



**ADVISORY COMMITTEE ON THE APPLICATION
OF SCIENCE AND TECHNOLOGY
TO DEVELOPMENT**

EIGHTH REPORT

March 1971

**ECONOMIC AND SOCIAL COUNCIL
OFFICIAL RECORDS: FIFTY-FIRST SESSION**

SUPPLEMENT No. 10

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NOTE

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

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INTRODUCTION

1. The Advisory Committee on the Application of Science and Technology to Development has in the past submitted to the Economic and Social Council a brief annual report summarizing its activities over the preceding twelve months. The seventh report (E/4780) 1/ covered the period from 1 April 1969 to 15 April 1970 and dealt with the eleventh, twelfth and thirteenth sessions of the Committee. The present report covers the period from 16 April 1970 to 15 April 1971. In line with a decision taken at the thirteenth session (E/4780, para. 7), the Committee, during those twelve months, held only one plenary session, its fourteenth. The report deals, therefore, with the work accomplished during the year and reviewed at the fourteenth session.

2. The mandate of the present membership of the Committee expires at the end of 1971 and it will be necessary for the Economic and Social Council to take decisions before that time regarding the future of the Committee or alternative arrangements to be made for dealing with problems of science and technology in the United Nations. The Committee's views on machinery for science and technology in the United Nations system were set forth in a report entitled "Future institutional arrangements for science and technology" (E/4827), which was before the Council at the forty-ninth session. The Committee decided at its fourteenth session that it did not wish to make any revisions or additions to that report at the present stage.

1/ Official Records of the Economic and Social Council, Forty-ninth Session, Supplement No. 9.

I. ACTIVITIES OF THE ADVISORY COMMITTEE

Meetings

3. During the year under review, the Advisory Committee held one session, its fourteenth, at United Nations Headquarters from 16 to 25 February 1971.

4. The Working Group on Industry and Transfer of Technology met at the headquarters of the United Nations Industrial Development Organization (UNIDO) at Vienna from 24 to 30 November 1970; the Working Group on the World Plan of Action met at United Nations Headquarters from 7 to 10 December 1970; the regional groups of the Advisory Committee met as follows: the Regional Group for Africa at the headquarters of the Economic Commission for Africa (ECA) at Addis Ababa from 19 to 22 October 1970; the Regional Group for Asia at the headquarters of the Economic Commission for Asia and the Far East (ECAFE) at Bangkok from 26 to 28 October 1970; the Regional Group for Europe at Geneva from 12 to 14 May 1970; and the Regional Group for Latin America (at the invitation of the Government of Brazil) at the Ministry for Foreign Affairs at Rio de Janeiro from 31 August to 2 September 1970. In addition, working groups and regional groups of the Committee held meetings immediately prior to or during the fourteenth session.

5. The fifteenth session of the Advisory Committee, the last under the Committee's present mandate, is scheduled to be held at Geneva from 15 to 26 November 1971.

6. Prior to the fifteenth session, the Working Group on Population and the newly established Working Group on Global Research Projects for the Solution of Development Problems are to meet, respectively, at Geneva and in New York on dates to be determined later in consultation with the chairmen of the groups concerned. Each of the four regional groups will also meet as usual at the headquarters of the appropriate regional economic commission, except that the Regional Group for Latin America will meet at Mexico City.

Publications

7. During the year under review, the statement on strategy for the application of science and technology in the United Nations Second Development Decade (E/4805 and Corr.1 and E/4805/Add.1), adopted by the Advisory Committee at its thirteenth session, was published under the title Science and Technology for Development. 2/ At that session, the Committee had also recommended publication of a report entitled "The world population problem: human fertility aspects" (E/AC.52/L.72), prepared jointly by the United Nations, UNICEF, the ILO, FAO, UNESCO and WHO at the Committee's request. That report was published under the title Human Fertility and National Development: A Challenge to Science and Technology. 3/

2/ United Nations publication, Sales No.: E.70.I.23.

3/ United Nations publication, Sales No.: E.71.II.A.12.

