

**COORDINATING COMMITTEE FOR  
GEOSCIENCE PROGRAMMES  
IN EAST AND SOUTH EAST ASIA  
(CCOP)**



**GEOSCIENCE**  
for a  
**SUSTAINABLE FUTURE**

**A STRATEGIC PLAN**

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

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

#### MEMBER COUNTRIES

Cambodia, China, Indonesia, Japan, Korea, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand and Vietnam

#### COOPERATING COUNTRIES

Australia, Belgium, Canada, Denmark, France, Germany, Japan, Netherlands, Norway, Russian Federation, Sweden, Switzerland, United Kingdom and United States of America

#### COOPERATING ORGANIZATIONS

ASCOPE, CIFEG, CPC, ESCAP, EUROGEOSURVEYS, GETECH, IOC, IOC/WESTPAC, IOMAC, IUGS, PETRAD, UNEP, UNESCO, WORLD BANK



# STRATEGIC FOCUS



**CCOP** has reviewed and redefined its programmes for the future with the strategic focus on :

- Enhanced coordination of the geoscience programmes of the national geoscientific institutions of the CCOP Member Countries in order to promote cooperation and to maximise the benefits of programmes of regional significance.
- Continued human resource development and institutional capacity building in accord with national priorities in order to achieve greater regional self-sufficiency in providing the geoscience inputs to sustainable economic development, sound environmental management and improvement of the welfare of the people of the region.
- A greater flow of technical information between the Member Countries, Cooperating Countries and Cooperating Organizations of CCOP in order to share such information for their mutual benefit, to learn from each others experience and to identify further opportunities for cooperation in capacity building.

The new classification of CCOP's technical activities into three Sectors and seven Programmes will allow the adoption of clear targets for the achievement of CCOP's strategic objectives.



# COORDINATING COMMITTEE

## FOR GEOSCIENCE PROGRAMMES IN EAST AND SOUTHEAST ASIA

### INTRODUCTION : AN EVOLVING ORGANIZATION.....

**CCOP** was founded under the auspices of the United Nations (ESCAP) in 1966 with the name “The Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas”. Initially its remit was to “promote and coordinate the planning and implementation of joint prospecting programmes and research in Asian offshore and geologically related areas of countries who are members of CCOP”. The first members were China, Japan, Republic of Korea and The Philippines. Funding for its activities came mainly from the United Nation’s Development Programme (UNDP).

In the ensuing years, membership of the organisation expanded rapidly and currently includes eleven participating states following the addition of Cambodia, Indonesia, Malaysia, Papua New Guinea, Singapore, Thailand and Vietnam. At the same time its remit gradually broadened to encompass activities related to prospecting onshore as well as offshore, geoscientific aspects of the development of the coastal zones of its participating states and the dissemination of geoscience information helpful for geo-hazard mitigation and the protection of life and property.

In 1987, CCOP became an independent intergovernmental organization, though it continued to receive considerable institutional support and project funding from the UNDP until 1991. As an intergovernmental organization, CCOP is strongly oriented towards regional cooperation through its programmes and it benefits from the considerable financial and technical support of its Co-operating Countries and Organizations as well as the Member Countries.



## .....AND A CHANGING AGENDA



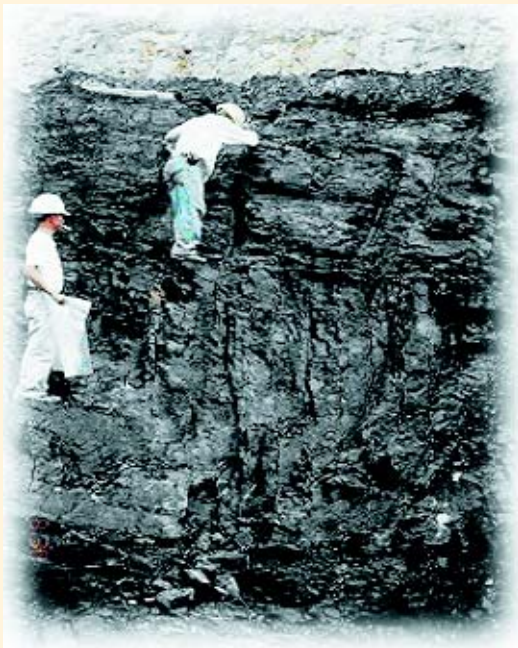
When CCOP was first established, prospecting offshore in the region, both for hydrocarbons and for mineral resources, was in its infancy. However, much of the regional geological data compilation, institutional capacity building and technical training since carried out by CCOP for the Member Countries has contributed to what is now a well developed and economically highly significant industry. Consequently, CCOP, with the assistance of its Cooperating Countries and Organizations, continued to adopt an evolving programme of activities that addressed new areas of concern as they arose. These included, in the offshore prospecting programme for example, sustainable resource development, safety issues and environmental impacts and their regulation.

In recent years, a significant challenge to the governments of the CCOP region has been posed by the rapid urbanisation and development of their, often fragile, coastal zones. Here again CCOP has displayed its flexibility by adjusting its programme to include research, training and information exchange on geoscientific aspects of coastal zone management. This, and many other topics crucial to the sustainability of economic and social development in the region, has benefited from the coordinated approach to training, research and the supply of data and information that CCOP strives to provide. For this reason the Member Countries of CCOP, in close collaboration with its Co-operating Countries and Organizations, have considered it timely to develop a new strategy embracing a broader range of activities aimed at equipping the countries of the region to better meet the geoscientific challenges of the coming decade. This strategy is explained in the following pages.



## BUILDING ON A STRONG FOUNDATION

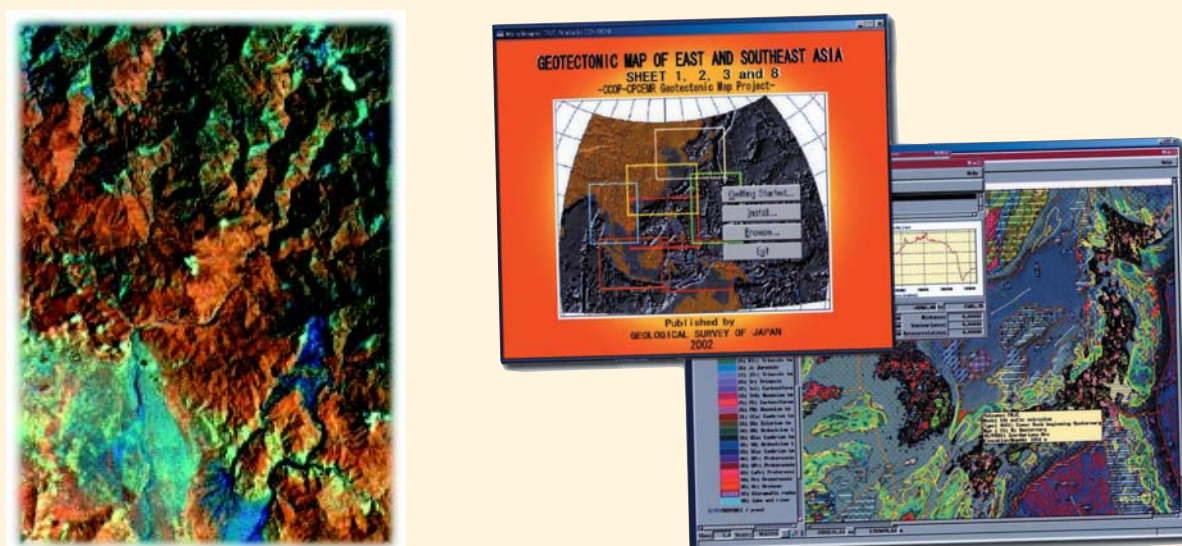
**For** much of its thirty-five years of existence CCOP has operated in three sectors; the Energy, the Minerals and the Coastal Zone and Geo-hazards Sectors. All its programmes have been assigned to one of these three sectors and though it is now thought timely to extend and reclassify its activities into several new sectors, the achievements of the past form a very strong foundation upon which to build for the future.



