ECONOMIC AND SOCIAL COMMISSION
FOR ASIA AND THE PACIFIC

Thirty-third session
5-14 April 1977
Bangkok, Thailand

PROCEEDINGS OF THE THIRTEENTH SESSION
(IN COMMEMORATION OF THE TENTH ANNIVERSARY)
OF THE
COMMITTEE FOR CO-ORDINATION OF
JOINT PROSPECTING FOR MINERAL
RESOURCES IN ASIAN OFFSHORE AREAS
(CCOP)

HELD AT KUALA LUMPUR, MALAYSIA
22 NOVEMBER TO 6 DECEMBER 1976
## CONTENTS

**PART 1 : REPORT OF THE COMMITTEE**

| I. Organization of the session | 1 |
| II. Activities of the Project Office since the twelfth session | 7 |
| III. Investigations relating to offshore petroleum resources | 9 |
| A. Pre-Tertiary petroleum potentials in the CCOP region | 9 |
| B. Deep water exploration | 9 |
| C. Standing working group for petroleum data collection, storage and retrieval | 10 |
| D. "Responsible" centre for marine research data | 10 |
| E. Seminar on generation and maturation of hydrocarbons in sedimentary basins | 10 |
| F. Seminar/workshop on methodology for assessment of undiscovered recoverable hydrocarbon resources | 10 |
| G. Needs of the newly established state oil companies | 11 |
| IV. Offshore tin and other detrital heavy minerals and study of Quaternary geology | 11 |
| A. Activities since the twelfth session | 11 |
| B. Symposium on Quaternary geology | 11 |
| V. Projects contributing to basic knowledge of marine geology of the CCOP region | 12 |
| A. Joint CCOP-IOC Working Group on IDOE Studies of East Asia Tectonics and Resources (SEATAR), second session | 12 |
| B. Project MAGNET | 13 |
| C. Circum-Pacific Map Project | 14 |
| D. Remote sensing | 14 |
| E. Seminar on marine phosphorite | 14 |
| VI. Technical co-operation among developing countries | 14 |
| VII. Co-operation with relevant national and international bodies | 15 |
| VIII. CCOP's long-range programme and recommendations of the High-Level Mission | 15 |
| IX. Review of external assistance obtained and assistance required | 18 |
| X. Policy and organizational considerations | 22 |
| A. Membership of CCOP | 22 |
| B. Co-operation with ASCOPE | 23 |
| C. Permanent Representatives to CCOP in member countries, 1976/1977 | 24 |
| D. National Working Groups for CCOP | 24 |
| E. Operations of the Technical Advisory Group and constitution of the Special and Honorary Advisers | 25 |
| XI. Work programme for 1976 to 1978 | 28 |
| XII. Dates, venue and agenda for the fourteenth session of CCOP | 28 |
Annexes

I. Messages from Governments ............................................. 29
II. List of participants .................................................... 35
III. List of documents issued for the session .......................... 48
IV. List of maps displayed at the session .............................. 57
V. Report of the twelfth session of the Technical Advisory Group .... 59
VI. Report of the Special Advisers to the thirteenth session of CCOP .... 93
VII. Work programme of the Committee for 1976-1978 ................... 97
VIII. Report and recommendations of the second session of the Joint 
CCOP-IOC Working Group on IDOE Studies of East Asia Tectonics and 
Resources (SEATAR) ...................................................... 114
IX. Report of the second meeting of the Northwest Quadrant Panel 
of the Circum-Pacific Map Project ................................... 132

Appendices

I. Members of the Northwest Quadrant Panel .......................... 135
II. List of maps displayed .................................................. 136

PART 2: TECHNICAL DOCUMENTS

A. TECHNIQUES FOR EXPLORATION AND EXPLOITATION

1. Remote sensing in coastal zone research ............................ 137
2. Developments in deep water drilling from floating drill-ships .... 154
3. Methods and requirements for measuring terrestrial heat-flow in the CCOP region. 166