II. MAJOR ACTIVITIES OF THE ADVISORY COMMITTEE

World Plan of Action for the Application of Science and Technology to Development

8. The Advisory Committee, in its third report to the Council, ^{4/} observed that the well-known gap between the living standards of the developing and the advanced countries had its parallel also in science and technology, and that it was growing wider. It was, indeed, one of the major factors in the growing disparity of living standards. To remedy this disparity and to mount a world-wide "concerted attack" on a limited number of especially important problems, the Advisory Committee made a proposal to the Council, which the Council approved by resolution 1155 (XLI), that the Committee should establish a World Plan of Action for the Application of Science and Technology to Development. The Council, in that resolution, endorsed the following objectives for the combined efforts of both the developed and the developing countries in implementing the Plan:

"(a) To assist the developing countries to build the necessary structure of institutions (national and, when appropriate, regional) and to train the necessary skilled personnel on which the capacity of the developing countries to apply science and technology to their development will depend;

"(b) To promote the more effective application of existing scientific knowledge and technology in the development of the less developed countries and, with that in view, to improve the arrangements for the transfer and adaptation of knowledge and technology already available in more developed countries; and at the same time, to develop a climate in developing countries more favourable to the adoption of innovations in the techniques of production;

"(c) To focus increasingly the attention, and to mobilize the efforts of scientists and research organizations, in highly developed countries as well as in the developing countries, on problems the solution of which will be of special benefit to the developing countries, and to encourage co-operation of developed and developing countries to this end;

"(d) To promote a greater knowledge among Governments, the scientific community, the general public and especially young people, in developed as well as developing countries, of the needs of the developing countries for science and technology."

9. The General Assembly, in resolution 2318 (XXII), endorsed the decision of the Council and further requested the Advisory Committee

^{4/} Official Records of the Economic and Social Council, Forty-first Session, Supplement No. 12.

"To remain aware of the need to ensure close co-ordination between its work in that field and the plans which are to be prepared for the next United Nations development decade;" and

"To consider carefully the regional aspects of such a plan and to seek, for that purpose, the co-operation of the regional economic commissions and the Economic and Social Office in Beirut."

10. As part of its contribution to the preparatory work on the Second United Nations Development Decade, the Advisory Committee submitted a strategy statement to the Council (E/4805 and Corr.1 and E/4805/Add.1) at its forty-ninth session. The Committee expressed its appreciation that its recommendations in the strategy statement had contributed to the contents of the paragraphs on science and technology in the statement on the International Development Strategy for the Decade adopted by the General Assembly at the special meeting held on 24 October 1970 to commemorate the twenty-fifth anniversary of the United Nations. 5/

11. After some four years of intensive work and close collaboration with members of the United Nations family of organizations, other intergovernmental and non-governmental organizations and individual consultants, the Advisory Committee completed its work on the World Plan of Action. The report, in two volumes (E/4962 and E/4962/Add.1), was adopted by the Committee at the fourteenth session; it will be placed before the Council at the fifty-first session for its consideration. The report outlines action in terms of a limited number of priority areas for new research, priority areas for application of existing knowledge and the building up of indigenous science and technology infrastructures in developing countries. The recommendations of the Committee are addressed to Governments and other institutions in the developing countries and in the developed countries and to the organizations of the United Nations family. The Committee specifically recommends that the Council establish a working party of government representatives to consider its proposal for the setting up of a science and technology fund or account within the United Nations Development Programme to supplement other sources of finance, bilateral and multilateral, for catalyzing action on the programmes outlined in the World Plan of Action. A draft resolution on proposed arrangements for implementing and financing the Plan has been submitted to the Council for action (E/4962, annex).

12. The World Plan of Action is presented in general terms and, within the major areas enumerated by the Committee, the need remains to work out specific programmes and projects. The Committee is strongly of the opinion that this work could only be done effectively at the regional level. In the draft resolution proposed by the Advisory Committee to the Economic and Social Council it has, therefore, recommended that the Council should request the regional economic commissions to consider the proposals contained in the World Plan of Action in the light of the needs of the countries in each respective region, with a view to preparing specific regional plans of action for each region. This work should be done in close co-operation with the specialized agencies in respect of their own fields of activity.

5/ United Nations publication, Sales No.: E.71.II.A.2, paras. 60-64.

13. It is the intention of the Advisory Committee that the draft regional plans should be reviewed at the meetings of the regional groups of the Committee in 1971 and subsequently, it is hoped, by the full Committee at its fifteenth session in November. After the Committee has approved those regional plans, they should be presented to the respective regional economic commissions and the Economic and Social Council for governmental approval.