Throughout its existence CCOP's top priority has been human resource development and technology transfer for the benefit of its Member Countries. This has been achieved with the invaluable participation of its Cooperating Countries and Organizations. Equally, the sharing of experience and dissemination of knowledge amongst the Member Countries, many at different stages of development, has been, and remains, an important characteristic of CCOP's programme. Activities carried out during the last decade (see Table at page 22), for example illustrate just how enthusiastically, and successfully, this policy has been pursued, resulting in a total of more than six thousand participants from the region taking part in the portfolio of projects and training schemes.



Many of the projects completed by CCOP have enjoyed major support from Cooperating Countries. In recent years for example, Norway and Denmark have been particularly active in the Energy Sector, The Netherlands in Coastal Zone Management and Japan in the digital compilation of a wide variety of geoscientific maps relevant to all the sectors. Others have provided advice and assistance in numerous ways, particularly in supporting short-term “one-off” activities such as seminars and workshops, according to their special technical strengths and national aid-funding policies. CCOP has also received strong support from other international organizations such as ESCAP, PETRAD, UNESCO, ASCOPE and the World Bank. Care has been taken to maintain close contacts with all regional organizations with complementary interests (see list of Cooperating Organizations) and in this context collaboration, rather than competition, ensures that the best use is made of valuable resources.



From the experience gained in organising both large and small projects, participating in numerous training activities and facilitating regional and bilateral collaboration between both Member Countries and Cooperating Countries and Organizations, the Technical Secretariat of CCOP is ready and able to implement the new strategy of CCOP in an endeavour to bring ever-increasing benefits to the countries and people of East and Southeast Asia.

## COOPERATION, COLLABORATION AND COORDINATION : THE ELEMENTS FOR CONTINUED SUCCESS

The CCOP region, comprising the combined territories of its eleven Member Countries, is highly significant in global terms. It occupies almost one tenth of the world's total land area and is home to over one quarter of the world's people including almost five hundred million poor people. Furthermore, important demographic changes continue apace within a region that today contains more than ninety cities with populations exceeding one million, nine cities of which each have more than ten million populations. As all demand an improvement in the quality of their lives, the pressure on the region's natural resources and environment is obvious.



Geoscience has a vital role to play in the daily lives of people to an extent that most do not fully realise. Not only is geology a controlling factor on the distribution of the mineral resources and much of the energy resources upon which their life-style depends, but it is important in the development and protection of the freshwater supplies upon which life itself depends. In addition, much of the CCOP region is prone to natural disasters such as earthquakes, volcanic eruptions, landslides and coastal erosion, all of which are a consequence of the geology of the region. The impact of such disasters can be accentuated by a lack of understanding of their causes and likely distribution leading to the inability of governments to adequately advise and protect their vulnerable populations.





It is not only natural resources and natural disasters that have a geological dimension. Burgeoning populations and their requirements for even the basics of daily life place great strains on the natural environment. Poor planning of the infrastructure necessary to support the population, undertaken without due regard for the geological facts, can lead to man-induced hazards such as pollution of water supplies, contamination of land and instability of our immediate physical environment. The rapid growth of urbanisation, particularly in coastal areas, has greatly magnified these problems in the CCOP region. Good geoscience research and the dissemination of information and knowledge within the region can do much to prevent both resource and environmental problems and can help to provide solutions when such problems arise.

All the governments of the CCOP region have a common interest in addressing the above problems and have established national institutions and agencies for this purpose. Many of the problems however are not restricted by national boundaries and a regional approach is required to fully understand them and find solutions. Furthermore shared experience, information and knowledge and the encouragement to learn from each other can greatly assist the individual governments in their collective goals. Herein lies the value of an intergovernmental organisation such as CCOP with its fundamental aims of facilitating cooperation, collaboration and co-ordination in geoscience programmes in the region.



With the knowledge that geoscience is relevant to a very broad spectrum of developmental problems, and recognising the diversity of the CCOP region in terms of the differing status of economic development in its individual Member Countries, CCOP has extended and reclassified its proposed activities as shown in the following pages.

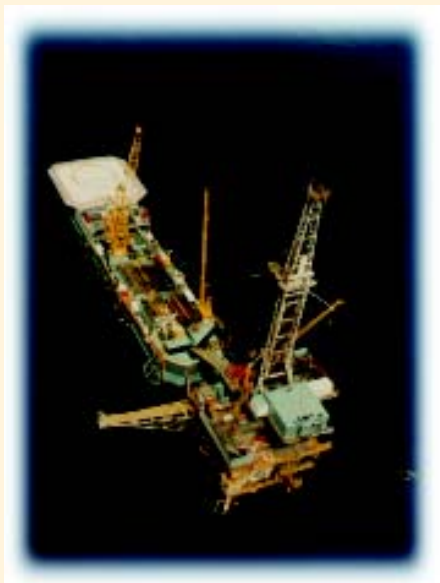


# THE GEO-RESOURCES SECTOR

## OUR PARTNERSHIP WITH THE EARTH

All of us depend, to varying extents, on the earth's supply of natural resources to support, maintain and improve our lives. Many of these resources, vital to our national life-support systems, are geology dependent. Properly executed geoscientific programmes of research and development are essential for their discovery and responsible usage. Mineral and most energy and fresh water resources all fall within this category.

■ *The overall objective for this sector is to strengthen the Member Countries technical capabilities in establishing the developmental potential of their mineral, energy and groundwater resources and promoting their socially responsible and environmentally sustainable exploration, conservation and development.*

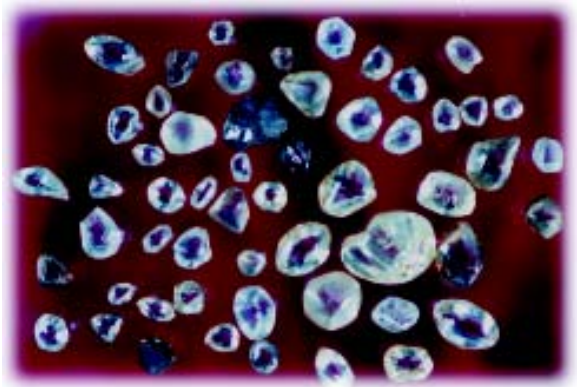


# The Minerals Programme

As the world's population has grown so has the demand for natural resources. For minerals, this applies both to minerals as a source of metals and to minerals which are a source of other, non-metallic, raw materials for industry and for use as construction materials. With increasing economic development the growth in the consumption of the latter is particularly dramatic.

These trends pose a series of inter-related problems and challenges for the CCOP region which comprises countries which are, variously, major producers and major consumers of a wide range of mineral resources and whose industries, dependent on these resources, are major sources of revenue and employment. These challenges include the need to effectively search for and develop new supplies without, as a consequence, causing irretrievable damage to the natural environment in contravention of the concept of "sustainable development".

The scope of this programme covers metallic and non-metallic minerals including industrial minerals and construction minerals.



## Strategy

### GENERAL

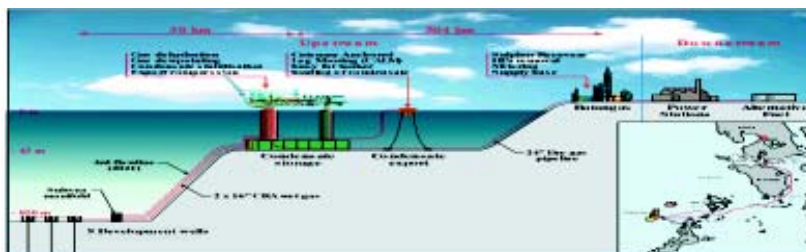
- Promote regional data compilation and dissemination.
- Promote the exchange of experience and information, and the transfer of technology, and provision of training for the strengthening of Member Countries' capabilities in determining the geological prospectivity of their national territory.
- Encourage the adoption of common standards within the region for resource classification and quantitative estimation.

