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**REPORT OF THE COMMITTEE ON NATURAL RESOURCES
ON ITS FOURTH SESSION**

(Item 7 of the provisional agenda)

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I. ORGANIZATION OF THE SESSION

1. The fourth session of the Committee on Natural Resources was held at Bangkok, Thailand, from 16 to 22 August 1977.

Attendance

2. The session was attended by representatives of the following members and associate members: Australia, Bangladesh, France, India, Indonesia, Iran, Japan, Malaysia, Nepal, Netherlands, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, United States of America, Hong Kong and Papua New Guinea, Representatives of the Federal Republic of Germany and Israel also attended, in accordance with paragraph 9 of the terms of reference of ESCAP.

3. The following United Nations bodies and specialized agencies were also represented: United Nations Development Programme (UNDP), United Nations Industrial Development Organization (UNIDO), United Nations Environment Programme (UNEP), International Labour Organisation (ILO), Food and Agriculture Organization of the United Nations (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO), World Health Organization (WHO), and World Meteorological Organization (WMO). The secretariat of the Committee for Co-ordination of Investigations of the Lower Mekong Basin was also represented. Representatives of the International Association for Hydraulic Research (IAHR), International Commission on Irrigation and Drainage (ICID), the International Council of Scientific Unions (ICSU), the International Law Association (ILA) and the International Planned Parenthood Federation (IPPF) also participated in a consultative capacity.

Opening of the session

4. In the absence of Mr. J.B.P. Maramis, Executive Secretary, Mr. Princy H. Siriwardene, Deputy Executive Secretary, officially opened the session.

5. In his message, the Deputy Executive Secretary pointed out that the meeting had a special significance, since in the light of a recent decision of the Economic and Social Council it would be the first of a series of regional meetings to consider follow-up action to the United Nations Water Conference, in preparation for a special session of the Council's Natural Resources Committee which would be devoted solely to consideration of that matter.

6. Because of the special nature of the session, it was hoped that the recommendations as far as international actions were concerned might be addressed to the international community generally and not only to ESCAP. There had already been consultations with the other United Nations bodies principally concerned, which were also represented at the session. That process of consultation would continue with a view to reaching agreement on a collaborative and sharing arrangement in order that the United Nations system might bring its efforts to bear on the problems of member countries in the most effective way, as an international partnership.

7. Mr. Siriwardene assured the delegations that ESCAP and the other members of the United Nations system would do their utmost to support national efforts, and sought clear guidance as to requirements. It was hoped in that way to make a real contribution to human development in the years ahead.

Election of officers

8. The Committee elected Mr. Davood Hariri (Iran) as Chairman, Mr. Sunthorn Ruanglek (Thailand) and Mr. M. Munir-uz Zaman (Bangladesh) as Vice-Chairmen, and Mr. S.H. Thavaraj (Malaysia) as Rapporteur.

9. The meeting appointed a Drafting Committee with Mr. P.F. Peters (Australia) as Chairman.

Adoption of the agenda

10. The meeting adopted the following agenda:
1. Opening of session
 2. Election of officers
 3. Adoption of the agenda
 4. Matters arising from the United Nations Water Conference
 5. Measures to improve the performance of the rural sector in irrigation projects
 6. Institutional, administrative and financial arrangements for water resources development
 7. Feasibility of utilizing coastal and estuarine storage for fresh water supplies

8. Activities of ESCAP in the appraisal, development and management of natural resources
 - (a) Water resources
 - (b) Energy resources
 - (c) Mineral resources
 - (d) Surveying and mapping
9. Activities of other international bodies in the appraisal, development and management of water resources
10. Programme of work and priorities in the appraisal, development and management of natural resources, 1978-1979, and consideration of the programme of work and priorities, 1980-1981, in the context of the medium-term plan, 1978-1981
 - (a) Water resources
 - (b) Energy resources
 - (c) Mineral resources
 - (d) Surveying and mapping
11. Consideration of the agenda and arrangements for subsequent meetings of the Committee
12. Other business
13. Adoption of the report

11. Because of the interrelationships between items 4, 5 and 6, it was agreed that these should be considered together.

II. MATTERS ARISING FROM THE UNITED NATIONS WATER CONFERENCE:

MEASURES TO IMPROVE THE PERFORMANCE OF THE RURAL SECTOR IN IRRIGATION PROJECTS

INSTITUTIONAL, ADMINISTRATIVE AND FINANCIAL ARRANGEMENTS FOR WATER RESOURCES DEVELOPMENT

(Agenda items 4, 5 and 6)

12. The Committee had before it, for consideration under agenda item 4, documents E/ESCAP/NR.4/12 and NR.4/CRP.8, 9, 12 and 13 submitted by the secretariat, together with five country papers.

13. The item was considered after the presentation of papers on items 5 and 6 (E/ESCAP/NR.4/1 and 2). The former was presented by a consultant, Mr. O.P. Chadha, Joint Secretary, Department of Irrigation, Ministry of Agriculture and Irrigation, Government of India, and the latter also by a consultant, Mr. I.R. Meacham, State Rivers and Water Supply Commission, Victoria, Australia. There were two country papers on item 5, and three on item 6.

14. In order to improve the productivity of irrigation projects, the author of the paper on measures to improve the performance of the rural sector in irrigation projects advocated a fully integrated developmental effort in the command area, including review and modernization of existing irrigation systems, where appropriate, providing technical help in planning, supervising and execution of on-farm development works, field water management, a package of programmes to ensure the timely supply of inputs, including credits, effective transfer of new agricultural technology and provision of requirements associated with transport and marketing of produce. However, co-ordination alone was not sufficient, and there was a need for institutional arrangements ensuring effective centralized authority for implementation of the necessary measures.

15. The author of the paper on institutional, administrative and financial arrangements for water resources development presented a supplementary paper (NR.4/CRP.11). He pointed out that while, as indicated in the main paper, it was impossible to prescribe an optimum framework for water resources development, certain conclusions could be drawn. In particular, in every country there should be some type of national water resources organization. Such an organization should co-ordinate water resources management, and ensure the integration of national water interests in national development generally. Depending on the circumstances, it could have selected or extensive operational as well as co-ordinating responsibilities.

16. The Committee noted with interest the statements made by representatives of UNDP, UNEP, UNIDO, ILC, FAO, UNESCO, WHO, and WMO, concerning the interests and activities of their organizations in following up the United Nations Water Conference.