Global research projects

14. From the time that the Committee first conceived the idea of "problems for concerted attack", ^{6/} it has been concerned with encouraging the provision of resources to deal with such problems, either through research or the application of existing knowledge. It has, therefore, welcomed the principle established in the United Nations Development Programme of setting aside a certain percentage of the funds available to the Programme for intercountry projects. Such projects might fall within the Committee's category of problems for concerted attack, though their significance would be regional or global rather than being limited to one particular country. In its report on future institutional arrangements for science and technology (E/4827), the Committee recommended that UNDP should raise from 3 per cent to 5 per cent the fraction of its resources to be set aside to finance its direct support of scientific research of interest to developing countries, in all fields including agriculture. The Committee expressed its disappointment that, rather than increasing the percentage from 3 to 5, it had been decided to reduce the funds available for this type of project to 1 per cent. The Committee was aware of the difficulty of identifying valuable projects of a global nature, and of specifying them in such a way as to attract UNDP support. It believed, however, that a number of the proposals in the World Plan of Action (see paragraph 11) should form the basis for global projects.

15. The Committee believes that a better understanding is required of the problems involved in bridging the gap between reports, recommendations and ideas, on the one hand, and, on the other, projects which have been sufficiently formulated and made explicit to promote action by UNDP. It has, therefore, decided to undertake a study, for submission to the fifteenth session, on the definitions and criteria which can be used to define such projects. The study would examine examples of global research projects selected from those presented to UNDP, as well as earlier recommendations of the Committee itself, and those in the World Plan of Action. It hopes to undertake several case studies in sufficient depth and detail to allow a realistic assessment to be made of what is required to bridge the critical gap between the idea and a formulated project on which action can be taken. It is believed that such a study could be of considerable assistance to UNDP in supporting global projects which, in the opinion of the Committee, can be of particular importance for development.

Science and technology in relation to industrial development

16. The Advisory Committee has given continuing attention to several aspects of the application of science and technology to industrial development. Recommendations on those matters have been made in the earlier reports of the

^{6/} See Official Records of the Economic and Social Council, Thirty-ninth Session, Supplement No. 14, chapter II.

Committee to the Council. However, in view of their specific importance, the Committee selected for inclusion among its special reports to the Council two problems in that area, namely, technologies appropriate for industrial development, and factors influencing the effectiveness of existing industrial research organizations in developing countries.

Technologies appropriate for industrial development

17. The statement on the international Development Strategy for the 1970s provides, inter alia, that particular attention should be devoted to fostering technologies suitable for developing countries. The research programmes of the developing countries should be oriented towards the development of technologies that are in line with the circumstances and requirements of individual countries and regions, and developed countries are urged, in relation to their aid and investment policies, to assist developing countries to identify technologies which are appropriate to their circumstances and avoid the utilization of scarce resources for inappropriate technologies.

18. The Advisory Committee at its fourteenth session adopted a special report on the subject (E/4967) which will be placed before the Council at its fifty-first session. The report enumerates the factors which render a particular technology appropriate or inappropriate for an individual developing country, and the elements involved in assisting developing countries to identify and adopt technologies that are appropriate for their circumstances. In addition to the problem of choice of technologies, the report considers questions of appropriate product and plant design. It makes recommendations to the developing countries and for supporting action by industrialized countries, at the national policy level and at the enterprise level. It also outlines proposals for action by the United Nations system and includes a draft resolution for action by the Council.

Factors affecting the effectiveness of existing industrial research organizations in developing countries

19. The Advisory Committee at its fourteenth session also adopted a special report (E/4960) dealing with problems in the effective provision and use of industrial research services. The report examines the factors affecting the supply and utilization of industrial research services. It also makes recommendations for action in the developing countries (at the national level, at the research organization level and at the industrial enterprise level), and on assistance from industrially advanced countries and through the United Nations system. That report will also be presented to the Council at its fifty-first session.

Transfer of technology to developing countries

20. With regard to the subject of transfer of technology, the Committee feels that it is desirable to avoid too rigorous and limited a definition of its coverage; there is a certain advantage in keeping the coverage of the subject as wide as possible in order that the transfer process can be reviewed as a system of many parts. Such an approach would be in keeping with the general mandate of the Advisory Committee to examine the activities of the various organizations within the United Nations system and their bodies and to suggest priorities and measures

for co-ordination. At its fourteenth session, the Committee reviewed the progress made and action taken on its earlier recommendations, in particular those set forth in its third report, 7/ the work of the Division of Public Finance and Financial Institutions and the United Nations Institute for Training and Research, the work programme proposed for the United Nations Conference on Trade and Development, and the channels and mechanisms for the transfer of technology.