B. NATIONAL GEOLOGICAL AND GEOPHYSICAL INVESTIGATIONS

4. Metallogenic provinces in Indonesia: a plate tectonic approach ...... 172
5. A review of Quaternary studies in Indonesia .......................... 175
6. Progress of heavy detrital mineral investigations in Indonesia between 1974 and 1976 194
7. Marine geological activities of the Geological Survey of Japan during the period 
April 1975 to March 1976 .............................................. 201
8. Publication of base map of submarine geology of the Korean continental shelf ... 203
9. Geological and geophysical studies offshore from the Tongho-ri and Mooan area, 
west coast of Korea ..................................................... 213
10. Plan for a marine geological and geophysical survey in Asan bay, west coast of Korea 222
11. Investigation of detrital heavy minerals and silica sands on Imjado island and in the 
Kusipo area, west coast of Korea ..................................... 225
12. The LANDSAT and SKYLAB programme in Malaysia .............. 241
13. General tectonic framework of the Philippine archipelago ........ 242
14. Researches on geological interpretation of ERTS/LANDSAT imagery of the 
Philippines ............................................................... 248
15. The first heat-flow measurements in Thailand .......................... 251
C. OFFSHORE MINERALS - EXPLORATION AND DEVELOPMENT

16. Preliminary report on the detrital heavy minerals of some sea bottom and shallow sub-sea bottom samples from the Straits of Malacca ........................................... 252
17. Cassiterite distribution patterns in a nearshore area off Perak, peninsular Malaysia 262
18. Offshore mining in the Philippines, 1975 and 1976 ........................................... 263
19. Possible ancient phosphogenetic provinces in southeast Asia ............................. 264
20. Environmental assessment, base-line and impact studies in regard to offshore hydrocarbon and mineral exploration and development ..................................... 269

D. OTHER GEOLOGICAL AND GEOPHYSICAL INVESTIGATIONS

21. Results of Project MAGNET surveys near northern Honshu island, Japan ........ 270
22. Report on pre-Tertiary petroleum geology in southeast Asia .......................... 274
23. Tin and other mineralization associated with granitic rocks ............................ 292

E. OFFSHORE HYDROCARBONS - EXPLORATION AND DEVELOPMENT

24. Petroleum exploration and production activities in Indonesian offshore areas from June 1975 to May 1976 ................................................................. 294
25. Summary of exploration activities for oil and gas offshore Japan in 1975 .......... 302
27. The Makassar trough: regional geology and hydrocarbon prospects ................. 306
28. The Baram delta oil province (Sarawak) Malaysia .......................................... 322

F. CCOP-IDOE SEABED ASSESSMENT PROGRAMME

29. Progress report on investigations of the Jawa transect, Indonesia .................. 332
30. Progress report on geological investigations of the Banda arc transect, Indonesia 334
31. Preliminary report on the volcanic rocks of the Banda arc, Indonesia .............. 343
32. Preliminary report on geochemical analyses of volcanic rocks of the Banda island arc volcanoes and their relation to the regional geology ......................... 345
33. Cenozoic evolution of the Sunda arc in the central Sumatra region ................. 365
34. The regional structure of Seram island, Indonesia, as interpreted from satellite imagery ................................................................. 366
35. Structural features in two transect areas of Japan analysed with the aid of satellite imagery ................................................................. 369
36. Progress report of CCOP-IDOE-KOREA Project II ........................................... 370
37. Status of activities relating to CCOP-IOC/IDOE transect projects in the Philippines ................................................................. 372
38. Remote sensing projects in the Philippines ......................................................... 374
39. Marine field programmes by U.S. institutions in the SEATAR project: a status report to the IOC-CCOP joint working group on SEATAR ......................... 375
40. Report of the second meeting of the CCOP expert working group
   on remote sensing .......................................................... 382
41. Preliminary report on land heat-flow expedition .......................... 386

G. GEOLOGICAL AND GEOPHYSICAL RESEARCH PROJECTS CARRIED
   OUT JOINTLY BY INDONESIA AND JAPAN UNDER THE JAPANESE
   GOVERNMENT'S ITIT PROGRAMME

42. Progress report to November, 1976, on ITIT joint research project being
   undertaken in Indonesia ..................................................... 390

H. CIRCUM-PACIFIC MAP PROJECT

43. Circum-Pacific map project .................................................. 391

I. TRAINING PROGRAMMES

44. Report on the group training course in offshore prospecting, Japan, 1975 .... 394
45. Report on the group training course in offshore prospecting, Japan, 1976 .... 395
46. Preparations for a proposed seminar/workshop on marine phosphorite ............ 396
47. Field training course on methods and techniques for drilling of nearshore
   unconsolidated formations and placer deposits, Netherlands ...................... 403