### SPECIFIC

- Provide information on methodologies and studies of the evaluation of environmental impacts of mineral resources development.
- Promote the exchange of information on institutional models, legislative and administrative frameworks for the responsible development of mineral resources.



# The Energy Programme



The production of the so-called fossil fuels - oil, natural gas and coal or lignite - is a very significant revenue earner in a number of the CCOP member states and the region as a whole is both an important producer and consumer of such products. It was stimulation of offshore exploration for such resources when the world's offshore hydrocarbons exploration industry was in its infancy that was the prime objective in the



foundation of CCOP. Now, after almost four decades of impressive growth in the industry in the region, questions of prudent resource exploitation, conservation, environmental impacts of both extraction and energy production from fossil fuels, health and safety are major concerns for the region, many of which benefit from a regional approach. CCOP, with the assistance of its Cooperating Countries and Organizations, including the ASEAN Centre for Energy and the ASEAN Council on Petroleum, is engaged in all of these areas. In addition important projects continue in relation to geothermal energy resources, which are a significant geological source of energy in several CCOP Member Countries.

The scope of the programme includes oil and gas, coal, peat, coalbed methane, gas hydrates and sources of geothermal energy.

## Strategy

### GENERAL

- Promote and assist cooperation in regional data acquisition.
- Promote the exchange of experience and information, and the transfer of technology, and provision of training for the strengthening of Member Countries' capabilities related to the exploration and exploitation of hydrocarbons.
- Promote increased cooperation and further collaboration with the ASEAN Council on Petroleum in training in health and safety in the petroleum industry.

### SPECIFIC

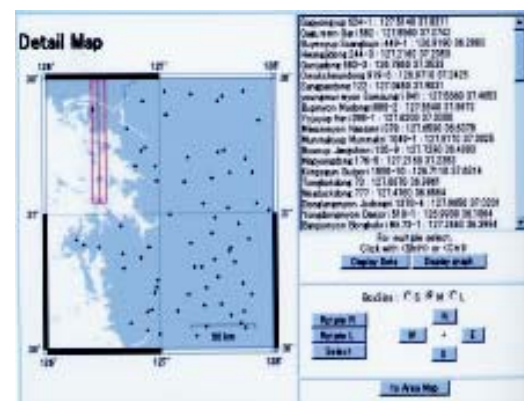
- Promote and assist in compilation and dissemination of regional data on resource potential.
- Promote the use of common standards for resource and reserve estimation, including resource assessment methods and technologies.
- Promote and facilitate cooperation in the development and application of regional geological modelling (including basin modelling) techniques.
- Promote improvements in Member Countries capabilities in the assessment of environmental impacts of energy resource development and in environmental accounting.
- Promote inter-regional cooperation in pollution control and mitigation of adverse transnational environmental impacts.
- Support the development of environmental guidelines for all stages of geological energy resource development.
- Assist and encourage the exchange of information on the development of new energy resources.
- Assist and encourage the exchange of information on institutional models and legislative and administrative frameworks for achievement of the above.



# The Groundwater Programme

**Water** is an essential ingredient of life. Everyone requires an adequate supply of clean potable water to sustain their existence. With increasing populations, demands on freshwater supplies also increase and freshwater, suitable for human consumption, is a rarer commodity than many of us realise. Freshwater comprises only about 2.5% of the world's total water endowment and of that small percentage by far the greatest proportion of immediately accessible supply is found as groundwater, below the earth's surface, rather than flowing in rivers or stored within surface lakes. Furthermore, this is an extremely sensitive resource that can easily be wasted or polluted by human activity. Geology plays an important role in locating, managing and protecting the quality of this commodity, essential to the lives of countless millions within the CCOP region.

The scope of the programme extends to all aspects of the hydrology and hydrogeochemistry of groundwater, its supply and protection.



## Strategy

### GENERAL

- Promote and facilitate the exchange of information and the transfer of technology for groundwater exploration and development.
- Promote interregional cooperation in the establishment of improved groundwater management regimes.

### SPECIFIC

- Promote and assist compilation of regional hydrogeological and hydrogeochemical databases and maps and the adoption of uniform data standards.
- Promote studies to develop predictive models for impacts of climate change on groundwater/hydrogeological regimes.
- Promote studies of the impact of urbanization on groundwater regimes, particularly in near-coast areas with possibilities of sea-water intrusion into aquifers.
- Assist in the development of Member Countries' capabilities in predictive modelling of hazard, risk and vulnerability to groundwater contamination (both natural and anthropogenic).
- Promote the exchange of information on legislative and administrative frameworks for groundwater development, usage and protection.





# THE GEO-ENVIRONMENT SECTOR

## THE NATURAL ENVIRONMENT: OUR COMMON HERITAGE

**The** earth provides us with both the natural resources essential to our development and the basic environment within which all of us will spend our lives. In using the earth's resources in supplying and constructing the requirements of modern civilization we must ensure that we do not compromise the welfare of our population by imposing unacceptable stress and damage on the world that we occupy. In this endeavour, geoscientific knowledge and its application plays a vital role and concern for the environment is an attitude that we must bring to all sectors of CCOP's strategic objectives.

In the Geo-Environment Sector are grouped programmes that specifically address aspects of our natural environment and its interaction with mankind.

■ *The overall objective for this sector is to strengthen Member Countries' capabilities in implementing geoscience projects that contribute to sustainable land-use development, coastal zone management and the mitigation of hazards caused by natural geological processes and by human activity, thereby contributing to the safety and welfare of civil society.*



# The Coastal Zone Programme

**The** countries of the CCOP region together possess over 160,000 kilometres of coastline, areas in which geological processes are frequently at their most dynamic and in which sensitive natural environments and habitats are most delicately balanced. At the same time the areas of fastest growth of human activity are to be found in the coastal zone which is now home to more than half the total population of the CCOP region. Without careful planning and responsible resource management, development of the coastal zone can result in severe economic and social consequences. Such planning and management must take account of all the relevant geological factors and CCOP's Coastal Zone Management Programme is aimed at providing the training and information required to adopt and strengthen such an approach.

The scope of this programme extends to investigating, understanding and providing information on all geological processes of relevance to sustainable development and land-use in coastal areas (e.g. coastal erosion, sedimentation, near shore hydrodynamics, sea level rise).

## Strategy

### GENERAL

- Assist in the compilation of thematic maps relevant to coastline evolution of the CCOP region.
- Promote the acquisition by Member Country institutions of basic data relevant to geological processes in their Coastal Zones.



### SPECIFIC

- Promote programmes to monitor critical processes and facilitate data exchange between Member Countries.
- Promote to developers and planners the use of geoscience information in making decisions concerning land use in coastal zones.
- Promote the transfer of information and technologies relevant to geoscience aspects of coastal zone management between Member Countries and Cooperating Countries and Organizations.



# The Geo-hazards Programme

**Our** geological environment, as well as providing many benefits to mankind, also can pose serious threats. Earthquakes, volcanic eruptions, landslides, mudflows and tidal waves (tsunamis) are just some of the most dramatic, and better known, of the natural hazards which we refer to as “geo-hazards”. On a worldwide scale, geo-hazards cause damage costing billions of dollars every year and, more tragically, can involve great loss of life, injury and attendant human misery. The CCOP region, as a tectonically active part of the earth’s crust, is prone to frequent geo-hazards and governments of the region have a duty to protect their citizens from both the human and financial disaster that these natural phenomena can bring. Regional knowledge of the nature and distribution of such hazards, regional co-ordination and training in the development of mitigation strategies and improved methodologies for assessing risk are all key objectives of CCOP activity in this area.