Action on earlier recommendations

21. The Committee's earlier recommendations on the subject fell into the following broad categories: publication of technological developments applicable to the needs of the developing countries, development of technological information services and systems, case studies on transfer of technology, creation or strengthening of technical information centres, training of technical information officers, development of institutions concerned with technology transfer, strengthening and expanding expert and fellowship programmes for such institutions, and conduct of symposia, seminars, conferences and training programmes related to technology transfer.

22. The Committee noted that the response from the United Nations organizations to those recommendations had, in general, been favourable, although one or two of the recommendations had not yet been acted upon, namely, the creation of centres limited to technology transfer, and the development of enterprises in developing countries for the publication of low-cost technical books and other printed material. It has been found that the specialized technology transfer centres may not be entirely practical, and that the functions of such centres can best be attached to existing or new research and development institutes, industrial extension services, business associations or departments of industry in governments, including patent offices. On the other matters, the recommendations in the third report of the Advisory Committee had been accepted by the international organizations concerned and are reflected in their work programmes.

Work of the Division of Public Finance and Financial Institutions and UNITAR

23. The Committee reviewed the work of the Division of Public Finance and Financial Institutions of the Department of Economic and Social Affairs and of UNITAR in the field and noted that, pursuant to Council resolution 1311 (XLIV), an interregional meeting of experts on transfer of enterprise-to-enterprise operative technology was to be convened by the Secretary-General at United Nations Headquarters from 22 June to 2 July 1971. The meeting will consider the results of the country case studies commissioned by the Division of Public Finance and Financial Institutions and the surveys undertaken by UNITAR, attempt to synthesize the material, reach conclusions, set guidelines and make recommendations. The Committee wished to be kept informed of further progress and to receive reports issuing from the Division, UNITAR and the interregional meeting of experts.

7/ Official Records of the Economic and Social Council, Forty-first Session, Supplement No. 12.

Proposed work programme of UNCTAD

24. The Advisory Committee noted that the work programme proposed for UNCTAD centred upon an examination, with a view to developing further proposals, of the main channels and mechanisms used in the transfer of technology to developing countries and of the costs of the transfer. That should lead to the consideration of a series of proposals aimed at improving the existing machinery, reducing the costs, securing a wider, faster and easier access by the developing countries to modern technology, and alleviating any restrictive conditions, imposed under licensing arrangements, which might hamper the expansion of the industries and exports of developing countries. The work programme also proposed a consideration of the impact of the transfer process on the trade perspectives of the developing countries. There were, for example, two other areas - substitution of domestic for imported technology and choice of technology - which were closely related to the transfer process but in which various agencies of the United Nations system and other international bodies were active; the work programme proposed that the role of the United Nations Conference on Trade and Development in those two areas would be to supplement, where necessary, the activities of those bodies, by agreement and in close co-operation with them.

25. The Advisory Committee endorsed the proposed work programme and welcomed the establishment of an Intergovernmental Group on Transfer of Technology within UNCTAD. It received an assurance from the representative of UNCTAD that, in implementing the programme on transfer of technology, the UNCTAD secretariat would seek to avoid unnecessary duplication and, in co-operation with other bodies of the United Nations system, would draw fully upon the results of the studies prepared or being prepared by them and upon their accumulated experience.

26. The Committee felt that in carrying out the studies outlined in the work programme, every attempt should be made by the UNCTAD secretariat to develop concrete proposals for action at the intergovernmental and national levels. The Committee wished to follow closely the implementation of the work programme and the activities of the intergovernmental group.

Channels and mechanisms for the transfer of technology

27. The Advisory Committee, at its thirteenth session, had requested a study on the mechanisms of transferring technology from the developed to the developing countries. In response to that request, the Office for Science and Technology, in co-operation with the UNCTAD secretariat, had commissioned a study entitled "The mechanisms for the transfer of technology from advanced to developing countries", by Charles Cooper and Francisco Sercovich of the University of Sussex, England.

