project was to be the organisation of an exploration promotion forum to promote the CCOP region at 14th World Petroleum Congress in Stavanger, Norway.

With the projects described above, Norway was already firmly established as a very important partner in CCOP's activities related to developments in the energy sector. More was to follow when, in 1995, a new agreement was signed with Norway for a project entitled, 'Resource Evaluation and Planning' and in 1996 four training courses were completed in China, Thailand, and Vietnam. By this time not only were CCOP's Member Countries receiving the benefits of excellent training but CCOP's central finances were also being boosted from a management charge on this and similar projects to cover the relevant CCOP overheads. The first phase of the project (REP I) was considered sufficiently successful for REP II to be launched with a first Working Group meeting in late 1996. During the subsequent two years, five workshops were held on such diverse topics as data management, basic petroleum economics, risk assessment and project evaluation and decision making. Altogether more than thirty participants attended the workshops and a second meeting of the Working Group considered the topic of resource classification and regional risk assessment and these two topics were further pursued by two Working Groups so that in 1999 the "CCOP Resource Classification System" was published with "Guidelines for Risk Assessment of Petroleum Prospects" being published in 2000. A CCOP Exploration Promotion Forum was held at the 'Offshore Northern Seas', Conference in Norway in 2002 (**Figure 31**) and an exploration promotion website launched.

A further four-year project (Petroleum Policy and Management, PPM) sponsored by Norway with institutional support to be provided by the Norwegian Petroleum Directorate (NPD) was approved in 2002. Like the COASTPLAN Project (see page 55), this was to involve several case studies in different countries and to have a project co-ordinator (Mr Gunnar Sjøiland) seconded to the CCOP Secretariat but, in a new and innovative development, after two years Mr Sjøiland would be replaced by a local appointee from the CCOP region. Mr Simplicio Caluyong was recruited as regional co-ordinator in 2003. The four case studies, launched in 2002, were in Cambodia, China, Indonesia and The Philippines with the first workshops held in 2003. A total of around five workshops for each case study were to be held during the course of the project altogether involving several hundred participants.



Figure 31. Ms Petcharat Sarawisutra of the CCOP Technical Secretariat presents a garland of flowers to the King of Norway at the Offshore Northern Seas Conference in 2002 in Stavanger, Norway. (photo by Jan Tore Glenjen)

Box 15**CCOP: A View from the Inside**

After secretarial training and working in merchandising and as a personal assistant in Bangkok a friend told me of a vacancy in an organization called CCOP. It was the closing date for applications but I managed to submit an application by the deadline and was eventually interviewed and offered a job. That is how in 1989 I became a member of the CCOP Headquarters team on the second floor of the Offshore Mining Organisation building shared between the CCOP Secretariat and the UNDP Project Office.

At first I undertook a variety of secretarial duties in both the UNDP Project Office and the Technical Secretariat but soon became mainly involved with the resources programme and in particular with helping to organize all the infrastructural support required for workshops, seminars and various projects. This involved much direct, and indirect, interaction with project participants from all the Member Countries, experts from the various Cooperating Countries and technical experts of the UNDP Project Office and the Technical Secretariat. I would say in this type of work our job is to take care of everyone in a project from its beginning to its end. This was, and is, not a dull job. The unexpected can happen. Sometimes I had to propose a change to the date of a field excursion three times until I was sure a major storm had passed the field area. Taking care of all the project participants and getting them out and then back home safe and sound was a great responsibility. Pursuing this type of project co-ordination work I was mainly involved with the hydrocarbons group and eventually became Assistant to the Manager of Technical Programmes and Assistant to the Programme Manager of the PETRAD projects in Southeast Asia and finally, in 2001, Manager of Technical Programmes.

In an Intergovernmental Organisation, working with so many different nationalities can bring problems and challenges but also many rewards. The problems often come from misunderstandings due to cultural differences but these can soon be solved with mutual goodwill. We experience new Directors and Technical Experts with different management and working styles and we must always make the effort to adapt. Working in CCOP is its own education. Here we build teams and believe in team work and this can be done everywhere; nationality, culture, language need not cause problems if we have the ability to discuss, understand and adapt to each other. Very often a change in 'self' is needed more than a change of scene. I always remind new support staff at the Secretariat that 'service' is our watchword: whatever the nature of the request from our visiting experts or Member Country participants, they should never respond immediately with "I can't do it" or "I don't know" but first check all the relevant information and then give an answer, whether positive or negative.

I have learned so much during seventeen years in CCOP and have made so many friends. Sometimes when coordinating an event as one of the organizers and I have no time to join the coffee or tea break, I am served by one of the speakers or participants. Such is the cooperative spirit of the CCOP 'family'. I never feel lonely when travelling or working because I have a 'family' in every CCOP country. As time has passed the family has grown and as we exchange small gifts and souvenirs I know that I will never forget our work together.

How do I see CCOP? I think of CCOP as a thriving fruit tree: CCOP as a regional organisation forms the roots and the Technical Secretariat the trunk, the CCOP Programme forms the many branches with new shoots and blossom constantly appearing, water to feed the tree comes from the individual Member Countries and Cooperating Countries/ Organisations, and sunshine from all the Advisers. Every year the tree bears abundant fruits for the benefit of all Member Countries of CCOP.



Ms Petcharat Sarawisutra

Going Digital

Throughout its first twenty years of activities, producing regional information likely to be of use in exploration for mineral resources, had been an important priority and, as we have seen above, this trend was set to continue with an ever wider variety of themes during the following decade. An East Asia Geotectonic Map Project had been proposed in 1987 and this was to be coordinated with the NW Quadrant Panel of the Circum-Pacific Map Project of the Circum Pacific Council. Japan was to play a prominent role in the compilation of this and future regional maps, the necessary data for compilation being provided by each of the Member Countries through the appropriate Working Groups made up of Member Country Representatives. By 1994, three sheets of the geotectonic map had been produced. In 1990 compilation of aeromagnetic maps had commenced with the establishment of a Working Group with meetings also acting as training workshops and with a chief compiler seconded to the Secretariat from the Japan Geological Survey.

The Japanese involvement in CCOP's regional map compilation programme, together with the Marine Geophysicist of the CCOP/UNDP Project team, greatly influenced the use of digital data in marine geophysical and geological map compilation and in 1993 a new project concerning the digital compilation of regional geoscience maps was established with a Working Group on Regional Geological Maps formed to assist some of the previous activities and oversee a new initiative which would concentrate on the compilation of a digital geological map of the region. Japan spearheaded this project entitled "Digital Compilation of Geoscience Maps (DCGM)", which had a series of successive phases (see Table 2) each of which concentrated on different map themes with linked databases and had an appropriate expert provided by Japan attached to the Secretariat as project coordinator. Extensive training courses for staff from the Member Countries were an integral part of each phase of the project. The subjects of successive phases included groundwater and urban geology, a clear indication of CCOP's acceptance by the turn of the Century of an 'onshore' role.

Table 2: List of DCGM Projects

DCGM I (1993-96)	Digital Compilation of Geologic Map of East and Southeast Asia
DCGM II (1996-98)	Digital Compilation of Marine Sediments and Mineral Resources Maps
DCGM III (1998-2001)	Digital Geoinformation Maps of Large Urban Areas in the CCOP Region
DCGM IV (2001-2004)	Compilation of Groundwater and Geothermal Databases in the CCOP Region

Safety in the Offshore Environment

An important move by CCOP into the matters concerning safety in the offshore environment had been foreshadowed in 1984 based on Dr Oystein Berg's and the *ad hoc* Working Group's recommendations (see page 51). Funding for a new programme in this area was to be largely provided by Norway through the Norwegian Engineering Committee on Offshore Resources (NECOR). Close collaboration was required with ASCOPE, who appointed a coordinator of Environment and Safety to interact with the new venture. Member Countries contributed considerable financial support towards covering local costs.

From the outset, safety training courses were an important element of the programme and the report for 1987 indicates such courses had been held in the Philippines, Malaysia, Thailand and Singapore. Safety regulations were being drafted by Member Countries and new directions of interest were an Oil Spill/Management Exercise held in Norway for delegates from Member Countries. In addition there was a one-week study tour in Norway concerned with marine pollution and a workshop on Quality Assurance in the Offshore Oil and Gas Industry held in the Philippines.

From 1988 Norwegian-funded programmes administered by CCOP were required to be defined by the Member Countries in order to more fully reflect their priorities. Activities under the programme, mainly training courses held in individual Member Countries, covered topics such as “Basic Safety and Work Environment Training”, “Safety Management and the Work Environment” and, more geographically specific, “Development and Implementation of an Oil-Drift Model for the South China Sea”.

NECOR was the forerunner of the Norwegian International Programme for Petroleum Management and Administration (PETRAD) and from 1989 the Norwegian input to CCOP for the ever widening programme of tailor-made training seminars and workshops for Government Agencies and National Oil Companies in CCOP Member Countries became a CCOP/ASCOPE/PETRAD programme. Topics came to include quality assurance, financial and risk aspects of oil and gas field development, gas pipeline development, and data management. As in other areas of the CCOP programme the distinction between offshore and onshore was becoming less apparent.

By the year 2006, a total of more than 150 seminars had been conducted in the region, covering a wide range of topics, and attended by a total of over 5,000 participants. In addition, experts and managers from the region had attended PETRAD courses, each eight weeks long, on “Petroleum Policy and Management” and “Management of Petroleum Development and Operations” held in Norway, the majority of participants receiving scholarships from PETRAD provided with funds from the Norwegian Government. In this area of work, Norway, through PETRAD, established an enviable reputation in the CCOP region.

The CCOP Programme and Evolving Aid Policies

During the late 1980s and, increasingly, in the next decade, the international aid policies of many Cooperating Countries were seeing changes that would have a considerable impact on CCOP. During this period many of the CCOP Member Countries, though by no means all, were experiencing very rapid economic growth (see page 81) and were becoming less obvious targets for international aid. This meant that aid to an organisation such as CCOP, which embraced countries at widely different levels of economic development, was becoming less attractive to the many developed countries who preferred to specifically target their aid at the poorest. Furthermore the Governments of certain countries, such as the United Kingdom, were reluctant to give aid to ‘regional organisations’, arguing that their aid to regions was already reflected in their contribution to the UNDP and other UN programmes as well as the World Bank and its offshoots.

CCOP had to take account of the above trends and seek new ways or methods of technical co-operation. The UK, for example, as a longstanding and enthusiastic Cooperating Country, was able to win funding under the UK Government’s international aid agency (ODA and later DFID)⁵ geoscience research and development programme thus enabling several projects to be carried out in collaboration with CCOP, all of which included a training element for personnel from all Member Countries. Project topics ranged widely from the development of databases for

⁵ Overseas Development Administration, later Department for International Development.

coastal zone management through mitigation of pollution from mining, legislation for offshore sand and gravel mining and its environmental impact, workshops on industrial minerals development, development of a towed seabed spectrometer and several projects concerned with the use of satellite imagery for geological mapping and geohazard appraisal and mitigation. The UK was able to continue support by pursuing projects of interest to CCOP in its subsequent aid-funded 'Knowledge and Research Programme' (KAR) with associated workshops such as that on 'Maximising Geoscience Data Value' held in Bangkok in 2001 in collaboration with ESCAP and CCOP and attended by thirty participants from ESCAP and CCOP Member Countries.

Other Cooperating Countries were able to target their major projects at one or other of the least developed Member Countries but to include elements such as training seminars and workshops which were open to all Member Countries. An early pioneer in this new mode of co-operation with CCOP was Denmark.

In 1995 Denmark launched a new three-year project with CCOP on 'Dynamic Basin Analysis and Description in the CCOP Area using High Resolution Sequence Stratigraphy and Quantitative Basin Modelling'. The first phase was targeted specifically at Vietnam which was still qualified for Danish aid but workshops were run allowing participation by other Member Countries. This type of assistance to the wider community of CCOP was further demonstrated in a workshop on 'Interactive Mapping Techniques for the Construction of Geological Reservoir Models' supported by Denmark through its Royal Embassy in Hanoi with twenty participants from the Member Countries.

Another innovative approach in collaboration is evident in a new three-year project 'Institutional Capacity Building in CCOP Member Countries' supported by the Danish Government which commenced in 2005. The project is designed to strengthen the capacity of the public authorities within CCOP Member Countries to assess their countries' hydrocarbon potentials and in a new and significant initiative involves cross-border case studies in Vietnam, China, Indonesia, Malaysia and the Philippines. Again all CCOP Member Countries will be invited to participate in project workshops and training courses and, like the Norwegian-sponsored PPM Project, expert consultants will be drawn from within the CCOP Member Countries as well as from the sponsoring country.

The above methods, whereby some of the Cooperating Countries have been able to continue to support projects that benefit all the Member Countries but also satisfy the aid policies of the donor Governments, indicate how changing aid policies have had to be acknowledged in deciding CCOP's future mode of operation. Equally, this change in attitudes of some of the major donor countries, has put more pressure on CCOP to increase projects financed by their more developed Members for the particular benefit of the less developed. Japan, in its dual role as both Member and Cooperating Country, has spearheaded such aid through CCOP since its formation and others have become increasingly involved in more recent years (see page 79).

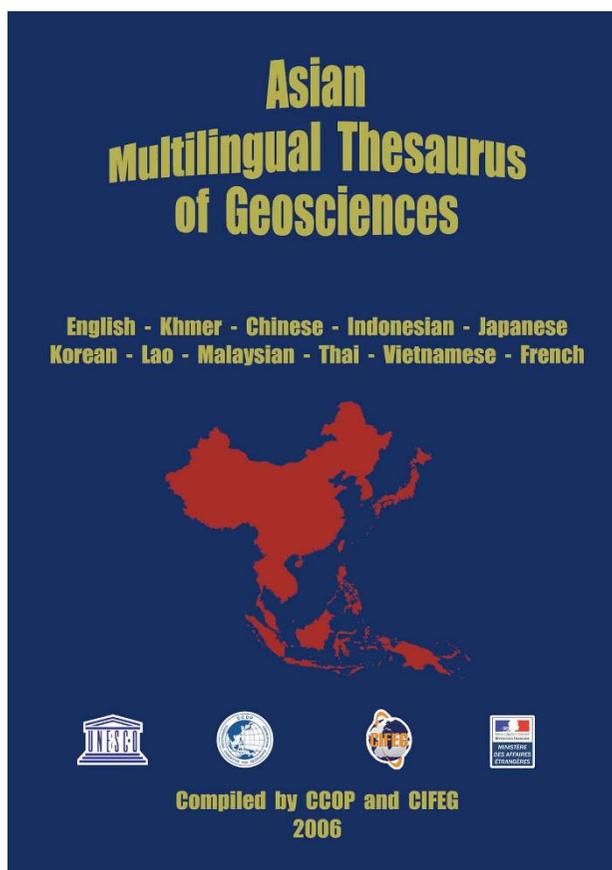
SANGIS: Increasing the Availability of Information

CCOP had always displayed a willingness to learn from the successful projects implemented by other international organisations in other regions of the world. One such project was the 'Pan-African Network of Geological Information Systems (PANGIS)' created with the help of UNESCO in the 1980s and early 1990s. At UNESCO's 29th General Conference, Asian delegates requested the development of a similar project in Asia. The project was to be entitled 'Southeast Asian Network of Geological Information Systems (SANGIS)' and in 1998 UNESCO asked for the assistance of CCOP in launching the project. The main aim of the project was to develop a regional geosciences information network to allow standardised data exchanges among Southeast Asian countries. The CCOP Steering Committee was enthusiastic about the proposed project and agreed that the Technical Secretariat should take action to co-operate with the regional

endeavour which was to be jointly supported by UNESCO and the Government of France, the latter through the International Centre for Training and Exchanges in the Geosciences (Centre International pour la Formation et les Echanges Geologique, CIFEG). A first SANGIS Workshop was held in Bangkok in 1999 with resource persons from UNESCO, Belgium, Denmark, France, Germany, The Netherlands and United Kingdom and participants from most CCOP Member Countries. Various information systems were discussed and individual countries introduced their own progress in the area. It was eventually decided that Phase I would be a bibliographic phase and the first training session supported by CIFEG and UNESCO took place in 2001, followed by further group training in 2002 so that all Member Countries had received the necessary network training.

Each Member Country then took over the lengthy task of populating the Bibliographic Database for their own publications and further training and consultation took place through missions to the participating countries. Steady progress was maintained in completing the Bibliographic Database for many of the Member Countries and by 2003 it was possible to start a new and equally ambitious project to establish an Asian Multilingual Thesaurus of Geosciences to be integrated with the Bibliographic Database and facilitate the retrieval of information across the language barriers existing in a multilingual region such as CCOP. The project was launched in 2003 with eight CCOP Member Countries, plus the Lao Peoples Democratic Republic, as the participants. Compilation of the Thesaurus was completed in 2005 and published in 2006 (**Figure 32**) with almost six thousand geoscientific terms translated to the Khmer, Chinese, Indonesian, Japanese, Korean, Lao, Malaysian, Thai and Vietnamese languages. This outstanding achievement, facilitated by the French Government and UNESCO with the practical input of the Member Countries, is a fitting testimony to the important role of an organisation such as CCOP in mobilising co-operation across a vast multi-ethnic and multilingual region.

Figure 32. The Asian Multilingual Thesaurus of Geosciences was published in 2006.



Also of great significance is a project currently in progress with the support of Geological Survey of Japan, AIST termed the “Geoscience Asian Information Network (GAIN)” which aims to make geoscience meta-data in CCOP countries more generally available with the CCOP, through its website, eventually becoming the clearing house for data enquiries.

Minerals for the Future

Through the International decade of Ocean Exploration and the SEATAR project (see page 45) CCOP had, in the 1970s, established itself as a regional organisation that could play a prominent role in a global initiative and in recent years this has become increasingly apparent. In 2003 the United States Geological Survey launched a five-year programme to assess the identified and potential (but as yet not proved) mineral resources of the world. As part of this programme a CCOP-USGS Global Mineral Resources Assessment Project (GMRAP) was launched to cover the CCOP region. A Working Group was formed with representatives from all the Member Countries and workshops on Quantitative Mineral Resources Assessment were held in 2003, 2004 and 2005. Copper assessment for the region was finalised in 2005 and deposit models for potash, nickel laterite deposits and tin and tungsten deposits were assessed in preparation for further work.