The scope of the programme includes all matters related to the monitoring, prediction and mitigation of naturally induced geological hazards.

## Strategy

### GENERAL

- Assist and facilitate compilation of regional databases of historic geo-hazard occurrences.
- Assist and facilitate compilation of regional susceptibility maps for various geo-hazards.



### SPECIFIC

- Promote introduction of common data standards in monitoring and recording geo-hazards.
- Assist in the establishment of a databank and network for prediction of geo-hazards.
- Promote and facilitate exchange of information on techniques for hazard and risk assessment.
- Promote and facilitate exchange of information (legislative and administrative frameworks) regulation and mitigation strategies for geo-hazard impact reduction.





# The Environmental Geology Programme

**Our** increasing populations coupled with the pace of urbanisation require an increasingly complex infrastructure to meet the demands of daily living. This results in ever greater, and often conflicting pressures, on land usage. The safe disposal of ever-increasing amounts of industrial and domestic waste together with the provision of a safe and stable infrastructure for both habitation and working environments are matters of great concern to us all. If land, a fundamental national asset, is not to be squandered, but is to be developed in the best interests of all, and with due regard to the health and social welfare of the population who inhabit it, then responsible land-use planning and management decisions are essential. Geological and geotechnical factors must be understood and carefully considered in reaching such planning decisions. To ignore them can be both financially disastrous and socially unacceptable.

We must also be aware of how the interaction of man with his geological environment can introduce factors that may restrict productive land-use in the future. For example, land subsidence can be caused by the subsurface extraction of geological resources such as groundwater, minerals or hydrocarbons, and land may be contaminated by industrial activity, posing a health threat to future generations.

The CCOP's Environmental Geology Programme aims, through training and technology transfer, to ensure that the region has the capacity to develop its land-use and the building of its physical infrastructure, both efficiently and safely. This will require a holistic approach involving interactions with programmes across all sectors of CCOP's activities.

The scope of the Programme includes the identification, mitigation and prevention of hazards and adverse environmental impacts caused by geological processes and their interaction with human activity.



## Strategy

### GENERAL

- Facilitate the exchange of information between Member and Cooperating Countries concerning projects involving geoscientific aspects of the environmental impact of interactions between natural geological processes and human activity.
- Promote geological, geochemical, geotechnical and hydrogeological mapping and data collection for application to all aspects of land-use planning, development and environmental management in the region.



### SPECIFIC

- Promote and facilitate involvement in projects concerned with hazards to human and animal health caused by the pollution and degradation of land and groundwater.
- Promote the exchange of information and the conduct of co-operative studies on the geological aspects of the safe disposal of toxic wastes.
- Facilitate the exchange of information concerning environmental impacts of, and rehabilitation strategies for, land contaminated by industrial, mining and other societal activities.
- Promote the exchange of information and cooperative research studies of the geotechnical classification and engineering evaluation of soil and lithologic units.
- Promote the exchange of information and cooperative studies of ground subsidence caused by extraction of subsurface resources such as groundwater, minerals and hydrocarbons.
- Promote and encourage an appreciation by decision-makers, planners and developers of the value of geoscience information in environmental protection and management.

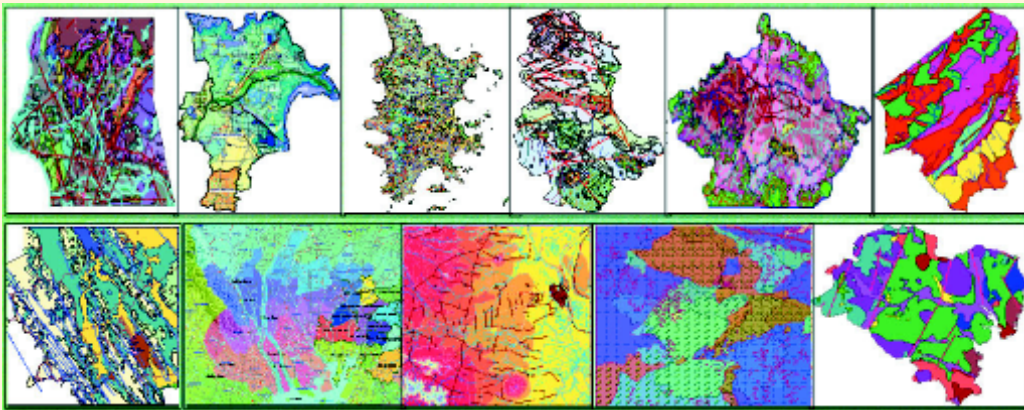


# T HE GEO-INFORMATION SECTOR

## FROM INFORMATION TO APPLICATION : BRIDGING THE KNOWLEDGE DIVIDE

The systematic collection of geological data, leading to the establishment of national geoscience databases and information systems, is undertaken by all the Member Countries of the CCOP. The knowledge that flows from these activities can make a vital contribution to the objectives for sustainable development within the region which include

- Social progress that meets the needs of everyone
- Effective protection of the environment
- Prudent use of natural resources
- The health and safety of the people



The effective use of the accumulated data, information and knowledge, however, will only be achieved in assisting these objectives if it is archived, processed and communicated to the potential users in ways that are appropriate to their requirements. This applies both nationally and regionally. The so-called 'information revolution', involving the rapid growth of electronic methods in data storage, processing and communication, is greatly facilitating this process. By further encouraging this trend through training, regional cooperation and the sharing of experience, CCOP seeks to stimulate, encourage and support sustainability by placing geoscience information and knowledge as a factor in all regulatory, planning and development decisions which have a potential impact on the environment and societal welfare within the region.

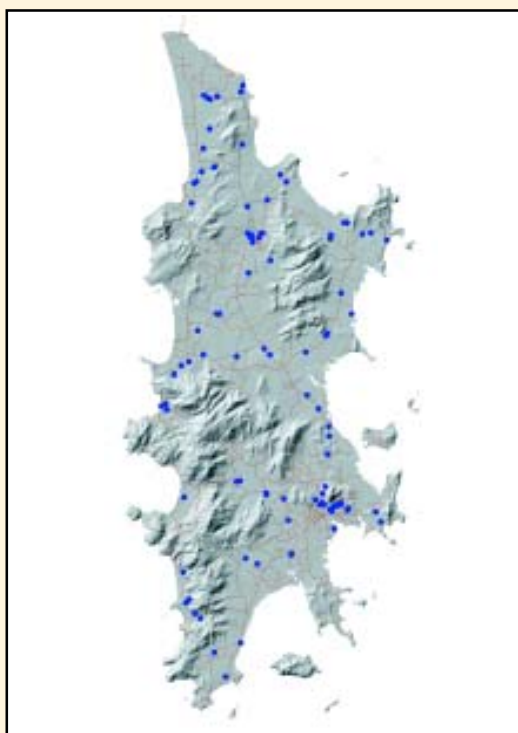


# The Geo-data and Information Management Programme

The overall objective is to strengthen Member Countries' capabilities in developing appropriate methodologies for improved management of geoscience information, its efficient dissemination to users in government, industry and civil society and in further promoting the use of geoscience information in both traditional and new areas of economic and social activity.

## Strategy

- CCOP will promote the use of geoscience information in regional economic and social development planning and assist Member Countries to nationally promote such information.
- CCOP will promote and coordinate the exchange of information and technologies between Member Countries and Cooperating Countries and Organizations concerning new methods for providing geoscience data and information to present and potential future users.
- CCOP will promote new and innovative applications of geoscience information.