28. The Ad Hoc Working Group on Industry and Transfer of Technology of the Advisory Committee had considered the study at its Vienna meeting. The Group had noted with appreciation the material presented in the study but had expressed some reservations. The Committee agreed with the decision of the Working Group that, since the authors of the study intended to revise the draft, taking into account the Group's comments, and since the revised study would be submitted to the UNCTAD Intergovernmental Group on Transfer of Technology for its consideration, the Advisory Committee should not pursue the matter further. The Committee, however, expressed a wish to receive copies of the revised study and of the reports on its subsequent consideration by UNCTAD intergovernmental bodies.

The population problem in developing countries

29. As mentioned earlier, the Advisory Committee took note with appreciation of the publication entitled Human Fertility and National Development: A Challenge to Science and Technology. It welcomed the steps that had been taken through the United Nations and the interested specialized agencies, as well as by national Governments, to intensify research on all relevant aspects of population growth, and took note of the decision of the General Assembly to proclaim 1974 as Population Year, to coincide with the World Population Conference convened by the Economic and Social Council. It also noted with satisfaction the preparatory programme undertaken by the Population Division and other interested bodies, and in particular the reports of the Ad Hoc Committee of Experts on Demographic Aspects of Social Development (E/CN.9/222) and the Ad Hoc Committee of Experts on Demographic Aspects of Economic Development (E/CN.9/239), which had met in April 1969 and June 1970, respectively.

30. The Committee decided to prepare a special report which would contain, as mentioned in its seventh report, 8/ an indication of priority areas for research as well as judgements about future work that might be stimulated within the United Nations family. It agreed upon an outline for the report and the arrangements made for the preparation and review of the first draft by the Committee's Ad Hoc Working Group on Population. The Committee hoped to complete that report in time for it to be considered by the Council in 1972.

The role of science and technology in reducing the impact of natural disasters

31. The Advisory Committee has taken note of the growing concern of the United Nations system in dealing with the problems of natural disasters which have for centuries caused great damage to human life and property. It believes that science and technology can be applied not only to the study of the causes of such disasters but also to their prevention, and to the organizational arrangements which should be made for forecasting them and reducing their impact when they do occur. It has, therefore, decided, after consultations with the Office for Inter-Agency Affairs, to undertake a preliminary study as a contribution towards the implementation of General Assembly resolution 2717 (XXV). In that study it would attempt:

(a) To identify the areas where more research should be applied to enable scientists to understand better the phenomena of natural disasters, interpret their causes, and improve the scientific and technological basis of forecasting and advance warning of volcano eruptions, earthquakes, tidal waves, hurricanes, cyclones, typhoons, floods and drought;

(b) To identify the areas where more technological research should be applied to improve protection against natural disasters, such as the development of methods for producing earthquake-resistant, low-cost buildings and other civil engineering works, and the development of new floating or inflatable equipment;

8/ Official Records of the Economic and Social Council, Forty-ninth Session, Supplement No. 9.

(c) To delineate the outline of a feasibility study for the purpose of establishing a network of sensors, using satellites, aircraft and sea and land platforms, which could transmit information to one or more centres that would analyse the data to provide early warning of certain natural disasters of a specific magnitude on a world-wide basis, and linking that network with national and international means for emergency action.

It is intended that a draft of the study should be available for consideration by the Committee at its fifteenth session.

Collaboration between scientists of developed and developing countries

32. The Advisory Committee has continued to stress the importance of stimulating and encouraging collaboration between scientists in developed and developing countries, and involving the scientific community of advanced countries in the problems of developing countries. It has been gratified by the increasing evidence of growing attention to this problem in a number of governmental and non-governmental organizations and in various meetings and seminars. Such activities contribute to the aims of the Advisory Committee for the Application of Science and Technology during the Second Development Decade. At its fourteenth session several recommendations were made on this matter.

33. The importance of ensuring that when international scientific meetings are held in developing countries (which should be done wherever practicable), care should be taken to ensure that such meetings deal with subjects of immediacy and relevance to the host countries and to their scientific-technical communities. It was agreed that the Executive Board of the International Council of Scientific Unions (ICSU) should be invited to solicit the assistance of all secretaries-general of the international scientific unions, and of the secretaries of the commissions, committees and the like, in obtaining an official and representative reply from the ICSU family on its current and planned meetings in developing countries, information and comments about the results obtained to date and suggested solutions to overcome the problem areas involved. The collection of those data would provide the basis for further recommendations from the Committee. With a view to overcoming the isolation of scientists and scientific institutions in developing countries and of stimulating the interest and participation of scientists from developed countries, it was recommended that international scientific organizations should be encouraged to hold a proportion of their meetings in developing countries.

