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PREPARATORY COMMITTEE FOR THE UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT
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Item 2 of the provisional agenda*

PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

Report of the Advisory Committee on the Application of Science and Technology to Development

Note by the Secretary-General of the Conference

1. By decision 1 (IV) of 10 February 1978,[1/] the Committee on Science and Technology for Development took note of a preliminary report of the Advisory Committee on the Application of Science and Technology to Development on the formulation of a harmonized science and technology policy for programmes within the United Nations system (E/C.8/49 and Corr.1 and Add.1) and requested that the Advisory Committee should continue its study of the question. The Committee also requested that the report resulting from this study be circulated to the Preparatory Committee for the United Nations Conference on Science and Technology for Development for information.

2. The report of the Advisory Committee was considered by the Administrative Committee on Co-ordination (ACC) at its seventy-fourth session in November 1978. The ACC decided that it be issued together with the consolidated comments of interested agencies.

3. By decision 19 (IV) of 4 May 1979,[2/] the Preparatory Committee requested that the Advisory Committee's report entitled "Formulation of a harmonized science and technology policy for programmes within the United Nations system" be circulated to its fifth session, together with any available comments by agencies and organizations of the United Nations system on the report. The report of the Advisory Committee is attached.

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* A/CONF.81/PC/37.

1/ See Official Records of the Economic and Social Council, 1978 Supplement No. 3 (E/1978/33, Chap.1).

2/ See Official Records of the General Assembly, Thirty-fourth session, Supplement No. 43 (A/34/43), vol. II, annex I.

FORMULATION OF A HARMONIZED SCIENCE AND TECHNOLOGY POLICY FOR PROGRAMMES WITHIN THE UNITED NATIONS SYSTEM

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LETTER OF TRANSMITTAL DATED 11 AUGUST 1978 FROM THE CHAIRMAN OF THE ADVISORY COMMITTEE ON THE APPLICATION OF SCIENCE AND TECHNOLOGY TO DEVELOPMENT ADDRESSED TO THE SECRETARY-GENERAL OF THE UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

At the twenty-fourth session of the Advisory Committee on the Application of Science and Technology to Development, careful consideration was given to a document prepared by the Ad Hoc Working Group on Policy for Science and Technology within the United Nations System. This document was elaborated in response to the request of the Committee on Science and Technology for Development at its fourth session wherein it took note of an earlier report (E/C.8/49) and requested a further document that should take account of certain points raised at the Committee on Science and Technology for Development meeting and also of certain comments by a number of United Nations agencies.

During the twenty-fourth session, the Advisory Committee had a full discussion of the Ad Hoc Working Group's report and further elaborated some important aspects. The Committee was thus able to produce the present document which expresses the consensus of the Advisory Committee on the subject. The Committee would now be very grateful if you would forward this document to the focal points in the member countries in connexion with the preparations for the United Nations Conference on Science and Technology for Development, in accordance with the recommendation of the Committee on Science and Technology for Development. Originally, our report was to be submitted to the Preparatory Committee at its third session and we expect that this is still the case, but in view of the postponement of this session, this document should be sent to the focal points in advance.

In transmitting this document to the focal points, we wish to indicate that it represents the independent and objective views of the Advisory Committee, having taken into account the past work on the topic over a number of years and the views of the different United Nations agencies, and having regard for the undue complexity of the matter in the light of the restructuring process that has been initiated by the General Assembly. The document, however, does not necessarily reflect the views of the United Nations agencies to the terms of our analysis nor to the particular alternative approaches we suggest for harmonizing science and technology policy, or to the specific alternatives we also suggest for harmonization and co-ordination mechanisms. During our twenty-fourth session, due to lack of time for studying the position paper by the Advisory Committee Ad Hoc Working Group, the agencies and organizations were not able to bring to the session their formal views, and they requested that this be made known to the focal points.

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We feel strongly that it is up to the Governments through the 1979 Conference and the General Assembly to decide what course to follow in harmonizing science and technology policy, but there is a certain minimum which is necessary to rationalize the efforts of the United Nations system in matters of science and technology and to improve its effectiveness for the benefit of the countries themselves. Some of the alternatives suggested could perhaps assist the Governments in their final recommendations for harmonization.

May I take this opportunity to express once more our interest and willingness to co-operate for the success of the United Nations Conference on Science and Technology for Development in 1979.

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INTRODUCTION

1. The present document has been prepared by the Advisory Committee on the Application of Science and Technology to Development in response to the request of the Committee on Science and Technology for Development at its fourth session in February, 1978. The Committee on Science and Technology expressed its appreciation to the Advisory Committee for its preliminary report (E/C.8/49) on the formulation of a harmonized policy for science and technology activities and programmes within the United Nations system, and it asked the Advisory Committee to continue study of this question and to submit a "further report" which would augment the preliminary report by focusing on several specific issues of immediate concern to the United Nations system. The Committee also requested that this "further report " be submitted "to the Preparatory Committee for the United Nations Conference on Science and Technology for Development, at its third session and all national focal points and regional [illegible] commissions for their information" (E/C.8/58).

2. The earlier report (E/C.8/49) was prepared in response to General Assembly resolution 3168 (XXVIII) of 17 December 1973 and to Economic and Social Council resolution 1826 (LV) of 10 August 1973 which, in paragraph 7 states that the Council "considers that the planning of activities in the field of science and technology of the various organizations of the United Nations should be harmonized and gradually integrated into a United Nations science and technology policy." The Council, in paragraph 8 of the same resolution, affirmed "that the Committee on Science and Technology for Development, in accordance with Council resolution 1715 (LIII) of 28 July 1972, shall be the focal point for the elaboration and continuing evaluation and assessment of United Nations policy in the field of science and technology, and that the United Nations Educational, Scientific and Cultural Organization, and the United Nations Conference on Trade and Development, in particular as regards the transfer of technology, the Advisory Committee on the Application of Science and Technology to Development and other organizations of the United Nations system concerned should co-operate with the Committee on Science and Technology for Development in the fulfilment of its tasks".

3. At the third session of the Committee on Science and Technology for Development a number of observations on the subject were made and the Advisory Committee was asked to use its Ad Hoc Working Group on Policy for Science and Technology within the United Nations system to develop the subject further, with the participation of the specialized agencies concerned, and to submit its report to the fourth session of the Committee. The Ad Hoc Working Group on Policy for Science and Technology within the United Nations system met in 1976 and again in July 1977 to produce

a report which was then submitted to the Committee on Science and Technology for Development at its fourth session (E/C.8/49).

4. At the fourth session, in requesting a further study the Committee also asked that specific attention be given to:

(a) The relevant policy decisions of the General Assembly on the establishment of the New International Economic Order;

(b) The forthcoming United Nations Conference on Science and Technology for Development;

(c) The current restructuring of the economic and social sectors of the United Nations system;

(d) An assessment of whether "any overlapping missions among organizations and bodies within the United Nations system constitute healthy pluralism or wasteful redundancies (in science and technology activities)"; and

(e) The comments on document E/C.8/49 contributed by the agencies of the United Nations system and contained in document E/C.8/49/Add.1.

5. The present report has been prepared in order to take into account the points identified by the Committee on Science and Technology for Development as meriting specific attention in addition to the original mandates from the Economic and Social Council and the General Assembly (Economic and Social Council resolution 1826 (LV) and General Assembly resolution 3168 (XXVIII)).

6. Two different but related concerns are the central focus of this report: first, to assist the Committee in meeting the broad responsibility assigned to it by the resolutions of the Economic and Social Council and the General Assembly concerning policies for science and technology in relation to the goals and activities of the United Nations system, and secondly, to contribute to the discussions of the programme of action for the United Nations Conference on Science and Technology for Development and to deliberations at the Conference for the proposed plan of action.

6a. Definition of a harmonized science and technology policy for the United Nations system.

7. Since the creation of the Advisory Committee, it has always been presumed that science and technology referred mainly to the exact and natural sciences. This document is written in that spirit. This does not in any way mean that the Advisory Committee is not aware of the indispensable interaction of human and social sciences with exact and natural sciences for the analysis of development problems and for the implementation of effective solutions.

RELEVANT ISSUES OF CONCERN TO THE UNITED NATIONS POLICY-MAKING BODIES

Scope and components of harmonized science and technology activities and policy

8. It was the opinion of the Ad Hoc Working Group that in view of the pervasive role of science and technology in the activities of humanity and the impact of science and technology over time, and taking into account the fact that virtually all United Nations organizations use science and technology to fulfil their specific objectives and the collective objectives of the system as a whole, there is a need for a policy that would guide and facilitate the development and application of science and technology by and within the United Nations system for the benefit of its Member States.

9. Such a policy might be described as the sum total of strategic principles and approaches that furnish a framework or set up criteria that could be applied to projects and programmes and to the formulation of coherent plans of action. To express it another way, it is a coherent set of issues, principles and measures adopted by the United Nations system in order to promote the application of science and technology in solving, through international co-operation, the development problems of the developing countries. It should provide substantive normative and operational guidance for science and technology activities carried out or promoted by the United Nations system in a purposeful and integrated manner.

10. In paragraphs 63 to 89 of this paper various decision-making options for choosing policies are explicated, but it can be stated here that, very broadly, there are basically two umbrella approaches to the formulation of policy for science and technology within the United Nations system. One is a global approach that considers problem areas only within the context of an integrated United Nations policy. The other is a subject or problem approach, which considers specific areas within the fields of the application of science and technology and which tries to build up a policy piece-meal, by attacking single problems. This second approach has come under question in recent years. The danger lies in failure to co-ordinate the single subjects or to integrate them conceptually and programmatically into an over-all policy framework.

11. However, it should not be assumed that United Nations policy for science and technology will be a panacea. Care must be taken to ensure that the policy is founded on a dynamic global approach that is applicable to different levels and modes of development and from which a selected formula appropriate to specific situations can be derived. Thus, it should be designed to achieve horizontal, multisectoral integration and cohesion while simultaneously preserving

effectiveness and freedom of action for each sector within its over-all framework and enhancing the specialized functions of each organization within the United Nations system.

12. Furthermore, the approach must lead to alternative strategies that can be assessed in terms of their feasibility. Thus, the policy framework should define principles (goals) that can identify the targets (objectives), the methods of applying science and technology within the United Nations (strategies and programmes), and the ways and means of co-ordinating, harmonizing or integrating activities. Such a framework should be capable of establishing permanent channels and modes of operation for co-ordinated implementation of the proposed policy, for evaluation of the progress made towards integrating activities into that policy and for eventual adjustment and up-dating of the policy.

13. In short, the approach that is adopted by the relevant policy makers should move logically from comprehensive global science and technology policy within the United Nations to functional divisions of problem areas, to proposals for concrete projects and other activities at the national and regional levels.

14. It should be noted that the efforts to harmonize science and technology policy at the level of the United Nations system require, to be fully effective, a substantial degree of harmonization at the national level which should range from the formulation of a national science and technology policy to implementation of national programmes through co-ordinated requests for co-operation from the international system.