Maintaining Relevance: A Tragic Reminder

The CCOP region, much of it situated on the ‘Pacific Rim’, has always been vulnerable to geohazards such as earthquakes and volcanic eruptions often culminating in extensive economic damage and human tragedy. Flooding and landslides have also taken a heavy toll and for these reasons CCOP, in its determination to remain an organisation relevant to the needs of society, has in recent years devoted an ever increasing effort to its geohazard programmes. This emphasis was to be thrown into stark perspective by the tragic events consequent upon the tsunami that struck the coastlines of several CCOP Member Countries on 26 December, 2004 (eg **Figure 33**). The worldwide response to the tragedy, in which more than a quarter of a million people died, was immediate and overwhelming in the provision of emergency aid but the event had posed some fundamental questions that needed serious discussion and a quick but carefully considered response.

Thailand, together with Indonesia, both Members of CCOP, were two of the worst hit countries and the CCOP Secretariat is based in the capital city of the former. The CCOP Secretariat, jointly with the Department of Mineral Resources (DMR) of Thailand acted quickly, to call for an international Tsunami seminar to consider the role of geoscience in post-tsunami reconstruction and rehabilitation, longer-term tsunami mitigation and early warning systems, and public education on tsunami hazards. Support for the seminar quickly came from CCOP Cooperating Countries including Japan (Geological Survey of Japan, AIST), The Netherlands (TNO-National Geological Survey of the Netherlands) and United Kingdom (British Geological Survey). The seminar, held on 31 January-1 February, just five weeks after the tsunami had struck, was opened by the Prime Minister of Thailand and was attended by over six hundred people including sixty foreign experts from fifteen countries while over sixty concerned agencies were represented, twenty-five from Thailand and thirty-six from other countries. CCOP had proved it could act quickly in marshalling a geoscientific response to a serious regional problem.

Box 16**CCOP Proves Its Worth**

I am proud to be a part of the CCOP family and honoured to have served as a recent Chairman of the Steering Committee (January 2004-December 2005). Here I would like to record some of my memories of that period.

We all realised, early in the new Millennium, that CCOP had to adjust to the changing regional and global contexts in which we operated. The Steering Committee was therefore most gratified when members of the Advisory Group volunteered their valuable time to come to Bangkok at their own expense and hold a four-day 'brainstorming session' (see page 29) in February 2004. We quickly accepted most of their many recommendations for ensuring the future health of the organisation and these have now been implemented. Both their invaluable guidance as Representatives of Cooperating Countries and Organisations, and also the Member Countries' carefully considered response, deeply impressed me as the demonstration of an invaluable cooperative effort made possible by the unique organisation that is CCOP. For their efforts of coordination and facilitation, and for their skillful analysis and synthesis of the Member Countries' comments leading to a recommended Action Plan, I must express my admiration of the CCOP Technical Secretariat.

More was to follow which would truly demonstrate the value of an organisation such as CCOP. The December 2004 Asian tsunami disaster was a tragedy that prompted scientists from around the world to gather and seriously consider how they could contribute much-needed help to the tsunami-affected communities. I was very proud of the way that CCOP responded so quickly through the international network that is a unique feature of the CCOP 'family'. Within about one month, CCOP, working with the Department of Mineral Resources, Thailand, and several Cooperating Countries, organized an International Seminar to consider how Thailand and the neighbouring countries could better prepare for future tsunami events. The seminar, in February 2005 in Bangkok, drew an impressive response with an attendance of nearly seven hundred participants. A total of sixty-one agencies/organizations were represented, of which twenty-five were from Thailand and thirty-six from other countries. The event was officiated by H.E. Dr.Thaksin Shinawatra, Prime Minister of Thailand, the first-ever geoscience event in Thailand that was honoured by the Prime Minister. The event gained much recognition from the Thai public. In addition, a CCOP Geohazard Programme was developed to prepare for long-term multi-national tsunami projects. I would like here to express my sincere gratitude to all my geoscientist colleagues from the CCOP Cooperating Countries and all who came to work together on the tsunami mission - particularly Dr. David Prior, Chairman of the Advisory Group. Again, I saw demonstrated the effective operation and professional character of our CCOP Technical Secretariat under the leadership of Mr. Chen Shick Pei. I was proud to observe that the CCOP family was able to act in harmony, both speedily and efficiently, at such a difficult time.

CCOP has long been property of all Member Countries and its worth has been proven many times during the last forty years. I wish to see CCOP continuing in the future to be a platform on which Member Countries, Cooperating Countries and Organizations and our Honorary Advisers can sit together and attempt to solve geoscientific problems nationally, regionally and globally. I wish our CCOP to grow and prosper in the years to come and in this I would like to express my deep gratitude to all the countries, organisations and individuals who together embody the CCOP spirit.

Finally I would like to express my sincere appreciation to Dr. Yoshihiko Shimazaki and Dr. Anthony Reedman for their devotion in compiling this memorable historic record of our unique and still youthful organisation, CCOP.

Somsak Potisat

Director-General, Department of Mineral Resources



Figure 33. A fishing boat washed inshore by the 26 December 2004 tsunami. Ban Nam Khem, Thailand.

More was to follow, as subsequent to the International Seminar a Project Planning Workshop was held to develop a multinational project to analyse and address both short and longer term needs of the tsunami-affected countries. The workshop took place in late March, 2005, in the tsunami-ravished resort of Phuket, Thailand, with representatives of Thailand, Malaysia and Japan, and CCOP Cooperating Countries; Canada, Germany, the Netherlands, United Kingdom and the Chairman of the CCOP Advisory Group, Dr David Prior (USA). A project document was developed during the workshop, focusing on the tsunami hazard as part of a fully integrated collaborative approach to coastal geohazards, with three main initiatives requiring urgent action; risk assessment for forward planning, risk mitigation, and coastal rehabilitation. An agenda had thus been set and, in effect, a challenge issued to the international funding agencies to follow up on their hugely impressive first response to the Tsunami tragedy.

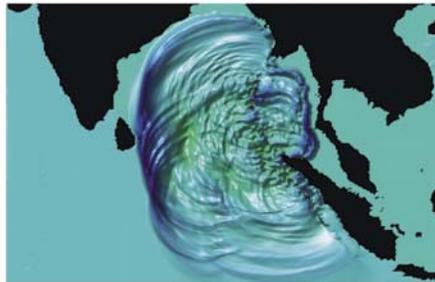
Several responses were forthcoming. An eight-month project funded by the Royal Norwegian Government in collaboration with DMR and the Norwegian Geotechnical Institute (NGI) as executing agency entitled 'Tsunami Risk Reduction Measures with Focus on Land-use and Rehabilitation' commenced in June 2005. The project was to be completed rapidly because of the urgent need for reconstruction work to commence and practical guidelines for land-use planning in the devastated areas established considering the risk of future earthquake and tsunami events. The three case study areas were in Thailand but the results of the study are intended for use in other parts of the tsunami-affected region. The results were presented at a final dissemination seminar attended by three hundred people in Bangkok in March 2006 and also published for much wider dissemination (**Figure 34**).

Germany has also responded together with DMR in setting up a project aimed at the implementation of high resolution terrain modelling of about 75km of tsunami-prone coastline in SW Thailand using advanced remote sensing techniques. The data will be used for tsunami risk assessment and disaster reduction and the project will run to the end of 2006.



CCOP-DMR Project on

Tsunami Risk Mitigation Measures with Focus on Land use and Rehabilitation



Supported by



NORWEGIAN MINISTRY
OF FOREIGN AFFAIRS

Conducted by



Norwegian Geotechnical Institute

Figure 34. Report on “Tsunami Risk Reduction Measure with a Focus on Land-use and Rehabilitation”, a project funded by the Royal Norwegian Government in 2005/6.

4. TRAINING

The Key to Progress

Everything as Training

From the outset, in 1966, the Member Countries of the newly established CCOP recognised that a programme of training and capacity building to strengthen their geoscientific institutions was essential if they were to increase their ability to carry out exploration of their own offshore territories.

A Training Centre for Offshore Prospecting

The most developed of the four founding Member Countries of CCOP, Japan, was able to respond to the other Member Countries' expressed wish for training in a rapid and imaginative manner. A regional training centre was established in May 1967 at the Tokyo International Centre of Japan's Overseas Technical Co-operation Agency (OTCA, later to become the Japan International Cooperation Agency, JICA). It was to be administered by OTCA which bore all expenses for the course including, training cruises, remuneration to the instructors, travel and per diem expenses of the participants. The Geological Survey of Japan (GSJ) assumed responsibility for the curriculum.

GSJ selected an experienced geoscientist as the course leader and he played the major role in finalizing the curriculum after consultation with various specialists from universities, other research institutions and industry. The curriculum consisted of lectures on basic marine geosciences; lectures, laboratory and on-the-job training in offshore prospecting methods and techniques including about ten days aboard an ocean-going survey ship and a week aboard a small near-shore survey vessel (**Figure 35**); study of special subjects consisting mostly of practical items such as prospecting methods at oil company laboratories; lectures and laboratory exercises on specific items such as remote-sensing technology; geoscientific issues of current importance; lectures by eminent invited foreign scientists; visits to universities, natural gas exploration sites, operating mines, and some cultural sites in Japan. The last three months were devoted to the study of specific individual themes and the participants were required to prepare a technical report on the subject. An average of about 30 geoscientists served as instructors each year and about a third of them were GSJ scientists and the remaining third were specialists from universities, various research institutions, oil and other industries.

Though started as a CCOP project, it was agreed to extend the invitation to scientists from other countries of the ECAFE region. Thus the first course, which was held for seven months from 16 May to 11 December 1967, was for ten trainees from seven countries; Indonesia, Korea, Malaysia, the Philippines, China, Thailand, and Vietnam, despite the small CCOP membership of only four countries at that time. A new course commenced each year.

The major emphasis of the course in the early years of the centre was on marine geophysical methods of exploration, particularly for petroleum resources, but gradually the need for such training decreased due to the fact that the search for oil was transferred from the geological surveys to other institutions. In the mid-1970s, the technical emphasis shifted to marine geology and geophysics in general. Efforts were made to provide the participants with training in all marine geoscientific investigation methods and the term geophysical was eventually deleted from its name which became the 'Regional Training Centre for Offshore Prospecting'. In 1980, thirteen years after the start of the course, the centre moved to the new facilities of the GSJ in the

Science City at Tsukuba in Ibaraki Prefecture about 70 km north of Tokyo and the trainees were accommodated in the also newly established Tsukuba International Centre of JICA.

With very strong support and cooperation from Member and Cooperating Countries, the training course enjoyed an exceptionally long life as a project of CCOP. It was held continuously for 25 years from 1967 to 1991 by which time the Member Countries had become geoscientifically competent and the course had successfully accomplished its mission. By then the course had contributed to the training of a total of 262 young geoscientists from 35 countries. According to Dr. Kinoshita, a marine geologist of GSJ who served as the course leader for five years from 1985 to 1990, the participants were very well selected by their governments and the instructors of the course generally thought very highly of them. He feels that the participants benefited from the fact that they were able to make many friends from other countries whom they would not have met otherwise. His office regularly sends GSJ Newsletters to about 180 past participants and is still in touch with many of them.

Training by Magnet

In addition to the above, in 1970, through the medium of Project Magnet (see page 41), geophysicists from Korea and Vietnam were being trained in the USA and Germany respectively and two geophysicists from the Philippines were shortly to follow. 'On the job' training of local scientists and technicians was also a very important element of the several early CCOP projects that had been made possible by the technical support from the UNDP and some of the 'supporting' countries. This type of training was to become an important feature of all CCOP projects and continues as such to the present day.

UNDP Fellowships

Throughout the twenty years (1972-1991) of UNDP support to CCOP, considerable emphasis was placed on training personnel from the Member Countries in various aspects of offshore exploration. At its inception, funds had been specifically earmarked to provide 'international fellowships' and at the 1973 Annual Session it was reported that six fellowships had been awarded to enable geologists and geophysicists from various Member Countries to undertake 'in-service' training abroad including participation in ship-borne surveys. Already, after little more than a year of the UNDP Project, a total of thirty-nine technical personnel had benefited from training programmes arranged through the project office. The speed with which the project had developed this programme and its continuing success were applauded by ECAFE who recommended that this emphasis on training should be continued and further expanded by organising more regional training courses of longer duration. However, in 1976, a reduction in UNDP funding was to cause a temporary halt to the fellowship programme.

In spite of the setback to the fellowship programme, the project office, helped by the Cooperating Countries, continued to organise training initiatives and in 1976, for example, these comprised a varied programme which included a workshop on the interpretation of satellite imagery, a field training course in The Netherlands on drilling in unconsolidated sediments, a training seminar in Indonesia on the collection, storage and retrieval of hydrocarbons data and continuation of the annual group training course in offshore prospecting in Japan. In 1977 an important event was the holding of a seminar on the generation and maturation of hydrocarbons in sedimentary basins, particularly significant because it was jointly sponsored by CCOP and ASCOPE. Following this successful example of collaboration between the two organisations it was suggested that co-operation might be strengthened by the formation of a joint working group for this purpose.



Figure 35a. Training at sea during a course in 1974 based at the Regional Training Centre for Offshore Geophysical Prospecting, Tokyo, Japan.



Figure 35b. Training flight for airborne geophysical survey during the same course as above.

Although the UNDP Project fellowship programme continued to be suspended through 1977, better news was reaching CCOP with the expectation of an increase in UNDP funding for the extended phase of the project from 1978 when the project office would be able to expand its training activities. A subsequent review of this programme in 1980 indicated that in the three years from 1978, twenty four technical personnel had been financed by the project office for training in a number of foreign vessels which came to East Asia as well as on ships provided by Member Countries for surveying their offshore areas. An expanded programme of seminars and workshops had also been organised in close liaison with ESCAP who had become the executing agency of the CCOP/UNDP Project at the outset of 1980.

Training activities continued as a high priority throughout the early 1980s and, in anticipation of a likely future decline in available financial support, the Special Advisers urged CCOP to develop a comprehensive list of training needs and priorities with particular emphasis on the training needs of prospective candidates for secondment to the CCOP as regional experts. A radical suggestion which was to be repeated in future years was for the ‘commercialisation’ of CCOP workshops with registration fees being charged for non-Member Country participants. Oil and mining companies might also be approached as potential sponsors for training courses.

By the time the CCOP/UNDP Project ended in 1991, more than one hundred and twenty individual Fellowships had been funded, two hundred and fifty personnel had participated in ‘on-the-job training’ and well over three thousand had attended workshops, seminars and short courses. Through CCOP, the UNDP Project had created an invaluable future resource for all the Member Countries.

By 1990, with the UNDP project nearing its end, only Dr John Ringis (**Figure 36**), Senior Marine Geophysicist and the final UNDP Team Leader, remained in post. There were now, however, five Technical Experts attached to the newly independent Secretariat and an active training programme of seminars and ‘on the job’ activities would continue under their guidance. In addition, many of the new collaborative programmes being introduced by the Cooperating Countries at this time contained a large element of training both through specially targeted workshops and seminars and through participation of Member Country personnel in survey activities.

Although the UNDP fellowships had been the main means by which CCOP had been able to support academic type training in the 1970s and 1980s, twenty years later the actions of two of the Honorary Advisers allowed the initiation of two new programmes. The first of these, the EAGER Project, was made possible by a trust fund set up in the Geological Society of America with a personal contribution from Dr Maurice ‘Ric’ Terman to be used for funding geoscience and environmental research in the CCOP region. Through this project a grant is made available each year to a candidate from the Member Country hosting the Annual Session. The second programme, made possible through the good offices of Dr David Prior at Texas A&M University, allows candidates from CCOP Member Countries to apply for three postgraduate fellowships at any one year leading to Master or PhD degrees with more than two-thirds of the cost underwritten by the University.



Figure 36. Dr John Ringis, Senior Marine Geophysicist on the UNDP/CCOP Project instructing Chinese geologists at China's National Centre for Quaternary Geology in Qingdao, 1987.

Working is Training

In the two decades after 1980, the regular sessions of several new Working Groups, such as the Working Group on Resource Assessment (WGRA) and Working Groups under the CCOP/Norway REP II Project together with Coordination meetings for the various phases of the DCGM project, with representatives drawn from each Member Country, also served as training sessions conducted by their coordinators or by other specialists. Training was by now such a closely integrated part of the entire programme that it was difficult to identify and coordinate as a distinctly separate activity. It was partly because of this fact, and also because of conflicting financial priorities, that the post of Training Coordinator at the Secretariat was never filled after it became vacant at the end of 1991. In reality, however, training has continued at the core of virtually every CCOP project up to the present day. From 1990 onwards it can be said that the CCOP work programme was essentially a training programme in its execution but with the addition, from time to time, of specific project products. PETRAD's record in training during and after the 1990s is particularly notable (see page 62 for details).

5. PUBLICATIONS

Spreading the Word

First Words

It was important from the outset that CCOP should not be seen as just another ‘talking shop’ but that its activities and their significance for regional development should be communicated both to the Governments of Member Countries and also to potential investors in exploration within the hydrocarbons and other geological-resource based industries. Published reports detailing the proceedings of each session of CCOP were produced as required by the sponsoring Governments and a series of Technical Bulletins served to report on technical activities and their results for the wider geological community.

The Geological Survey of Japan was to play a most important role in printing the Bulletin series, the first volume of which appeared in 1968 summarising the results of several early CCOP sponsored offshore surveys. Bulletin Number 2 included a report of the geophysical survey in the East China and Yellow Seas (see Box 11, p 43) and Bulletin Number 3, published in 1970, included a report and compilation map of the regional geology and distribution of Tertiary sedimentary basins in East Asia. Both were significant contributions to hydrocarbon exploration in the region. A further very important report, “The Offshore Hydrocarbon Potential of East Asia: A review of Investigations, 1966-73”, was published in 1973 and comprehensively covered the formative period of CCOP. This was to be updated and reissued in 1975 to cover the period corresponding to CCOP’s first ten years in existence. Both reports included important statistics that documented the progress of exploration in all the CCOP Member Countries.

Launch of a Newsletter

Throughout the years of CCOP’s development the number and variety of its publication output continued to grow (see Appendix 2). In 1972, under the fledgling UNDP/CCOP Support Project, added impetus was given by the appointment of an Englishman, Dr Deryck Laming, as Senior Geologist/Editor. In 1973 the first CCOP Newsletter was published (**Figure 37** a, b, c). The newsletter, comprising an annual volume of four separate issues, was launched as the main means of regularly communicating news of CCOP activities to the wider world and it has continued in that role for over thirty years up to the present day.