17. The Committee also noted with appreciation the offers of countries to provide assistance or support as follows:

Australia: to make available its experience in training, and to co-operate as far as possible in regional development;

India: to share its expertise through TCDC, and make training facilities available;

Iran: to contribute to international co-operation;

Japan: to consider the needs of countries as set out in country papers;

/Malaysia:

Malaysia: to provide in-service training in hydraulic data systems and carry out hydraulic model studies for coastal engineering; to make manuals available on an exchange basis; to accept visits of inspection of projects; within two to three years, to accept trainees at a national water management centre which was being developed;

Netherlands: to share experience particularly in community water supply on the following aspects: (i) development and application of appropriate technology; (ii) establishment of institutional facilities, including those for training; (iii) promotion of activities at various levels, including sharing of experience between developing countries;

New Zealand: to provide training, particularly operator training, in water and waste water treatment, specially for Pacific Island countries.

Philippines: to provide water resources abstracts on request;

USSR: to provide technical assistance in various fields within the framework of ESCAP programmes;

United Kingdom: to make expertise and facilities available through bilateral aid;

United States: to continue and expand support, particularly for training in regional countries.

18. The attention of the Committee was drawn to document NR.4/CRP.14 entitled "Selection of metabolic structure of water for cities with restricted water resources" which was submitted by the Government of Japan for the information of the Committee.

19. The record of the Committee's deliberations on follow-up to the United Nations Water Conference is set out below. It was agreed that that section of its report should be submitted to the appropriate forum in pursuance of a resolution adopted by the Economic and Social Council at its sixty-third session.

20. The Committee on Natural Resources of the Economic and Social Council, at its fifth session held at Geneva from 9 to 20 May 1977, recommended to the Council that the regional commissions should be requested to convene meetings to discuss opportunities, needs and problems concerning implementation of the recommendations of the United Nations Water Conference (UNWC). At that meeting, the ESCAP representative informed the Committee that in the case of ESCAP, the fourth session of its Committee on Natural Resources, scheduled to be held from 16 to 22 August 1977, would consider regional follow-up to the United Nations Water Conference.

21. Subsequently the Economic and Social Council, at its sixty-third session held at Geneva during July/August 1977, approved the recommendation to hold regional meetings. While noting that the subjects of the regional meetings might vary, it also approved the recommendation of the Secretary-General of the United Nations that among subjects which the regional meetings might typically be expected to take up, the following should be considered:

(a) Strengthening of the regional commissions to discharge their enlarged functions in the water sector - at the intergovernmental and secretariat levels (United Nations Water Conference resolution VIII on institutional arrangements);

(b) Action necessary to increase the capabilities of regional water organizations to promote co-operation in the field of shared water resources (United Nations Water Conference resolution VII, and recommendation G on regional co-operation);

(c) Specific regional recommendations referred by the United Nations Water Conference to the regional commissions (part one, paragraph 88 of the report of the United Nations Water Conference and related annex);

(d) Implementation of the Plan of Action for community water supply and preparations for the launching of the International Drinking Water Supply and Sanitation Decade (United Nations Water Conference resolution II, and recommendations in paragraphs 15-17 of the report);

(e) Action Programme on Water for Agriculture (United Nations Water Conference resolution III);

(f) Technical co-operation among developing countries (United Nations Water Conference resolution VI and recommendations in paragraphs 99-103);

/(g)

(g) Financing arrangements in the field of water resources (United Nations Water Conference resolution IX and recommendations in paragraphs 94-98).

22. The question of follow-up action to the United Nations Water Conference was considered as part of the agenda for the fourth session of the ESCAP Committee on Natural Resources, which was held at Bangkok from 16 to 22 August 1977.

23. The Committee was somewhat hampered in its consideration of that question by the fact that there had been relatively little time since the Conference for detailed consideration of the Mar del Plata Action Plan at the national level, the official report of the Conference having just become available. Furthermore, the implications of the various decisions of the Economic and Social Council on the matter could not be assessed before the Committee session, since the relevant papers had not been available.

24. Nevertheless, the Committee reviewed the Mar del Plata Action Plan, as recorded below. In its deliberations the Committee included the topics suggested by the Secretary-General, except item (c) which did not apply to the ESCAP region.

Policy, institutional arrangements and legislation

25. The commonly recognized need for an integrated approach to the development and management of water resources was not easy to reconcile with the basic importance of water in a wide range of development activities. Institutional arrangements should also facilitate the integration of water programmes into national development programmes. Thus, while details might vary, there was a general need for a national water organization (in countries with a federal system of government the word "national" should be interpreted in accordance with the constitutional division of responsibilities with respect to water). Such an organization would provide a basis for representation of comprehensive water interests in national development planning, and within the water field would have responsibilities including:

(a) The creation and maintenance of a national data bank on the occurrence and quality of water resources, and on the established controls and uses of those resources;

(b) The development and standardization of good and appropriate practice in water resources data collection, analysis and presentation;

(c) The development and standardization of appropriate procedures for multidisciplinary assessment of water resource management projects;

/(d)

(d) The reconciliation or optimization of projects affecting related water resources, and the promotion where appropriate of multipurpose projects;

(e) The rationalization and promotion of research into various aspects of water resources management and use;

(f) The collation and presentation of water resources management needs on a national scale in respect to trained personnel;

(g) The formulation and implementation of a national water policy, consistent with over-all national policies and programmes;

(h) Arranging, or advising the Government on, the orderly and efficient delegation of water resources management functions between appropriate national and/or subnational organizations;

(i) Advising the Government on the codification of national water law, and on the implications that proposed legislation in other fields might have with regard to water resources management; and

(j) Promoting the co-ordination of land and water resources management at the national level.

26. In view of the limited number of personnel skilled in water management, organizational structures should aim at concentrating available skilled personnel in as few organizations as possible, with allocation of specific water management functions according to the capabilities of those organizations. A national water organization might, depending on circumstances, have very limited operational responsibilities, which would be discharged principally by appropriate bodies, with the national organization playing a co-ordinating, stimulating and monitoring role.

27. Information exchange should be supported, and technical assistance provided in that field as requested, particularly with reference to formulation of national water legislation and water policy. Consideration should be given to arranging a working group on those matters.

Assessment of water resources and water use

28. Orderly planning, development and management of water resources was impossible without adequate data on total resources and use, including the effects of use on quality. Since there was generally a need for data covering a number of years before any reasonable assessment of resources could be made,

/there was

there was a high urgency for the establishment of adequate data systems. There was a parallel need for appropriate techniques for the assessment of water resources that might be made available for use.

29. Countries should therefore be assisted on request through the exchange of information and the provision of guidance and technical assistance under the following headings:

(a) Formulation of a programme for an integrated system for quantitative and qualitative assessment of both surface and ground-water resources;

(b) Data network development, including field equipment and laboratory facilities for water analysis;

(c) Improvement in existing field and office procedures and techniques of collection, processing, publication, storage and retrieval of hydrologic data and data on water use, including staff training; and

(d) Improvement in analytical techniques for the quantitative and qualitative assessment of water resources.