United Nations science and technology activities to which policies would relate

15. Specific activities in the field of science and technology include but are not necessarily exclusively concerned with:

"(i) Scientific and technological research (R), which means the processes of study, experimentation, conceptualization and theory-testing involved in the generation of new discoveries in the field of science and technology;

(ii) Experimental development (D), which consists of the processes of adaptation, testing and refinement of inventions which lead to practical applicability;

(iii) Scientific and technological services (STS) which represents a mixed group of activities which are indispensable both for the progress of research and for the practical application of science and technology. They collect, process and disseminate the scientific and technological information needed for such purposes;

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(iv) Innovation, which means bringing into being a new product or process and ensuring that new ideas and inventions are used effectively in the national economy. This includes the transfer of technology whereby known products or processes are introduced in countries where they have not been utilized or produced before; and

(v) Diffusion of innovation throughout the productive sector of the economy." 1/

Goals of the science and technology activities and policies

To assist in the establishment and fulfilment of the New International Economic Order

16. The sixth and seventh special sessions of the General Assembly held in 1974 and 1975, respectively, marked a major reassessment of the relations among countries and the focus of the United Nations in economic affairs. The sixth special session adopted two major resolutions: resolution 3201 (S-VI), entitled "Declaration on the Establishment of a New International Economic Order" and resolution 3202 (S-VI) entitled, "Programme of Action on the Establishment of a New International Economic Order." The seventh special session extended many of the concepts of the Programme of Action in resolution 3362 (S-VI), entitled, "Development and international economic co-operation."

17. These three resolutions will be discussed at length in chapter III of the present Report. It is sufficient here only to note that they together give general and specific goals, summed up by the concept of a New International Economic Order -- a concept for which the world community is attempting to elaborate more specified goals and programmes. Consequently, the objectives which follow should be seen within the context of the establishment of a New International Economic Order.

1/ This definition of science and technology activities was adopted by the Ad Hoc Working Group on Policy for Science and Technology within the United Nations System at its first session in 1976. However, it should be made clear that there is by no means any consensus within the United Nations system on either this definition or any other definition of precisely what constitutes a scientific or a technological activity. Without a consensual definition, it is virtually impossible to begin to co-ordinate and harmonize science and technology policy or to be able to identify duplication or gaps. Because this problem constitutes a serious constraint to formulating policy, it will be taken up again later in the present report.

To assist in the development of national science and technology capacities and capabilities of Member States

18. Assistance in the development of national science and technology capacities and capabilities of Member States -- particularly as these further self-reliance -- is a constant theme in the documents and resolutions of the United Nations system, and it is the target of numerous projects undertaken by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO), as well as by other organizations in the system. In recognizing this goal, it is important to note that the solution is no longer seen as one purely involving capital investment, a widely held view in the past. In the end, it must be recognized that national science and technology capacities, including the capability to select, acquire, adapt and absorb imported technology, as well as to develop indigenous technology, are fundamental to development and that many if not all countries require co-operation and/or assistance in establishing or improving these capacities.

To relate to and assist in economic, social and cultural development, from the viewpoint of science and technology

19. Relating to and assisting in economic, social and cultural development is a fundamental goal. Any policy should take into account the over-all development of human society -- socially, culturally and economically. In attaining this goal a two-way process must be recognized and enhanced -- that is, the impact of science and technology on the socio-cultural and economic systems and, conversely, the impact of these on science and technology, its development and use.

20. Such a dynamic process of mutual interaction will necessarily affect the direction and scope of technological change and will thus imply a multitude of development models. Without recognition of this interdependence, any attempt to formulate policy for science and technology is operating in a vacuum.

To motivate and lead international co-operation in science and technology and emphasize the role of the United Nations system in this process

21. The United Nations system as a global forum is ideally placed to initiate and lead international co-operation in science and technology and technical co-operation among developing countries. One of the most important aspects of this is providing the political motivation and open international forums for the co-ordination and pursuit of these activities, for the purpose of promoting co-operation in and sharing of science and technology developments. This should eventually lead to a situation in which countries, while remaining interdependent, would have the necessary means to be self-reliant.

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To co-ordinate and harmonize the activities of the United Nations system in science and technology

22. Policy-making for science and technology within the United Nations system should not be seen as a process that begins at a zero base. There are already numerous ongoing programmes and projects in multitudinous areas and sectors. However, these programmes are not always well co-ordinated, since many of them were created at different times and under different conditions. Consequently, one of the most useful exercises which could be undertaken in this regard is a cross-sectoral analysis of programmes and plans of science and technology activities in the system, with a view to mobilizing and integrating, at the planning and programming stages, the inputs and expertise of the organizations of the United Nations system for the following tasks:
(a) concerting the implementation of policy guidelines, directives and priorities emanating from the General Assembly and the Economic and Social Council; and (b) developing the co-operative and, wherever possible, joint planning of programme activities decided upon at the intergovernmental level with a view to system-wide medium-term planning at the earliest possible time.

23. Furthermore, any United Nations policy for science and technology must not only promote the harmonization of activities and the co-ordination of existing programmes, but it should also take an initiative in promoting changes in activities corresponding to new objectives. Thus, the policy should be formulated with sufficient flexibility to ensure its ability to respond continuously to changing priorities, while encouraging the rational deployment of scarce resources, both human and financial. This should encompass both long-term and medium-term planning as well as short-term problem-solving.

24. All of the previous goals lead inevitably to the contribution that science and technology can or should make to the solution of concrete problems. In particular, global problems -- that is, those areas that are intrinsically international in character -- should be the subject of a United Nations policy for science and technology activities. Examples of these issues include meteorological problems, environmental problems and questions regarding the resources of the sea-beds.

25. Other issues of global concern should also be considered. In particular, the five subject-areas chosen from national and regional priorities at the second session of the Preparatory Committee of the Conference on Science and Technology for Development are instructive. These five areas are as follows:
(1) food and agriculture, including (a) agricultural technology and techniques and its improvement; (b) nutrition; (c) fisheries; and (d) food storage and processing;
(2) natural resources, including energy and (a) renewable and non-renewable resources; (b) conventional and non-conventional sources of energy; (c) development and conservation of natural resources; and (d) rational management and utilization;
(3) health, human settlement and environment, including medicinal plants and pharmaceuticals; health services; housing; and social services and environment;

(4) transport and communications; and
(5) industrialization, including production of capital goods. 2/

Current constraints in harmonizing policies in science and technology

26. Regardless of the appropriateness of the policies themselves, no improvement in the science and technology programmes can occur without a comparably well-organized structure of policy-making and implementation. However, at present, the United Nations system includes a wide spectrum of activities in science and technology under widely different systems of planning and implementation and with insufficient co-ordination among the parts.

27. With the advent of the restructuring of the social and economic sectors of the United Nations (to be discussed in chapter V of the present report), efforts are underway to improve co-ordination within the United Nations system. However, the need also exists to ensure that greater harmonization, compatibility and complementarity be achieved between science and technology policies at the national level and those at the level of the United Nations system at large. Such harmonization might be greatly facilitated by establishing clear criteria for the activities most appropriate for harmonization.

28. Once criteria are adopted and United Nations policy for science and technology is implemented, it will be important to keep in mind that the chances for successful implementation will be determined not only by United Nations structure and functions but also by the degree of the commitment of Member States to ensure that the policy is carried out. Political decision-makers must be willing to expend the necessary efforts and resources in order to co-ordinate science and technology policy within their own countries and within the intergovernmental forums of the United Nations, and to acknowledge the interdependence between the two.

29. Similarly, there is much greater need for co-ordination, harmonization, and integration of science and technology policy at the regional level. Regional intergovernmental meetings have consistently marked the rich potential inherent in regional co-operation -- particularly for co-operation in science and the application of technologies.

30. Finally, linkage between intergovernmental co-ordination and intersecretariat co-ordination within the United Nations system could be strengthened. It is here that co-ordination, harmonization and integration must begin, because the United Nations decision-making bodies exist and express their priority concerns first at the global level of the system.

2/ Official Records of the General Assembly, Thirty-third session, Supplement No. 43 (A/33/43), annex I).

The need for harmonizing science and technology activities

31. One of the major changes both at the international and at the national levels over the past three decades has been the increasing awareness of the importance of the role played by science and technology. Consequently, one reason for harmonizing science and technology activities is to render more effective assistance to the developing countries in the creation and consolidation of their scientific and technological potential. This is not a new goal. The United Nations and its specialized agencies have devoted considerable effort to carrying out this task. But much still remains to be done towards providing materially technically and scientifically for the new role to be played by developing countries in the international division of labor. In particular; the United Nations should extend its efforts to help developing countries become truly self-reliant by organizing the expansion of their scientific infrastructure by developing a science and technology policy-making capacity training many more scientists, specialists and skilled workers; ensuring the required inflow of scientific information; increasing the exchange of international expertise and the transfer of science and technology and fostering innovation and the diffusion of innovation throughout the productive sector.

32. Similarly activities and policy in the field of science and technology need to be harmonized to gear United Nations policy toward the objectives and strategies chosen by the national governments in science and technology and then arranging for the policy-making process to be multidisciplinary, cross-sectoral and relevant to the whole economic, social and cultural development of States.

Means: difficulties in identifying resources allocated for science and technology activities

33. In order to formulate a harmonized science and technology policy, it is necessary to have some indication of the currently available resources that would or could be employed in implementing policy or of those that would be affected by a policy. For many areas and sectors, such as statistics, health, food and agriculture, this is a relatively easy procedure; but in the case of science and technology, the situation is more complicated.

34. There is no widely accepted definition within the United Nations of precisely what constitutes a science and technology activity within the system. This problem is best exemplified in attempts to include science and technology as a sector much like energy housing and the like in analyses of budgets and the work force of the various organizations of the system. As an example, in the report of the Secretary-General on "Institutional arrangements for science and technology" (E/C.8/29/Add.1), UNESCO includes virtually all of the programme of its Natural Science Sector as science and technology expenditures -- some $16.6 million for

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1975 -- noting that in the annual reports of the Administrative Committee on Co-ordination on expenditures in the United Nations system certain of these programmes are classified under natural resources, rather than science and technology. It should further be noted that none of the activities on human or social sciences is included, nor are those dealing with the hard science components of other sectors of the UNESCO programme. A further problem arises in respect of funds from UNDP, the World Bank, the World Food Programme, and other extra-budgetary sources, which provide a considerable proportion of the resources of the United Nations organizations. That is, one of the questions that needs to be answered is how these funds can be broken down and related to the science and technology components of the regular budgets.