Publication Problems

The impact on CCOP training of declining funds within the UNDP Project during the mid 1970s has already been mentioned (see page 72) and a further consequence was that by 1976 the post of Technical Editor in the UNDP team, now vacant, could not be filled. Publications, including the newsletter, were still being issued with some assistance from Cooperating Countries and particularly from the Geological Survey of Japan, but by 1982 the Special Advisers were expressing concern that the lack of editorial staff was having an adverse impact on the publication programme. Nevertheless, a glance at the publications list (see Appendix 2) shows that in spite of obvious difficulties and delays in the early to mid-1980s, the worst fears of the Advisers were not being realised.

Figure 37a

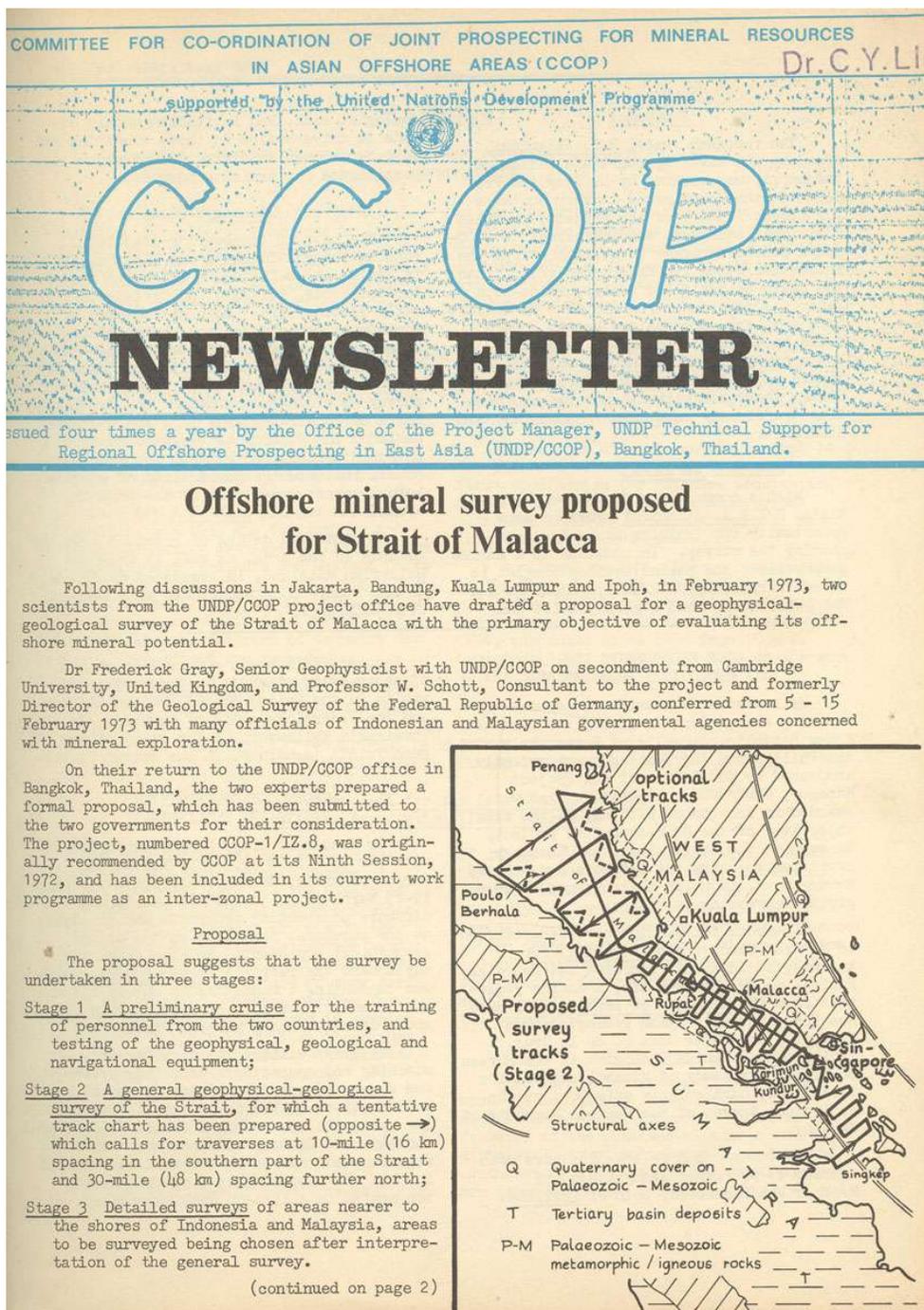


Figure 37. The changing face of the CCOP Newsletter: 37a) The first Newsletter published in 1973. Overleaf: 37b) A Newsletter from 1986 and 37c) A Newsletter from 2005.

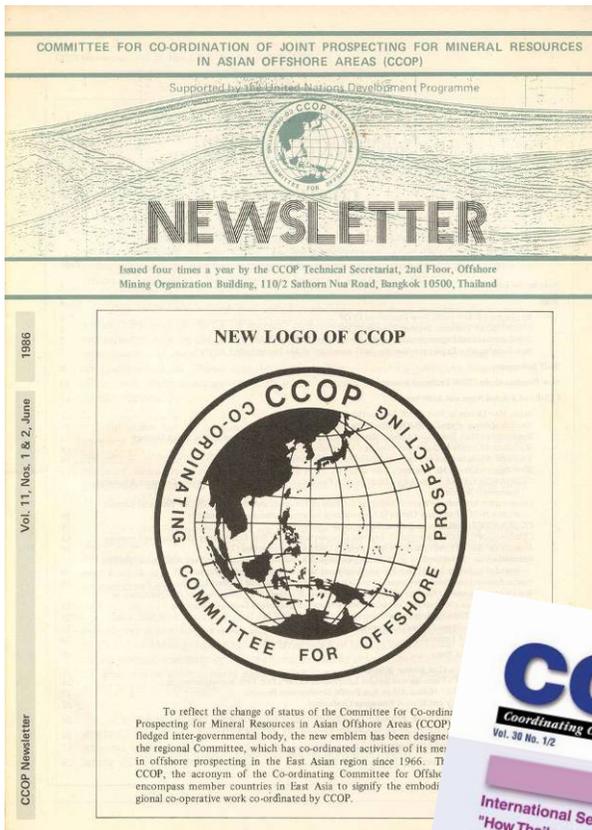


Figure 37b

Figure 37c



See caption on previous page.

A Digital World

Going Beyond Printing

During the 1990s, two developments helped to greatly expand the publications list of CCOP. The first was the worldwide movement from analogue to digital production of material for publication and the second was the tendency for individual CCOP projects sponsored by Cooperating Countries to edit and subsequently publish their own results.

With regard to the first development, in 1991 CCOP had published the 'Total Sediment Isopach Map of Offshore East Asia', and in 1994 the digital dataset was released for sale. Similarly, the printed version of the 'Magnetic Anomaly Map of East Asia' was published as a CD-ROM in 1996. From the mid-1990s onwards digital publication of both maps and reports became a regular practice (see Appendix 2). The list of publications (op cit) also indicates the increasing number of 'joint publications' largely funded by the Cooperating Country funds for CCOP projects of which CCOP-COASTPLAN is a good example. Altogether the CCOP publication list up to the present (June 2006) indicates the wealth of information that CCOP has made available in support of its mission to help further the sustainable development of the region.

Although CCOP publications have always been available for sale, the resulting income has never been other than a very small percentage of the total annual budget of CCOP. A number of complimentary copies of each new publication are supplied to all Member Countries and to organisations participating in the projects as well as under exchange agreements with many other organisation's libraries worldwide. Actual sales are small. For the five years from 1995 to 1999, for example, expenditure for publication amounted to an average of about \$12,500 per annum or about 2% of the total annual expenditure of CCOP, whilst income from sales amounted to an average of only about \$6,500 per annum, or about 1.5% of CCOP's average total annual income.

Information for the World

Nowadays most international organisations have a dedicated website to tell the rest of the world all about themselves. CCOP launched its own website (www.ccop.or.th) in 1999 (**Figure 38**). Not only does this act as a window on CCOP and all its activities but it also provides links to the individual websites of many of the geological organisations in the Member Countries. Within the near future it is intended to become a gateway to a meta-data index of the geoscience data holdings within CCOP Member Countries, indicating the institutional whereabouts, ownership and availability of such data. Forty years ago, when CCOP started on the road to develop its mission of providing geological data and information aimed at increasing the prosperity of the region, it would have been impossible to imagine how far it would have travelled just forty years later.



Figure 38. The Home Page of the CCOP Website.

6. TECHNICAL CO-OPERATION BETWEEN DEVELOPING COUNTRIES (TCDC)

Helping Hands

An Important Acronym

Amongst the many acronyms used by the United Nations forty years ago, the acronym TCDC, standing for 'Technical Co-operation between Developing Countries', was extremely popular within the development-aid context. TCDC demonstrated that developing countries were prepared to help each other towards their development goals. CCOP, with its membership of countries at differing stages of development would be a good testing ground for TCDC.

The UNDP Project and TCDC

At the Annual Session of 1975, referring to the report of the Manager of the UNDP Project, the Committee noted that particular importance was attached to promotion through the project of technical co-operation between developing Member Countries. Already, in 1973, a study tour, comprising senior government officials and experts from developing Member Countries of CCOP had visited all of the Member Countries to familiarise themselves with the offshore survey and related activities taking place in each of them. This enabled the participants to benefit from one another's experience and thus enhanced the opportunities for further technical co-operation. For example, technical personnel from Malaysia and Thailand had observed exploration and development of tin deposits in Indonesia through arrangements made through the CCOP Project office. Further, at a very practical level, Korea would make equipment available to Indonesia and Malaysia for the forthcoming Malacca Straits survey. TCDC was to be actively encouraged throughout the life of the UNDP Project and many examples were to follow, individually small, but collectively very significant for the continued success of CCOP.

TCDC in a Changing World

Examples of TCDC, mainly in the form of training attachments arranged between individual Member Countries, were common during the first thirty years of CCOP's existence. Such arrangements for bilateral co-operation between Member Countries continue to this day and, particularly during the last ten years, some CCOP-wide projects have been sponsored by certain Member Countries for the benefit all the other Member Countries. This is a natural outcome of the more rapid economic development of some Member Countries as compared to others who have been less fortunate. The result is that the leading role that Japan, as the most developed Member Country, has played in sponsoring projects ever since the birth of CCOP is now being extended to other rapidly developing Members. Korea is a good example of such a Member Country.

In 2003, Korea initiated a CCOP project under the Geohazards Programme entitled 'Development of Techniques for Landslide Assessment by Remote Sensing and GIS'. The three-year project involved workshops for participants from all Member Countries and visits by a Korean expert to individual countries to introduce specialised software to undertake project studies in selected areas of their territories. In this way 2004 saw the completion of landslides hazard mapping and verification completed in selected areas in Malaysia, Thailand and Vietnam. The assistance from Korea was further extended in 2005.

In another example, China recently provided financial support to other Member Countries participants and met local costs for several CCOP activities, including the Petroleum Policy and Management Project workshops held in China. All Member Countries have contributed in various ways to CCOP activities by meeting some of the local costs, providing support as well as assisting the Secretariat in the organization and arrangement for the activity.

By 2005, the Chairman of the Advisory Group was able to highlight the fact that now almost half the portfolio of CCOP projects was supported solely by Member Countries, the other half being partly supported by Cooperating Countries and Organisations. This trend is likely to continue.

7. A WORLD OF DIFFERENCE

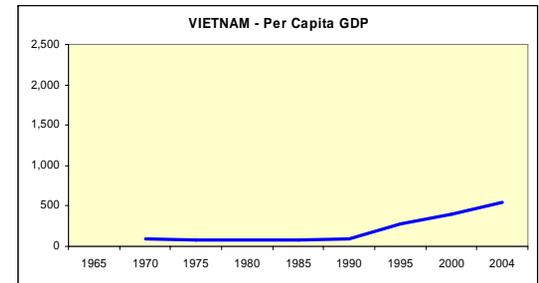
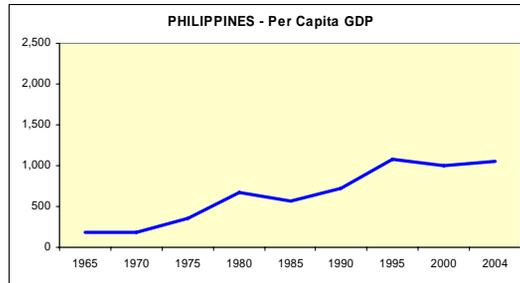
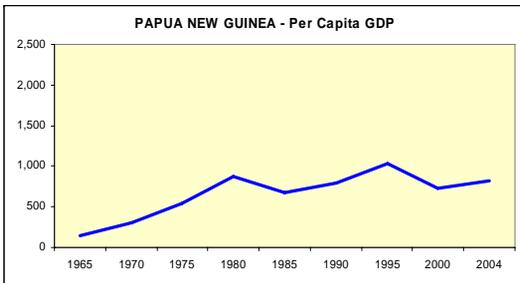
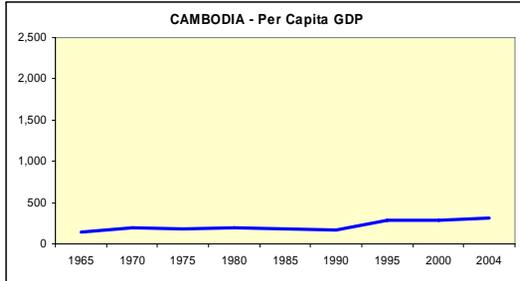
Then and Now

All Change

The world today is not the same world as that in which CCOP was first established forty years ago and as the world has changed so too has CCOP. In 1966, CCOP consisted of just four Member Countries and could hardly be said to fully represent the whole of East Asia as implied by its official title. The total land area of its original four constituent members amounted to just over one million square kilometres supporting a population of about two hundred and thirty million people. This was only a tiny fraction of the total area and population of the whole region at that time. Some ten years later, however, with the addition of new Member Countries, CCOP represented a land area of over thirteen million square kilometres and well over a billion people. The world population was set to continue its growth and this also was the case in CCOP's Member Countries. Today, the CCOP region, containing about one tenth of the earth's total land surface, is the home to almost one quarter of the world's total population. This has inevitably led to greater demands on the natural resources of the individual Member Countries and of the region as a whole.

The CCOP Member Countries, with the exception of Japan, were relatively poor countries during its early years. A glance at **Figure 39** indicates that by 1970, only Japan and Singapore had an annual per capita GDP of approximately one thousand US dollars or greater (approximately \$1000 for Singapore and \$2000 for Japan). The other countries had figures that ranged from Malaysia at just over three hundred US dollars to Indonesia, then amongst the poorest countries in the world, with a *per capita* GDP of just seventy-four US dollars.

In terms of world economics and the fortunes of individual states much can change in just a few decades. Such changes must have been readily apparent to anyone making regular visits to the capital cities of several of the Member Countries of CCOP and are graphically displayed in **Figure 39**. There we can see that by 2004 the wealth of all CCOP Member Countries, as measured by per capita GDP, has grown since 1970, in some cases dramatically, in others much more modestly. The Republic of Korea, one of the so-called "Asian tiger economies" was well over one hundred times wealthier in 2004 than it was when it joined CCOP as a founding member in 1966. Most Member Countries saw their wealth, as measured by per capita GDP, grow by factors of between five and twenty during the period 1970 to 2004. The fact that economic growth has been at vastly different rates in different Member Countries means that if we compare the Member Countries' economic situations in 1970 and 2004 respectively (**Figure 40**), there have been several notable changes in the order they are ranked by wealth. This has implications for CCOP in that it is a crude indicator of which Member Countries are most in need of assistance which might lead to economic development and which Member Countries can best afford to help its neighbours in that quest. CCOP cannot influence its Member Countries' economic policies but it will of necessity depend on them for continuation in the future.



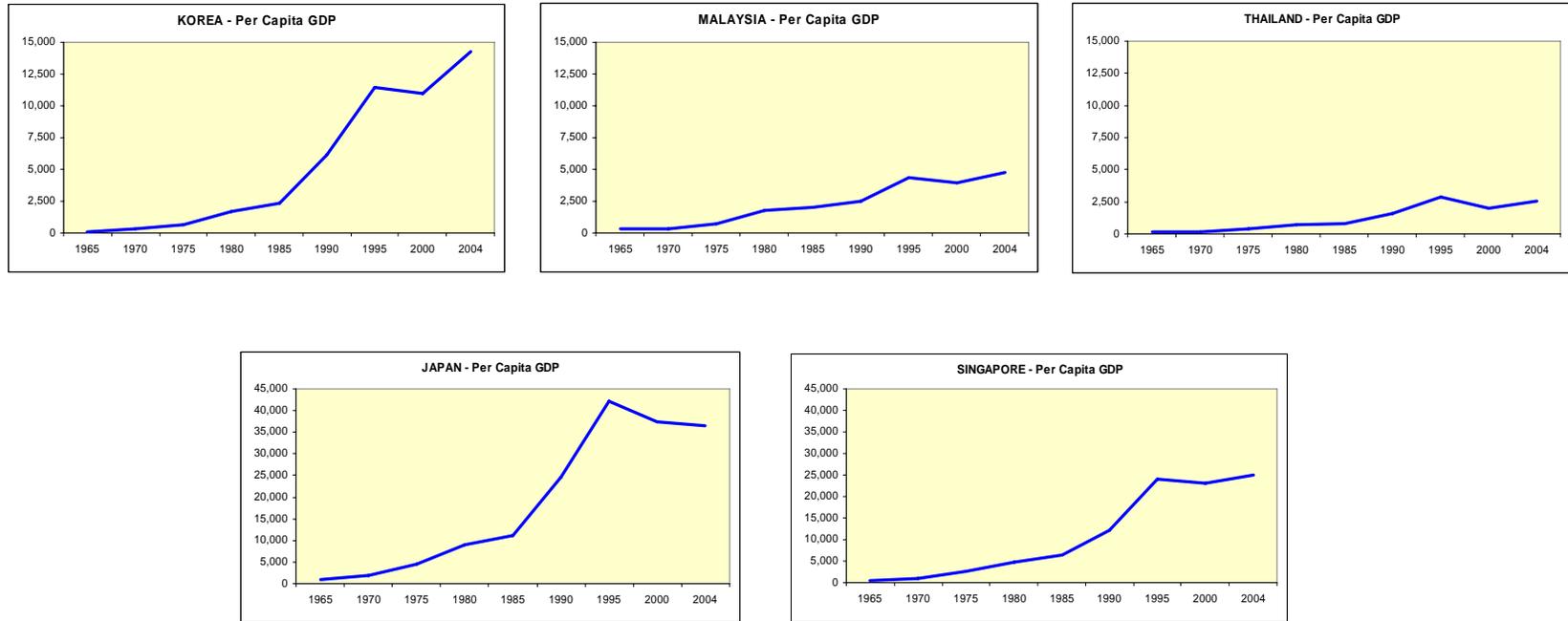


Figure 39. The growth in the Gross Domestic Product (GDP) *per capita* in USD of the individual CCOP Member Countries.