- CCOP will provide a common regional entry point for access to the data and information holdings and services of appropriate Member Country institutions through the establishment of an electronic meta data index.
- CCOP will facilitate the compilation and distribution of information for the promotion of resource exploration activities and opportunities in the Member Countries.
- CCOP will promote and facilitate projects aimed at strengthening Member Countries' capabilities in applying cost-benefit analysis to their national geoscience programmes and projects.
- CCOP will promote training aimed at strengthening Member Countries' capabilities in project design, management and evaluation.

# TURNING WORDS TO ACTION :

## IMPLEMENTING THE STRATEGY

**The** scope of the programmes outlined in the foregoing pages is extremely broad. To maintain credibility in seeking to be instrumental in facilitating such an ambitious agenda within the region, CCOP must not only adhere to several well established principles but must also set clear priorities for action. The major principles that will continue to guide CCOP's actions can be summarised as :

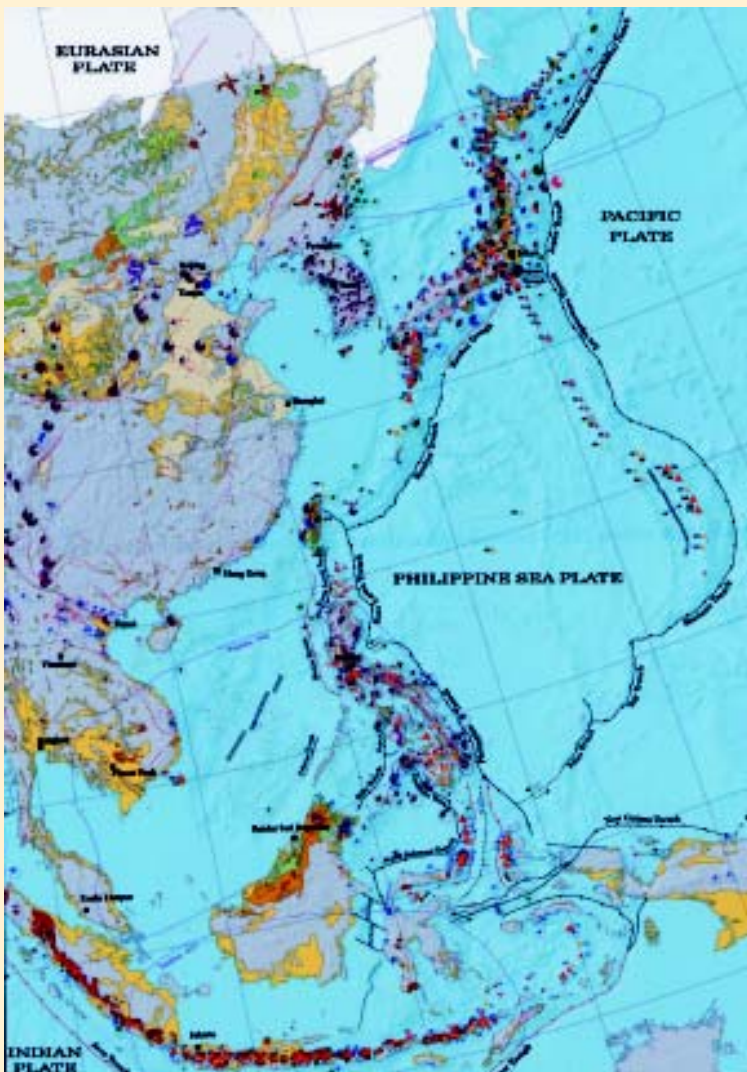
**Cooperation and Coordination** : being an intergovernmental organization, CCOP will facilitate cooperation between national geoscience organizations (governmental and quasi-governmental) in the Member Countries by providing a common pool of information concerning their various individual programmes and projects within the Geoscience Sectors outlined above. Such information will allow the sharing of experience and facilitate the coordination of common activities which are of regional significance.



**Human Resource Development** : one of the major aims of CCOP is to assist the Member Countries to improve their ability to undertake all necessary actions within the various geoscience sectors. To this end, CCOP will seek to promote training courses, workshops, seminars and training attachments within the region. While external assistance, particularly from Cooperating Countries and Organizations, will be sought in this endeavour, special emphasis must be placed on establishing greater training cooperation between Member Countries and the secondment of experts between Member Country organizations.



**Information Dissemination** : an increased flow of information concerning geoscience experience and activities between all parts of the CCOP Organization and from relevant external bodies will greatly increase the likelihood of, and opportunities for, cooperation, coordination and capacity building within the region. Through its Geoscience Research Information Dissemination Network (Grid-Net) coupled with upgrading of the CCOP website, the Technical Secretariat will place a high priority on continuously improving its information service. CCOP aims to become a common regional entry point for all seeking detailed geoscience information and services from individual Member Country organizations.



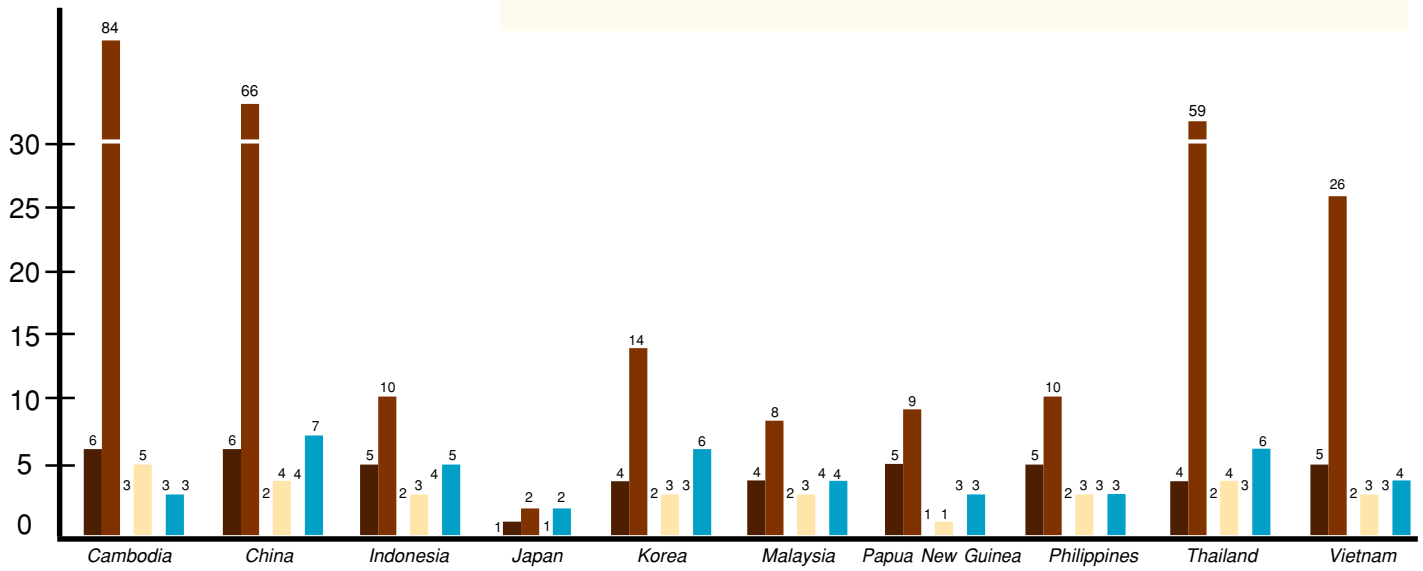
CCOP has only a small permanent Technical Secretariat and limited internal financial resources with which to initiate positive action in pursuance of the above general objectives and to address the many important topics identified in the new strategic plan. Much can be achieved by careful planning and responsible stewardship of CCOP's current internal resources, but much more will be possible with the help of greater financial and technical inputs from the Member Countries and from a variety of external sources. Therefore, in order to increase the effectiveness of the organization, CCOP will establish priorities within the ambitious agenda outlined above and will set targets, milestones and performance measures, within a rolling three year Action Plan to be reviewed regularly by the Steering Committee and at the CCOP Annual Sessions. In this way, we intend to work tirelessly to turn our vision into reality.