30. In relation to item (a), a working group should be convened with a view to developing guidelines to assist countries in the development of integrated systems.

Community water supply and waste disposal

31. The Committee noted that in terms of resolution WHA 30.33 of the thirtieth World Health Assembly, WHO had already initiated action on the implementation of resolution II of the Mar del Plata Action Plan.

32. Having regard to the fact that the majority of people in the region did not currently have access to a safe drinking water supply, and the enormous effort that would be involved in providing supplies to meet standard requirements, there was a particular need to plan programmes so that those in the worst situation would receive some benefit before others, already reasonably well served, were given further improvement. Countries should therefore be assisted in the development and observation of standards of quality and quantity for various stages of development in community water supply. Assistance should also be provided through the development and dissemination of information on

X cost effective processes and appropriate technologies for water treatment, particularly for rural communities, and for waste water treatment processes. Case studies could be useful for that purpose.

Water for agriculture

33. It was noted that that matter, referred to in resolution III of the Mar del Plata Action Plan, would be considered by the FAO Conference at its nineteenth session in November/December 1977.

34. Having regard to the increasing cost of new irrigation projects, and the damaging effects, as well as water losses, associated with the commonly prevailing inefficiencies in existing projects, improvement in the efficiency of water use on existing projects was a matter of the highest priority. Water, however, was only one of the inputs required for optimum land and water use, and there was extensive evidence of the need for integrated effort at the farm level to ensure the availability of all farm inputs required for optimum land and water use. Requirements included such matters as on-farm development, land-levelling, the provision of good quality seed and agricultural chemicals, finance for the necessary farm development and operations, transportation and appropriate marketing facilities.

35. While details of institutional arrangements might vary, the best results were likely to be obtained through the establishment of a single authority with responsibility for management of a command area or project as outlined above. Staff could in large measure be provided by secondment from the departments or authorities with functional interests in the various sectors of development involved.

36. Appropriate administrative arrangements and availability of the necessary requisites, including finance, would not ensure the desired results unless the farmer had access to appropriate technology and equipment for land and water management. That called for adequate extension services, based on sound practices developed on experimental and demonstration farms, with the objective of providing timely advice.

37. Motivation of farmers was vital to the success of any irrigation project. Land tenure and administration should be on a basis which provided a real incentive for the farmer to adopt sound land and water management

/practices,

practices, to reach desired production goals and to achieve a satisfactory standard of living. The establishment of co-operatives and water user associations could also contribute greatly to the positive involvement of the farmer in the whole rural development process, and increase his participation in the benefits.

38. Even with proper farm management, waterlogging and salinity problems could develop unless projects were designed and constructed so as to minimize losses in distribution systems, and appropriate provision made for drainage.

39. At the project level, availability of water in existing projects could often be greatly increased through rehabilitation, including channel and structure improvement for water control. Particularly in large systems, efficiency could also be improved through the development of mathematical models for water management. Efficiency in water use could also be stimulated by appropriate pricing policies, which at the same time should not cause undue hardship or discourage the use of sufficient water by the poorest among the beneficiaries.

40. The practice of post-evaluation of projects should be encouraged as a means of identifying desirable measures with a view to improving project performance.

41. Having regard to the increasing cost and limited availability of regulated supplies of water for irrigation, there was also a need for improvement in the management of rain-fed agriculture and livestock enterprises. In particular there was a need for improved techniques for planning and management of such enterprises having regard to the risks associated with variability of rainfall.

42. Countries should therefore be assisted on request, particularly in relation to:

(a) The establishment of:

(i) Appropriate institutional arrangements for integrated development and management of command areas or projects;

(ii) Co-operatives and water user organizations;

/(b)

(b) The provision of the extension services, including experimental and demonstration farms, necessary to ensure that the farmer used appropriate techniques for land and water management;

(c) The formulation and implementation of programmes for rehabilitation of existing projects;

(d) Improvement in system management, including the use of mathematical models;

(e) The introduction of pricing systems to encourage efficient use of water; and

(f) The formulation and implementation of measures to improve the performance of rain-fed agriculture and livestock enterprises.

43. In particular, a roving seminar should be arranged on measures to encourage optimum land and water use by irrigation farmers.

Land and water management (catchments)

44. Deterioration of catchments, particularly associated with uncontrolled clearing of natural vegetation, had resulted in almost irreparable damage to large areas of land, and the process was continuing and expanding. There was a related aggravation of floods and deterioration in water quality of surface run-off from such areas.

45. Countries should therefore receive on request guidance and assistance in measures to minimize this process, and where feasible to restore damaged land, through:

(a) Improved techniques of land resource evaluation, including use of remote sensing technology;

(b) Development of guidelines on integrated management of land and water resources; and

(c) Dissemination of techniques for controlling erosion resulting from improper management.

Pollution control

46. While this is in part dealt with under community water supply and waste disposal, there are various matters more particularly related to industrial water use which cause concern.

47. There is a need for information exchange and guidance on measures to encourage treatment and reuse of water by industries, and of technologies for such treatment for major industrial users. There is a similar need in relation to the treatment of waste water, prior to discharge, where reuse is not feasible.

48. As a means of minimizing pollution, encouraging efficiency in water use, and equitable cost allocation, countries should adopt the general principle that, as far as possible, direct or indirect cost attributable to pollution should be borne by the polluter.

49. A seminar should be arranged to provide guidance to countries on treatment and reuse of waste water.

Natural hazards

50. Tropical cyclones, heavy rainfalls and associated floods afflict many countries in the region, and at the other extreme drought is also a frequent occurrence. In spite of extensive programmes in recent years to mitigate the harmful effects of tropical cyclones and associated floods, further assistance should be provided through information exchange and guidance in flood forecasting and flood mitigation, particularly through non-structural measures such as flood-plain mapping, risk evaluation, zoning and management. Similar action was required in relation to longer-term forecasting of droughts, and the development of measures to reduce their harmful effects. With regard to rain-fed agricultural and pastoral activities, research and development should be carried out in relation to drought-resistant species.

51. Volcanic debris falling on irrigation areas was also a problem in some countries.

Ground water

52. There was a common tendency for the potential for ground-water development to be overlooked when it frequently offered the best scope for early development for many purposes. In alluvial valleys, in which the largest supplies of ground-water were often obtainable, there were interactions between surface and underground resources, and in coastal areas development frequently led to problems with salt water intrusion.

53. There was a need for information exchange and guidance on the investigation and development of ground water, including conjunctive use of surface and ground-water resources, artificial recharge, and control of salt water intrusion in estuaries and coastal areas.

54. In some cases problems had arisen because of land subsidence associated with ground-water development, and there was a need in some countries for information and guidance on the matter.