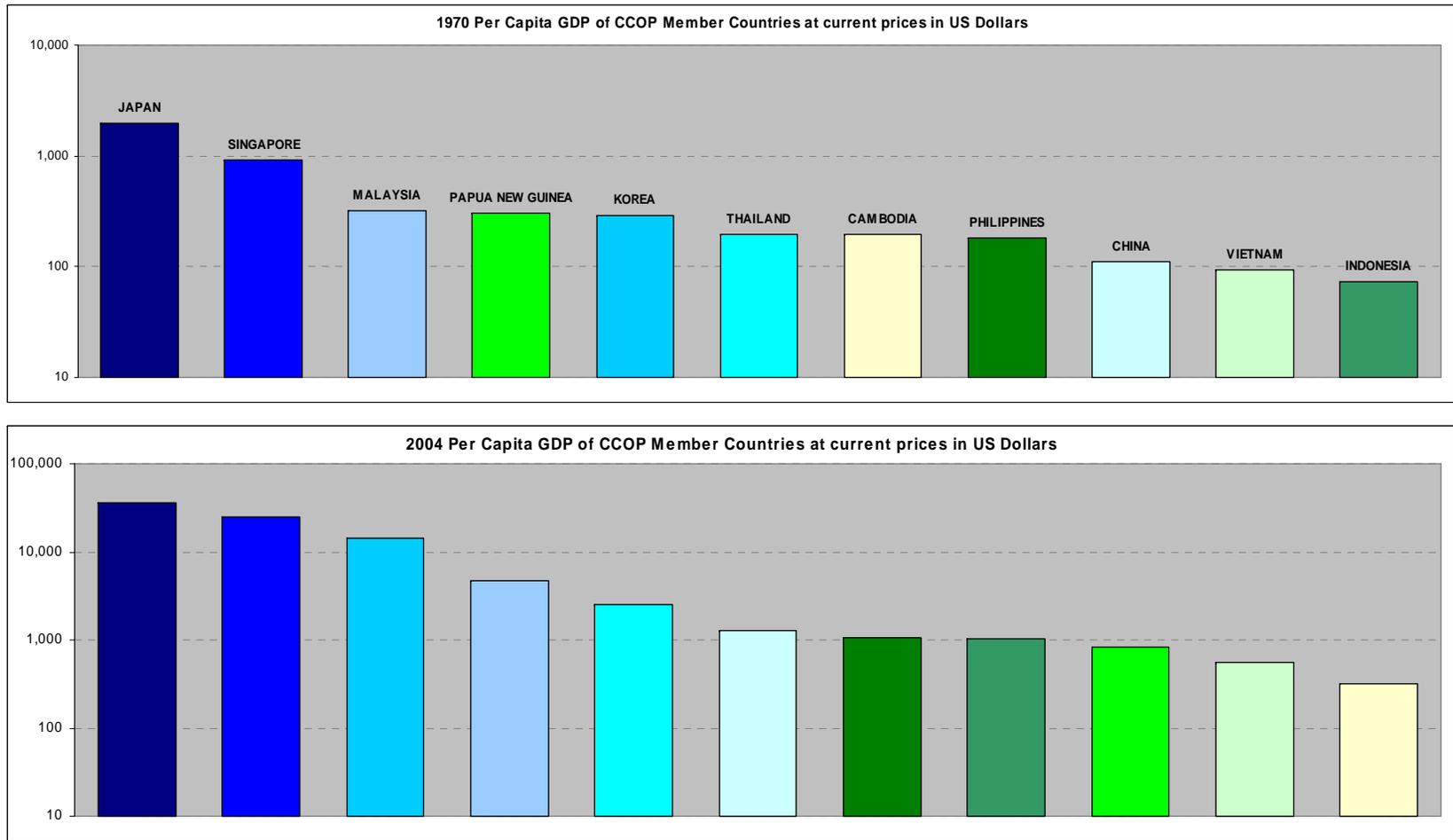


Figure 40. Comparison of the Gross Domestic Product (GDP) per capita for individual CCOP Member Countries in 1970 and 2004.

CCOP was formed with a key objective of stimulating international coordination in offshore mineral prospecting including hydrocarbons. At the time of its formation there was virtually no production of hydrocarbons offshore in what was to become the future CCOP region. With the help of Cooperating Countries and UNDP and with enthusiastic encouragement from Member Countries, CCOP was able to embark on a number of base-line geophysical surveys of extensive offshore areas. At the same time investment in exploration by both private and national oil companies grew rapidly through the 1970s and 1980s. To what extent CCOP's actions influenced the growth in others exploration efforts is an interesting, but probably unanswerable, question. What is important is the fact that the totality of these combined endeavours has produced dramatic results. By the 1990s, China, Indonesia, Malaysia, Philippines, Thailand and Vietnam were major offshore gas and or oil producers. Japan was producing a modest amount together with Korea who commenced production on a small scale later, in 2005, almost forty years after it had been host to the first ever CCOP survey. Compare Korea's current marine survey vessel (**Figure 41**) with that used in Korea for the first CCOP survey in 1966 (**Figure 23**).

With a newly established and burgeoning hydrocarbons production industry in the CCOP region the world of CCOP had changed dramatically. It was against this background that the many training courses and projects, provided through CCOP with its various partners and covering the fields of hydrocarbons exploration and exploitation, were of enduring value.

If the world in which CCOP operates has changed, to what extent can CCOP claim to have changed the world? Claims are of course very easy to make and much more difficult to substantiate, For this reason alone it would be foolish for CCOP to claim that it has had a dramatic impact on, or made a huge difference to, this "World of Difference". What can be stated with certainty is that in a multitude of small but significant ways, through exchanges of experience and information, training and discussion, CCOP has made a real difference to many people's lives, both professionally and personally, throughout East and Southeast Asia and no doubt it will continue to do so in the future.



Figure 41. The Tamhae II, the current research vessel of the Korea Institute of Geoscience and Mineral Resources.

AN EPILOGUE

In this book, the authors, Dr Anthony Reedman and Dr Yoshihiko Shimazaki, have very expertly presented the forty eventful years of the history of CCOP. The readers can clearly see that it has been a fascinating progression from birth and the uncertainty of infancy in to the comfort of the UN-ESCAP (UN-ECAFE) environment during the 1960s and 1970s, then through the twenty years of UNDP support and increasing maturity from the 1970s to 1990s. During all this time the activities carried out by CCOP gave an added impetus to the development of the offshore petroleum and other resources of the region. This we believe is the single most significant development that economically fuelled the rapid growth of the region in the coming years. Through the 1990s and into the new Millennium, CCOP faced the challenges of independence, battling for its rightful place, to remain relevant and to flourish as an intergovernmental organization. In order to survive and prosper, CCOP needed to ensure its relevance in the fast changing world environment and its activities had to be seen to bring the benefits to the Member Countries. The Cooperating Countries also needed to be convinced that CCOP was an appropriate vehicle to deliver their technical assistance to the needy countries of the region. This had to be achieved effectively, in the most transparent manner and in accord with donor countries' current policies for socio-economic development in the region.

The fact that CCOP has not only survived, but has gone from strength to strength over the last forty years is proof that it was able to meet the challenges of the past and is well able to meet the challenges of the future. The reasons are not difficult to find. In the narrative history of CCOP, we can clearly see that the organisation was able to meet the changing needs of its Member Countries and adapt to the changing environment in which it had to operate. It was able to have a clear vision of its future, to continuously review its strategy and to re-engineer itself to meet the emerging challenges. All the constituents of CCOP, the Member Countries, the Cooperating Countries and Organisations, after informed and friendly debate, were always fully united behind the Organisation. Therefore, it is heartening to see that through the years, the scope of activities has expanded, the level of the activity has increased dramatically, and the number of Member Countries' personnel that have benefited from the training content of these activities now exceeds five thousand. Such statistics illustrate the progress of CCOP towards its goal of contributing to economic development, human security and an improved quality of life in the region.

Under the leadership of the Steering Committee, CCOP has already taken action and carried out some necessary reforms to help secure its future. As seen in the latter part of the narrative, CCOP activities have now been reorganised into three Sectors and seven Programmes following the implementation of the 2002 CCOP Strategic Plan. The Steering Committee has also instituted a series of actions first outlined in the Advisory Group's brainstorming recommendations in 2004. These were for CCOP to build on existing strengths and evolve its activities to take advantage of the new contexts and opportunities, and to capitalise on the Organisation's innate strength and assets to ensure that it continues to deliver good geoscience for society, and to remain relevant in a rapidly changing environment. These challenges include the need to:

- enhance the role of geoscience in governance and in policy making including the need for greater engagement in ongoing activities and future policy formulation on scientific issues of global significance
- bring geoscience information, knowledge and services more directly to the people at the community level
- understand the changing nature of national and international technology transfer and aid-funding models together with the shift in availability of technical assistance from traditional donor countries
- adjust to the rapid development of CCOP's own Member Countries

- understand the need for projects to be defined in increasingly complex, multidisciplinary and holistic terms
- develop the potential for integrating regional perspectives into bilateral programmes of Member Countries
- explore the potential for public-private partnership

In taking account of many of the above requirements, the Steering Committee has agreed to strengthen the management, marketing and technical coordination capacity and capability of the Technical Secretariat with the appointment of three Sector Managers, each heading one of CCOP's three strategic sectors. An Organisational Business Plan has been adopted which outlines the various actions and activities need to achieve the strategic goals of the organisation, together with clear indicators for measuring progress. A review of the Strategic Plan and an Organisational Review will also be conducted from time to time to ensure that CCOP continues to be relevant, its activities meet the needs of its constituents and appropriate adjustments are being made to meet the changing demands of the regional socio-economic and natural environments.

With this strong foundation already in place, and with the continued commitment and unwavering support of all the Member Countries, the Cooperating Countries, the Cooperating Organisations, the Advisers, all our MoU partners and supporters, CCOP can look forward to the future with a renewed sense of purpose and with the confidence that it will serve the Member Countries and the society for many more years to come.

Chen Shick Pei

Director, Technical Secretariat
CCOP

APPENDIX 1: TERMS OF REFERENCE OF CCOP

DRAFT TERMS OF REFERENCE OF THE COMMITTEE FOR CO-ORDINATION OF PROSPECTING FOR MINERAL RESOURCES IN ASIAN OFFSHORE AREAS (1966)

Organization

1. The Committee shall be composed of a representative from the Government of each regional member country desiring to participate in co-operative or joint geophysical and other measures for mineral resources prospecting in Asian offshore areas. The Executive Secretary of ECAFE or his representative shall be an ex-officio member of the Committee.
2. The Committee shall have a technical secretary and shall be assisted by an advisory group consisting of high level experts to be recruited from within and outside of the region.
3. The Committee shall meet as and when appropriate and shall hold at least one meeting annually. A meeting of the Advisory Group shall precede each meeting of the Committee.

Functions

4. The Committee shall, on request from participating Governments, promote and co-ordinate the planning and implementation of offshore geophysical and other prospecting projects on the marine shelves of the countries of the region which are represented on the Committee. It shall, to this end
 - (a) Review regularly the progress made with offshore geophysical and other joint prospecting projects, basic and applied research, and regional training programs;
 - (b) Recommend to Governments of the participating countries concerned, upon request, measures for implementing their offshore geophysical and other prospecting projects, particularly through joint action and co-coordinated longer-term projects, aimed at saving expenses and at operating under the most favourable climatic conditions in different parts of the region
 - (c) Consider, upon request, the possible sources of financial and technical support for such projects;
 - (d) Prepare and submit, at the request and on behalf of the participating Governments, requests for technical, financial and other assistance offered under the United Nations Development Program and by other organizations and contributors;
 - (e) Study and advise on problems connected with offshore geophysical and other prospecting projects agreed upon between or among the Governments concerned, or problems otherwise referred to it;
 - (f) Promote, prepare and submit to participating Governments and other interested organizations plans for carrying out co-coordinated basic and applied research in continental shelf areas of the region;
 - (g) Promote the establishment of programs and facilities for training personnel from countries of the region in methods of offshore prospecting within the region and arrange for training outside the regional, making such assistance available to all regional countries, irrespective of whether they are members of the Committee or not.

5. The Executive Secretary may request those countries which have immediate plans for participation to signify formally their intention to join the Committee and at the same time to indicate the details and extent of the prospecting work they wish the Committee to co-ordinate. All other member countries in the region shall be notified of the intention to form the Committee and requested to indicate whether they are willing to join it and, if so, the extent and details of the work they wish to be done on a joint basis, in order that the identity of their interest and the economic and technical advantages to be obtained from the co-ordination of their programs may be assessed.
6. The Executive Secretary may also take all steps necessary to secure the necessary financial and technical support for the Committee from the United Nations Development Program and other friendly agencies and to establish the Advisory Group of experts to advise the Committee.
7. The Committee shall adopt its own rules and procedures, subject to the provisions set out below
8. The Executive Secretary of ECAFE and a technical secretary designated by him shall provide the necessary servicing of the Committee's meetings. The Technical Secretary shall be responsible for preparing from time to time reports on the implementation of the Committee's recommendations as may be desired by the Committee.
9. All meetings shall be closed meetings unless the Committee shall decide otherwise.
10. The Executive Secretary shall, in consultation with the Chairman, issue a notice convening each meeting of the Committee, prepare the provisional agenda and distribute basic relevant documents at least six weeks before the commencement of the meeting.
11. The Committee shall submit reports to the participating Governments and annually to the Economic Commission for Asia and the Far East.
12. The Committee shall have the authority, subject to United Nations procedures, to invite representatives of Governments and of specialized agencies to attend specific meetings of the Committee in a consultative capacity on agenda items of interest to those Governments and organizations.
13. The date and place of the first meeting shall be determined by the Executive Secretary of the Commission after at least two countries have signified their intention of joining the Committee. The venue and dates for subsequent meetings shall be decided upon by the Committee, subject to the concurrence of the Executive Secretary of the Commission.

MEMORANDUM OF UNDERSTANDING TO CONFER UPON THE COMMITTEE FOR CO-ORDINATIONS OF JOINT PROSPECTING FOR MINERAL RESOURCES IN ASIAN OFFSHORE AREAS STATUS AS AN INTERGOVERNMENT ORGANIZATION AND TERMS OF REFERENCE (1987)

WHEREAS the Governments of China, Democratic Kampuchea, Indonesia, Japan, Malaysia, Papua New Guinea, Philippines, Republic of Korea, Singapore, Thailand and Vietnam are members of the Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (“CCOP”); and

WHEREAS these Governments desire to continue to co-operate in the planning and implementation of offshore geophysical and other prospecting projects in Asian offshore and geologically related areas of member countries; and

WHEREAS these Governments recognize the CCOP has made possible an effective level of co-operation since its formation under the Terms of Reference in 1966; and

WHEREAS these Governments desire to confirm the institutional status of CCOP;

NOW these Governments declare through this Memorandum of Understanding that:

1. CCOP which was formed with the Terms of Reference in 1966 is hereby adopted as an intergovernmental organization.
2. The Terms of Reference, 1966, as amended and attached hereto are adopted as the Constitution of CCOP.
3. East Asian Governments eligible for membership may join by signing or acceding to this Memorandum of Understanding after approval by CCOP.
4. This Memorandum of Understanding shall enter into force thirty days after signature or accession by seven Governments, including the Government of Thailand. Thereafter it shall enter into force for Governments subsequently signing or acceding thirty days after signature or deposit of an instrument of accession with the depository state.
5. The headquarters of CCOP shall be in Thailand.
6. The Government of Thailand is designated the depository of this Memorandum of Understanding.

Dated this twenty-fifty day of March, 1987.

TERMS OF REFERENCE OF THE COMMITTEE FOR CO-ORDINATION OF JOINT PROSPECTING FOR MINERAL RESOURCES IN ASIAN OFFSHORE AREAS

Purpose and Functions

1. The purpose of CCOP is to promote and co-ordinate the planning and implementation of joint prospecting programmes and research in Asian offshore and geologically related areas of countries who are members of CCOP.

For this purpose, CCOP shall have the following functions:

- (1) Review regularly the progress made with offshore geophysical and other joint prospecting projects, basic and applied research, and regional raining programmes;
- (2) Recommend to Governments of the participating countries concerned, upon request, measure for implementing their prospecting projects, particularly through joint action and co-ordinated longer-term projects aimed at the saving of expenses and at operating under the most favourable conditions in different parts of the regions;
- (3) Consider, upon request, the possible sources of financial and technical support for such projects;
- (4) Prepare and submit, at the request and on behalf of the participating Governments, requests for technical, financial and other assistance offered under the United Nations Development Programme and by other organizations and contributors;
- (5) Study and advise on problems connected with prospecting projects agreed upon between or among the Governments concerned, or problems otherwise referred to it;
- (6) Promote, prepare and submit to participating Governments and other interested organizations plans for carrying out co-ordinated basic and applied research in Asian offshore and geologically related areas,
- (7) Promote the establishment of programmes and facilities for training personnel from countries of the region in methods of offshore prospecting within the region and arrange for training outside the region.

Membership

2. All countries that are presently members of CCOP shall be eligible for membership.

Any other country in the East Asian area may apply to become a member of CCOP by indicating the extent and details of the work they propose to be done on a joint basis. Acceptance of new members is subject to the approval of the Steering Committee.

The Steering Committee may admit countries as associate members on such terms as the Steering Committee may prescribe, provided that associate members shall not be deemed members of CCOP for purposes of establishing a quorum of voting.

Each country, on becoming a member of CCOP, recognizes that the financial viability of CCOP is the responsibility of its member countries. Members shall ensure that contributions to CCOP are made in a timely and adequate manner.

Status, Structure and Headquarters

3. CCOP shall have juridical personality and shall have the capacity, in accordance with the national laws and regulations of the members of CCOP to contract, to acquire and dispose of immovable and movable property, and to institute legal proceedings.

Steering Committee: Composition and Functions

4. The Steering Committee shall be composed of a permanent representative of each member of CCOP. The Director of CCOP shall serve as Secretary of the Steering Committee.

The Steering Committee shall:

- (a) Establish policies and principles which will govern the activities of CCOP and approve the broad framework of its programmes. The Steering Committee shall approve the budget and accounts of CCOP for each year.
 - (b) Establish such subsidiary bodies as it may deem appropriate;
 - (c) Appoint the Director of CCOP;
 - (d) Receive and consider the reports of the Director on the functions delegated to him; and
 - (e) Exercise such other functions as it may be authorized to perform or as may be necessary under these Terms of Reference.
5. The Steering Committee shall meet in regular session at least once every year. The venue and dates of regular meetings shall be decided upon by the Steering Committee.