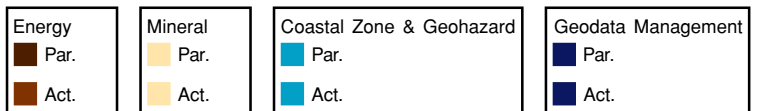
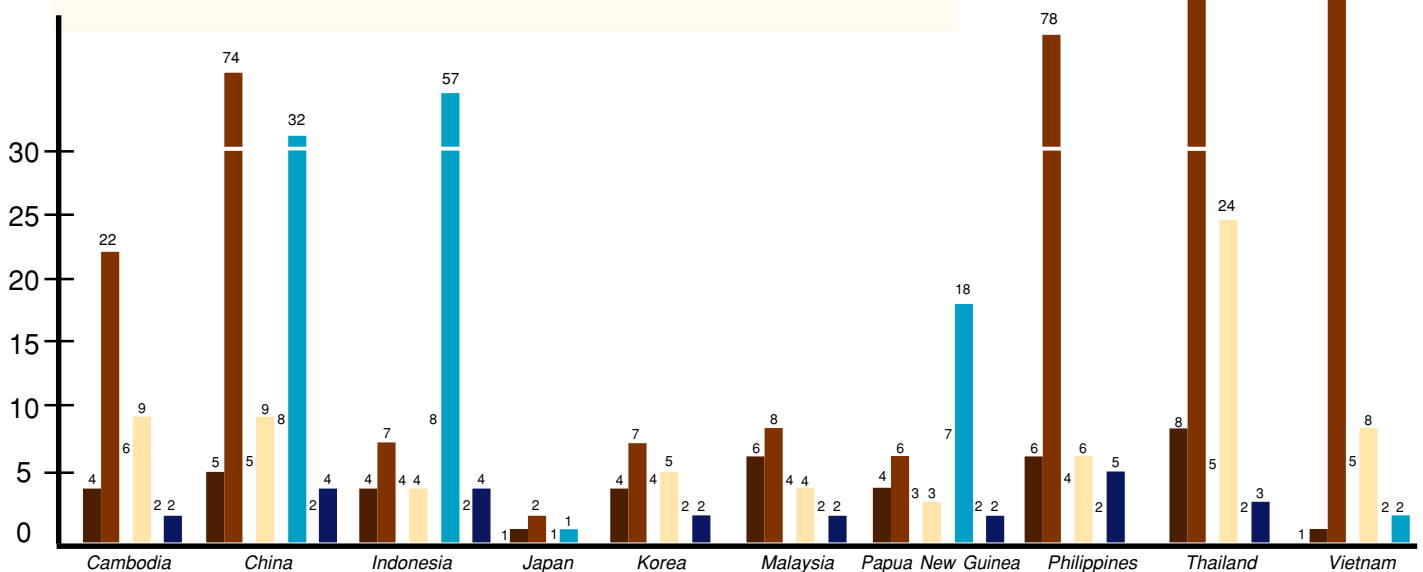
# CCOP TECHNICAL ACTIVITIES