(55) A roving seminar should be arranged on the development and management of ground water / ~~with particular emphasis on conjunctive use and control of salt water intrusion~~ (*artificial recharge*)

Efficiency in water use (municipal and industrial)

(56) In view of the heavy and increasing cost of constructing new water projects, there was a strong economic incentive to achieve increased efficiency in existing projects and so increase the quantity of water available for municipal and industrial purposes. There was a similar incentive to improve waste-water treatment and reuse.

57. Reference has been made in paragraph 39 to various matters concerning efficiency of water use in agriculture. Whatever the form of water use, improved efficiency was likely to be stimulated by appropriate pricing policies, which at the same time should not cause undue hardship to the poorest sectors of the community. Countries should therefore be assisted in the formulation and implementation of systems and programmes for applying appropriate charges for water use for municipal and industrial purposes, including the use of water courses and water bodies for waste water disposal. Such systems should to the extent possible be based on quantity of water used or pollutant discharged, and assistance should also be provided in the establishment of the necessary measurement systems.

58. A seminar should be held on the subject.

Planning and management

59. Countries recognized the importance of integrated planning and management of water development but there was a widespread need for improvement of techniques and practices.

60. Systematic information exchange, and development of guidance material by working groups where appropriate, were needed in relation to a number of matters including:

- (a) Projection of demand;
- (b) Water allocation priorities;
- (c) Techniques for multi-objective formulation and management of projects;
- (d) Preparation of national long-term water plans;

/(e)

- (e) Formulation of master plans for individual river basins (upstream catchments to deltas);
- (f) Optimization of multipurpose projects, including flood mitigation;
- (g) Application of systems analysis in water planning and management; and
- (h) Post-evaluation of projects with a view to adjustment as required in order to achieve desired goals, and also for feedback to planning and design.

61. In order to provide training in planning techniques related to particular country situations, roving seminars should be arranged, particularly in regard to items (c) and (g), the material for which should, to the extent possible, assist in dealing with other matters as listed.

Shared water resources

62. There were many international water courses in the region, and only in two cases - the Lower Mekong and the Indus - was there an agreed basis for development. Further progress in that regard was therefore a matter of considerable importance to a number of countries. Hence it was desirable that action should be taken wherever appropriate in accordance with recommendations G and H of the Mar del Plata Action Plan. In particular, the secretariat was asked to convey to the International Law Commission and the UNEP Intergovernmental Working Group of Experts on Natural Resources shared by two or more States the Committee's view that their work in regard to shared water resources be expedited as recommended in para 93 (a) and (c) of the Mar del Plata Action Plan. The Committee also drew attention to recommendation 93 (b) of the Plan concerning the principles to be applied by Member States in the absence of bilateral or multilateral agreements.

Education and training

63. For many countries, shortage of suitably trained and experienced staff was hampering progress at all levels from top planning and management to the individual water user. Because of its fundamental importance, and the variation of needs between countries, assistance should be provided when requested in the conduct of national surveys of personnel requirements and existing

/and required

and required facilities and programmes, in relation to the investigation, development and management of water and related resources, including health aspects. This should include consideration of education of the public concerning the importance of water and the need for care in its use.

64. The Committee noted that ESCAP had been compiling and distributing a publication entitled "Training Courses Available in Developing ESCAP Countries" and expressed its support for the continuation of that project. A review should also be made of facilities for international training of a formal academic nature, in the water field. There were several institutions of this type in the region operating under the auspices of ESCAP and other United Nations bodies, the use of which should be encouraged.

65. Useful on-the-job training could be achieved through institutional arrangements in connexion with technical assistance and other projects involving personnel from overseas, and provision for that could be made in contracts or other project documents.

Finance

66. Shortage of funds to implement the desired programmes was, like shortage of suitably skilled manpower, a basic constraint to the achievement of desired goals. The proposals contained in resolution IX of the Mar del Plata Action Plan were therefore of the greatest importance. The experience of a number of countries also reinforced the significance of the recommendation in paragraph 97 (d), for reduction of project costs by greater involvement of the people and more extensive use of local labour, material and technology. The maximum feasible involvement of local labour had important social as well as financial benefits.

67. Countries would need to give appropriate priority to water supply and sanitation if the necessary funds were to be allocated for the development of a national revolving fund as recommended in resolution II, section B, paragraph 5 (g).

Technical co-operation among developing countries (TCDC)

68. In the course of the meeting a number of offers of technical assistance were made by developing countries in connexion with matters under discussion. The Committee recommended that individual countries, and the international

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community in particular, when seeking or arranging technical assistance and project implementation, should make maximum possible use of the capabilities available within the countries of the region. TCDC should automatically be an early consideration in the planning of any activity.

69. Special reference was made to one form of activity which could make a significant contribution to the training of key personnel within the region, namely, the strengthening of arrangements for exchange of personnel between countries. Having regard to the fact that personnel sent from one country primarily to gain experience in another could at the same time make a direct contribution in the receiving country through the exercise of their responsibilities within the framework of in-service training, and since in addition many developing countries would have difficulty in finding convertible funds to meet costs in another country, it was recommended that personnel exchange should be based as far as possible on the concept that the host country would meet local costs.

70. In order to facilitate the operation of such a system, it was recommended that countries interested in taking advantage of opportunities for personnel exchange, and those prepared to offer such facilities, should advise the ESCAP secretariat of their needs and capabilities so that wherever possible the requesting countries could be put in direct touch with other countries which appeared to be in a position to meet their requirements. The ESCAP secretariat was also requested to seek funds that might be needed in some cases to support such exchange arrangements.

Institutional arrangements for international co-operation

71. The Mar del Plata Action Plan contains a number of recommendations concerning sectoral development and management of water, the most important being related to community water supply and water for agricultural use. At the same time it was stressed that all aspects of water development and management should be handled in an integrated manner, nationally and internationally. As indicated by the recommendation in paragraph 97 (b), in which countries were urged to develop by 1980 an inventory of investment needs in the field of water resources and determine the relative priorities of these needs, the parallel recommendations for development of proposals for

/community

community water supply and waste disposal, and agricultural water use, must be closely co-ordinated. Programmes concerning water for agricultural use, and for community water supply in rural areas which comprised the greatest need as far as that sector was concerned, must be very closely related to rural development programmes generally. Having regard to the existence in the ESCAP region of an interagency committee and task force on integrated rural development, interagency co-operation at the regional level on the matters referred to above should be effected through those existing bodies.

72. The United Nations system, however, was involved in a range of water-related activities not directly connected with rural development, and co-ordination of those activities was essential for efficient use of available personnel and other resources. While such co-ordination depended ultimately on goodwill, and the willingness of the parties concerned to work co-operatively, it would be assisted by appropriate institutional arrangements.