The Steering Committee shall meet in special session whenever a majority of the members of CCOP request the Chairman of CCOP to convene a special session.

A quorum for meetings of the Steering Committee shall be a majority of the members of CCOP.

Each member of CCOP shall have one vote in the Steering Committee. A permanent representative may appoint another person to represent him at meetings of the Steering Committee.

The Steering Committee shall endeavour to reach its decisions by consensus of members present. Where consensus is not possible, decisions of the Steering Committee shall, unless otherwise provided in these Terms of Reference, be made by a majority of the members, whether or not present.

The Steering Committee shall at each regular session elect a Chairman and a Vice-Chairman. They shall hold office until the next regular session of the Steering Committee.

The Chairman or, in his absence, the Vice-Chairman, shall preside at meetings of the Steering Committee. In the absence of both the Chairman and Vice-Chairman, the Steering Committee shall elect an acting chairman to preside at the meeting.

6. Representatives of Governments not members of CCOP, representatives of ESCAP and other appropriate United Nations bodies and specialized agencies, representatives of such other organizations as the Steering Committee may deem appropriate and experts in fields of interest to the Steering Committee may invited to participate in meetings of the Steering Committee in the capacity of observers without the right to vote.
7. A Technical Advisory Group shall be selected by the Steering Committee and shall consist of high-level experts from within and outside the region to consider the technical, scientific, and research aspects of CCOP's work programme and submit its findings to the Steering Committee. The Steering Committee shall appoint a Chairman for each meeting of the Technical Advisory Group from among the members of the Group present at the meeting.
8. The Steering Committee shall, subject to the provisions of these Terms of Reference, adopt its own rules of procedure.

Director

9. The Director of CCOP shall be appointed by the Steering Committee for a term of up to three years. The Director shall be eligible for reappointment.

The Director shall be responsible to the Steering Committee in the performance of his functions. The Director shall:

- (a) Administer CCOP and its programmes with a view to ensuring that CCOP continues to be an institution of high professional standing;
- (b) Prepare and submit to the Steering Committee, for review and approval, the areas identified for programmes, training, seminars and workshops, budget estimates and accounts of CCOP;
- (c) Report on CCOP and its programmes to the Steering Committee;
- (d) Appoint the other staff of CCOP;
- (e) Arrange all matters relating to the publication of materials produced by CCOP;
- (f) Seek and administer funds and technical expertise; and
- (g) Perform such other duties as may be required under these Terms of Reference or pursuant to decisions of the Steering Committee.

Resources

10. The financial resources of CCOP shall be composed of:
 - (a) The contributions of the members of CCOP;
 - (b) Funds received from Governments not members of CCOP;
 - (c) Funds received from international and national institutions;
 - (d) Moneys received for services furnished by CCOP; and
 - (e) Other funds or moneys received by CCOP.

CCOP may also receive contributions of a non-financial nature.

11. The Steering Committee shall at each session review the state of the resources of CCOP, as presented by the Director, and make such recommendations to the members of CCOP as it may deem appropriate, to ensure that timely and adequate resources are always available to CCOP and its programmes, and that a balance between these resources and programmes is maintained.

CCOP shall be administered on a sound economic and financial basis.

12. Regulations for receipt, custody and expenditure of the financial and non-financial resources of CCOP shall be established.

Relations with International Institutions

13. CCOP shall establish and maintain a close consultative, co-operative and working relationship with ESCAP. The Executive Secretary of ESCAP or his representative shall be invited to attend meetings of the Steering Committee, and may make such statements and present such papers as he may deem appropriate. The Steering Committee may submit to ESCAP each year at its annual session a report on CCOP and its programmes.

CCOP may establish and maintain such relations as it may deem appropriate with United Nations bodies, intergovernmental organizations, specialized agencies and other international institutions.

Facilities, Privileges and Immunities

14. CCOP shall conclude with Thailand, as the country in which the headquarters of CCOP shall be located, a headquarters agreement relating to the facilities, privileges and immunities which CCOP, representatives of its members, its officials and its consultants will receive while in Thailand for the purpose of exercising official duties.

Withdrawal from CCOP

15. Any member of CCOP may withdraw from CCOP by giving written notification of withdrawal to the Chairman of the Steering Committee.

The Chairman shall inform all other members of CCOP of such notification. A notification of withdrawal shall take effect six months after the date of receipt of the notification by Chairman. A member withdrawing from CCOP shall continue to be responsible for obligations incurred within the period of its membership.

Dissolution of CCOP

16. CCOP may, by vote of two-thirds of the member of CCOP, resolve that CCOP be dissolved.

A resolution to dissolve CCOP shall enter into force on the thirtieth day after the deposit with the Government of Thailand of instruments of acceptance of the resolution by two-thirds of the members of CCOP. The Steering Committee shall take necessary steps for the dissolution of CCOP, including establishment of a committee to advise the Steering Committee on the manner in which the assets and obligations of CCOP should be liquidated prior to the dissolution of CCOP.

The Steering Committee shall, at the appropriate stage, adopt a final declaration stating that on a specified date CCOP shall be deemed dissolved. The declaration shall be communicated by the Chairman of the Steering Committee to the members of CCOP.

Amendments

17. CCOP may, by vote of two-thirds of the members of CCOP, amend these Terms of Reference.

An amendment shall enter into force on the thirtieth day after the deposit with the Government of Thailand of instruments of acceptance of the amendment by two-thirds of the members of CCOP.

TERMS OF REFERENCE OF CCOP (2006)

Purpose and Functions

1. The purpose of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (here after referred to CCOP) is to carry out joint applied geoscience programmes for sustainable development in East and Southeast Asian countries.

For this purpose, CCOP shall have the following functions:

- (1) Review regularly the progress made with geoscientific projects, basic and applied researches, and regional training programmes;
- (2) Recommend to Governments of the participating countries concerned, upon request, measures for implementing their geoscientific projects, particularly through joint action and co-ordinated longer-term projects aimed at the saving of expenses and at operating under the most favourable conditions in different parts of the region;
- (3) Consider, upon request, the possible sources of financial and technical support for such projects;
- (4) Prepare and submit, at the request and on behalf of the participating Governments, requests for technical, financial and other assistance from the co-operating countries, the United Nations agencies, other organizations and contributors;
- (5) Study and advise on problems connected with geoscientific projects agreed upon between or among the Governments concerned, or problems otherwise referred to it;
- (6) Promote, prepare and submit to participating Governments and other interested organizations plans for carrying out geoscientific programmes East and Southeast Asia; and
- (7) Promote the establishment within the region of programmes and facilities for training personnel from CCOP member countries in geoscientific activities.

Membership

2. The present members of CCOP shall consist of the following countries: Cambodia, the People's Republic of China, the Republic of Indonesia, Japan, the Republic of Korea, Malaysia, Papua New Guinea, the Republic of the Philippines, the Republic of Singapore, Thailand, and the Socialist Republic of Vietnam.

Any other country in the East and Southeast Asian area may apply to become a member of CCOP. Membership involves participation in regional applied geoscientific co-operation. Acceptance of new members is subject to the approval of the Steering Committee by consensus.

Each country, on becoming a member of CCOP, recognizes that the financial viability of CCOP is the responsibility of its member countries. Members shall ensure that contributions to CCOP are made in a timely and adequate manner.

Status, Structure and Headquarters

3. CCOP shall have juridical personality and shall have the capacity, in accordance with the national laws and regulations of the members of CCOP to contract, to acquire and dispose of immovable and movable property, and to institute legal proceedings.

CCOP shall be composed of the following constituent units: a) Steering Committee, b) Advisory Group, and c) Technical Secretariat, headed by a Director.

Steering Committee: Composition and Functions

4. The Steering Committee shall be composed of a permanent representative of each member country of CCOP. The Director of CCOP shall serve as Secretary of the Steering Committee.

The Steering Committee shall:

- (a) Establish policies and principles which will govern the activities of CCOP and approve the broad framework of its programmes. The Steering Committee shall approve the work plan, budget and accounts of CCOP for each year, as well as new programme proposals;
 - (b) Establish such subsidiary bodies as it may deem appropriate;
 - (c) Appoint the Director of CCOP Technical Secretariat;
 - (d) Receive and consider the reports of the Director on the functions delegated to him; and
 - (e) Exercise such other functions as it may be authorized to perform or as may be necessary under these Terms of Reference.
5. The Steering Committee shall meet in regular session at least once every year. The venue and dates of regular meetings shall be decided upon by the Steering Committee.

The Steering Committee shall meet in special session whenever a majority of the members of CCOP request the Steering Committee Chairperson to convene a special session.

A quorum for meetings of the Steering Committee shall be a majority of the members of CCOP.

Each member country of CCOP shall have one vote in the Steering Committee. A permanent representative may appoint another person to represent him at meetings of the Steering Committee.

The Steering Committee shall endeavour to reach its decisions by consensus of the members present. Where consensus is not possible, decisions of the Steering

Committee shall, unless otherwise provided in these Terms of Reference, be made by a majority of the members, whether or not present.

The Steering Committee shall at a regular session elect its Chairperson and Vice-Chairperson who shall hold office for a term of two years. The Chairperson or, in his/her absence, the Vice-Chairperson, shall preside at meetings of the Steering Committee. In the absence of both the Chairperson and Vice-Chairperson, the Steering Committee shall elect an acting Chairperson to preside at the meeting.

6. Representatives of Governments who are not members of CCOP, representatives of other appropriate United Nations bodies and specialized agencies, representatives of other organizations and experts in fields of interest to the Steering Committee may be invited, subject to the approval of the Steering Committee by consensus of the members present, to participate in meetings of the Steering Committee as observers or resource persons without the right to vote.
7. An Advisory Group shall consist of representatives of the co-operating countries and co-operating organizations, Technical Advisers and Honorary Advisers to consider the technical, scientific, and research aspects of CCOP's work programme and submit its findings to the Steering Committee. Members of the Advisory Group shall elect its Chairperson and Vice-Chairperson for each of its meeting from among its members present at the meeting.
8. The Steering Committee shall, subject to the provisions of these Terms of Reference, adopt its own rules of procedure.

Director

9. The Director of CCOP Technical Secretariat shall be appointed by the Steering Committee for a term up to three years. The Director shall be eligible for reappointment.

The Director shall be responsible to the Steering Committee in the performance of his/her functions. The Director shall:

- (a) Act as ambassador and promoter of support to CCOP activities;
- (b) Administer CCOP Technical Secretariat and work programmes of CCOP with a view to ensuring that CCOP continues to be an institution of high professional standing;
- (c) Assist member Governments in negotiating bilateral and multilateral technical assistance programmes in fields related to CCOP activities;
- (d) Prepare and submit to the Steering Committee, for review and approval, proposals on areas identified for programmes, training seminars and workshops, budget estimates and accounts of CCOP;
- (e) Report on CCOP and its programmes to the Steering Committee;
- (f) Appoint and supervise the other staff of CCOP;
- (g) Arrange all matters relating to the publication of materials produced by CCOP;

- (h) Seek and administer funds and technical expertise; and
- (i) Perform such other duties as may be required under these Terms of Reference or pursuant to decisions of the Steering Committee.

Resources

10. The financial resources of CCOP shall be composed of:

- (a) The contributions of the members of CCOP;
- (b) Funds received from Governments that are not members of CCOP;
- (c) Funds received from international and national institutions;
- (d) Moneys received from services furnished by CCOP; and
- (e) Other funds or moneys received by CCOP.

CCOP may also receive contributions of a non-financial nature.

11. The Steering Committee shall at each session review the state of the resources of CCOP, as presented by the Director, and make such recommendations to the members of CCOP as it may deem appropriate, to ensure that timely and adequate resources are always available to CCOP and its programmes, and that a favourable balance between these resources and programmes is maintained.

CCOP shall be administered on a sound economic and financial basis.

12. Regulations for receipt, custody and expenditure of the financial and non-financial resources of CCOP shall be established.

Relations with International Institutions

13. CCOP shall establish and maintain a close co-operative and working relationship with concerned United Nations agencies, other organizations and institutions as it may deem appropriate. The representatives of these establishments may be invited to attend meetings of the Steering Committee as resource persons from time to time, when considered necessary and appropriate. The Director of CCOP Technical Secretariat may submit to these organizations each year at their annual meetings a report on CCOP and its programmes.

Facilities, Privileges and Immunities

14. CCOP shall conclude with Thailand, as the country in which the headquarters of CCOP shall be located, a headquarters agreement relating to the facilities, privileges and immunities which CCOP, representatives of its members, its officials and its consultants will receive while in Thailand for the purpose for exercising official duties.

Withdrawal from CCOP

15. Any member of CCOP may withdraw from CCOP by giving written notification of withdrawal to the Chairperson of the Steering Committee.

The Chairperson shall inform all other members of CCOP of such notification. A notification of withdrawal shall take effect six months after the date of receipt of the notification by the Chairperson. A member withdrawing from CCOP shall continue to be responsible for obligations incurred within the period of its membership.

Dissolution of CCOP

16. CCOP may, by vote of two-thirds of the members of CCOP, resolve that CCOP be dissolved.

A resolution to dissolve CCOP shall enter into force on the thirtieth day after the deposit with the Government of Thailand of instruments of acceptance of the resolution by two-thirds of the members of CCOP. The Steering Committee shall take necessary steps for the dissolution of CCOP, including establishment of a committee to advise the Steering Committee on the manner in which the assets and obligations of CCOP should be liquidated prior to the dissolution of CCOP.

The Steering Committee shall, at the appropriate stage, adopt a final declaration stating that on a specified date CCOP shall be deemed dissolved. The declaration shall be communicated by the Chairperson of the Steering Committee to the members of CCOP.

Amendments

17. CCOP may, by vote of two-thirds of the members of CCOP, amend these Terms of Reference.

An amendment shall enter into force on the thirtieth day after the deposit with Government of Thailand of instruments of acceptance of the amendment by two-thirds of the members of CCOP.

Adoption of Terms of Reference

Terms of Reference shall be signed by the Chairperson of the Steering Committee and attested by the Director of CCOP Technical Secretariat.

APPENDIX 2: CCOP PUBLICATIONS

1966

- Report of the First Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Quezon City, Philippines, 27 May – 2 June, 1966
- Report of the Second Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian
- Offshore Areas and Report of the First Session of its Technical Advisory Group (Appendix 4), Tokyo, Japan, 29 October – 7 November, 1966
- CCOP / TP.1: The Offshore Hydrocarbon Potential of East Asia : 1966-1973

1967

- Report of the Third Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Second Session of its Technical Advisory Group (Appendix 9), Seoul, Republic of Korea, 24 June – 4 July, 1967
- Report of the Fourth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Third Session of its Technical Advisory Group (Appendix 12), Taipei, Republic of China, 6-16 November, 1967

1968

- Report of the Fifth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Fourth Session of its Technical Advisory Group (Appendix 4), Tokyo, Japan, 10-19 June, 1968
- CCOP / TB Vol. 1: Korea strait, Penghu, Islands, Japan trench, East China Sea, Sunda Shelf, Bibliography Vietnam. June 1968

1969

- CCOP / TB Vol. 2: Luzon gravity, Singapore geology, Tungliang RL-1 well (Penghu), offshore coalfields Japan. May 1969
- Report of the Sixth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Fifth Session of its Technical Advisory Group (Appendix 4 of the Report of the Committee) with Part 2 – Technical Documentation, Bangkok, Thailand, 13-27 May, 1969

1970

- Report of the Seventh Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Sixth Session of its Technical Advisory Group (Appendix 4 of the Report of the Committee) with Part 2 – Technical Documentation, Saigon, Vietnam, 12-23 May, 1970
- CCOP / TB Vol. 3: Seismic survey offshore Vietnam, Sunda Shelf geology, offshore petroleum prospects Eastern Asia. May 1970

1971

- CCOP / TB Vol. 4: Aeromagnetism Korea, aeromagnetism Philippines, Structural framework South China Sea. June 1971
- CCOP / TB Vol. 5: Detrital heavy minerals CCOP region. June 1971
- Report of the Eighth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Seventh Session of its Technical Advisory Group (Annex 4 of the Report of the Committee) with Part 2 – Technical Documentation, Manila, Philippines, 6-16 July, 1971

1972

- Report of the Ninth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Eight Session of its Technical Advisory Group with Part 2 – Technical Documentation, Bandung, Indonesia, 20 November – 2 December, 1972
- CCOP / TB Vol. 6: Shallow Sea, Taiwan strait; structure and Stratigraphy of the China basin, aeromagnetic Survey Palawan, seismic investigations Sunda. July 1972

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- CCOP Newsletter Vol. 1 No. 1, January-April, 1973
- CCOP Newsletter Vol. 1 No. 2, May-July, 1973
- Report of the Tenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Report of the Ninth Session of its Technical Advisory Group with Part 2 – Technical Documentation, Bangkok, Thailand, 10-22 September, 1973
- CCOP / TB Vol. 7: Plate tectonics Indonesia, sonobuoy Measurements Java Sea, stratigraphic Studies Indonesia. November 1973

1974

- CCOP Newsletter Vol. 1 No. 3, September-December, 1973 (issued January 1974)
- CCOP Newsletter Vol. 1 No. 4, January-June, 1974 (issued June 1974)
- Proceedings of the Eleventh Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Seoul, Republic of Korea, 7-21 August, 1974
- CCOP/TP. Ref. 1: Classified Index 1966-1976. February 1974
- CCOP / TB Vol. 8: Seismic surveys Korea, Geology Korea, Banda arc petroleum prospects, Indonesian Tertiary basins, hydrocarbon exploration India, organic metamorphism. December 1974
- CCOP / TP. 2: Report of the IDOE Workshop: Metallogenesis, Hydrocarbons and Tectonics Patterns in East Asia. 1974

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- CCOP Newsletter Vol. 2 No. 1, July-December, 1974
- CCOP Newsletter Vol. 2 No. 2, January-April, 1975
- Proceedings of the Twelfth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Tokyo, Japan, 8-22 August, 1975
- CCOP / TB Vol. 9: Earth energy balance, geological environment of Indonesian mineral deposits, silica sand deposits, Thailand. December 1975