35. Thus, although it can be inferred from studying the various programme budgets of the system that expenditures for science and technology are of a magnitude comparable to a number of other categories that do receive policy-level attention, no detailed quantitative assessment can now be made of the utilization of the currently available resources for science and technology in the United Nations system. However, without clear, consensual definitions regarding what constitutes a "science and technology" category, and accurate comparable data across the system on resources available for science and technology, it is virtually impossible to begin to co-ordinate and harmonize science and technology policy. This is further extended to present a serious constraint to being able to identify redundancies and gaps, and it is one of the major reasons why this report does not attempt to analyze the existence and function of redundancies and gaps in the system's science and technology activities. 3/

36. Considering the above and the recommendation made in paragraph 43 of Assembly resolution 32/197 concerning the development of "Harmonized budget presentations and common methodology of programme classification and description of content," the Advisory Committee underlines the importance of an effective science and technology budgeting as a tool for assisting in harmonization of science and technology activities and policy in the United Nations system. The Advisory Committee consequently recommends that UNESCO, in consultation with other United Nations agencies, develop a harmonized budget presentation for its consideration.

3/ It should be noted that this is one of the goals of the restructuring process within the United Nations. See paragraph 113 of this report.

UNITED NATIONS SYSTEM GOALS FOR SCIENCE AND TECHNOLOGY POLICY

37. In attempting to formulate United Nations policy in the field of science and technology, the Ad Hoc Working Group felt that it was necessary first to examine the policy goals of the United Nations to see how they have evolved, and then to summarize what appear to be the current science and technology goals of the system.

38. In 1945, when the United Nations was established, the maintenance of international peace and security was regarded as the primary goal and responsibility of the organization. It was held that the achievement of this goal would be the necessary and sufficient condition to reach all other goals, such as human rights, social progress and better standards of life.

39. However, since 1945, as decolonization has proceeded, United Nations membership has expanded considerably. As a result, the United Nations also has placed new emphasis on one of its goals -- namely, the economic and social development of developing countries. In recognition of this goal, the General Assembly in 1961 designated the 1960s a United Nations Development Decade and called upon all Member States to unite in a sustained effort to break through the cycle of poverty, hunger, ignorance and disease that still affects much of the world. During the First United Nations Development Decade, many developing countries achieved some progress in the rate of increase in their gross national product, but this progress was offset by growing populations and unfavourable patterns in balance of trade. The situation has also been agravated by heavy burdens of debt, due in part to the fact that a large percentage of the aid and credit for development allocated to the developing countries was and still is in the form of loans, and in many cases, tied loans. Towards the end of the First Decade it became clear that a plan or strategy was needed to resolve these problems and in 1970 the General Assembly approved the International Development Strategy for the Second United Nations Development Decade, as set forth in resolution 2626 (XXV) of 24 October 1970.

40. The International Development Strategy represents a turning point in the United Nations position towards development. It postulates that aid or technical assistance alone will not solve the problems of underdevelopment. It declares that "Economic and social progress is the common shared responsibility of the entire international community. It is also a process in which the benefits derived by the developing countries from the developed countries are shared by the world as a whole." Furthermore, the Strategy stresses the fact that "the primary responsibility for the development of developing countries rests upon themselves".

41. However, although the Strategy adequately defines numerous goals relating to development, it is based on the assumption that development relies largely on the integration of the developing economies into a world economy structures to discriminate against them. This assumption was seriously questioned in 1974 when the General Assembly held its sixth special session devoted to economic problems, and attention shifted towards changing the international economic order itself.

42. At its sixth special session, the General Assembly adopted the Declaration and the Programme of Action on the Establishment of a New International Economic Order, as set forth in resolutions 3201 (S-VI) and 3202 (S-VI) of 1 May 1974, respectively. In the Declaration, United Nations Member States solemnly proclaim their determination to work urgently for:

> "the establishment of a New International Economic Order based on equity, sovereign equality, interdependence, common interest and co-operation among all States, irrespective of their economic and social systems which shall correct inequalities and redress existing injustices, make it possible to eliminate the widening gap between the developed and the developing countries and ensure steadily accelerating economic and social development and peace and justice for present and future generations."

43. General Assembly resolutions 3201 (S-VI) and 3202 (S-VI), 3281 (XXIX), on the Charter of Economic Rights and Duties of States, and 3362 (S-VII). on development and international co-operation, all deal in a general way with the broad economic goals of the world community. As a particular subset of those goals they all also refer both implicitly and explicitly to various issues that can be referred to as science and technology subgoals. In particular, the resolutions mention both research and development and transfer of technology, and other science and technology issues are implied as part of solving particular problems in the areas of industrialization, food, raw materials, transportation and the like. It may thus be useful to review some of the major provisions of these resolutions which deal with science and technology.

44. The link between the constant and overriding goals of the United Nations and the more recent goals expressed in the New International Economic Order is given in the preamble to General Assembly Resolution 3362 (S-VII) where the Assembly recognizes that:

> "greater co-operation among States in the fields of trade, industry, science and technology as well as in other fields of economic activities, based on the principle of the Declaration and the Programme of Action on the Establishment of a New International Economic Order and on the Charter of Economic Rights and Duties of States, would also contribute to strengthening peace and security in the world."

45. Consequently, peace and security are seen as the ultimate goals of the United Nations system, development as an important subgoal, both in its own right and as one of the means towards peace and science and technology as two of the vehicles with which development is sought.

46. In particular, the New International Economic Order was founded upon the principles of (a) giving developing countries access to the achievements of modern science and technology; (b) promoting the transfer of technology and the indigenous creation of technology; (c) recognizing that there is a need for all States to end waste of natural resources; and (d) strengthening, through individual and collective actions, mutual economic trade, financial and technological co-operation among the developing countries (see General Assembly Resolution 3201 (S-VI)).

National infrastructure

47. Several of these themes are picked up throughout the relevant resolutions and specified in more detail. Great stress is placed on the need for developed and developing countries to co-operate in establishing, strengthening and developing infrastructure in developing countries, including scientific infrastructure, industrial technological information banks and possibly regional and sectoral banks, and to consider establishing an international centre for exchange of technological information for sharing research findings relevant to developing countries. In addition, developed countries are requested to expand their assistance to developing countries for direct support to their science and technology programmes and to increase the proportion of their research and development devoted to problems of primary interest to developing countries, and especially to the creation of indigenous technology.

48. Resolution 3362 (S-VII) also calls for a United Nations Conference on Science and Technology for Development to be held in 1978 or 1979, with the major objective of "strengthening the technological capacity of developing countries to enable them to apply science and technology to their own development; / and / adopting effective means for the utilization of scientific and technological potentials in the solution of development problems of regional and global significance, especially for the benefit of developing countries".

Transfer of technology

49. A second major theme underlying the principles of the New International Economic Order revolves around the multiplicity of issues involved in transferring technology. General Assembly resolution 3202 (S-VI) states in section IV that:

"All efforts should be made":

"(a) To formulate an international code of conduct for the transfer of technology corresponding to needs and conditions prevalent in developing countries;

"(b) To give access on improved terms to modern technology and to adapt that technology, as appropriate, to specific economic, social and ecological conditions and varying stages of development in developing countries;

"(c) To expand significantly the assistance from developed to developing countries in research and development programmes and in the creation of suitable indigenous technology; 4/

4/ It should be noted that the adaptation of existing technologies and the innovation of new technologies are subsets of recommendations clustered around the development of national infrastructure, the transfer of technology and technical co-operation among developing countries. In other words, the adaptation/innovation complex tends to cross-cut all issues regarding science and technology for development.

"(d) To adapt commercial practices governing transfer of technology to the requirements of developing countries and to prevent abuse of the rights of sellers;

"(e) To promote international co-operation in research and development in exploration and exploitation, conservation and the legitimate utilization of natural resources and all sources of energy."

50. General Assembly resolution 3362 (S-VII) reiterates the concern for the equitable transfer of technology and in section III specifically calls for all States to co-operate in evolving an international code of conduct for the transfer of technology, with work on the code to take place within the United Nations Conference on Trade and Development. Developed countries are also asked to facilitate the access of developing countries "to informatique, to relevant information on advanced and other technologies suited to their specific needs, on new uses of existing technologies, new developments and possibilities of adapting them to local needs."

51. That resolution also directs developed countries to improve the transparency of the industrial property market to help developing countries make technological choices. The need to formulate national and international policies to prevent the "brain drain" and to obviate its adverse effects is expressed and the relevant organizations of the United Nations system are requested to undertake projects in the field of information, consultancy and training for the benefit of the developing countries.

52. Specifically, in paragraph 8 of section III of Assembly resolution 3362 (S-VII), it is stated that

"The work of the relevant United Nations bodies, in particular that of the United Nations Conference on Trade and Development, the United Nations Industrial Development Organization, the International Labour Organization, the United Nations Educational, Scientific and Cultural Organization, the Food and Agriculture Organization of the United Nations, the World Intellectual Property Organization and the United Nations Development Programme, to facilitate the transfer and diffusion of technology should be given urgent priority. The Secretary-General of the United Nations should take steps to ensure that the technology and experience available within the United Nations system is widely disseminated and readily available to the developing countries in need of it."

Technical co-operation among developing countries

53. The Programme of Action on the Establishment of the New International Economic Order places considerable emphasis on promoting and establishing among developing countries "effective instruments of co-operation in the fields of industry, science and technology, transport, shipping and mass communication media". In section VII of resolution 3202 (S-VII) the Assembly states that the developed countries "should support initiatives in the regional, subregional and interregional co-operation of developing

countries through the extension of financial and technical assistance by more effective and concrete actions, particularly in the field of commercial policy". To that end, it is important to note that the United Nations Conference on Technical Co-operation Among Developing Countries (TCDC) was held at Buenos Aires from 30 August to 12 September 1978 for the purpose of adopting a world plan of action for the promotion and advancement of technical co-operation among developing countries.

54. Within these broad areas of strengthening national infrastructure, transferring technology and establishing technical co-operation among developing countries, there are primarily three cross-cutting substantive areas that figure in the goals of science and technology. These are (a) raw materials, (b) food and agriculture, and (c) industrialization.

Raw Materials

55. In section I of resolution 3202 (S-VI), the General Assembly asks that every effort be made to help developing countries to develop unexploited or underexploited land which, if reclaimed, could contribute to the solution of their food crises. The international community is further requested to undertake concrete and speedy measures to arrest desertification, salination and damage by locusts or any other similar phenomena involving the developing countries (especially those in Africa) and gravely affecting the agricultural production of those countries.

56. All States are called upon "to refrain from damaging or deteriorating natural resources and food resources, especially those derived from the sea, by preventing pollution and taking appropriate steps to protect and reconstitute those resources". In addition to improving agricultural areas, steps should be taken to ensure that all inputs for food production, such as fertilizer, and for food storage are made available to developing countries on favourable terms from developed countries.

57. In section I of resolution 3362 (S-VII) the General Assembly expresses support for increased "processing of raw materials in producing developing countries and the expansion and diversification of their exports, particularly to developed countries". It also states that "urgent and necessary changes in the pattern of world food production should be introduced and trade policy measures should be implemented, in order to obtain a notable increase in agricultural production and the export earnings of developing countries".