34. The Advisory Committee agreed that it was important to be able to assess the capability of individual institutions and laboratories of developing countries, to identify the problems and to conduct innovative research in fields selected by developing countries, and it recommended that UNESCO should be requested to proceed with a survey of research institutions and laboratories in developed countries which have been engaged over the past years in continuing programmes of research on problems specific to developing countries. UNESCO should also be requested to include a special entry in its statistical survey of science and technology concerning the developed countries which would allow for a clear assessment of the national research and experimental development effort devoted to specific problems of developing countries. It was recommended that three or four case studies should be carried out on specific problems of importance to developing countries.

35. The Advisory Committee again stressed the need to establish or strengthen bilateral links between research institutions of developed and developing countries, and recommended that UNESCO should take up with the Governing Council of UNDP the implementation of the Committee's recommendations endorsed in Council resolution 1543 (XLIX).

The role of modern science and technology in national development
and the need to strengthen technical and scientific co-operation
among States

36. The Advisory Committee has taken note of General Assembly resolution 2658 (XXV), which refers to its recommendations and its work in formulating the World Plan of Action for the Application of Science and Technology to Development. The resolution recommends that the Advisory Committee should give special consideration to the long-term economic and social implications of science and technology having regard to the special needs of the developing countries. The resolution requests the Secretary-General, with the assistance of the Advisory Committee and taking into account its work on the World Plan, to prepare a study which would evaluate the main implications of science and technology, particularly for development and appraise the results achieved since the first United Nations Conference on the subject in 1963.

37. The Advisory Committee established a working group which met during the session and expressed its willingness to assist the Secretary-General in preparing the study and to review any materials placed before it. The Advisory Committee welcomed the General Assembly resolution and particularly stressed the need for increased international scientific and technological co-operation, which is one of its own major concerns. The Committee emphasized the importance of giving special consideration to the long-term economic and social implications of science and technology having due regard to the special needs of developing countries. It decided to place the matter on the agenda for its fifteenth session and to include consideration of questions of science and technology and human values in modern society.

38. As far as the proposed report is concerned, the Committee was of the opinion that it should not be encyclopaedic in character but should be limited and well defined in scope. It suggested that, as a first step, the Secretary-General should request relevant organizations in the United Nations family and other intergovernmental organizations concerned to prepare short notes on the impact on the activities of those organizations of the 1963 Conference on Science and Technology for the Benefit of the Less Developed Areas and of the work of the Advisory Committee. It was also suggested that the Division of Human Rights should be requested to prepare a note covering its activities pursuant to General Assembly resolution 2450 (XXIII) so that any potential overlap should be avoided. A report on action taken by the world scientific community to follow up the 1963 Geneva Conference should also be sought from the International Council of Scientific Unions.

Other items

The protein problem

39. At its thirteenth session, the Advisory Committee adopted a statement on the protein problem 9/ in which it recommended that a broad statement of strategy should be prepared which would indicate the role that Governments and national institutions should play in reducing the magnitude of the protein problem, as well as any action which should be taken during the Second United Nations Development Decade. This idea was taken up by the General Assembly in resolution 2684 (XXV), which requested the Secretary-General to prepare, with the assistance of independent experts and in close consultation with the agencies and organizations of the United Nations system, a concise report on the possible elements of a broad statement of strategy.

40. The Secretary-General is convening a panel in May 1971 to formulate this strategy statement. It will be composed of a small number of persons with wide experience in the field of economic development or scientific endeavour. The statement of the panel will be transmitted to the Council at its fifty-first session, after which it will be placed before the twenty-sixth session of the General Assembly.

41. The Committee looks forward with great interest to the receipt of the strategy statement and believes that it should add considerably to the visibility and the momentum of action on the protein problem confronting the developing countries.

Science education

42. As was reported at the thirteenth session, the Advisory Committee had, with the issue of its second report on science education (E/4814), completed that stage of its work in the field of science education. It noted with appreciation, however, that arrangements were being made for the preparation of a book on science education based on the reports and working papers which had been issued by or been before the Advisory Committee. Arrangements would be made by UNESCO for its eventual publication.