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- CCOP Newsletter Vol. 2 No. 3 & 4, May-December, 1975
- CCOP Newsletter Vol. 3 No. 1 & 2, January-June, 1976
- CCOP Newsletter Vol. 3 No. 3, July-September, 1976
- Proceedings of the Thirteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Kuala Lumpur, Malaysia, 22 November – 6 December, 1976
- CCOP / TP. 3: Proceedings of the Seminar on Isotopic Dating. July 1976
- CCOP / TP. 4: The Offshore Hydrocarbon Potential of East Asian: 1966-1975, September 1976
- CCOP / TB Vol. 10: Evolution Western Pacific, petroleum geology offshore Japan, sedimentary basins Philippines, petroleum geology of China. December 1976

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- CCOP Newsletter Vol. 3 No. 4, October-December, 1976
- CCOP Newsletter Vol. 4 No. 1 & 2, January-June, 1977
- Proceedings of the Fourteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Manila, Philippines, 21 September – 4 October, 1977
- CCOP / TB Vol. 11: Offshore hydrocarbon and heavy mineral investigations in East Asia. October 1977
- CCOP / TP. 5: Quaternary Geology of the Malaysia-Indonesian Coastal and Offshore Areas. November 1977

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- CCOP Newsletter Vol. 4 No. 3 & 4, July-December, 1977
- CCOP Newsletter Vol. 5 No. 1 & 2, January-June, 1978
- Proceedings of the Fifteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Singapore 24 October – 6 November, 1978
- Proceedings of the Fifteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas and Part 2 – Scientific and Technical Documentation, Singapore, 24 October – 6 November, 1978
- CCOP / TB Vol. 12: Satellite imagery Japan, heat flow Thailand, Tertiary coal basins Indonesia, evolution Sunda-arc and central Sumatra. October 1978

1979

- CCOP Newsletter Vol. 5 No. 3 & 4, July-December, 1978
- CCOP Newsletter Vol. 6 No. 1, January-March, 1979
- CCOP Newsletter Vol. 6 No. 2, April-June, 1979
- CCOP Newsletter Vol. 6 No. 3, July-September, 1979
- Proceedings of the Sixteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Bandung, Indonesia, 10-18 September, 1979
- CCOP / TP. 6: Generation & Maturation of Hydrocarbons in Sedimentary Basins. January 1979

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- CCOP Newsletter Vol. 6 No. 4, October-December, 1979
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- CCOP Newsletter Vol. 7 No. 2, April-June, 1980
- CCOP Newsletter Vol. 7 No. 3, July-September, 1980
- CCOP / TP. 8: Collection, Storage, and Retrieval of Geological and Geophysical Data. June 1980
- CCOP / TP. 9: Prospecting Offshore Placers: Drilling Ships, equipment, and Positioning Techniques. August 1980
- Proceedings of the Seventeenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Bangkok, Thailand, 4-17 November, 1980
- CCOP / TB Vol. 13: Gravity surveys Indonesia, heat flow in exploratory well offshore Malaysia, Quaternary geology, Malaysia. December 1980

1981

- CCOP Newsletter Vol. 7 No. 4, October-December, 1980
- CCOP Newsletter Vol. 8 No. 1, January-March, 1981
- CCOP Newsletter Vol. 8 No. 2, April-June, 1981
- CCOP Newsletter Vol. 8 No. 3, July-September, 1981
- CCOP / TP. 7a: Studies in East Asian Tectonics and Resources (SEATAR), 1981
- CCOP / TP. 10: Assessment of Undiscovered Oil and Gas. 1981
- CCOP / TB Vol. 14: Gyeongsang basin, Ogcheon basin, geologic evolution Korea, subduction off Northeast Japan. December 1981

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- CCOP Newsletter Vol. 8 No. 4, October-December, 1981
- CCOP Newsletter Vol. 9 No. 1, January-March, 1982
- CCOP Newsletter Vol. 9 No. 2, April-June, 1982
- CCOP Newsletter Vol. 9 No. 3, July-September, 1982
- Proceedings of the Eighteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, Seoul, Republic of Korea, 21 September – 2 October, 1981, published in November 1982
- Proceedings of the Nineteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), Tokyo, Japan, 1982
- CCOP / TP. 11: Petroleum Data Management and Monte Carlo Simulation. 1982
- CCOP / TP. 13: Palaeomagnetic Research in Southeast and East Asia. March 1982
- CCOP / TB Vol. 15: Heat flow and geothermal measurements, Philippines, Java, Papua New Guinea, Malaysia, Neogene movements Tohoku arc. Dec. 1982

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- CCOP Newsletter Vol. 9 No. 4, October-December, 1982
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- Proceedings of the Twentieth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), Kuala Lumpur, Malaysia, 1983
- CCOP/TP. Ref. 2: Classified Index 1977-1982. February 1983
- CCOP / TP. 12: Exploration for Offshore Placers & Construction Materials in Southeast Asia. September 1983
- CCOP / TB Vol. 16, 17: Jurassic in Southeast Asia, aeromagnetic Survey, Philippines. December 1983

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- Proceedings of the Nineteenth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part II-Technical Reports), 10 September, 1984, Bangkok, Thailand
- CCOP / TP. 15: Proceedings of the Joint ASCOPE/CCOP Workshops 1 & 2: October 1981, Jakarta; October 1984, Bangkok
- CCOP / TP. 14: Philippine Porphyry Copper Deposits: Geologic Setting and Characteristics. November 1984

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- Proceedings of the Twenty-First Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), 26 November – 7 December, 1984, Bandung, Indonesia, published in January, 1985
- Proceedings of the Twentieth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part II-Technical Reports), 1-18 November 1983, Kuala Lumpur, Malaysia, published in April 1985
- Proceedings of the Twenty-First Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part II-Technical Reports), 26 November – 7 December, 1984, Bandung, Indonesia, published in November 1985

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- Technical Report of the Joint IUGS/CCOP/ASCOPE Workshop on Resource Assessment, 21-26 April 1986, Kuala Lumpur, Malaysia

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- CCOP Newsletter Vol. 12 No. 2, April-June, 1987
- CCOP Newsletter Vol. 12 No. 3, July-September, 1987
- Proceedings of the Twenty-Second Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part II-Technical Reports), 11-21 November, 1985, Guangzhou, China, published in June, 1987
- Proceedings of the Twenty-Third Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I & II-Technical Reports), 3-13 November, 1986, Madang, Papua New Guinea, published in July, 1987
- CCOP / TP. 17: Seismic Stratigraphy I, Proceedings of the Joint ASCOPE/ CCOP Workshop I, June 1986, Jakarta, Indonesia. 1987
- CCOP / TP. 18: Progress in Quaternary Geology in East and Southeast Asia – Proceedings of Symposium, Bangkok, October 1986. 1987
- CCOP / TB Vol. 18, 19: Results of the Japan-Indonesia Cooperative Programme in the Sunda Forearc area. December 1987
- Technical Report of the Second Meeting of the Working Group on Resources Assessment (WGRA), 6-8 July 1987, Jakarta, Indonesia

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- CCOP Newsletter Vol. 12 No. 4, October-December, 1987
- CCOP Newsletter Vol. 13 No. 1, January-March, 1988
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- CCOP Newsletter Vol. 13 No. 3, July-September, 1988
- Proceedings of the Twenty-Fourth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), 28 October - 7 November, 1987, Bangkok, Thailand, published in March, 1988
- CCOP / TB Vol. 20: Late Palaeozoic and Mesozoic fossils of West Thailand and their environments.
- Report of the Fourth WGRA Meeting (WGRA Map Compilers' Workshop), 27-29 September 1988, Tsukuba, Japan
- Technical Report of the Third Meeting of the CCOP Working Group on Resources Assessment

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- CCOP Newsletter Vol. 14 No. 1, January-March, 1989
- CCOP Newsletter Vol. 14 No. 2, April-June, 1989
- Proceedings of the Twenty-Fourth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part II-Technical Reports), 28 October - 7 November, 1987, Bangkok, Thailand, published in April, 1989
- Proceedings of the Twenty-Fifth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I & II-Technical Reports), 5-13 December, 1988, Baguio City, The Philippines, published in March, 1989
- CCOP / TP. 19: The Pre-Tertiary Fossils of Sumatra and Their Environments by Henri Fontaine and Suudi Gafoer. March 1989

- Report of the Fifth Meeting of the Working Group on Resources Assessment (WGRA), 28-31 March 1989, Bangkok, Thailand
- Report of the Sixth Meeting of the Working Group on Resources Assessment (WGRA), 28 August – 2 September 1989, Bangkok, Thailand

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- Proceedings of the Twenty-Fifth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I & II-Technical Reports), 24 October - 3 November, 1989, Bangkok, Thailand, published in February, 1990
- CCOP / TP. 20: Ten Years of CCOP Research on the Pre-Tertiary of East Asia by Henri Fontaine. January 1990
- CCOP / TP. 21: Proceedings of the CCOP Heat Flow Workshop III. August 1990
- CCOP / TP. 23: CCOP/WGRA Play Modeling Exercise 1989-1990. December 1990
- CCOP / TB Vol. 21: Gold mineralization, heavy mineral, heat flow data, gravity, hydrocarbon assessment, quaternary stratigraphy in CCOP countries. December 1990
- Report of the Seventh Meeting of the Working Group on Resources Assessment (WGRA), 26-31 March, 1990, Bangkok, Thailand
- Report of the Eight Meeting of the Working Group on Resources Assessment (WGRA), 3-6 September 1990, Chiang Mai, Thailand
- BGS-ODA-CCOP Technical Report – Userguide to Version 1 of the 3-D sediment decompaction and geothermal modelling program: DECOMP3D

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- CCOP Newsletter Vol. 15 No. 4, October-December, 1990
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- CCOP Newsletter Vol. 16 No. 2, April-June, 1991
- CCOP Newsletter Vol. 16 No. 3, July-September, 1991
- Proceedings of the Twenty-Seventh Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I & II-Technical Reports), 6-12 November, 1990, Seoul, Republic of Korea, published in March, 1991
- CCOP / TP. 22: The INQUA International Symposium on Stratigraphy and Correlation of Quaternary Deposits of the Asian and Pacific Regions. January 1991
- CCOP/TP. Ref. 3: Classified Index 1983-1991. February 1991
- CCOP / TB Vol. 22: Carboniferous corals of Thailand. April 1991
- CCOP / TB Vol. 23: 6 Map Sheets: Total Sedimentary Isopach Maps, Offshore East Asia. September 1991
- Explanatory Text (TB Vol. 23). September 1991
- CCOP / TP. 24: 25th Anniversary Volume of CCOP Technical Publication Series. October 1991

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- BGS-ODA-CCOP Technical Report – Thermal History of Petroliferous Basins of the CCOP Region. 3. The North Sumatra Basin
- CCOP / TP. 26: Studies in East Asian Tectonics and Resources Crustal Transect VII Jawa-Kalimantan-Sarawak-South China Sea. December 1991
- Reports from the Ninth Meeting of the Working Group on Resources Assessment (WGRA), 29-31 May 1991, Kuala Lumpur, Malaysia; and WGRA Coordinating Committee Meeting, 9 June 1991, Bangkok, Thailand
- Reports from the Tenth Meeting of the Working Group on Resources Assessment (WGRA), 20-22 November 1991, Bangkok, Thailand; and WGRA Coordinating Committee Meeting, 22 November 1991, Bangkok, Thailand
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- CCOP Newsletter Vol. 17 No. 1, January-March, 1992
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- Proceedings of the Twenty-Eight Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), 29 October - 2 November, 1991, Bangkok, Thailand
- Report of the 19th CCOP Steering Committee Meeting, 23-25 June 1992, Bangkok, Thailand
- Minutes of First Meeting of Oil and Gas Resources Management (OGRM), 14-17 July 1992, Bangkok, Thailand (Part I) and Minutes of OGRM Coordinating Committee Meeting, 13 July 1992, Bangkok, Thailand
- Report of the CCOP-OGRM Workshop on Play Level Quality Assurance and Quality Control, 26-30 October 1992, Phuket, Thailand
- BGS-ODA-CCOP Technical Report – Thermal History of Petroliferous Basins of the CCOP Region. 4. The Subei-South Yellow Sea Basin

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- CCOP Newsletter Vol. 18 No. 3, July-September, 1993
- Proceedings of the Twenty-Ninth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), 3-7 November, 1992, Hanoi, Vietnam
- Report of the 20th CCOP Steering Committee Meeting, 9-10 November 1992, Hanoi, Vietnam
- Report of the 21st CCOP Steering Committee Meeting, 8-10 June 1993, Chiang Mai, Thailand
- Report of the 22nd CCOP Steering Committee Meeting, 15-16 November 1993, Bali, Indonesia

- The Minutes of the Second Meeting of Oil and Gas Resources Management (OGRM), 26-28 May 1993, Bali, Indonesia
- Report of the CCOP-OGRM Workshop on PRASS-1 and FASPUM Calibration, 17-20 November 1993, Permata, Bangi, Malaysia
- The Minutes of the First Working Group Meeting of the Project on Digital Compilation of Geoscientific Maps in East and Southeast Asia, 8-10 December 1993, Bangkok, Thailand

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- CCOP Newsletter Vol. 18 No. 4, October-December, 1993
- CCOP Newsletter Vol. 19 No. 1, January-March, 1994
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- CCOP Newsletter Vol. 19 No. 3, July-September, 1994
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- Proceedings of the Thirtieth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part I), 9-13 November, 1993, Bali, Indonesia, published in April, 1994
- Proceedings of the Thirtieth Session of the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (Part II-Technical Reports), 9-13 November, 1993, Bali, Indonesia, published in May, 1994
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- Report of the 24th CCOP Steering Committee Meeting, 24-25 October 1994, Kuala Lumpur, Malaysia
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- The Minutes of the Third Meeting of Oil and Gas Resources Management (OGRM), 15-18 August 1994, Beijing, China

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- CCOP Newsletter Vol. 20 No. 2, April-June, 1995
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- Proceedings of the Thirty-First Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part I & II-Technical Reports), 18-22 October, 1994, Kuala Lumpur, Malaysia
- Proceedings of the Thirty-Second Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part I), 27-30 September, 1995, Tsukuba, Japan
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- Report of the 26th CCOP Steering Committee Meeting, 2-3 October 2005, Tsukuba, Japan
- CCOP / TB Vol. 25: Studies on Terrestrial Heat Flow in East and Southeast Asia. March 1995

- Report on Implementation of the Programme on Oil and Gas Resources Management (OGRM)
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- Report of the CCOP/NORAD/STATOIL 2nd Training Course on Basic Geophysics, 22 April – 3 May 1996, Pattaya, Thailand
- Report on the REP-II First Working Group Meeting, 15-19 July 1996, Bangkok, Thailand
- Report of CAPES – CCOP/ASCOPE/PETRAD Environment and Safety Workshop, 10-12 January 1996, Pattaya, Thailand
- Report on the PETRAD-CCOP Seminar on Reservoir Management, 9-12 December 1996, Pattaya, Thailand
- Report of the Final Working Group Meeting of the Project on Digital Compilation of Geoscientific Maps in East and Southeast Asia (DCGM) Phase I, 15-19 July 1996, Bangkok, Thailand

- Report of the First Workshop of the CCOP DCGM Phase II Project, 20-24 May 1996, Bangkok, Thailand
- CD-ROM of the Magnetic Anomaly Map of East Asia (scale 1:4,000,000). 1996
- CD-ROM of the Digital dataset of the Composite Maps of Tertiary Sedimentary Isopach Map (Phase I)
- CD-ROM of the Composite Map of Tertiary Sediments Offshore East and Southeast Asia (Phase I, II)

1997

- CCOP 1996 Annual Report
- CCOP Newsletter Vol. 21 No. 4, October-December, 1996
- CCOP Newsletter Vol. 22 No. 1, January-March, 1997
- CCOP Newsletter Vol. 22 No. 2, April-June, 1997
- CCOP Newsletter Vol. 22 No. 3, July-September, 1997
- Report of the 29th CCOP Steering Committee Meeting, 27-29 March 1997, Hat Yai, Thailand
- Report of the 30th CCOP Steering Committee Meeting, 13-14 October 1997, Taejon, Republic of Korea
- CCOP / TB Vol. 26: Geological Map in East and Southeast Asia. December 1997
- Report of the Second Workshop of the CCOP DCGM Phase II Project, 20-24 January 1997, Rayong, Thailand
- Report of the Third Workshop of the CCOP DCGM Phase II Project, 28-30 July 1997, Bandung, Indonesia
- Final Report of the REP-I Programme (January – December 1996)
- Report on the REP-II Workshop on Data Management, 12-17 January 1997, Bangkok, Thailand
- Report on the REP-II Workshop on Resource Classification and Inventory System, 21-30 April 1997, Phnom Penh, Cambodia
- Report on the REP-II Workshop on Basic Petroleum Economics, 11-22 October 1997, Cheju, Korea
- CCOP COASTPLAN Publication 1: Some Marine Geoscience Contributions to Integrated Coastal Zone Management
- Report on the PETRAD-CCOP-DMR Seminar on Petroleum Policy and Management, 6-15 January 1997, Bangkok, Thailand
- Report of PETRAD-CCOP-MIME Seminar on Petroleum Policy and Management (Part I – Government), 3-7 March 1997, Phnom Penh, Cambodia
- Report of PETRAD-CCOP-MIME Seminar on Petroleum Policy and Management (Part II – National Oil Company), 29 May – 4 June 1997
- Report on PETRAD-CCOP-PetroVietnam Seminar on Petroleum Policy and Management (Part I – Government), 11-15 August 1997, Hanoi, Vietnam
- Report on the PETRAD-CCOP-CNOOC Advanced Reservoir Management Seminar, 2-8 December 1997, Kunming, China
- Map : Heat Flow Map of East and Southeast Asia (2 folded map sheets, scale 1:5,000,000) May 1997
- CD-ROM of the Digital Geologic Map of East and Southeast Asia (scale 1:2,000,000). 1997