58. In addition, in section [illegible] of resolution 3362 (S-VII), the Assembly recommends that developing countries give high priority to agricultural and fisheries development and promote interaction between expansion of food production and socio-economic reforms, with a view to achieving integrated rural development.

59. Developed countries are encouraged to adopt policies directed towards ensuring a stable supply and sufficient quantity of fertilizer and other

production inputs to developing countries at reasonable prices and to provide assistance to the development of fertilizer industries in developing countries. Further, developed countries are asked to make additional resources available on concessional terms for agricultural development in developing countries, to pledge, on a voluntary basis, substantial contributions to the International Fund for Agricultural Development, to accept the principal of a minimum food aid target and the concept of forward planning of food aid, and to support the expansion of work of existing international agricultural research centres. Through their bilateral programmes, they should strengthen their links with these international research centres and with the national agricultural research centres in developing countries. Finally, research and development assistance for the improvement of productivity and competitiveness with synthetics of non-food agricultural and forestry products should be co-ordinated through an appropriate mechanism.

60. In section III of General Assembly 3201 (S-VI), the international community is called upon to encourage the industrialization of developing countries, including the setting up of new industrial capacities for raw materials and commodity-transforming facilities as a matter of priority in developing countries.that produce those raw materials and commodities. This was also understood in 1975 when UNIDO adopted the Lima Declaration and Plan of Action on Industrial Development and Co-operation (see A/10112, chap. IV). In the Declaration, UNIDO, recognizing the urgent need to bring about the establishment of a new international economic order based on equity, sovereign equality, interdependence and co-operation, declares that developing countries should increase their industrial production to at least 25 per cent of the total world industrial products by the year 2000.

61. All States are also encouraged to continue to expand, with the aid of developed countries and international institutions, operational and instruction-oriented technical assistance programmes, including vocational and management training of the national personnel of developing countries.

Other sources of science and technology policy corresponding to the New International Economic Order

62. Although it is not within the scope of the present report to analyse all of the policy directives from every United Nations agency dealing with science and technology, relevant policy directives from two organizations -- the United Nations Conference on Trade and Development and the United Nations Educational, Scientific and Cultural Organization -- will be briefly discussed.

63. At its fourth session in 1976, UNCTAD adopted resolution 87 (IV), entitled "Strengthening the technological capacity of developing countries", in which, inter alia, it welcomes the General Assembly decision to convene the United Nations Conference on Science and Technology for Development. While stressing the importance of improving conditions of transfer of

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technology to developing countries by adopting an international code of conduct on transfer of technology and the revision of the Paris Convention for the Protection of Industrial Property, at its fourth session UNCTAD strongly emphasizes the necessity for developing countries to have their own technological capacity and resources as a fundamental pre-condition for achieving their economic and technological independence. It recommends that

"Each developing country take the necessary steps, at the national level, to ensure:

"(a) The formulation of a technology plan as an integral part of its national development plans, as well as the co-ordination of its policies in a number of interrelated areas, including licensing arrangements, transfer, development and adaptation of technology, industrial property laws and practices, foreign investments, research and development;

"(b) The establishment of appropriate institutional machinery, including a national centre for the development and transfer of technology, with urgent attention being paid to defining the role and functions of such a centre, including the principal linkages which need to be established with other national bodies or institutions;

"(c) The elaboration of all necessary measures to ensure optimum utilization of its qualified manpower resources".

64. Resolution 87 (IV) also recommends a number of measures to promote co-operation in the field of science and technology among developing countries at subregional, regional and international levels, including the establishment of centres for the transfer and development of technology and also measures to improve technological co-operation between developed and developing countries. National Governments and the regional commissions, with the help of UNCTAD, UNIDO, UNESCO and other United Nations organizations and agencies, are now in the active process of establishing such regional centres.

65. Mention should also be made of UNESCO's regional Ministerial Conferences on the Application of Science and Technology to Development, which were organized in response to the appeal formulated in this connexion by the first United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas (Geneva, 1963). This series of conferences has covered Africa (CASTAFRICA Conference, 1974), Asia (CASTASIA Conference 1968), the Arab States (CASTARAB Conference, 1976) and Latin America (CASTALA Conference, 1966). All of these governmental, ministerial-level conferences have adopted resolutions and declarations that are of great importance for the expansion of the capacity of developing countries in the fields of science and technology, and in their application to development. New approaches to this question have been emerging from those Conferences, and these deserve to be borne in mind in the elaboration

of a science and technology policy for the United Nations system. The same is true of the general resolution on science and technology adopted by the UNESCO General Conference at its nineteenth session held at Nairobi in 1976. (reference 19C/Res.2.01), which was communicated by the Director-General of the organization to the Secretary-General of the United Nations for the information of the General Assembly at its thirty-first session.

III. ALTERNATIVE APPROACHES TO HARMONIZATION OF SCIENCE AND TECHNOLOGY ACTIVITIES AND POLICY-MAKING

66. In this section, three alternative approaches to the policy-making process are examined. This is a theoretical discussion applicable to all organizational settings, not only science and technology in the United Nations. However, illustrations used throughout do relate specifically to science and technology activities in the United Nations system. Consequently, for the purpose of the present report, each of these options is characterized by the same policy goals, broadly outlined in section II.

67. The intention of this theoretical discussion is to stress that, regardless of how good and how well-articulated policy goals may be, and regardless of the elegance of the structure designed to harmonize science and technology activities and policy, the way in which decisions are made -- the actual policy-making process -- affects the extent to which goals can be achieved. That is, each alternative approach has varying constraints and advantages inherent in it, and these must be understood if the organization structure is to function according to design.

68. In paragraph 12, above, it is stated that, in order for policies to "lead to alternative strategies that can be assessed in terms of their feasibility" the policy framework must "define principles (goals) that can identify the targets (objectives), and the methods of applying science and technology within the United Nations (strategies and programmes)". In other words, the Ad Hoc Working Group has identified four elements of policy-making: policy goals, objectives, strategies and programmes. Although this breaking-down of policy-making into four components may at first glance appear to reduce decision-making to a static state, in fact the discussion that follows is intended to demonstrate how these elements interact with one another in a continuous dynamic process. Thus, the focus is as much on the links among goals, objectives, strategies and programmes as it is on their content. Consequently, other aspects of policy-making, such as budgeting, implementation, monitoring, control, or evaluation are all implicit here. However, the extent to which, for example, monitoring, control and evaluation are likely to be successful is largely determined by the choice of approach to decision-making.

69. Broad goals are determined by choices made among alternative norms and values existing in the international system. That is, while over-all goals are chosen by the governing bodies of the organizations of the United Nations, the range of choice is limited by the existence and interaction of value systems within the international arena. Consequently, changes in the international system come to be reflected, after a period of time, in parallel changes of the organization's goals. For example, as discussed in section II, United Nations goals have focused more and more specifically on development objectives and on the impact of science and technology on development as decolonization has increased the membership of the United Nations and brought to the attention of the organizations the problems of developing countries.

70. Objectives are the operational expression of particular goals. They are most frequently expressed as targets -- for instance by 1985 a regional capability to monitor patent rights and needs should be established -- and they should always be specific enough to permit debate regarding the feasibility of their implementation. A vaguely conceived objective is not likely to be an attainable one. However, objectives need not contain instruction on the mode of operation; their purpose is only to specify the desired end of strategies and programmes.

71. Strategies are concerned with a method of operation, and they therefore presuppose a working hypothesis of how to implement operations in order to achieve objectives. Programmes, on the other hand, provide actual content, the specific mixtures of operational activities to be applied towards a given objective, even when there is no understanding or consensus regarding how to achieve that objective. In order to illustrate the difference between strategies and programmes, examples of each are given below.

72. One strategy that was popular in the 1960s is known as the "trickle-down" theory of growth. The goal was to advance development; the objective was to increase GNP for specific developing countries within a specified time, while simultaneously moving towards a more equitable distribution of resources among the population. The "trickle-down" strategy relied upon an economic hypothesis that essentially (though more elegantly) proposed that, given large amounts of capitalization for industrial growth, wealth would automatically "trickle-down" by means of generating employment, which in turn would increase consumption, which then would lead to the development of spin-off industries and business, thus gradually distributing capital throughout the entire economy. In other words, this involved an idea of how to accomplish a certain objective, but it did not, as stated, include the actual application of a programme. It did not put together a package of capital aid in order to implement the strategy.

73. Programmes may or may not co-exist with a strategy. If, for example, the objective is to eradicate smallpox from the world, then one might put together a programme of mass innoculation with the smallpox vaccine, based on a medical hypothesis of cause and effect. However, if the objective is to curb overpopulation, then one might put together a programme package that would include access of all women to abortions; birth control for both men and women; nutrition and health care to ensure the survival of children into adulthood and thus reduce the pressure to combat uncertainty by producing many children; migration and immigration restrictions; relocation policies ; and so forth -- precisely because there is no operational hypothesis of causation: there are only several "guesses" about what might be effective in reducing overpopulation on an enduring basis.

74. Healthy redundancy is likely to appear when there is uncertainty about strategies -- that is, about how to implement programmes. In such a situation, several programmes can be designed, with each based on a different hypothesis of how to achieve an objective. However, even when there is certainty about strategies, it can still be valuable -- resources permitting -- to develop redundant programmes as insurance against failure

in the implementation of any single programme. In other words, redundancy is not necessarily wasteful: It can be an extremely important hedge against uncertainty.

Alternative No. 1: Incremental decision-making

75. The first alternative is what is here termed incremental decision-making. As already stated, and as is true for all three of the alternatives to be discussed here, goals for science and technology activities within the United Nations system are set by Governments through the General Assembly, the Economic and Social Council, the various governing councils and inter-governmental committees. In general, these goals are statements of value preferences, but frequently they are not articulated into specific objectives with clear operational implications. Rather, they are broken down into subgoals by the relevant secretariats. Then, on the basis of these subgoals, individual offices attempt to design programmes that seem to fit the implicit requirements of the subgoals. As the programmes are implemented, new subgoals tend to emerge from the old ones, leading to serial analysis designed to pinpoint new problem areas.

76. The programmes resulting from this approach may or may not produce a strategy, but even when a strategy is designed, it is weakened by the absence of coherently integrated objectives. In other words, it is difficult to hypothesize about cause and effect when the precise intended effect is not known or expressed. The usual result, given a lack of objectives and uncertainty over strategy, is redundancy--or worse, fragmentation of programmes.[5/] For example, where "improved access to technology for developing countries" is a broad goal for the United Nations and there is no intermediate detail about the objectives or the strategies to meet this goal, the many proliferating programmes are broken down throughout the system into technology assessment, technological innovation, patent rights, evaluation of industrial property, establishment and strengthening of national infrastructure to evaluate technology transfer, training centres and so forth.

77. There is no *prima facie* argument against such redundancy. The problem is that without clearly articulated objectives, the result is more likely to be fragmentation than redundancy. In other words, a multiplicity of programmes would be carried out in the absence of any framework capable of bringing their numerous merits together, with the consequence that the sum of their achievements would most likely be lost.