The systems approach

43. At its thirteenth session, the Committee had considered the application of a systems approach to relevant economic programmes and its possible application to policy-making in the field of science and technology. Following a request made at that session, a number of replies had been received from various divisions of the United Nations Secretariat and from organizations within the United Nations family dealing with their activities and experience with respect to systems analysis. The Advisory Committee decided to take up the subject at its fifteenth session when it will further examine the documentation prepared for its thirteenth session and consider the submissions presented by organizations in the United Nations family, together with other relevant material that may be available. It will then be in a

9/ Official Records of the Economic and Social Council, Forty-ninth Session, Supplement No. 9, annex II.

position to determine what further steps it might undertake with respect to the application of the systems approach, as set out in its seventh report. 10/

The application of computer technology to development

44. The Advisory Committee's role in relation to General Assembly resolution 2458 (XXIII) concerning the application of computer technology to development was reported in the seventh report, which noted that the comments submitted by its Working Group on the subject had been incorporated in the Secretary-General's report entitled "The application of computer technology for Development" (E/4800). The full report of the Working Group was annexed to the Secretary-General's report. The Advisory Committee at its fourteenth session endorsed the report of the Working Group and took note that the Secretary-General's report had been published. 11/ In that publication, the report of the Advisory Committee's Working Group was reproduced as annex II. The Advisory Committee expressed the hope that the Economic and Social Council would take steps at its next sessions to give effect to the substantive and institutional proposals in the Secretary-General's report.

Question of the establishment of an international university

45. The Advisory Committee has taken note of the studies currently being undertaken in relation to the question of establishing an international university and of the provisions of General Assembly resolution 2691 (XXV) which calls for further studies of the educational, financial and organizational aspects. It also noted that UNESCO had drawn up a programme which would enable it to prepare a report on the subject by October 1971. The Advisory Committee expressed the hope that, in any plans which were drawn up, the role and contribution of existing institutions would be taken into account and that undesirable duplication would be avoided.

United Nations Conference on the Human Environment

46. The Advisory Committee is following with keen interest the arrangements being made for the United Nations Conference on the Human Environment to be held at Stockholm in 1972, particularly as it was involved at the outset in providing advice to the Secretary-General on the scope and nature of the proposed meeting. During the fourteenth session, its Ad Hoc Working Group on the Human Environment Conference met to discuss the arrangements and to provide informal advice requested by the Secretary-General of the Conference on certain aspects of the background documentation. The Advisory Committee has re-emphasized the importance with which it regards the Stockholm meeting and holds itself in readiness to provide any assistance it can to the Secretary-General of the Conference.

10/ Official Records of the Economic and Social Council, Forty-ninth Session, Supplement No. 9, para. 56.

11/ The Application of Computer Technology for Development (United Nations publication, Sales No.: E.71.II.A.1).

Committee on Natural Resources

47. The Advisory Committee has noted the establishment of the Council Committee on Natural Resources and looks forward to collaborating with that new body, particularly in view of its own interest and the publication earlier of its report, Natural Resources of Developing Countries. 12/ It wishes to be kept informed of the activities of the Committee on Natural Resources especially in regard to the role of science and technology in the discovery and exploitation of the natural resources in developing countries.

III. ACTION TO BE TAKEN BY THE ECONOMIC AND SOCIAL COUNCIL

48. The Advisory Committee, in concluding this report, would like to draw the attention of the Economic and Social Council to the following matters on which it is now making recommendations to the Council and other organizations within the United Nations system, for action as appropriate:

- (a) The future of the Committee or alternative arrangements for advice on the application of science and technology to development (para. 2 and E/4827);
- (b) Programme of meetings in 1971 (paras. 5 and 6);
- (c) Committee's report on the World Plan of Action and draft resolution (paras. 11 and 12; E/4962 and E/4962/Add.1);
- (d) Committee's report on technologies appropriate for industrial development and draft resolution (para. 17; E/4967);
- (e) Committee's report on factors affecting the effectiveness of existing industrial research organizations in developing countries (para. 18 and E/4960);
- (f) Committee's statement on transfer of technology to developing countries (paras. 20-28);
- (g) Committee's recommendations for action by UNESCO on the survey of research in developed countries on problems of developing countries (para. 34) and bilateral links between research institutions of developed and developing countries (para. 35); and
- (h) Secretary-General's report on computer technology (para. 44; E/4800).

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