73. Having regard to the stress that had been laid on co-ordination at the regional level, an interagency task force on water should be established for the ESCAP region to assist co-operation and, as appropriate, there should be joint action among participating bodies in support of national programmes for investigation, development and management of water. The task force would also provide liaison with the Sub-Committee on Water Resources Development of the Administrative Committee on Co-ordination, or the body which might be set up to supersede it, and would provide comments or advice to the Interagency Task Force on Integrated Rural Development for Asia and the Pacific on matters as might be requested. That should not involve any additional personnel or financial requirements.

74. The task force could for instance be concerned with the rendering of assistance as requested in connexion with the development of shared water resources. In that connexion consideration should be given to the convening in the ESCAP region of a meeting of representatives of existing river basin commissions outside as well as inside the region. The major role played by the ESCAP Water Resources Section (formerly the Division of Water Resources Development) in initiating the Mekong Project was an indication of the potential for further activity in that field.

75. With regard to resolution VIII, subparagraph (d)(iii) of the Mar del Plata Action Plan regarding the secretariat functions of ESCAP, and their relation to an intergovernmental body, the Committee on Natural Resources met annually, but gave detailed consideration to water matters only once every three years.

76. While working groups provided opportunities for detailed consideration of topics by selected specialists, there could be a need for wider consideration of matters of importance to most countries at intervals of less than three years. In particular it seemed desirable that there should be a review, at the regional level, of progress made in implementing the most important recommendations of the United Nations Water Conference before the seventh session of the Committee in 1980. The secretariat should therefore keep in close touch with the United Nations bodies principally concerned, and with the ESCAP Advisory Committee of Permanent Representatives and Other Representatives Designated by Members of the Commission, and if deemed appropriate, recommend to the Commission that an ad hoc intergovernmental meeting be held for that purpose.

77. With regard to its secretariat functions, ESCAP had a relatively strong Water Resources Section comprising seven professional posts, within the Natural Resources Division. That Section should be sufficient to carry out the most important items of a regional or intercountry nature. Its effectiveness, however, was hampered by the inability of its personnel to maintain sufficient direct awareness of the problems and capabilities of the member countries because of very severe constraints on travel funds. Some means of overcoming that weakness should therefore be found, primarily by the provision of additional funds at the regional level from the regular budget.

78. With regard to the many proposals for more effective exchange of information, countries should keep the ESCAP secretariat informed of developments or other matters likely to be of interest to other countries, on which more detailed information could be provided on request. The secretariat should from time to time distribute summaries to all countries, so that direct contacts could be made as desired.

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III. FEASIBILITY OF UTILIZING COASTAL AND ESTUARINE STORAGE
FOR FRESH WATER SUPPLIES

(Agenda item 7)

79. The Committee had before it a background document prepared by a consultant, Mr. J.C. van Dam, attached to which was noted by the secretariat (E/ESCAP/NR.4/3), and two country papers.

80. In the background document, it was pointed out that coastal and estuarine storage could be an attractive means of storage of fresh water for various purposes in coastal regions and could result in important secondary benefits, such as increased employment, protection against flood and storm surges, improved conditions for public health and stimulus to further development and social activities. However, it was stressed that the feasibility of such type of storage had to be carefully studied and analysed with special care before a decision was made to construct such a project.

81. In his presentation, the consultant highlighted the main points of the document and emphasized the importance of determining hydrologic and hydraulic feasibility, the need to understand the salt transport mechanism and the importance of paying due attention to environmental factors. He also stressed that potential intangible benefits should not be underestimated. He suggested that although not comprehensive, the document could be considered as a checklist of important considerations which should be carefully studied in assessing the feasibility of utilizing coastal and estuarine storage projects.

82. The representative of Hong Kong presented a paper "Impounding reservoirs from the sea in Hong Kong" (NR.4/CRP.1) which described the need for and the problems of water resources development in his country. The methods, problems and differences in construction of the Plover Cove and High Island reservoirs were highlighted, as were the pros and cons of construction of impounding reservoirs from the sea. The principal conclusion of the paper was that construction of dams from the sea to form coastal reservoirs was feasible, although costs were high and design and construction works could be complicated.

83. The representative of the United Kingdom presented a paper "The Morecambe Bay, Dee Estuary and Wash feasibility studies of estuarial water storage in the United Kingdom" which described the results of investigations on three estuary sites for the storage of fresh water, with emphasis on the technical and environmental problems encountered. The studies concluded that, at present, the costs of water development in the estuary storages considered would be greater than inland storage costs, but less than the costs of desalination.

84. The Committee considered the topic was an appropriate one because the continuing depletion of good storage sites upstream would make estuarine storage more attractive and feasible in the future. It complimented the authors of the papers presented and noted that although there were only a few estuarine storage dams in the ESCAP region at present, many opportunities for that type of storage existed. Where estuarine storages did exist, both within and outside the ESCAP region, they had usually proved to be successful; that is, the benefits outweighed the disadvantages. There was a need, however, to make a careful appraisal of possible adverse ecological effects, aggravation of flooding problems, and the use of appropriate technology. For example, the feasibility of estuarine storage had been demonstrated in temperate and subtropical humid areas, but care must be taken in transferring that experience to arid and semi-arid areas where salt problems might be acute. There was also a need to consider alternative developments and uses of the estuaries.

85. The Committee also pointed out that integrated river basin planning could not be carried out without considering the conditions in the deltas, and that proper allocation of available water supplies could be made only when those conditions and development possibilities had been explored.

86. The Committee voiced appreciation of the Netherlands offer to make expertise available in that field.

IV. ACTIVITIES OF ESCAP IN THE APPRAISAL, DEVELOPMENT
AND MANAGEMENT OF NATURAL RESOURCES

(Agenda item 8)

87. The Committee reviewed the activities of the secretariat in the field of natural resources as reported in documents E/ESCAP/NR.4/5, 9, 10, 13, 15 and 16 and NR.4/CRP.4.

Water resources

88. The Committee noted with interest the progress made in the activities of the secretariat in the field of water resources development which were grouped under four main projects, as described in documents E/ESCAP/NR.4/5 and NR.4/CRP.4.

89. Under the programme component, "Investigation, planning and development of water resources", the Committee discussed the project "Improvement of systems for the collection of water resources statistics on a uniform basis".

90. The Committee recalled that during the discussion on agenda items 4, 5 and 6, a number of delegates had mentioned the importance of compiling basic data for evaluating the existing status of development and the planning for integrated river basin development. It was stressed that that project would be primarily for the benefit of the countries in the region but at the same time the data would facilitate a regional review on a regular basis.