78. In addition, there are other serious disadvantages to this incremental alternative. First, subprogrammes built upon subprogrammes are likely to lose sight of original goals and inadvertently move away from the over-all goal. In other words, each new decision (each successive stage of the serial analysis) is built upon an existing decision only, with almost no reference back to original purposes. Secondly, the organization tends to become unresponsive to dynamic changes in the international environment, again because the reference point is the last decision, not the goal.

5/ The distinction between redundancy and fragmentation is as follows: redundancy is the existence of multiple programmes all designed to achieve a single, specific objective, fragmentation is the existence of many programmes designed without a clear sense of purpose and without co-ordination of their parts.

Thirdly, and for the same reasons as given for the first two problems, the system is likely to become resistant to evaluation. And finally, available resources may become so thinly dispersed among a number of fragmented programmes that the efforts of each are not effective in any case.

79. The principal advantage to this incremental decision-making approach is that it provides a method of operating when no hypothesis regarding cause and effect exists. The United Nations has set for itself innumerable goals; yet, frequently, the knowledge needed to attain these goals, to devise a definite strategy, is simply not in evidence. Consequently, a hit-or-miss tactic, based upon redundancy of programmes, may be the most efficient strategy available. A further advantage to incrementalism is that it permits flexibility when disagreement among Governments makes it politically impossible to build a consensus around specific objectives.

Alternative no. 2: Modification decision-making

80. As noted above, goals are set by the collective decision of States Members of the United Nations, but in modification decision-making there would be a conscientious effort to translate those goals into objectives. Then, once subgoal assignments are given to the Secretariats by the intergovernmental bodies, each responsible officer should set objectives before programmes are created and assigned. This does not mean simply a vague declaration of what should be done (subgoals) or sketches of what will be done (programmes), but also very specific statements of what the agencies' and departments' targets (objectives) are for working towards the relevant United Nations goals. Such a system of policy-making would automatically build in a means for evaluation, because these targets would also provide measurements of success. 6/

81. For example, a current goal for the United Nations is to provide instruments of co-operation to developing countries in the utilization of science and technology for solving socio-economic problems that cannot be solved by individual action. At present this goal would most likely be broken up into subgoals along the functional lines of the agencies and departments. That is, one organization would be concerned with instruments of co-operation for trade, one for research and development, one for training, one for industrial development and so forth. But while this kind of institutional allocation of responsibility helps to limit the problem to workable size, it does little to clarify what really must be done in order to achieve the over-all goal. For example, to say that the United Nations should encourage co-operation among developing countries for appropriate agricultural technologies is to say little that can provide real guidance. But to say that by 1985 each region of the developing world will have established co-operative research institutes, with specific characteristics to study biological technologies for agriculture, or to study the economic implications of mechanized agricultural technologies, is to state an objective against which the programmes can be measured.

6/ This is not meant to imply, however, that evaluation is thereby ensured. Rather, a means for evaluation is provided. A complex system of incentives and penalties is probably required to guarantee that the means will be correctly used.

82. When sufficient knowledge is available, strategies can be developed to provide the basis for programme selection and design. What is most likely to occur is initial uncertainty about strategies, resulting in a redundancy of programmes all geared towards the objective at hand. However, since this policy style permits and encourages periodic evaluation, it is possible that, after some time, information regarding the fit between programmes and subgoal objectives will emerge and learning can occur within the organization. At such a time, some programmes might be discarded, others reappraised and changed, thereby lessening the need for redundancy.

83. The relation between all the subgoals and the over-all goals needs also to be evaluated and readjusted periodically. Therefore, at given intervals of time, the subgoals should be recombined and assessed in the light of new knowledge or goal changes, in order to determine whether or not the sum of the subgoals is still consistent with the system's goal objectives. If they are not, then new subgoal objectives must be established, and programmes and strategies altered accordingly.

84. Organs currently exist within the United Nations which are capable of performing periodic re-evaluations of subgoals and goals. However, in order for modification decision-making to work, there must also be structures to encourage good co-ordination of science and technology, to ensure that new knowledge is recognized within offices and correctly translated from field to office, and to promote optimal usage of the system by Governments, who are, after all, both the decision makers and the clientele of the United Nations.

85. In summary, given that objectives are derived from goals, most of the inherent disadvantages of the incremental style are avoided in the modification approach. However, this presupposes that the objectives once specified, are systematically measured against the programmes and strategies derived to achieve them. Unless such evaluation is actually carried out, the modification alternative is likely to fall subject to most of the same problems as the incremental alternative.

86. Nevertheless, when the modification approach is fully and consistently followed, it should be possible to harmonize activities and policy through the periodic evaluation procedure without having to centralize policy-making. Furthermore, opportunity is afforded for adapting objectives, strategies and programmes to changing goals reflected in the international environment, for assessing the success of strategies and programmes against objectives and goals, and for avoiding fragmentation and unnecessary redundancy.

Alternative no. 3: Comprehensive decision-making

87. The comprehensive alternative considers problem areas only within the context of an integrated United Nations policy. It rejects the incrementalist approach, which considers specific areas within the fields of science and technology and which tries to build up a policy by solving, one-by-one, the problems of each, because this incrementalism has led to a

disregard for integrated national development plans and to ignorance of similar or even opposing programmes operated by different organizations. The comprehensive alternative also advocates the construction of an over-all policy that harmonizes its internal parts that is designed to achieve horizontal, multisectoral integration and cohesion in order to promote effectiveness for each sector within its broad framework and co-ordination of the specialized functions of each organization within the United Nations system.

88. The comprehensive alternative begins with goals established by the policy-making bodies of the United Nations system. Objectives are derived from these goals, and strategies from the objectives. However, all objectives are not simply articulated at the central level; they are also placed into a single conceptual framework that acknowledges the inter-dependencies and implicit rankings among the objectives. Thus, the readjustment or abandonment of the overriding strategy may necessitate the realigning and redefining of all subgoals and programmes.

89. Programmes are designed on the basis of strategies, and these programmes form the foundation for feedback throughout the policy process. If a programme fails in its subgoal objectives, then this information informs the reshaping of the strategy and perhaps even the objectives and goals. In other words, policy-making in the comprehensive option is entirely deductive; correction for error is largely inductive. In either case, all four components of the policy process - goals, objectives, strategies and programmes - are so tightly linked as to preclude the independent movement of any one of them.

90. For example, assume that one overriding goal of the United Nations system is development of science and technology capabilities for developing countries. Objectives derived from this might include the development of x amount of national and regional infrastructure in research and development by 1985, the rearticulation of patent and trade laws in favour of developing countries by 1985, the establishment of regional and national training centres for scientists and technologists by 1985 and so forth. To accomplish these, a single grand strategy, with all of its components well-integrated, would be designed. Then parts of this strategy (subgoals) and their objectives) would be assigned to the relevant agencies and departments, and these would build programmes on the basis of the strategy. In other words, this decision-making style looks like a formal syllogism: alter one of the terms and both the major premise and the conclusion come under question. So, too, in a comprehensive option: alter a single programme -- because empirical evidence advises you to do so -- and the strategy, objectives and goals must be re-evaluated.

91. On first examination, this type of policy-making appears to be the best alternative. No other approach offers more consistency between goals and all other parts of the decision-making process. Furthermore, because all parts are interdependent and organized so as to adjust to feedback from the environment, the comprehensive alternative is most open to recognition and correction of errors.

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92. However, closer scrutiny reveals several disadvantages. First of all, the system requires a degree of certainty regarding cause and effect and a degree of consensus on objectives that is virtually impossible to obtain, especially in an organization whose membership represents countries across the international spectrum. Secondly, the goals, subgoals, objectives, strategies and programmes are so interlinked that Governments would be severely constrained in attempting to change goals quickly. Thirdly, given the statutory jurisdiction and the governance of the specialized and other agencies in the United Nations system and their frequently overlapping policies and co-ordination constraints, comprehensive planning a of science and technology activities would be very difficult to achieve and manage, even if the Sub-Committee on Science and Technology of the ACC should vastly improve its performance. And, finally, the cost in resources would be quite high, because of the considerable expense involved in, continuously gathering information and re-evaluating programmes in the light of this information.

IV. CO-ORDINATION FOR SCIENCE AND TECHNOLOGY IN THE UNITED NATIONS SYSTEM AND THE CURRENT RESTRUCTURING PROCESS

93. In this section, the Ad Hoc Working Group has chosen to focus on an examination of the decisions that have already been taken in regard to the restructuring of the economic and social sectors of the United Nations, without prejudice to the authority of the Member States or the Secretary-General in implementing those decisions. However, in order to place the restructuring resolutions within their proper context and to relate more specifically to the question of harmonizing science and technology activities, the basic co-ordinating mechanisms for the United Nations, "pre-structuring", are briefly described.

Intersecretariat machinery for co-ordination

Administrative Committee on Co-ordination

94. The senior body for co-ordination among the secretariats in the United Nations system is the Administrative Committee on Co-ordination (ACC). Its formal membership includes the Secretary-General (Chairman) and the executive heads of the specialized agencies and of the International Atomic Energy Agency (IAEA); the heads of the United Nations programmes also regularly attend and take part in the meetings of ACC. It is the highest intersecretariat body dealing with all matters which are of common interest to organizations belonging to the United Nations system.

95. In its resolution 1643 (LI) of 30 July 1971, the Economic and Social Council entrusted ACC with the following tasks:

(a) To maintain under constant review measures to be suggested to the Council to ensure the fullest and most effective implementation of the agreements between the United Nations, the specialized agencies and IAEA;

(b) To study uniform and co-ordinated methods which would enable the United Nations system to achieve greater productivity and efficiency through economies of scale and related advantages;

(c) To submit a concise annual report to the Council and, as appropriate, to the specialized agencies and IAEA on the way in which the system operates, bringing out the problems solved and, in addition, highlighting those unresolved, for action at the intergovernmental level, and making suggestions and proposals designed to facilitate the implementation by the organizations concerned of decisions taken by the Council in the field of co-ordination, in order to ensure that actions taken are mutually supporting and complementary;

(d) To suggest annually topics for in-depth consideration and to submit reports on these topics, pointing out in particular any shortfalls or duplication, as well as practical difficulties arising from the implementation of the policies and work programmes concerned;

specify that it

> shall be responsible for expert examination of the budget of the United Nations, and shall assist the Administrative and Budgetary Committee (Fifth Committee) ... It shall also examine on behalf of the General Assembly the administrative budgets of specialized agencies and proposals for financial and budgetary arrangements with such agencies." 7/

Restructuring of the economic and social sectors of the United Nations system

101. The way in which decision-making is carried out in the United Nations and, therefore, the degree to which harmonization of policy can be achieved, is largely dependent upon the structures adopted for co-ordination. The General Assembly in resolution 32/197, has recognized this by noting that "restructuring of the United Nations system" should be undertaken in order to make the system "more fully capable of dealing with problems of international economic co-operation and development in a comprehensive and effective manner" and "to make it more responsible to the requirements of the provisions of the Declaration and the Programme of Action on the Establishment of a New International Economic Order as well as those of the Charter of Economic Rights and Duties of States".