## PARTICIPATION OF CCOP MEMBER COUNTRIES (1997-2001)

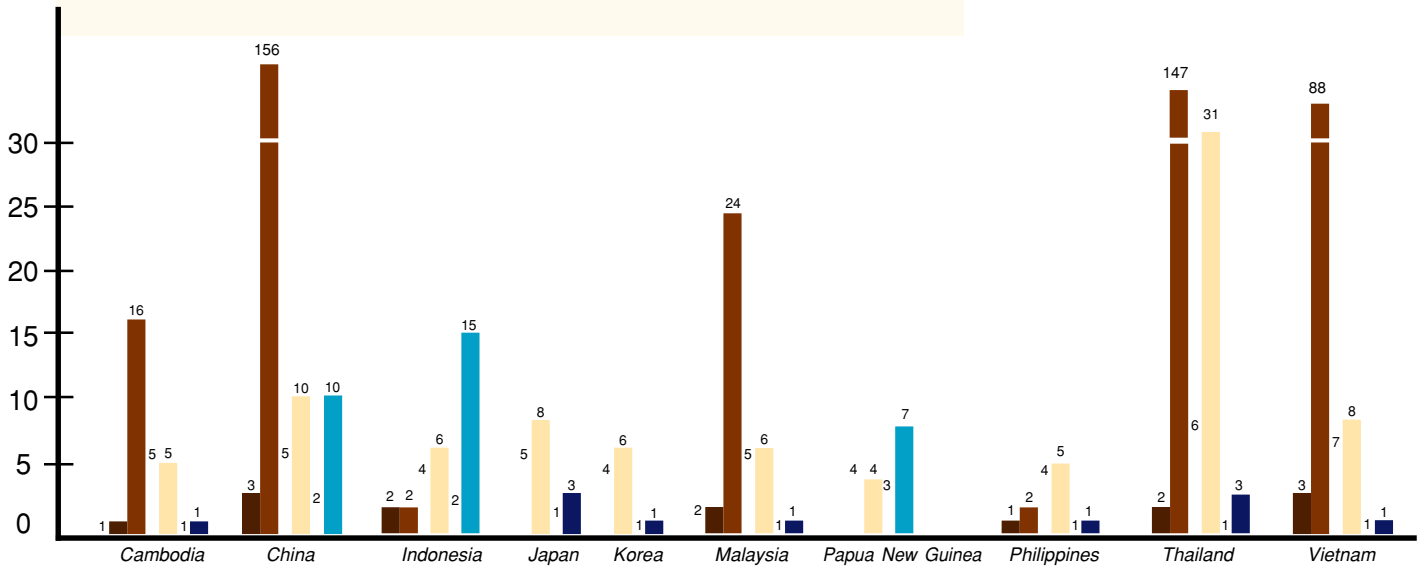
1997



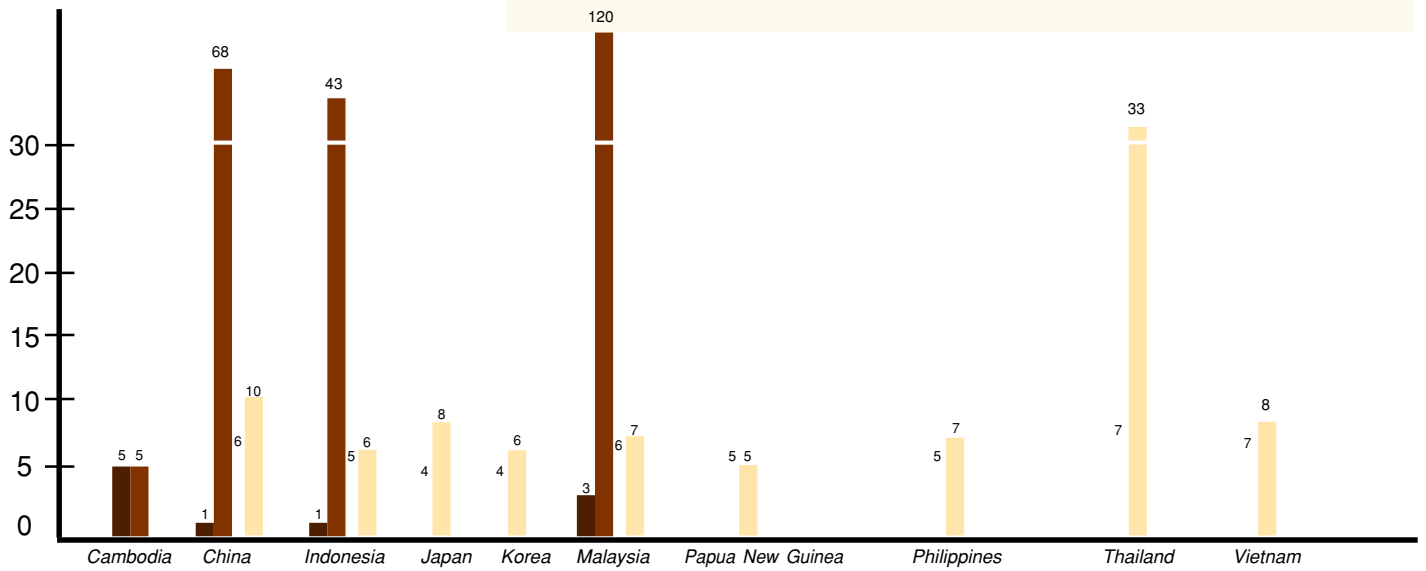
1998



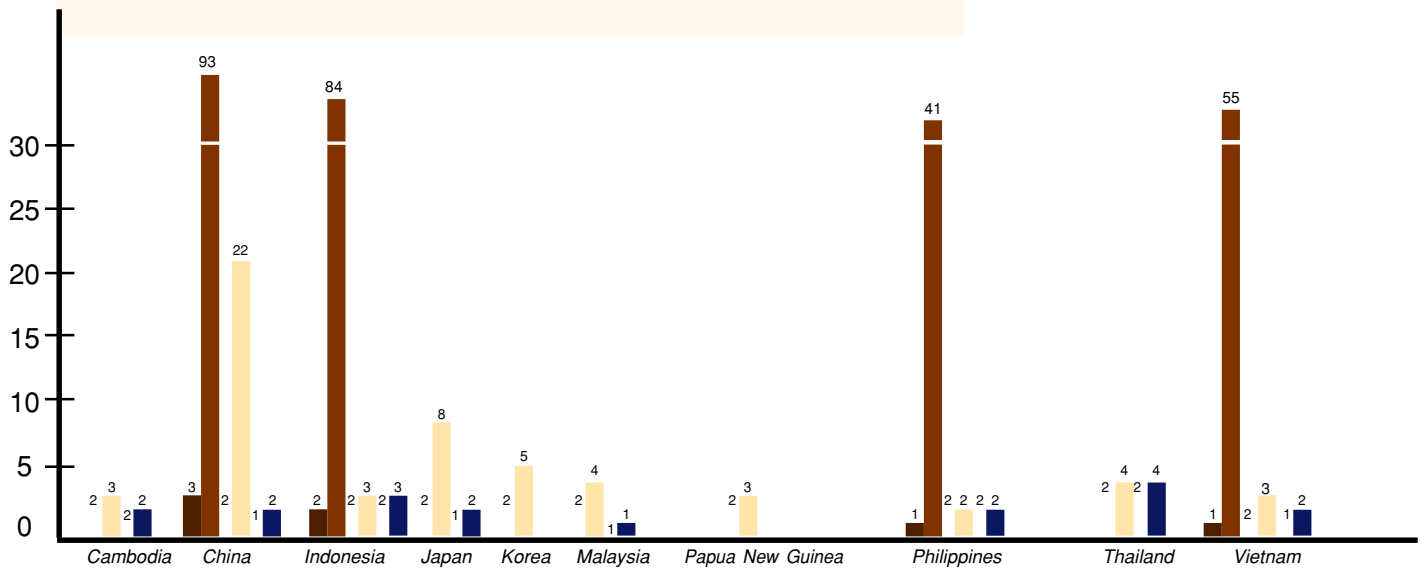
# 1999



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# 2001



# RECORD OF LONG AND SHORT-TERM PROJECTS AND TRAINING

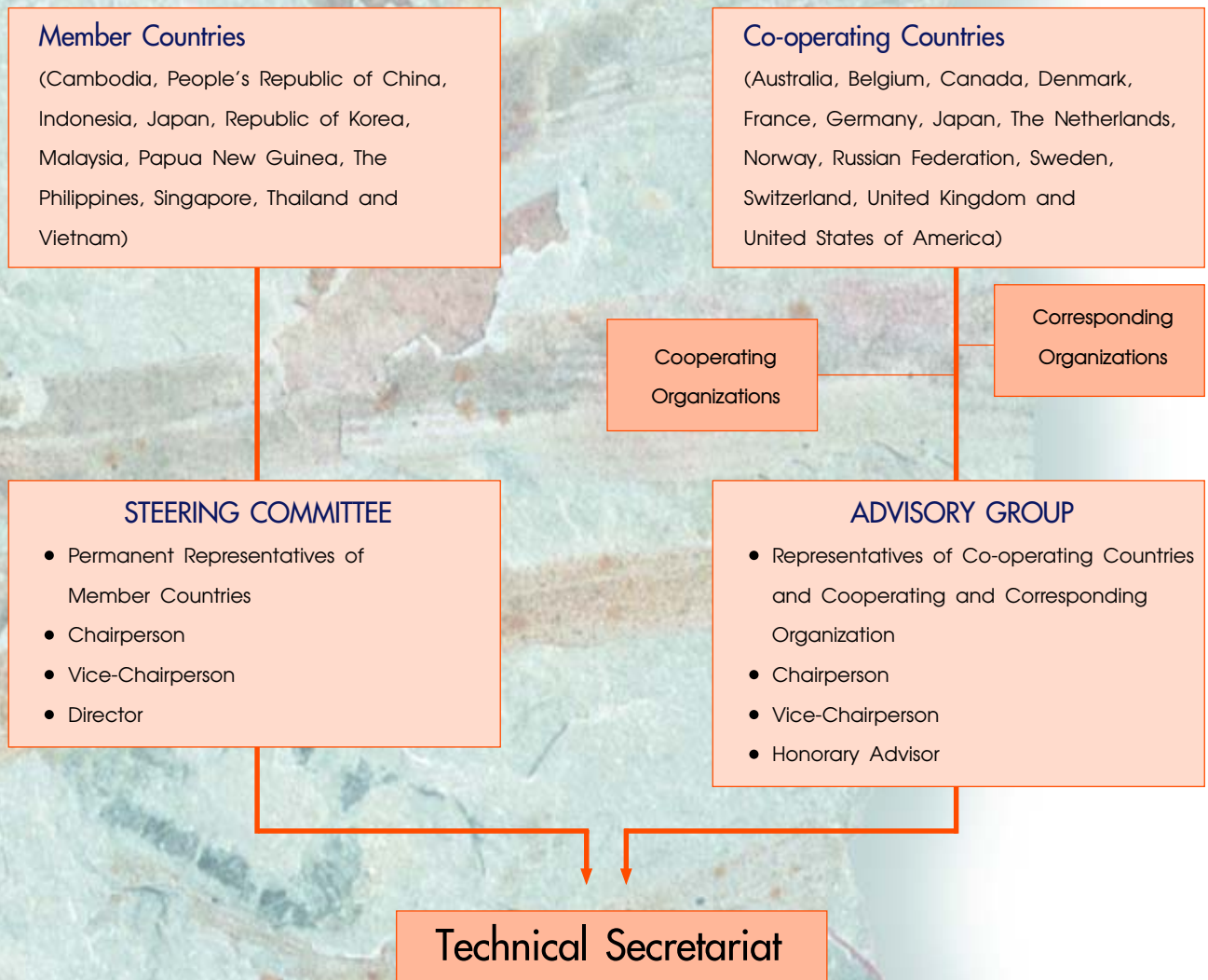
AS OF JUNE 2002

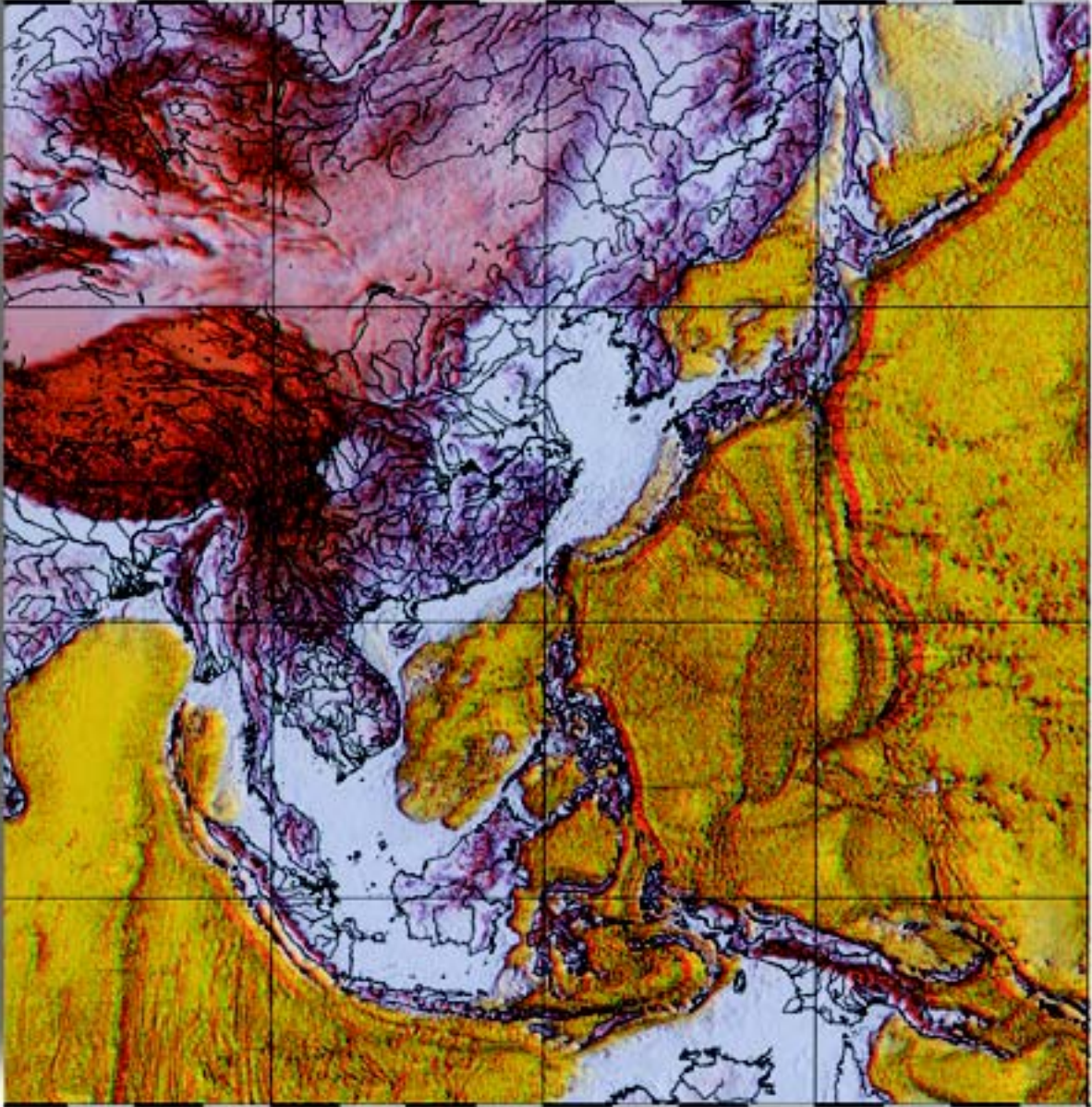
| PROJECT/ACTIVITY   | DURATION             | NUMBER OF PARTICIPANTS                           |
|--|----------------------|--|
| <b>GEO-RESOURCES SECTOR</b>  |                      |  |
| CCOP Programme on Pre-Tertiary Geology   | 1980- (on-going)     | (CCOP expert and scientists recipient countries) |
| CCOP-PETRAD Training Programme   | 1985- (on-going)     | 4095   |
| Working Group on Resource Assessment (WGRA)  | 1989-1991            | 157  |
| PETRAD 8-week courses  | 1991- (on-going)     | 207  |
| Oil and Gas Resources Assessment and Management (OGRM)   | 1991-1994            | 205  |
| Exploration Promotion Forum (EPF)  | 1994                 | 26   |
| Resources Evaluation Planning (REP-I)  | 1995-1996            | 60   |
| Resources Evaluation Planning (REP-II)   | 1996- (on-going)     | 197  |
| 1 <sup>st</sup> PetroWater Meeting   | 1995                 | 29   |
| CCOP/CPGDP Geological Correlation (WGGC)   | 1995-2002 (on-going) | 86   |
| CCOP/ASCOPE/PETRAD Safety and Environment Programmes Meeting   | 1996                 | 32   |
| CCOP-VPI-GEUS Workshop on Interactive Interpretation   | October 14-29, 1999  | 23   |
| Digital Compilation of Geoscientific Maps (DCGM-Phase I) Regional Geological Map   | 1992-1996            | 29   |
| DCGM-Phase II Marine Geological Maps   | 1995-1999            | 51   |
| NEDO/CCOP Geothermal Symposium   | 1998- (on-going)     | 88   |
| CCOP-DMR-MMAJ Joint Seminar on Application of Satellite Image Analysis in Mineral Exploration                                | 1998                 | 27   |
| CCOP/ESCAP/World Bank/DFID Workshop on Industrial Minerals & Offshore Aggregates in Asia                                     | 1999                 | 26   |