91. The Committee observed that provision of detailed data, particularly on a basin-wide basis, would be difficult and would take some time, but data for items in the short list of selected items on a nation-wide basis could be supplied regularly to ESCAP. Some representatives mentioned that their replies to the questionnaire should be interpreted in the context of the qualifications which they had specified in their returns. In view of the importance of such data, the Committee recommended that information which could be supplied by countries in the short list should be published in the Statistical Yearbook for Asia and the Pacific.

92. The Committee noted with appreciation that experts from developing countries of the region had participated as members of an expert group on field missions - in the Roving seminar on the Use of Computers in Hydrology and Water Resources Planning and in the preparatory mission for the Third Regional Symposium on the Development of Deltaic Areas.

93. The Committee noted with interest the close collaboration between ESCAP and WMO in that field as described by the WMO representative, and expressed its appreciation of the support provided by the Government of the Netherlands.

Energy resources

94. The Committee took note of document E/ESCAP/NR.4/9, which indicated that the co-ordinated energy planning mission project was still awaiting the allocation of UNDP funds, while other approved activities in both conventional and non-conventional fields had proceeded as planned. Supplementary reports E/ESCAP/NR.4/15 and 16 gave brief information on the recently completed seminar and study tour on electricity distribution systems in urban areas, and the workshop on bio-gas and other rural energy resources, respectively. The Committee was informed of the latest position of the roving seminar on rural energy development, and the two studies on peak-load coverage, with particular reference to gas turbines and hydro-electric plants, and on the financing and management of rural electrification.

95. The Committee recorded its appreciation of the financial support provided for those activities by the Governments of Japan, the Netherlands, and Switzerland, and of the provision of expert personnel by the Government of India.

Mineral resources

96. The Committee was informed of the activities of the secretariat in the mineral resources sector as outlined in documents E/ESCAP/NR.4/10 and 11.

97. The Committee was advised that the Intergovernmental Meeting on the Organizational Aspects of the ESCAP Regional Mineral Resources Development Centre (RMRDC) had been held from 2 to 8 August 1977. Agreement had been reached on the draft statute for the Centre, and four developing countries of the region had made pledges of cash contributions to meet the operational costs of the Centre. The meeting had also agreed that the offer of the Government of Indonesia to provide host facilities for the Centre should be accepted with gratitude. The recommendations of the meeting would be considered at the next session of the Commission. The Committee also noted

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that UNDP had approved an allocation of \$US 155,890 for the provision of a co-ordinator for the Centre for two years. The Committee also noted that the Agreement and the project document for the Southeast Asia Tin Research and Development Centre had been signed.

98. The Committee expressed its appreciation of the support provided during the year by the Governments of Australia, the Federal Republic of Germany, Japan, the Netherlands and New Zealand.

Surveying and mapping

99. The Committee noted the information contained in documents E/ESCAP/NR.4/13 and 14 in connexion with the activities in surveying and mapping. ESCAP had hosted the Eighth United Nations Regional Cartographic Conference from 17 to 28 January 1977 and had convened the Intergovernmental Meeting on Remote Sensing and Satellite Surveying from 7 to 13 June 1977.

100. The Committee noted with appreciation the statement by the representative of Japan that his Government was planning a training seminar on digital analysis of remotely sensed data from resources satellites and aircraft, together with on-the-job training in the use of the equipment. The seminar would be held in Tokyo from 26 January to 22 February 1978, and would be open to about ten participants from ESCAP development countries.

101. The Committee recorded its appreciation of the support given by the Government of the Netherlands to the surveying and mapping activities for the two-year period 1976-1977, and expressed the hope that it would prove possible to continue to provide services in those fields for the period 1978-1979.

V. ACTIVITIES OF OTHER INTERNATIONAL BODIES IN THE APPRAISAL,
DEVELOPMENT AND MANAGEMENT OF WATER RESOURCES

(Agenda item 9)

102. The Committee was referred to document E/CONF.70/CBP.4, entitled "Present and future activities of the United Nations system in water resources development. Report of the Administrative Committee on Co-ordination and the Environment Co-ordination Board" which was one of the main background documents of the United Nations Water Conference. The Committee also had before it document NR.4/CRP.6. Information in those documents was supplemented by oral statements made by the representatives of various organizations.

United Nations Environment Programme

103. The co-ordination of the environmental programme of the United Nations system as well as the contribution of the United Nations organizations to the formulation of the UNEP programme of work were made through the Environment Co-ordination Board (ECB) established by the General Assembly of the United Nations in 1972. One of the priority studies initiated by ECB, namely, "Review of experience in examining health aspects of water resources development" had already been prepared by WHO and FAO and reviewed by the Board. The study on the environmental aspects of water would be continued. UNEP had also provided financial support for attendance by a number of countries at the United Nations Water Conference.

International Labour Organization

104. The activities of ILO related to water resources fell under three areas of the ILO programme: labour-based technology, emergency employment schemes; and training, management and vocational projects, detailed information on which was given in document E/CONF.70/CBP.4/Add.2 entitled "Current and Future Activities of the International Labour Office in Water Resources Development" submitted by ILO to the United Nations Water Conference.

Food and Agriculture Organization of the United Nations

105. The FAO follow-up action programme to the United Nations Water Conference with reference to water for agriculture was to be directed towards the improvement of existing and the development of efficient new irrigation systems; the improvement and extension of rain-fed agriculture and livestock production; the protection of agricultural land against flooding and waterlogging; and the introduction and expansion of fish production. The four main activities comprising the current action programme of FAO in the field of water for agriculture were the following:

(i) stimulation of investment such as the evaluation of land use potential in major agro-ecological zones and the upgrading of the global study of irrigation potential; (ii) training, which envisaged six national workshops on water management at the farm level starting in 1978, a regional workshop on irrigation management to be organized in 1978 by the Overseas Development Institute in London in co-operation with FAO and a UN/FAO training seminar on remote sensing applications in agriculture in 1978; (iii) implementation of field projects, 13 of which have been carried out, on land and water resources development; and (iv) promotion of technical co-operation through its Technical Co-operation Programme (TCP) which was organized to provide, in response to urgent requests, assistance, including grants, to countries, particularly in their efforts to improve food production.

United Nations Educational, Scientific and Cultural Organization

106. The regional activities of UNESCO in Asia were directed towards the promotion of co-operation among the countries in research for application of science and technology for the assessment and development of water resources, and education and training in that field. Several meetings on hydrology matters had been held recently or were being planned. A regional meeting of IHP (International Hydrological Programme) National Committees for Southeast Asia and the Pacific would be convened in Indonesia the following year; it was planned to hold a regional seminar on ice and snow in India in April 1978; and an International Symposium on Droughts was to be held in India in collaboration with WMO and IAHS (International Association for Hydrological Sciences). With the support of UNESCO, the international post-graduate course in hydrology had been successfully run during the past six years at Roorkee University in India. UNESCO was a participating party in some specific activities of the ESCAP programme of work and priorities and was ready to increase its co-operation with ESCAP.