102. In response to the General Assembly's resolution, restructuring of the economic and social sectors of the United Nations -- under which science and technology are at present subsumed -- has begun. Several of the recommendations adopted in the restructuring resolution may increase the ability of the United Nations system to harmonize and co-ordinate its science and technology objectives, strategies and programmes, and consequently, the Advisory Committee considers the process and implications of restructuring to be of the greatest importance and relevance for its continued work on harmonization. To this end, the Advisory Committee believes that careful, deliberate analysis of the entire history of the restructuring process could afford the Advisory Committee the opportunity to be highly responsive to the needs of Member States and therefore suggests that this analysis be undertaken in the near future. For the present, however, the Advisory Committee reserves comment until the details of the restructuring have been agreed upon. The following discussion should give some indication of the direction in which Member States want the United Nations to turn.

General Assembly

103. The parts of Assembly resolution 32/197 that speak to those functions of the General Assembly that are relevant to co-ordination and the way in which substantive and operational activities in the economic and social

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7/ Rules of Procedure of the General Assembly, Rule 157. See also General Assembly resolution 14 A (I) of 13 February 1946.

fields, including science and technology, are to be dealt with, include the following:

"(a) The Assembly should fully exercise its powers under the Charter to promote, inter alia, solutions as to international economic, social and related problems, and, to that end, to function as the principal forum for policy-making and for the harmonization of international action in respect of these problems.

"(b) The Assembly should concentrate on the establishment of over-all strategies, policies and priorities for the system as a whole in respect of international co-operation, including operational activities, in the economic, social and related fields. It may assign to other forums within the United Nations system, as necessary, the responsibility for negotiating and submitting recommendations for action in specific areas.

"(c) The Assembly should review and evaluate developments in other forums within the United Nations system and establish appropriate guidelines for further action. It may also review and evaluate developments in forums outside the United Nations system and address recommendations to them."

Documentation submitted by or on behalf of the Secretary-General to the Second and Third Committees, as well as to other United Nations bodies in the economic and social fields concerning items on their agenda should be concise, action-oriented and in conformity with the relevant general and specific legislative directives.

Economic and Social Council

104. First, it should be emphasized that the major responsibilities of the Economic and Social Council, as set out in paragraph 5 of General Assembly resolution 32/197, are:

"(a) To serve as the central forum for the formulation of policy recommendations thereon addressed to Member States and to the United Nations system as a whole;

"(b) To monitor and evaluate the implementation of over-all strategies, policies and priorities established by the General Assembly in the economic, social and related fields, and to ensure the harmonization and coherent practical operational implementation, on an integrated basis, of relevant policy decisions and recommendations emanating from United Nations conferences and other forums within the United Nations system after their approval by the Assembly and/or the Economic and Social Council;

"(c) To ensure the over-all co-ordination of the activities of the organizations of the United Nations system in the economic, social and related fields and, to that end, the implementation of the priorities established by the General Assembly for the system as whole;

"(d) To carry out comprehensive policy reviews of operational activities throughout the United Nations system."

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105. Thus, although it is primarily the General Assembly that sets major policy goals, it is the Council that is responsible for monitoring the establishment of priorities, for ensuring co-ordination and harmonization, and for conducting policy reviews. With this in mind, in striving to establish a harmonized science and technology policy, it is important to note that the Economic and Social Council will, from now on, organize "shorter but more frequent subject-oriented sessions spread throughout the year". As stated in paragraph 7 of Assembly resolution 32/197, these sessions will be scheduled for the purposes of

> "considering action by the United Nations system in particular sectors, reviewing the results of technical work undertaken in specialized bodies and establishing guidelines for such work, reviewing programme budgets and medium-term plans within the United Nations system, and recommending policy guidelines for operational activities."

106. Furthermore, in paragraph 8 of that resolution, it is stated that

> "the council may, in modification of its programme, decide on ad hoc arrangements - including in particular the convening of special sessions - to deal with emerging problems meriting special or urgent international attention."

107. In paragraph 10 of Assembly resolution 32/197 it is stated that

> "in order to ensure that the subject areas referred to in paragraph 7 above are given the most effective and informed consideration possible within the broad context /of the Council's tasks, functions and responsibilities/, the Economic and Social Council should assume to the maximum extent possible direct responsibility for performing the functions of its subsidiary bodies; these bodies would accordingly be discontinued or their terms of reference redefined and/or regrouped."

Among those subsidiary bodies categorized in paragraph 11 of Assembly resolution 32/197 which might be discontinued "unless the Council takes affirmative action to renew and redefine their mandates" are the Advisory Committee on the Application of Science and Technology to Development (of the expert and advisory bodies of the Council") and the Committee on Science and Technology for Development (one of the "standing intergovernmental committees").

Other United Nations forums for negotiation, including the United Nations Conference on Trade and Development and other United Nations organs and programmes, the specialized agencies, the International Atomic Energy Agency and ad hoc world conferences

108. In paragraph 16 of Assembly resolution 32/197, all of the above organizations, funds, programmes and ad hoc world conferences within the United Nations system are called upon to "co-operate in whatever measures are necessary for the effective discharge of the responsibilities of the General Assembly and the Economic and Social Council". They are also asked to give "full and prompt effect to their specific policy recommendations".

109. Furthermore, Paragraph 18 of that resolution requests that

> "appropriate measures should be taken to enable the United Nations Conference on Trade and Development, within available resources, effectively to play the major role envisaged...as an organ of the Assembly for deliberation, negotiation, review and implementation in the field of international trade and related areas of international economic co-operation, bearing in mind the need to maintain its close and co-operative relationship with the Assembly and to co-operate with the Economic and Social Council in carrying out the Council's responsibilities under the Charter."

Structures for regional and interregional co-operation

110. The role of the regional commissions is being strengthened under Assembly resolution 32/197, and several of the recommendations bear on the ability of the system to co-ordinate science and technology policy. In particular, paragraph 21 of that resolution specifies that the regional commissions are supposed to provide

> "inputs for the global policy-making processes of the competent United Nations organs and should participate fully in the implementation of the relevant policy and programme decisions taken by these organs".

111. In addition, paragraph 23 of that resolution states that

> "Relations between regional commissions and the organizations of the United Nations system should be strengthened. Close co-operation with the United Nations Development Programme should be established and appropriate arrangements made to enable the regional commissions to participate actively in operational activities carried out through the United Nations system, including the preparation of intercountry programmes, as may be required, in their respective regions.... The General Assembly and the Economic and Social Council should take measures to enable them to function expeditiously as executing agencies for intersectoral, subregional, regional and interregional projects and, in areas which do not fall within the purview of the sectoral responsibilities of specialized agencies and other United Nations bodies, for other subregional, regional and interregional projects".

112. The regional commissions are called upon in paragraphs 24 and 25 of Assembly resolution 32/197 to take a more active role in assisting national Governments to identify projects and prepare programmes for "the promotion of co-operation among those countries". And they are directed to strengthen and, where appropriate, expand co-operation among themselves for "the continuous exchange between them of information and experience".

Operational activities of the United Nations system

113. Several proposals are put forth in General Assembly resolution 32/197 restructuring resolution which promote the better co-ordination of operational activities. In particular, paragraph 31 of the resolution states that "there should be held a single annual United Nations pledging conference for all United Nations operational activities for development". Paragraph 32 states that "Measures should be taken to achieve maximum uniformity of administrative, financial, budgetary, personnel and planning procedures, including the establishment of a common procurement system, harmonized budget and programme cycles, a unified personnel system and a common recruitment and training system." In addition, in paragraph 33 the resolution specifies that "the United Nations Development Programme country-programming process should be utilized as a frame of reference for the operational activities carried out and financed by the organizations of the United Nations system from their own resources."

114. This integration of operational activities should also extend to the country level, where it is recommended in paragraph 34 that all operational activities for development be "entrusted to a single official to be designated... who should exercise team leadership and be responsible for evolving, at the country level, a multidisciplinary dimension in sectoral development assistance programmes."

115. Finally, in paragraph 35, the resolution asks that consideration be given by the General Assembly "to the establishment of a single governing body responsible for the management and control, at the intergovernmental level, of United Nations operational activities. This body should replace the existing governing bodies."

Planning, programming, budgeting and evaluation

116. As discussed in the earlier sections of this paper, harmonization of science and technology policy would be simplified if such guidelines as budgets and medium-term plans were also harmonized and synchronized throughout the system. In paragraph 43 of Assembly resolution 32/197 this proposal is considered in some detail:

> "The organizations of the United Nations system should intensify their efforts to develop harmonized budget presentations and a common methodology of programme classification and description of content. They should synchronize their programme budget cycles and provide full and compatible information on extrabudgetary resources in their programme budgets".

117. In paragraphs 44 and 45 of the resolution, the Assembly states:

> "These organizations should work out without further delay solutions to the timing and technical problems which are impeding the effective application of the existing procedures for prior consultation on work programmes in order that the competent governing bodies may be enabled to take full account of the results thereof before approving such programmes. In the same context, vigorous steps should be taken towards joint programming in related programme areas."

"These organizations should intensify their work on the elaboration of medium-term plans, including the problems of methodology, procedure and the harmonization of plan cycles. In addition, the procedures for prior consultation should be applied to these plans with a view to establishing an increasing measure of joint planning in areas of mutual concern and eventually to system-wide medium-term planning."

118. And finally, in paragraph 48, the Assembly states :

"There should be close co-operation between the Committee for Programme and Co-ordination and the Advisory Committee on Administrative and Budgetary Questions and they should work out appropriate arrangements for maintaining continuous contact".8/

119. In addition, the evaluation role of CPC is stressed. Specifically, CPC "should also assist the Council and the Assembly in supervising, reviewing and carrying out, as appropriate, evaluation exercises in respect of the activities of the United Nations, particularly those having system-wide implications". This includes measures "to improve the effectiveness of internal evaluation procedures in respect of programme implementation", and the development of "appropriate methods" to "assist the competent intergovernmental bodies, with the assistance as required of the Joint Inspection Unit, in carrying out their responsibilities for external evaluation".

Interagency co-ordination

120. Assembly resolution 32/197 reconfirms in paragraph 54, that the "machinery for interagency co-ordination at the intersecretariat level should centre on the Administrative Committee on Co-ordination under the leadership of the Secretary-General". Further, it recommends that the machinery of ACC should be "streamlined and reduced to a minimum" and should rely to the maximum extent possible on ad hoc arrangements "designed to meet the specific requirements of the intergovernmental bodies concerned and geared to the policy-making and programming processes of the General Assembly of the Council".