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- CCOP Newsletter Vol. 22 No. 4, October-December, 1997
- CCOP Newsletter Vol. 23 No. 1, January-March, 1998
- CCOP Newsletter Vol. 23 No. 2, April-June, 1998
- CCOP Newsletter Vol. 23 No. 3, July-September, 1998
- Proceedings of the Thirty-Third Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part II-Technical Reports), 30 October-2 November, 1996, Shanghai, China, published in May, 1998
- Proceedings of the Thirty-Fourth Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part I), 7-11 October, 1997, Daejeon, Korea, published in February, 1998
- Proceedings of the Thirty-Fourth Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part II-Technical Reports), 7-11 October, 1997, Daejeon, Korea, published in August, 1998
- Report of the 31st CCOP Steering Committee Meeting, 28-31 March 1998, Cha-am, Thailand
- Report of the 32nd CCOP Steering Committee Meeting, 26-27 October 1998, Manila, The Philippines
- The CCOP Petroleum Resource Classification System
- Report on REP-II Workshop on Risk Assessment and Prospect Evaluation, 7-13 May 1998, Chengdu, China
- Report on REP-II Bilateral Seminar on Practical Training in Full Cycle Analysis of Prospects, 24-28 August 1998, Hanoi, Vietnam
- Report on REP-II Workshop on Decision Making, 11-19 October, 1998, Manila, Philippines
- Review of the CCOP Resource Evaluation and Planning (REP-II) Project
- Report of the Coordinators' Meeting of the DCGM Phase II Project, 12-14 January 1998, Bangkok, Thailand
- Report of the First Workshop of the DCGM Phase III Project, 8-11 June 1998, Bangkok, Thailand
- Report of the Final Workshop of the CCOP DCGM Phase II Project, 25-27 August 1998, Phuket, Thailand
- Summary Report of the DMR-CCOP-MMAJ Joint Seminar on the Application of Satellite Image Analysis in Mineral Exploration, 17-19 February 1998, Bangkok, Thailand
- Report of the DMR-CCOP-MMAJ Joint Seminar on the Application of Satellite Image Analysis in Mineral Exploration, 17-19 February 1998, Bangkok, Thailand
- CCOP COASTPLAN Report No. 2: Geoscience Data for Integrated Coastal Zone Management
- CCOP COASTPLAN Report No. 4: Geohazard Management in Coastal Areas. COASTPLAN Workshop, Osaka, Japan, 17-21 February 1997. Bangkok, Thailand. 1998
- CCOP COASTPLAN Report No. 5: Integrated Coastal Zone Management for Decision Makers. COASTPLAN Workshop, Hat-Yai, Thailand, 25-26 March 1997. Bangkok, Thailand. 1998
- Report on PETRAD-CCOP-PETROVIETNAM Seminar on Petroleum Policy and Management (Part II – The National Oil Company), 16-19 February 1998, Hanoi, Vietnam

- Report on PETRAD-CCOP Seminar on Supply and Contracting Processes, 2-3 April 1998, Bangkok, Thailand
- Report on CCOP-ASCOPE-PETRAD Seminar on Petroleum Policy and Management, 8-19 & 15-19 June 1998, Manila, The Philippines
- Report on ASCOPE-CCOP-PETRAD Workshosp on Environmental Accounting, 22 June 1998, Bangkok, Thailand
- Report on ASCOPE-CCOP-PETRAD-PETROVIETNAM Seminar on Advanced Reservoir Management, 10-14 August 1998, Hanoi, Vietnam
- Report on ASCOPE-CCOP-PETRAD-PETROVIETNAM Workshop on Supply and Contracting Processes, 17-18 August 1998, Hanoi, Vietnam
- Report on ASCOPE-CCOP-PETRAD Workshop on Safety Implementation and Management Systems Audit, 26 October 1998, Bangkok, Thailand
- Report on CCOP-PETRAD-CNOOC Seminar on Management of Water Drive Sandstone Reservoirs and Heavy Oil Production, 30 November – 5 December 1998, Guilin, China

1999

- CCOP 1998 Annual Report
- CCOP Newsletter Vol. 23 No. 4, October-December, 1998
- CCOP Newsletter Vol. 24 No. 1, January- March, 1999
- CCOP Newsletter Vol. 24 No. 2, April-June, 1999
- CCOP Newsletter Vol. 24 No. 3, July-September, 1999
- Proceedings of the Thirty-Fifth Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part I & II-Technical Reports), 20-23 October, 1998, Subic Bay, the Philippines, published in February, 1999
- Report of the 33rd CCOP Steering Committee Meeting, 22-25 March 1999, Bangkok, Thailand
- Report of the 34th CCOP Steering Committee Meeting, 1-2 November 1999, Hanoi, Vietnam
- Report of the Second Workshop of DCGM Phase III Project, 14-18 June 1999, Bangkok, Thailand
- Report on the CCOP-DMR Field Survey Training on Seismic Survey in Rivers and Channels in the Chao Phraya Delta, 17 February – 6 March 1999
- Proceedings of NEDO-AIST-CCOP Asian Geothermal Energy '98 – Symposium on 'Current and Future Geothermal Energy Developments in Asia', 22 October 1998, Subic, Philippines
- Proceedings of UNESCO-IUGS-CCOP-ESCAP-GEOSEA-CIFEG 1st Regional Technical SANGIS Workshop (Vol. 2 - Countries' Presentations), 5-9 July 1999, Bangkok, Thailand
- Resource Evaluation and Planning (REP-II) Project Annual Report 1998
- CCOP COASTPLAN Case Study Report No. 1: Yellow River Delta, China – Planning in Four Dimensions. Beijing/Bangkok, 1999.
- CCOP COASTPLAN Case Study Report No. 2: Coastal Environmental Geology of the Jakarta Reclamation Project and Adjacent Areas
- CCOP COASTPLAN Case Study Report No. 3: Geology and Natural Hazards of Lae City and Surroundings, Papua New Guinea. Port Moresby/Bangkok, 1999
- Report on ASCOPE-CCOP-PETRAD-PETROVIETNAM Seminar on Petroleum Economics, 25-29 January 1999, Hanoi, Vietnam
- Report on CCOP-PETRAD-CNPC Seminar on Decision Making Processes and Economic Evaluation in Petroleum Exploration, 10-14 May 1999, Rushan, Shandong, China

- Report on ASCOPE-PTT-CCOP-PETRAD Seminar on Safety Risk Assessment and Methods for the Oil and Gas Industry (Part I); and Integrated Quality Safety Health and Environment Management System (Part II), 22-25 June 1999, Thailand
- Report on PETRAD-CCOP-CNOOC Seminar on Development Technology for Offshore Oil and Gas Fields, 2-6 August 1999, Xian, China
- Report on PETRONAS-CCOP-PETRAD Workshop on IOR/EOR Projects, 9-11 August 1999, Genting Highlands, Malaysia
- Report on ASCOPE-CCOP-PETRAD-PETROVIETNAM Seminar on Management and Operations of Gas Pipeline Systems, 6-10 December 1999, Vung Tau, Vietnam

2000

- CCOP 1999 Annual Report
- CCOP Newsletter Vol. 24 No. 4, October-December, 1999
- CCOP Newsletter Vol. 25 No. 1, January-March, 2000
- CCOP Newsletter Vol. 25 No. 2 & 3, April-September, 2000
- Proceedings of the Thirty-Sixth Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part I & II), 26-29 October, 1999, Hanoi, Vietnam
- Proceedings of the Thirty-Seventh Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part I), 24-27 October, 2000, Bangkok, Thailand
- Report of the 35th CCOP Steering Committee Meeting, 27-29 March 2000, Bangkok, Thailand
- Report of the 36th CCOP Steering Committee Meeting, Bangkok, Thailand, 30-31 October 2000, Bangkok, Thailand
- The CCOP Guidelines for Risk Assessment of Petroleum Prospects
- CCOP / TB Vol. 28: The International Symposium on Environmental Groundwater Issues. June 2000
- CCOP / TB Vol. 29: Proceedings of Technical Meeting on Remote Sensing for Disaster Mitigation and Geohazard Mapping. July 2000
- CCOP / TP. 27: Technical Meeting on Exodynamic Geohazards in East and Southeast Asia. October 2000. (CD-ROM only)
- Proceedings of the NEDO-AIST-CCOP-DGMV Asia Geothermal Symposium – ‘Difficulties in Geothermal Development and Their Solutions’ and ‘Geothermal Direct Use’, 28 October 1999, Hanoi, Vietnam
- REP-II Project Progress Report (1 January – 31 December 1999)
- Report of the ASCOPE-PETRONAS-CCOP-PETRAD Seminar on Small Field Development, 7-11 August, 2000, Port Dickson, Malaysia
- Report on PETRAD-CCOP-PGS-MLR Seminar on E & P Data Management, 29-30 November 2000, Qingdao, China
- Report on the CCOP-PETRAD Seminar on E & P Data Management, 4-5 December 2000, Yogyakarta, Indonesia
- Map : East Asia Geographic Map Sheet Series at a scale of 1:2,500,000, 2000 (Sheet 1: Japan, Korea & Northeast China; Sheet 2: Southeast China; Sheet 3: Southeast Asia; Sheet 4: Philippines; Sheet 5: Malaysia & Indonesia (West); Sheet 6: Indonesia (East); Sheet 7: Papua New Guinea & Solomon Islands; and Sheet 8: Western Pacific Islands)

- Map: Magnetic Anomaly Map of East Asia
- CD-ROM of the Geotectonic Map of East and Southeast Asia
(Sheet 4: the Philippines, Vietnam & South China; Sheet 5: Malaysia & Western Indonesia; and Sheet 6: Eastern Indonesia) * with its explanatory text : TB Vol. 27, March 2000
- CD-ROM of Technical Meeting on Exodynamic Geohazards in East and Southeast Asia (TP Vol. 27). October 2000

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- CCOP 2000 Annual Report
- CCOP Newsletter Vol. 25 No. 4, October-December, 2000
- CCOP Newsletter Vol. 26 No.1/2, April-June 2001
- Proceedings of the Thirty-Seventh Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part II-Technical Papers), 24-27October, 2000, Bangkok, Thailand, published in 2001
- Proceedings of the Thirty-Seventh Session of the Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (Part II), 24-27October, 2000, Bangkok, Thailand
- Proceedings of the Thirty-Eighth Session of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (Part I), 23-26 October, 2001, Phnom Penh, Cambodia
- Report of the 37th CCOP Steering Committee Meeting, 21-22 March 2001, Khon Kaen, Thailand
- Report of the 38th CCOP Steering Committee Meeting, 29-30 October 2001, Phnom Penh, Cambodia
- Proceedings of the 1st Compilers' Meeting of DCGM Phase IV: Groundwater and Geothermal Databases, 24-26 April 2001, Bangkok, Thailand
- CCOP / TB Vol. 30: Geoinformation and GIS Application for the Urban Areas of East and Southeast Asia. June 2001
- Report on ASCOPE-CCOP-PETRAD Seminar on Marginal Field Development, 29 January – 1 February 2001, Bandung, Indonesia
- Report on ASCOPE-CCOP-PETRAD Seminar on Marginal Field Development, 26-30 March, Hanoi, Vietnam
- Report on DOE-NORAD-PETRAD-CCOP-ASCOPE Seminar on Management and Operations of Gas Pipeline Systems, 14-17 August, 2001, Manila, The Philippines
- Report on CCOP-PETRAD-MLR-CNOOC-INTSOK Seminar on Enhancing Marginal Field Developments by Implementing Technology, 10-14 September 2001, Shekou, China
- Report on CCOP-PETRAD-MLR-CNOOC-INTSOK Seminar on Enhancing Marginal Field Developments by Implementing Technology, 17-19 September 2001, Daqing, China
- CD-ROM of CCOP-COASTPLAN: A Geoscientific Contribution to Integrated Coastal Zone Management (ICZM). 2001
- CD-ROM of the Urban Geoscientific Data of East and Southeast Asia – GIS data sets of 11 Cities (Nagoya, Guangzhou-Foshan, Dongying, Ulsan, Kuala Lumpur, Hanoi, Phnom Penh, Port Moresby, Cebu, Phuket, Bandung). DCGM III Working Group, 2001 (CD-ROMs Disc. 1-2). 2001 (1st Edition)

2002

- CCOP 2001 Annual Report
- CCOP Newsletter Vol. 26 No. 3/4, July-December, 2001
- CCOP Newsletter Vol. 27 No. 1/2, January-June, 2002
- CCOP Strategic Plan
- Proceedings of the Thirty-Eighth Session of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (Part II-Special Thematic Session), 23-26 October, 2001, Phnom Penh, Cambodia
- Proceedings of the Thirty-Ninth Session of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (Part I), 22-25 October, 2002, Yogyakarta, Indonesia
- Report of the 39th CCOP Steering Committee Meeting, 28-29 March 2002, Chiang Mai, Thailand
- Report of the 40th CCOP Steering Committee Meeting, 28-29 October 2002, Yogyakarta, Indonesia
- CCOP / TB Vol. 31: Geotectonic Map of East and Southeast Asia: Sheets 1,2,3 and 8 - Second Product of the CCOP-CPCEMR Geotectonic Map Project. July 2002. (with CD-ROM)
- Report on the Workshop on Interactive Mapping Techniques for the Construction of Geological Reservoir Models, 14-25 January 2002, Hanoi, Vietnam (with CD-ROM)
- Transactions, International Symposium on Geoinformation via Internet and International Workshop for CCOP Metadata, 18-22 February 2002, Tsukuba, Japan. (CD-Rom)
- CD-ROM of Proceedings of the First Workshop of DCGM Phase IV Project: Groundwater Database, Beijing, China, November 2001.
- CD-ROM of Proceedings of the Second Workshop of DCGM Phase IV Project: Geothermal Database, Makati, The Philippines. 5-7 February 2002.
- Report on the 1st Petroleum Policy and Management (PPM) Project (Kick-Off Seminar) (CD-Rom)
- Report on ASCOPE-CCOP-PETRAD-PETROVIETNAM Seminar on IOR/EOR, 11-13 March 2002, Vung Tau, Vietnam
- Report on CCOP-PETRAD-MLR-CNOOC-CGS-INTSOK Seminar on Deep Water Exploration and Field Development (Floating Production and Subsea Systems), 8-10 April 2002, Guangzhou, China
- Report on PETRONAS-CCOP-PETRAD-INTSOK Seminar on Deep Water Exploration and Field Development (Floating Production and Subsea Systems), 13-15 May 2002, Seremban, Malaysia
- Report on CCOP-PETRAD-MLR-CNOOC-CGS-INTSOK Seminar on Advanced Technology for Offshore Gas Fields Development, 9-11 October 2002, Chengdu, China
- Report on CCOP-PETRAD-ASCOPE-MIME-CNPA Seminar on Natural Gas Exploration, Field Development, Production, Transportation and Utilisation, 3-6 December 2002, Phnom Penh, Cambodia
- CD-ROM of the Geotectonic Map of East and Southeast Asia: Sheets 1, 2, 3 and 8 (Sheet 1: Shikhote Alin, Korean Peninsula, Northeast and North China, Japanese Islands and surrounding areas; Sheet 2: Central and Southern continental China, Taiwan and Ryukyu arcs and surrounding areas; Sheet 3: South China, Indochina peninsula, Malaysia, Myanmar and surroundings; and Sheet 8: Western Pacific Ocean) with its explanatory text : TB Vol. 31, July 2002

- CD-ROM of the Urban Geoscientific Data of East and Southeast Asia – GIS data sets of 11 Cities (Nagoya, Guangzhou-Foshan, Dongying, Ulsan, Kuala Lumpur, Hanoi, Phnom Penh, Port Moresby, Cebu, Phuket, Bandung). DCGM III Working Group, 2001 (CD-ROMs Disc. 1-2) 2001. (2nd Edition)
- CD-ROM of the Magnetic Anomaly Map of East Asia (scale 1:4,000,000) 2002. (2nd Edition)

2003

- CCOP 2002 Annual Report
- CCOP Newsletter Vol. 27 No. 3/4, July-December, 2002
- CCOP Newsletter Vol. 28 No. 1/2, January-June, 2003
- Report of the 41st Steering Committee Meeting, 27-28 March 2003, Koh Samui, Thailand
- Report of the 42nd Steering Committee Meeting, 13-14 October 2003, Kuala Lumpur, Malaysia
- Proceedings of the Thirty-Ninth Session of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (Part II - Thematic Session), 22-25 October, 2002, Yogyakarta, Indonesia
- Final Report of CCOP Resource Evaluation and Planning Phase II (REP-II) Project
- CD-ROM of Proceedings of the DCGM-IV Training Course on Groundwater Data Management, Bangkok, Thailand, 19-22 November 2002. 2003
- CD-ROM of Proceedings of the Fourth Workshop of DCGM Phase IV Project: Geothermal Database, Bangkok, Thailand, 5-7 March 2003. 2003
- CD-ROM of the CCOP Exploration Promotion Forum, 27-30 August 2002, Stavanger, Norway
- Proceedings of the 1st Seminar of CCOP-USGS Global Mineral Assessment Project, 10-13 February 2003, Bangkok Thailand (CD-ROM)
- Report on CCOP-DMF-PETRAD Workshop on National Competence Requirements in Drilling and Well Technology for Department of Mineral Fuels, Thailand, 6 February 2003, Bangkok, Thailand
- Report on ASCOPE-PETRONAS-CCOP-PETRAD Seminar on Life Cycle Management of Gas/Oil Fields, 5-6 March 2003, Sarawak, Malaysia (D-ROM)
- Report on CCOP-PETRAD-MLR-CGS-CNOOC Seminar on Risk Management, 2-4 April 2003, Shanghai, China
- Report on ASCOPE-PETRONAS-CCOP-PETRAD Seminar on Gas Conservation Efforts Towards “Zero Flaring” Target, 25-27 June 2003, Langkawi, Malaysia (CD-ROM).

2004

- CCOP 2003 Annual Report
- CCOP Newsletter Vol. 28 No. 3/4, July-December, 2003
- CCOP Newsletter Vol. 29 No. 1/2, January-June, 2004
- Proceedings of the Forty Session of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (Part I & II-Special Thematic Session), 7-10 October, 2003, Kuala Lumpur, Malaysia, published in March, 2004
- Report of the 43rd CCOP Steering Committee Meeting, 17-19 March 2004, Phuket, Thailand
- Summary Report of the BGR-DMR-CCOP Training Course on Goal Oriented Project Planning, 31 May – 4 June 2004, Bangkok, Thailand

- CD-ROM of Proceedings of the Fifth Workshop of DCGM Phase IV Project: Current Status and Future for Geoinformation Network, Kuala Lumpur, Malaysia, 7-8 October 2003. 2004
- Report of the Petroleum Policy and Management Project's Mid-term Review in 2004
- Report of the CCOP-PETRAD-MLR-CGS-CNOOC Seminar on Reservoir Management and Technology, 12-15 January 2004, Kunming, China
- Report of the ASCOPE-CCOP-PETRAD-PETROVIETNAM Workshop on Gas Infrastructure Governance Process, 16-17 February 2004, Do Son, Vietnam (CD-ROM).
- Report of the CCOP-PETRAD-MLR-CGS-CNOOC Seminar on Operations and Maintenance Management, 8-12 March 2004, Tianjin, China (CD-ROM).
- Report of the CCOP-PETRAD-MLR-CGS-CNOOC Seminar on HSE Management, 26-29 July 2004, China (CD-ROM).
- Report of the CCOP-PETRAD-MLR-CGS-SINOPEC Seminar on Petroleum Geochemical Exploration, 9-13 August 2004, China (CD-ROM).
- Report of the CCOP-PETRAD-PTT Top Management Seminar on Enterprise Risk Management, 23 November 2004, Bangkok, Thailand (CD-ROM).
- Report of the CCOP-PETRAD-PTT Workshop on Enterprise Risk, 23-24 November 2004, Bangkok, Thailand (CD-ROM).