| CCOP-MLR-CGS Seminar on Regional Geochemical Exploration   | May 20-26, 2001      | 34   |
| CCOP-VPI-GEUS Workshop on Interactive Mapping Techniques for the Construction of Geological Reservoir Models                 | January 14-25, 2002  | 27   |
| Exploration Promotion Forum (EPF) 2002   | On -going            | -  |
| Petroleum Policy Management (PPM)  | 2002-2005            |  |
| <b>Sub-Total</b>   |                      | <b>5399</b>                                      |
| <b>GEO-ENVIRONMENT SECTOR</b>  |                      |  |
| Integrated Coastal Zone Management (Coastplan)   | 1995 - 1999          | 233  |
| ITIT/GSJ/CCOP Symposium on Geoscientific Information and GIS Application for the Urban Areas of East & Southeast Asia        | 1998-2000            | 39   |
| Technical Meeting on Remote Sensing for Disaster Mitigation and Geo-hazard Mapping   | 1998                 | 10   |
| Technical Meeting on Exodynamic Geo-hazards in East and Southeast Asia   | 1999                 | 15   |
| Geohazards Symposium   | 2000                 | 51   |
| Digital Compilation of Geoscientific Maps (DCGM-Phase III) Geo-information Map of Large Urban Cities in the CCOP Region      | 1998-2001            | 198  |
| <b>Sub-Total</b>   |                      | <b>546</b>                                       |
| <b>GEO-INFORMATION SECTOR</b>  |                      |  |
| 1 <sup>st</sup> SANGIS Workshop Digital Compilation of Geoscientific Maps (DCGM-Phase IV) Groundwater & Geothermal Databases | July 1999            | 20   |
| SANGIS Training (Bibliographic Phase) Group-I,   | 2001- (on-going)     | 31   |
| KAR Workshop on Maximizing Geoscience Data Value   | June 25-29, 2001     | 9  |
| SANGIS Training (Bibliographic Phase) Group-II   | June 21-22, 2001     | 29   |
| International Symposium on Geo-information via Internet and Workshop on CCOP Metadata  | January 21-25, 2002  | 7  |
|  | February 18-22, 2002 | 75   |
| <b>Sub-Total</b>   |                      | <b>171</b>                                       |
| <b>Grand Total</b>   |                      | <b>6116</b>                                      |





## ORGANIZATION CHART OF CCOP





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