121. As specified in paragraph 52 of the resolution, interagency co-ordination at the intersecretariat level should concentrate on the following tasks :

"(a) Preparing ... concise and action-oriented recommendations for consideration by the intergovernmental bodies concerned;

"(b) Concerting in an effective manner the implementation ... by the United Nations organs, programmes and agencies concerned of policy guidelines, directives and priorities emanating from the General Assembly and the Economic and Social Council;

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8/ In this regard it should be noted that UNESCO has agreed to attempt to develop a system of harmonized budget presentations for consideration by the Advisory Committee in its further work on the harmonization of science and technology policy in the United Nations system.

"(c) Developing the co-operative and, whenever possible, joint planning, as well as the co-ordinated execution, of programme activities decided upon at the intergovernmental level".

122. Furthermore, ACC's agenda, functioning and reporting systems are to be adjusted to meet the requirements and programme of work of the General Assembly and the Economic and Social Council; arrangements are to be made to improve communication between ACC and the intergovernmental bodies concerned; and the executive secretaries of the regional commissions are to be enabled to participate in the work of ACC on matters of concerns to their respective commissions.

Secretariat support services

123. Assembly resolution 32/197 recommends in paragraph 61 that the United Nations Secretariat concentrate on the following broad functions:

"(a) Interdisciplinary research and analysis, drawing as necessary upon all relevant parts of the United Nations system ... ;

"(b) Cross-sectoral analysis of programmes and plans in the economic and social sectors of the United Nations system with a view to mobilizing and integrating, at the planning and programming stages, the inputs and expertise of the organizations of the United Nations system ... ;

"(c) Substantive support for technical co-operation activities in economic and social sectors which are not covered by other United Nations organs, programmes or specialized agencies; this function would include, inter alia, the provision of technical expertise in the formulation, implementation and evaluation of country and intercountry programmes and of specific projects, the provision of direct advisory assistance to Governments, the development of training materials and support of training institutions;

"(d) Management of technical co-operation activities carried out by the United Nations ... ;

"(e) Provision, on an integrated basis, of technical secretariat services for the Committee for Programme and Co-ordination, the Economic and Social Council, the General Assembly, ad hoc conferences and inter-secretariat co-ordination machinery ... ;

"(f) Without prejudice to the function defined in subparagraph (a) above, and in response to directives from the relevant intergovernmental bodies, research, including the collection of relevant data, and analysis in those economic and social sectors that do not fall within the purview of other United Nations organs, programmes, and specialized agencies".

124. The detailed implementation of the recommendations made regarding secretariat support services in General Assembly resolution 32/197 will be carried out by the Secretary-General in the exercise of his powers under the Charter of the United Nations. To date, the Secretary-General has issued three bulletins (ST/SGB/161, 162 and 163) which establish the existence and list the functions of (1) the Department of International Economic and Social Affairs; (2) the Department of Technical Co-operation for Development; and (3) the Office of Secretariat Services for Economic and Social Matters.

125. The functions of the new Department of International Economic and Social Affairs are the following :

(a) To undertake interdisciplinary research and analysis, drawing as necessary upon all relevant parts of the United Nations system, including the preparation of global economic and social surveys and projections to assist the General Assembly and the Economic and Social Council;

(b) To undertake intersectoral analyses and syntheses of development issues in close collaboration with other organizations of the United Nations system, and to prepare appropriate recommendations for consideration by the General Assembly and the Economic and Social Council;

(c) To identify and bring to the attention of Governments emerging economic and social issues of international concern;

(d) To undertake research and analysis in those economic and social sectors that do not fall within the purview of other United Nations units, organs, programmes and specialized agencies and which are necessary to support the functions described in subparagraphs (a), (b) and (c) above;

(e) To prepare for publication and dissemination the results of research and analysis relating to relevant economic and social issues;

(f) To assist, as required, jointly with all parts of the United Nations system involved in operational activities, the Economic and Social Council in carrying out comprehensive policy reviews of operational activities throughout the United Nations system;

(g) To undertake cross-sectoral analysis of programmes and plans in the economic and social sectors with a view to mobilizing and integrating, at the planning and programming stages, the inputs and expertise of the United Nations system;

(h) To function as the focal point for the development at the intersecretariat level of co-operative and joint planning of programme activities with a view to system-wide medium-term planning;

(i) To maintain liaison with regional commissions and non-governmental organizations;

(j) To prepare substantive documentation for the General Assembly and the Economic and Social Council on the planning and programming of activities on a system-wide basis in the economic and social fields;

(k) To provide substantive services for the Committee for Programme and Co-ordination, the Administrative Committee on Co-ordination and its subsidiary bodies in the economic and social sectors, and for the Committee for Development Planning and other expert bodies of the Economic and Social Council.

126. The functions of the Department of Technical Co-operation are as follows:

(a) To assist and advise the Secretary-General in regard to technical co-operation activities for which the United Nations is executing agency;

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(b) To manage the United Nations regular programme of technical co-operation and implement UNDP projects and projects financed from extrabudgetary resources for which the United Nations is the executing agency;9/

(c) To provide substantive and management support to such programmes and projects;

(d) To provide substantive support for the development of policies for technical co-operation activities of the United Nations as an executing agency;9/

(e) To assist Governments and regional institutions in improving the effectiveness of their policies and programmes bearing on economic and social development through the provision of direct advisory services;

(f) To maintain liaison with UNDP and associated funds and with other bodies of the United Nations which execute technical co-operation projects directly, such as UNCTAD, UNIDO and UNEP;

(g) To perform the functions devolving upon the United Nations as the co-founder with FAO of the World Food Programme;

(h) To maintain liaison with other executing agencies on all matters of mutual concern;

(i) To prepare relevant inputs for reports to the General Assembly, the Economic and Social Council and its subsidiary bodies, the UNDP Governing Council, and ACC and its subsidiary bodies;

(j) To undertake research and analysis in those economic and social sectors that do not fall within the purview of other United Nations units, organs, programmes and specialized agencies and which are necessary for substantive support of technical co-operation activities.

127. The functions of the Office of Secretariat Services, Economic and Social Matters are as follows:

(a) To provide, on an integrated basis, technical secretariat services for the Committee for Programme and Co-ordination, for the Economic and Social Council, for the General Assembly and *ad hoc* conferences in the economic and social fields as well as for the inter-secretariat co-ordination machinery;

(b) To organize and co-ordinate the provision by the Secretariat units concerned of substantive support services, particularly documentation, as required by the above-mentioned bodies in the economic and social fields;

(c) To ensure that the substantive units concerned are informed of relevant developments in the work of these bodies in the economic and social fields, including resolutions and decisions adopted by them; and to ensure that these bodies are kept informed of action being taken, in response to their decisions, by the Secretariat units concerned;

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9/ Except for UNIDO, UNCTAD and UNEP.

(d) To prepare, in consultation with the substantive units concerned, the basic programme of work of the Economic and Social Council;

(e) To prepare, in consultation with the Department of Conference Services, the calendar of conferences and meetings in the economic and social fields;

(f) To assist the Office of the Under-Secretary-General for Political and General Assembly Affairs in the formulation of the provisional agenda of the General Assembly in respect of economic and social matters and in all relevant organizational aspects, including recommendations for the allocation of items and the like.

V. HARMONIZATION OF SCIENCE AND TECHNOLOGY POLICY AND THE UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

128. Agenda Item 6 of the provisional agenda for the Conference on Science and Technology for Development calls for discussion on the "utilization of the existing United Nations system and other international organizations to implement the objectives... in a co-ordinated and integrated manner". Consequently, apart from the separate process of restructuring being undertaken in the economic and social sectors of the United Nations, the Conference will be focusing on the way in which the institutional structure of the United Nations system can be better used or better designed to facilitate improved harmonization of science and technology policy.

129. The Ad Hoc Working Group has determined that it can here best fulfill its advisory role to the United Nations Conference on Science and Technology for Development and its specific mandate regarding science and technology policy in the United Nations system by discussing, without prejudice to choice, several possible institutional alternatives for harmonizing science and technology policy. These institutional alternatives, which are correlated with the alternatives for policy-making discussed in Section III, do not constitute the universe of possible structures for science and technology in the system, but they are meant to cover the range of choice available for improved, harmonized policy. In addition, various other suggestions affecting structural alternatives for harmonized science and technology policy will be put forward and also linked to the mode of policy-making they would institutionalize. It is understood, of course, that a decision in regard to any of these alternatives is the responsibility and prerogative of Member States, and will be the result of deliberations during the Conference for Science and Technology for Development, the Economic and Social Council and ultimately, the General Assembly.

A new agency

130. The most extreme institutional option would be the creation of an entirely new agency charged with the overall co-ordination of science and technology for the entire system. This agency would also be responsible for conducting research linked to the explicit science and technology objectives of the system, in particular where this research is not within the terms of reference of any existing United Nations organizations. And, in its co-ordinating role, the new agency would synthesize data on all of the system's research and programmes in order to assess the degree to which objectives were being met and goals achieved.

131. Furthermore, the new agency would have ultimate (but not sole) responsibility for directing new information regarding objectives throughout the system to all relevant organizations and governing bodies. To this end, it would establish and maintain on-going contact with non-governmental organizations, other intergovernmental organizations dealing with science and technology, national science and technology ministries and organizations, and members of the scientific and technological community, throughout the world.

132. In this way, a fully circular system would be created. That is, the new agency would search out information from other United Nations organizations on their programmes and strategies; assess these in relation to the system's objectives; monitor the United Nations' environment for new information (for example, feedback on programmes implemented, new and revised hypotheses regarding strategies and changing goal patterns, as well as new developments in scientific research and technology); make this "new information" available to the secretariats and governing bodies in the system; and then, once again, examine the sum of programmes and strategies adopted by the United Nations organizations in order to evaluate the extent to which they have responded to feedback.

133. A structure such as this one would most closely approximate that required for the comprehensive decision-making alternative to operate. In theory, there would be a single agency capable of co-ordinating and harmonizing the numerous objectives, strategies and programmes spread throughout the system, thereby permitting integration of all policy components without sacrificing the specialized functions of any organization within the United Nations system. Furthermore, the agency would be specifically geared to gathering and directing information, providing feedback and encouraging organizational learning.

134. In fact, however, a new agency would probably create new problems for science and technology policy. In the experience of the United Nations (as well as of almost all organizations), new agencies tend to become concerned not only with their own survival but also with increasing their influence and activities. Consequently, it is highly probable that jurisdictional disputes would arise between such an agency and the existing United Nations organizations dealing with science and technology. This situation would increase conflict over policy in the system, and it would also make it extremely difficult for the new agency to monitor and assess the operations of the other organizations effectively.

135. Finally, it is unlikely, that the cost of a new agency could be justified. There are other institutional mechanisms that could achieve better harmonization of policy without incurring major expenditures. Furthermore, given that most science and technology related activities applicable to United Nations objectives have already been distributed throughout the system, it is improbable that there is a big enough residual to warrant a new agency.