2005

- CCOP 2004 Annual Report
- CCOP Newsletter Vol. 29 No. 3/4, July-December, 2004
- CCOP Newsletter Vol. 30 No. 1/2, January-June, 2005
- Proceedings of the Forty-First Session of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (Part I & II-Special Thematic Session), 15-18 November, 2004, Tsukuba, Japan, published in August, 2005
- Report of the 44th CCOP Steering Committee Meeting, 19-20 November 2004, Tsukuba, Japan
- Report of the 45th CCOP Steering Committee Meeting, 31 March – 2 April 2005, Phuket, Thailand
- Report of the 46th CCOP Steering Committee Meeting, 19-20 September 2005, Beijing, China
- CD-ROM of Proceedings of the Japan-Thailand Joint Seminar on Strategy for Sustainable Development of Coastal Area, 27 January 2005, Bangkok, Thailand, 2005
- Report of the CCOP-PETRAD-CNOOC-MLR-CGS Seminar on Deepwater Technology, 12-15 January 2005, Hainan, China
- Report of the CCOP-PETRAD-CNOOC-MLR-CGS Seminar on IOR-EOR Technologies, 11-14 April 2005, Tianjin, China
- Report of the CCOP-PETRAD-PETRONAS Seminar on EOR Application and High CO₂ Gas Field Development, 1-2 August 2005, Kuantan, Malaysia
- Report of the CCOP-PETRAD-BPH MIGAS-BPMIGAS Seminar on Petroleum Policy, Regulations, Administration and Tools in Upstream and Downstream Petroleum Management, 5-9 December 2005, Jakarta, Indonesia

2006

- CCOP 2005 Annual Report
- CCOP Newsletter Vol. 30 No. 3/4 (July-December 2005)
- Report of the 47th CCOP Steering Committee Meeting, 29-31 March 2006, Krabi, Thailand
- Asian Multilingual Thesaurus of Geoscience (English – Khmer – Chinese – Indonesian – Japanese – Korean – Lao – Malaysian – Thai – Vietnamese – French)
- Final Report - Tsunami Risk Reduction Measures with Focus on Landuse and Rehabilitation Project
- Summary Report – Tsunami Risk Reduction Measures with Focus on Landuse and Rehabilitation Project (in English & Thai languages)
- Report of the CCOP-PETRAD-PETRONAS Seminar on Advance Seismic Analysis, 6-8 March 2006, Putrajaya, Malaysia (Hard copy and CD-ROM)
- Report of the CCOP-PETRAD-INTSOK-CNOOC Seminar on Drilling, Downhole Technology and Well Service, 24-26 April 2006, Tianjin, China (Hard copy and CD-ROM)
- Report of the CCOP-PETRAD-INTSOK-PETRONAS Seminar on Deepwater Technology, 22-25 May 2006, Kota Kinabalu, Malaysia. (Hard copy and CD-ROM)

Note:

- Reports and documents of the Petroleum Policy and Management and the Institutional Capacity Building Projects are published in the CCOP website from 2003-2006 and 2006 respectively.

APPENDIX 3: ATTENDANCE LIST, FIRST SESSION OF CCOP, QUEZON CITY, 1966.

CHINA

- Representative: Mr. Chao-yi Meng, Chief Geologist, Chinese Petroleum Corporation, Taipei, Taiwan
- Alternates: Mr. Suyen Chain, Acting Director, Taiwan Petroleum Exploration Office, Chinese Petroleum Corporation, Taipei, Taiwan
Mr. Yuh-Sheng Pan, Deputy Chief, Geological Department, Taiwan Petroleum Exploration Office, Chinese Petroleum Corporation, Taipei, Taiwan

JAPAN

- Representative: Mr. Masao Kanazawa, Minister, Embassy of Japan, Manila
- Alternates: Mr. Masato Yamano, First Secretary, Embassy of Japan, Manila
Dr. Yoshihiko Shimazaki, Chief, First Laboratory, Ore Research Section, Mineral Deposits Department, Geological Survey of Japan
Mr. Kohji Tsujita, Secretary, Economics Section, United Nations Bureau, Ministry of Foreign Affairs, Tokyo.
- Advisers: Dr. Satoru Sasaki, Managing Director, Teikoku Oil Co. Ltd., Tokyo
Dr. Tsutomu Hatakeyama, Chief, First Section, Geophysical Survey Department, Japan Petroleum Exploration Co. Ltd., Tokyo
Mr. Y. Shimitzu, Mining Engineer, Embassy of Japan, Manila

KOREA (Republic of)

- Representative: Mr. Park In Kyu, Director, Geological Survey of Korea
- Alternates: Mr. Chong Su Kim, Chief of Research Section, Office of Geological Survey, Seoul
Mr. Han Jung Suk, Chief of Mines Section, Bureau of Mining, Ministry of Commerce and Industry, Seoul
Mr. Hyon Chin Kim, Third Secretary, Korean Embassy in the Philippines

PHILIPPINES

- Representative: Mr. Fernando S. Busuego, Jr., Director, Bureau of Mines
- Alternates: Mr. Elpidio C. Vera, Assistant Director, Bureau of Mines
Dr. Ernesto P. Sonido, Project Director, Institute of Applied Geology, University of the Philippines
Mr. Norberto S. Fernandez, Mining Project Co-ordinator, Bureau of Mines
Mr. Francisco A. Comsti, Chief, Geological Survey Division, Bureau of Mines
Mr. Felipe U. Francisco, Chief, Petroleum Division, Bureau of Mines
- Experts: Mr. Carlos F. Teodoro, Supervising Petroleum Geologist II, Bureau of Mines
Mr. Victor C. de los Santos, Mines Regional Officer, Bureau of Mines
Mr. Oscar A. Crispin, Assistant Chief Geologist, Bureau of Mines
Mr. Froilan C. Gervasio, Supervising Geologist II, Bureau of Mines
Mr. Patricio Dinglasan, Chief, Deep-Sea Fishing Demonstration Division, Philippine Fisheries Commission
Mr. Pablo Esquieres, Chief, Exploration Section, Marine Fisheries Biology Division, Philippine Fisheries Commission
Lt. Jesus F. Dorion, Philippine Navy
Lt. Jg. E. I. Tolentino, Philippine Navy

Advisers: Atty. Jomer A. Bajar, Department of Agriculture and Natural Resources
Mr. Ricardo R. Policarpio, National Economic Council
Mr. Anastacio V. Torrijos, Board of Technical Surveys and Maps
Mr. Cesar B. Ibañez, President, Geological Society of the Philippines
Mr. Jose C. Quema, Philippine Society of Mining, Metallurgical and
Geological Engineers, and Base Metals Association of the Philippines
Dr. K. W. B. Iten, Philippine Gold Producers Association, Inc.
Mr. William R. Merrill, Catawba International
Mr. Fortunato P. Mamaclay, Philippine Petroleum Association

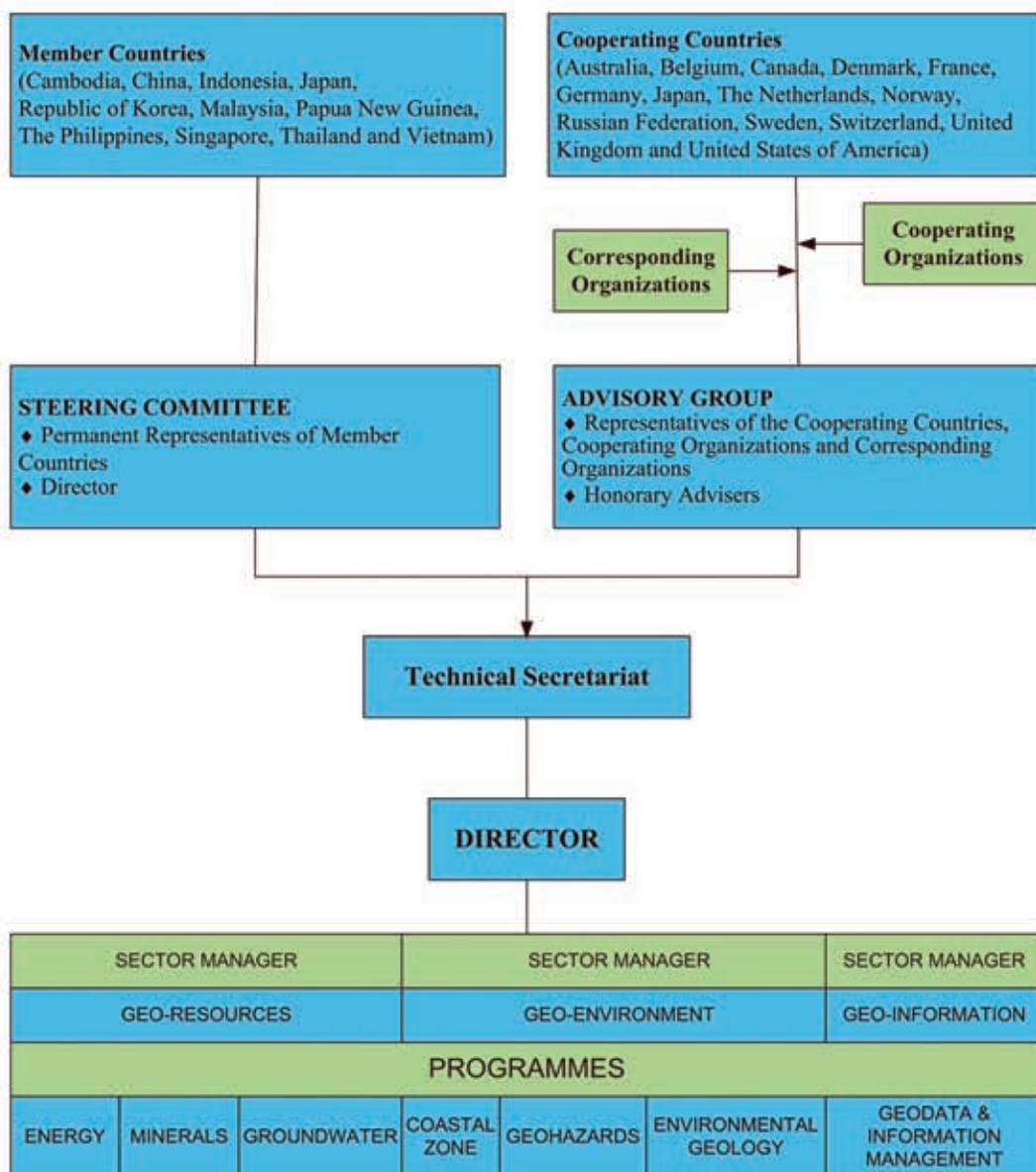
ECAFE SECRETARIAT

Mr. A.G. Menon	Chief, Industries Division
Mr. C. Y. Li	Chief, Mineral Resources Development Section; Deputy Chief, Industries Division
Mr. Leo W. Stach	Regional Adviser on Offshore Prospecting (Geology)
Dr. R. H. Gees	Regional Adviser on Offshore Prospecting (Geophysics)

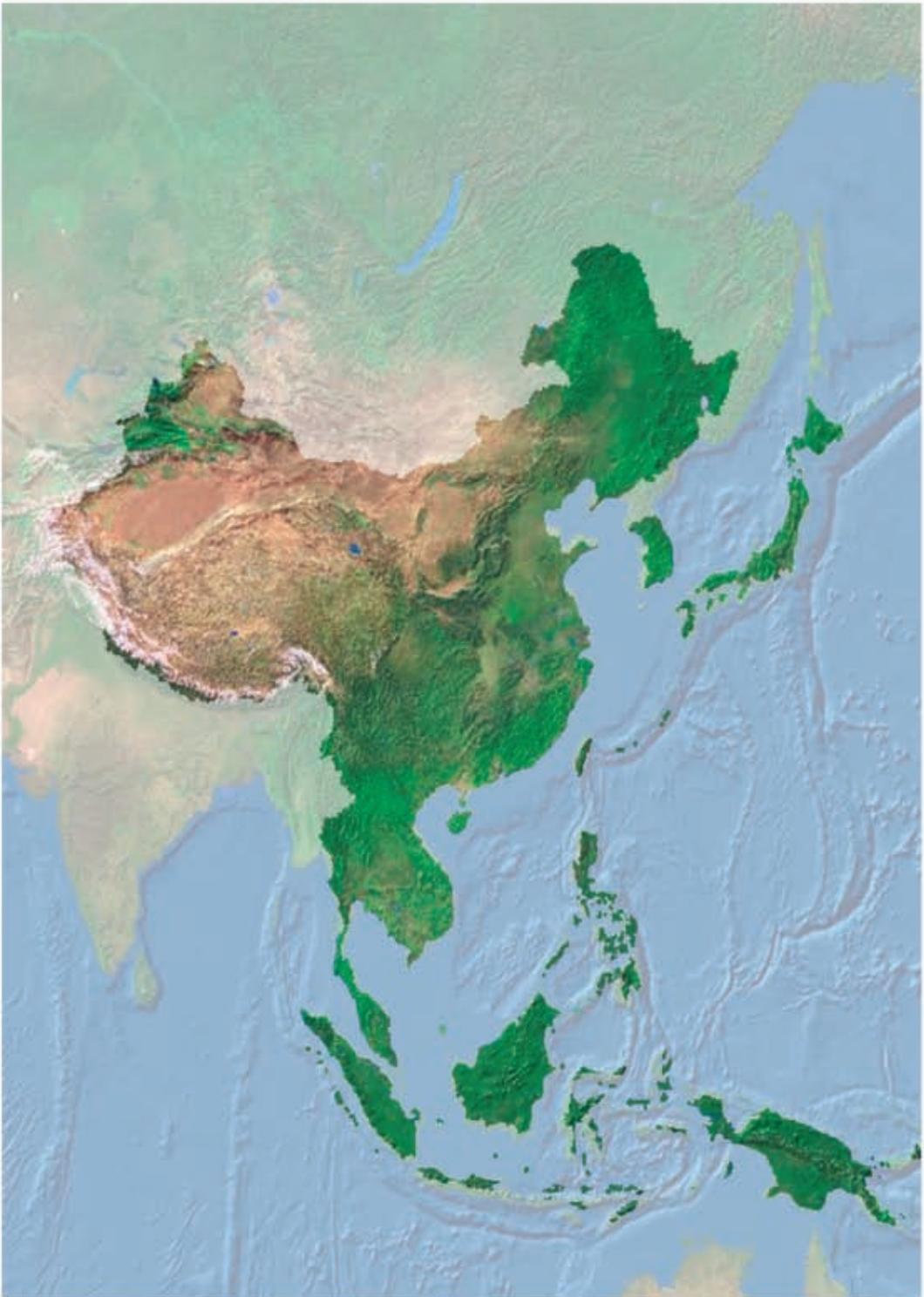
UNITED NATIONS DEVELOPMENT PROGRAMME

Mr. Warren H. Cornwell	Resident Representative of the United Nations Development Programme, Manila
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CCOP Organization Chart



Map of the CCOP Region



My CCOP Experience

During the mid-1960s, I was the principal scientist on a US Geological Survey team that compiled a Tectonic Map of China and Mongolia; this introduced me to a career focus on Asian geoscience. In 1974, I joined the USGS Office of International Geology to participate in the ever evolving Circum-Pacific Map Project, particularly to work with the Northwest Quadrant Panel in conjunction with the Committee for Coordination of Prospecting for Mineral Resources in Asian Offshore Areas (CCOP) which in 1966 fortuitously had brought together the geoscientists of the nations of East and Southeast Asia. The bond with CCOP was very important to CPMP during the next several decades, and contributed greatly to the success of both ventures. The final product was the Pacific Basin Tectonic Map.

In 1979, I became the OIG Chief of Asian and Pacific Geology and thereby a continuing Technical Adviser to CCOP. Their annual sessions became my principal focus of travels to Asia because I could look forward to conferring with representatives of the major regional geoscientific organisations in an informative and convivial framework. USGS normally does not have its own funds to support CCOP, but rather seeks to develop productive bilateral projects to be underwritten by USAID. Fortunately international programs, such as the International Decade of Oceanographic Exploration, brought numerous cruises of US and other national research ships to Asian waters, and the plethora of derivative geoscience data led to the compilation of valuable transect studies, isopach maps, and basin analyses. Also US and other experts have conducted a variety of training sessions that have helped establish databases and technical reports with mostly common formats and language such that diverse Member Countries have advanced uniformly in the full range of geoscience activities. All read from the same page, and the pages kept turning.

In 1991, I became a Scientist Emeritus of the USGS, and thankfully an Honorary Adviser to CCOP. This has continued my travels to the annual sessions; I missed only the Madang PNG meeting in the last 27 advisory years. In collaboration with other USGS colleagues, we started a CCOP Working Group on Geological Correlations to digitally compile a Geological Lexicon of East and Southeast Asia, a regional Biozonation Chart, and a geochronologic database financed by an Industrial Associates Program; this final product should be completed in the near future. I was fortunate to be able to establish the CCOP/GSA East Asia Geosciences and Environmental Research (EAGER) Project which assists member-country PhD candidates, and may serve as a basis for enhanced future cooperation between CCOP and the Geological Society of America.

CCOP has had a remarkable history progressing from an UN ECAFE unit fully supported by UNDP to an intergovernmental organisation administratively funded by all its Member Countries and assisted by a dozen or so Cooperating Countries in its technical programmes. It has gone from a narrow focus on offshore prospecting to a broad range of geoscience programmes both on the sea and land. It has dropped the UN-mandated translations of presentations in French and ponderous reading of technical papers and now has streamlined sophisticated multi-media proceedings. It has moved towards transparent and effective management. It is introducing professional programme guidance, round-table dialogues, and thematic sessions; all-in-all, it has a fascinating new look.

Memories and photos from CCOP experiences will last for a lifetime: friendly faces after long flights, camaraderie of renewing old friendships, dressy formal openings and group photos, informative presentations and interesting informal dialogues, tasty snacks and delicious dinners, excellent entertainment at cultural shows and particularly that craziness on the farewell evenings, finished off by varied and stimulating field excursions – all plus invaluable cooperative regional geoscientific progress. What's not to remember and treasure! May CCOP continue to prosper!

Maurice J. (Ric) Terman
CCOP Honorary Adviser