World Meteorological Organization

107. The representative of WMO outlined his organization's current activities relating to the development of hydrological network and data systems in Asia, as well as activities in other fields, WMO was a participating party in some of the projects listed in the ESCAP programme of work on water resources development, and particularly in the Typhoon Committee and the Panel on Tropical Cyclones. In connexion with financial problems facing both projects, the WMO Executive Committee, at its meeting in June, had fully agreed with the ESCAP decision that the secretariats of WMO and ESCAP should negotiate further with UNDP for continued support. It had also reaffirmed that it was important for member countries to provide assistance through the WMO Voluntary Assistance Programme (VAP) or bilaterally, for urgent

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improvements in the forecasting and warning systems of countries affected by tropical cyclones. In connexion with the activities of the WMO subsidiary bodies, it was stressed that the countries of the region should participate more actively in the projects and working groups of the WMO Commission for Hydrology.

Committee for Co-ordination of Investigations of the Lower Mekong Basin

108. The Committee noted with interest the information provided on activities of the Mekong Committee highlighting the principal accomplishments during 1976, as contained in its annual report. The most important event during 1977 was the "Joint Communique Concerning the Mekong Committee" announced at the thirty-third session of the Economic and Social Commission for Asia and the Pacific by the representatives of the Lao People's Democratic Republic, the Socialist Republic of Viet Nam and Thailand on the intention of three of the riparian countries to reactivate the Committee. A meeting was held at Vientiane at the end of July 1977 by representatives of the three countries in order to develop a definitive basic agreement, including the establishment of an interim committee to proceed with new water resources development in the Lower Mekong basin pending the resumption of the participation of Democratic Kampuchea in the work of the Mekong Committee.

Other organizations

109. The representatives of the International Association for Hydraulic Research (IAHR), the International Commission on Irrigation and Drainage (ICID) and the Co-ordinating Committee on Water Research (COWAR) of the International Council of Scientific Unions (ICSU) described the functions and activities of their respective organizations aimed at stimulation and promotion of international co-operation of engineers and scientists of member countries in various fields of water engineering and water sciences.

110. After listening to the various statements of the representatives of the various agencies, the Committee expressed the need for institutional arrangements to ensure co-ordination at the regional level of the related activities within the framework of existing organizations.

111. The Committee was informed that there was already an interagency body which could carry out the co-ordination of activities concerning water for agriculture and rural community water supply. Moreover, the ESCAP secretariat already had close working relations and contacts with most of the agencies represented at the meeting.

VI. PROGRAMME OF WORK AND PRIORITIES IN THE APPRAISAL, DEVELOPMENT AND MANAGEMENT OF NATURAL RESOURCES, 1978-1979, AND CONSIDERATION OF THE PROGRAMME OF WORK AND PRIORITIES, 1980-1981, IN THE CONTEXT OF THE MEDIUM-TERM PLAN, 1978-1981

(Agenda item 10)

112. The Committee considered the programme of work and priorities for the development of natural resources as set out in documents E/ESCAP/NR.4/6, 7, 11 and 14.

Water resources

113. In considering the programme of work and priorities for 1978-1979, the Committee supported a proposal to include a "Seminar on measures to improve irrigation efficiency at the farm level" for which the USSR was prepared to provide host facilities in 1979. It was suggested that should there be a need to eliminate any project already approved, consideration could be given to combining projects 17.1 (ii) and 17.1 (iii). The observer from UNESCO stated that his organization desired to co-operate in project 17.3 (iv), "Expert working group on droughts".

114. For the period 1980-1981, the Committee suggested the following projects in addition to the proposed continuing activities:

- (i) Roving seminar on multi-objective planning and management of water resources projects; and
- (ii) Roving seminar on systems analysis for water resources planning and management.

115. It was also suggested that the provision of short-term advisory services to countries on request be considered. Such services could be provided by secretariat staff, assisted, if necessary, by outside experts. The Committee noted with appreciation the readiness of the Netherlands Government to support that activity.

Energy resources

116. The Committee endorsed the programme of work as presented, with the suggestion that having regard to the urgency and importance of measures to stimulate economy and efficiency in the production and use of energy, consideration should be given to a working group on that topic under activity 02.3 (iv), in place of a study. The representative of France offered to make available the results of studies currently being carried out on that topic in his country.

117. However, the Committee expressed its serious concern at the information given by the representative of UNDP that funds would not be provided for activity 02.2 (i)(a), "Technical assistance in co-ordinated planning of the investigation, development and management of energy resources, and identification of high priority projects". That activity had been approved in principle in 1975 and endorsed by 11 countries but had not been funded in 1976 and 1977 because of financial constraints. Since, at its thirty-third session in April 1977, the Commission had "expressed concern at the delay which had occurred in the project on co-ordinated investigation, planning and development of energy resources, and urged UNDP to provide the funds necessary to enable the project to be started in 1978", it was difficult to understand why the project was now considered unsuitable by UNDP. The Committee therefore requested the secretariat, as a matter of urgency, to seek a reversal of the decision by UNDP to withdraw its support for the activity which was not only important in its own right, but was the basis for the greater part of the proposed programme. A reformulation of the project, as suggested by UNDP, did not therefore seem appropriate.

118. The representative of UNESCO indicated the interest of his organization in participating in activity 02.2 (iii), "Development of the most appropriate forms of energy for rural areas".

Mineral resources

119. The programme of work for 1978-1979 and 1980-1981 for mineral resources development was endorsed by the Committee.

120. In view of the fact that the South Pacific offshore prospecting project (16.1 (vii)) was one of the very few ESCAP projects in that area, and was a very successful example of co-operative effort, the hope was expressed that the necessary funds would be found to enable the full project to be initiated in 1979.

121. It was also suggested that care was needed to ensure good quality in published reports.

122. The representative of the United Kingdom indicated the willingness of his country to share its experience in modern systems for data storage and retrieval.

/Surveying and

Surveying and mapping

123. The Committee endorsed the programme of work in those fields.
124. The representative of New Zealand informed the Committee that his Government endorsed the importance of strengthening information services, and would contribute appropriate information to interested countries, including the results of remote sensing studies and land use surveys based on aerial photography and ground inspection.
125. With regard to the proposal for co-ordinated regional research activities on the use of satellite data, the representative of Bangladesh stated that a national working group on flood forecasting and water resources management had been set up.

VII. CONSIDERATION OF THE AGENDA AND ARRANGEMENTS
FOR SUBSEQUENT MEETINGS OF THE COMMITTEE

(Agenda item 11)

Agenda and arrangements for the fifth session of the Committee,
with specific reference to energy resources development

126. Having considered the provisional agenda for the fifth session proposed by the secretariat (E/ESCAP/NR.4/4), the Committee made the following suggestions:
- (i) Under agenda item 4, country papers should include aspects of the formulation of energy development policy;
 - (ii) Under agenda item 5, country papers on electricity development should be presented, bringing out various aspects such as improvement in the operation of the electricity supply industry, problems and measures in meeting load demand, and structural changes in the industry;
 - (iii) Under agenda item 6, statements by countries on research and development activities relating to non-conventional energy resources should be invited;
 - (iv) Under agenda item 7, priority should be in the following order:
(c), (b), (a), (d);
 - (v) Under agenda item 7 (b), two new topics should be added, namely, electricity generating plant of improved efficiency, and the role of nuclear power in the region;

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(vi) Provision should be made in the agenda for countries heavily dependent on oil imports to discuss means to reduce such dependence;

(vii) Topics on the improvement of economy and efficiency in the production and use of energy, and the demand and supply of energy in the region should be included appropriately in the agenda, possibly with a view to studies being carried out in that connexion.

127. It was agreed that the secretariat would inform member countries of those suggestions and seek their guidance on the amendment of the agenda as necessary.

128. It was expected that the fifth session of the Committee would be held at Bangkok, on dates to be determined, in September/October 1978.

Subjects for discussion at the seventh session of the Committee

129. The Committee suggested the following topics for discussion at the seventh session, on the understanding that the views of the member countries of the region would be sought again before 1980:

(i) Rural community water supply and rural sanitation in relation to over-all management of water resources;

(ii) Relation between water management and health conditions (particularly on ways of preventing waterborne diseases);

(iii) Industrial water use in relation to the over-all management of water resources;

(iv) Integrated optimum development of the deltaic and upland portions of a river basin;

(v) Efficiency of water use, reuse and recycling (for industrial, agriculture, domestic and other uses, including technical and administrative aspects);

(vi) Review and modernization of existing irrigation projects;

(vii) Water-pricing policies in irrigation systems;

(viii) Provision of drainage for irrigation projects;

(ix) Water policy in the context of economic, social and environmental development.

130. In view of the number of suggestions, it was proposed that some of the topics could be taken up during ad hoc meetings which might be organized between the triennial water sessions of the Committee, principally to discuss progress and problems in the implementation of the Mar del Plata Action Plan.

VIII. ADOPTION OF THE REPORT

(Agenda item 13)

131. The Committee adopted the report of the session on 22 August 1977.

IX. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

132. The pertinent conclusions and recommendations of the Committee, for the attention of the Commission were the following:

1. The secretariat should convey to the International Law Commission and the UNEP Intergovernmental Working Group of Experts on Natural Resources Shared by Two or More States the Committee's view that their work in regard to shared water resources should be expedited, as recommended in paragraphs 93 (a) and (c) of the Mar del Plata Action Plan (paragraph 62).

2. The secretariat was requested to seek funds that might be needed in some cases to support training of key staff through exchange of personnel between developing countries under the TCDC concept (paragraph 70).

3. Interagency co-operation at the regional level on activities concerning water for agricultural use and for community water supply in rural areas should be effected through the existing interagency committee and task force in the ESCAP region (paragraph 71).

4. An interagency task force on water should be established for the ESCAP region to assist co-operation and, as appropriate, joint action among participating bodies in support of national programmes for the investigation, development and management of water (paragraphs 73 and 110).

5. Consideration should be given to the convening in the ESCAP region of a meeting of representatives of existing river basin commissions outside as well as inside the region (paragraph 74).

6. The secretariat should, if deemed appropriate, recommend to the Commission that an ad hoc intergovernmental meeting be held before the seventh session of the Committee in 1980 to review, at the regional level, progress and problems in implementing the most important recommendations of the United Nations Water Conference (paragraph 76).

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7. In order to strengthen and increase the effectiveness of the secretariat functions of ESCAP as recommended in resolution VIII, subparagraph (d) (iii), of the United Nations Water Conference, some means should be found to increase travel funds primarily by the provision of additional funds at the regional level from the regular budget (paragraph 77).

8. The secretariat should from time to time distribute summaries of information available from countries on developments or other matters likely to be of interest to other countries (paragraph 78).

9. Expressed appreciation of support provided or offered for the Commission's activities in the natural resources field (paragraphs 17, 93, 95, 98, 101).

10. Information on water resources which could be supplied by countries should be published in the Statistical Yearbook for Asia and the Pacific (paragraph 91).

11. The Committee supported a proposal to include in the water resources programme of work a "Seminar on measures to improve irrigation efficiency at the farm level" for which the USSR was prepared to provide host facilities in 1979 (paragraph 113).

12. It suggested the following projects in addition to the proposed continuing activities in the 1980-1981 programme of work and priorities for water resources development: (i) Roving seminar on multi-objective planning and management of water resources projects; and (ii) Roving seminar on systems analysis for water resources planning and management (paragraph 114).

13. It also suggested that the provision of short-term advisory services (concerning water problems) to countries on request should be considered. The readiness of the Government of the Netherlands to support this activity was appreciated (paragraph 115).

14. The Committee endorsed the programme of work in energy resources as presented and suggested that consideration be given to holding a working group on measures to stimulate economy and efficiency in the production and use of energy under activity 02.3 (iv) in place of a study (paragraph 116).

15. It expressed its serious concern at the information given by the representative of UNDP that funds would not be provided for activity 02.2 (i)(a). It requested the secretariat to seek a reversal of the decision by UNDP to withdraw its support for this activity. A reformulation of the project, as suggested by UNDP, did not therefore seem appropriate (paragraph 117).

16. It endorsed the programme of work for 1978-1979 and 1980-1981 in the field of mineral resources (paragraph 119).

17. It expressed the hope that the necessary funds would be found to enable the full South Pacific offshore prospecting project (16.1 (vii)) to be started in 1979 (paragraph 120).

18. It suggested that care was needed to ensure good quality in published reports (paragraph 121).

19. It endorsed the programme of work in the field of surveying and mapping (paragraph 123).

20. It made a number of suggestions concerning the provisional agenda for the fifth session of the Committee (E/ESCAP/NR.4/4) (paragraph 126).

21. The Committee suggested topics for discussion at the seventh session of the Committee, on the understanding that the views of the member countries of the region would be sought again before 1980 (paragraph 129).

22. It also suggested that some of the topics suggested in paragraph 129 for discussion at the seventh session could be taken up during ad hoc meetings which might be organized between the triennial water sessions of the Committee (paragraph 130).