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A new programme

136. A second alternative is the creation of a programme for science and technology activities that would function within the United Nations system to arrange concerted action involving two or more agencies and organizations on well-defined activities in the application of science and technology to development. The programme would have no operational activities of its own nor would it conduct any independent research and analysis. Rather it would co-ordinate - and be in a position to influence - programmes and strategies agreed upon.

137. The specific nature of the programme would depend mainly on the outcome of the United Nations Conference on Science and Technology for Development, particularly the programme of action to be adopted. It obviously need not, and probably could not, include all aspects of science and technology within the United Nations system. However, it should be composed of those parts that may be selected by the Conference as being priorities that require, given the jurisdiction of different agencies and organizations, a concerted effort as well as inter-relationship and co-ordination in order to be effective in the framework of problem-solving, and possibly new types of action as well.

138. Such a programme should have a supporting secretariat capable of gathering, synthesizing and co-ordinating information for preparation of policy and implementation guidelines. (The proposed centre for concerted action and co-ordination on science and technology, suggested in paragraphs 143 and 145 below could function as the secretariat).

139. In order to be effective, the programme would require additional financial input from the agencies and organizations concerned, with the possible support of UNDP funding upon requests from Governments.

140. Consideration might be given to supplying the programme with a fund, and, in an expanded version, with a structure such as the United Nations Environment Programme. This would involve further specifications which cannot be elaborated at this time. In this connexion it must be recognized that there are difficulties surrounding the creation of new funds. However, such a fund would be very useful as a catalyst to the programme.

141. This type of structure would most likely encourage the modification alternative for policy-making discussed earlier. Each organization within the system would be responsible for defining its own subgoals, objectives and strategies, but the programme would also be in a position to ensure consistency among these through its decisions regarding funding and through co-ordination.

142. Furthermore, by assuming an active role in translating objectives set by the General Assembly and the Economic and Social Council into a coherent set of strategies for reference by organizations throughout the system, the programme could provide the thrust necessary for changing the orientation of programmes towards solving development problems.

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A centre for concerted action and co-ordination on science and technology

143. A third alternative is to have a centre for concerted action and co-ordination on science and technology even if no programme is adopted. Its justification lies in the need to systematize and synthesize information as a minimum on all science and technology programmes and strategies conducted throughout the system; advise the Secretary-General regarding the on-going subgoal objectives of the other United Nations organizations; relate these subgoal objectives to the overall and changing objectives of the system; and be responsible for maintaining contacts with the scientific and technical community. Because this centre would be kept as small as possible, it would refer research questions to other organizations in the system, where applicable, to non-governmental organizations, or to a committee of no more than twelve top-level experts or such ad hoc advisory committee or working groups as might be necessary.

144. This institutional arrangement, if it is able to function effectively, would also create a setting for a "loose" version of the modification alternative for policy-making. That is, it would provide a mechanism for co-ordination, and it could help in harmonization through the Secretary-General and the Economic and Social Council. Furthermore, because it would have a small staff and would not be subject to a large bureaucracy, it could be extremely flexible, could discard outdated issues easily, respond quickly to advice sought by the Secretary-General and require relatively few resources from the system. In addition, it would in no way compete with existing organizations in the United Nations either for resources or for authority.

145. Because an organ such as a centre for concerted action and co-ordination on science and technology would be located within the United Nations organization, its creation, structure and functions would be subject to the current restructuring process of the social and economic sectors within the United Nations. Thus, it is also important to keep in mind other parallel changes already requested as part of the restructuring which are likely to affect science and technology activities. In particular, reference is made here to the fact that the restructuring process is focusing heavily on improved co-ordination of the system, especially through the Economic and Social Council, the Committee on Programme and Co-ordination, the Administrative Committee on Co-ordination the Regional Commissions and the United Nations secretariat."

Other suggestions to improve institutional arrangements

146. First, programme success is dependent upon both the way in which a programme approaches goals and upon the attractiveness of a programme to Member States. However, one of the main problems here is that, even when objectives are designed to achieve goals, recipient states are not sufficiently aware of the full potential of the United Nations system to be able to use it to its fullest advantage. In other words, co-ordination must take place not only in the making of policy, but also in the implementation of policy. There is therefore a need to designate a

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section, in whichever co-ordinating structure for policy emerges, to co-ordinate information on science and technology programmes throughout the system, with an emphasis on illustrating how these relate to the goals and objectives of specific countries. This unit should also be able to put together packages of programmes from any and all of the organizations to suit the specific needs of the government, and it should preclude the implementation of conflicting programmes. Finally, it might also orient itself toward helping countries choose technologies and packages of technologies.

147. Second, the structure of the United Nations has inadequate linkage between intergovernmental co-ordination and intersecretariat co-ordination; nor do these each separately succeed in providing machinery for the implementation of integrated policy for science and technology. The following suggestions are intended to relate specifically to this problem.

148. The Committee for Programme and Co-ordination (see paragraphs 99 and 116 to 119) has no specialized secretariat to service it, to collect and analyse the vast amount of material pertinent to the Committee's [illegible] co-ordination functions. It has tried to circumvent this lack of resources by referring to the data produced by the procedure of prior consultations on programme planning documents, but two problems become evident.

149. First, there is too much uncertainty involved. CPC has to set programme priorities; however, to do this the Committee has to be able to control as much uncertainty in the system as possible and to be able to depend upon certain inputs--such as information gathering and analysis--as reliable and comprehensive. It cannot do this without access to a secretariat which is both competent and well-staffed.

150. The second problem is the need to standardize any co-ordinating exercise--be it prior consultation or medium-term plans or budget decisions--both conceptually and methodologically. This would include comparable programme-budget presentations, a common system for programme classification and description of content, synchronized budget cycles throughout the entire United Nations system, and time-tables for budget preparation and review. 10/ Ideally, it should also encompass full information on all extra-budgetary resources in programme budgets and harmonization of country programming periods with agency medium-term periods. A starting point for a standardized format for science and technology programme evaluation might be the work being undertaken by UNESCO on standardization of statistics relating to science and technology.

151. Implicit in the suggestions made concerning CPC is the assumption that ACC, the major intersecretariat co-ordinating mechanism, and [illegible] particularly its Sub-Committee on Science and Technology, will be strengthened, because it will logically fall to the inter-organizational machinery, acting with the new co-ordinating structure for science and technology, to establish the standardization referred to in paragraph 150 and set time tables for implementation of United Nations objectives in science and technology.

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10/ These are, in fact, included in the recommendations put forward in the General Assembly resolution 32/197 of 9 January 1978 entitled, Restructuring of the Economic and Social Sector of the United Nations System.

152. In the consideration of the above alternatives it is important to recognize the increasing role to be played by the regional commissions in the analysis, formulation and implementation of science and technology activities. For this purpose, the secretariats of the regional commissions require increased access to advisory services, in consultation, where appropriate, with the co-ordinating mechanism that may be adopted.

153. The intention here is to require more from the system, primarily by tightening up on existing structures. This same approach could also be carried through to the regional level, where the regional commissions could be utilized much more effectively as a major link between the international and the national levels.

ANNEX

Record of the third session of the Ad Hoc Working Group on Policy for Science and Technology Within the United Nations System a/

CONTENTS

a/ The views expressed herein reflect those of the participants and are not necessarily shared by the Advisory Committee.

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INTRODUCTION

1. The third session of the Advisory Committee's Ad Hoc Working Group on Policy for Science and Technology within the United Nations System was held in Paris from 22 - 26 May 1978. The meeting was opened by the Chairman of the Working Group, Victor Urquidi. He welcomed all of the participants and, on behalf of the Ad Hoc Working Group, thanked the representatives from UNESCO for their offer to act as host to the meeting in Paris.

2. In addition to the members of the Working Group, the meeting was attended by three members of the Advisory Committee, representatives from the Office for Science and Technology of the Department of International Economic and Social Affairs of the United Nations Secretariat, which provided the secretariat services for the meeting, the United Nations Conference on Trade and Development (UNCTAD), the United Nations Industrial Development Organization (UNIDO), the secretariat of the United Nations Conference on Science and Technology for Development, the United Nations Institute for Training and Research (UNITAR), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Atomic Energy Agency(IAEA). A complete list of those participating in the meeting is provided in appendix II.

3. In accordance with the agenda, elections were held. Mr. Urquidi was elected Chairman and Mr. Berlinguet was elected Rapporteur.

4. The draft provisional agenda was then considered and amended to include a review of the history and purpose of the Advisory Committee's work on harmonization of science and technology activities and policy in the United Nations system. The approved agenda is contained in appendix I.

5. At the invitation of the Chairman, the Director of the Office for Science and Technology reviewed the historical background which had led to the convening of the third session of the Working Group. The Director cited Economic and Social Council Resolution 1826 (LVII) in which the Council had considered that the "planning of activities in the various organizations of the United Nations should be harmonized and gradually integrated into a United Nations science and technology policy" and affirmed that the Committee on Science and Technology for Development should be the focal point for the elaboration and continuing evaluation and assessment of a United Nations policy in that field.

6. The Director also brought to the attention of the Working Group that at the fourth session of the Committee on Science and Technology for Development in February 1978, the Committee requested a "further report" on a harmonized science and technology policy from the Advisory Committee and asked that particular attention be given in the report to: (a) the relevant policy decisions of the General Assembly on the establishment of

the New International Economic Order; (b) the forthcoming United Nations Conference on Science and Technology for Development; (c) the possible existence and effect of wasteful redundancy in United Nations science and technology activities; (d) the current restructuring of the economic and social sectors of the United Nations system; and (e) comments on the exercise submitted by the agencies.

7. Finally, the Director noted that the work of the Advisory Committee on harmonization of science and technology activities and policy in the United Nations system had been linked directly to agenda item 6 of the Conference, both by the Secretary-General of the Conference speaking at the second session of the Ad Hoc Working Group and by the Committee on Science and Technology for Development at its fourth session. In particular, the Committee had requested the Advisory Committee "to submit a further report to the Preparatory Committee for the United Nations Conference on Science and Technology for Development at its third session and to all national focal points and regional commissions for their information".

8. The Chairman reminded the Working Group that the principal purpose of the meeting was to develop the report which was to be submitted to the Advisory Committee at its twenty-fourth session and then to the Preparatory Committee for the Conference at its third session. He pointed out that, in its formal advisory role, the Advisory Committee had complete freedom to offer whatever advice it felt would be most relevant and useful in fulfilling the requests from the Economic and Social Council and the Committee on Science and Technology for Development. In that respect, the Chairman stated that it was especially important for the Working Group to direct advice to the preparations for the Conference and to discussions on the Conference programme of action.

9. The present record contains highlights of some of the major points brought up during the discussions and decisions reached regarding the drafting of the further report. The follow-up action is to be taken by the secretariat in order to prepare the draft of the report to be submitted to the Advisory Committee at its twenty-fourth session.

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I. REVIEW OF THE PURPOSE OF THE WORK OF THE ADVISORY COMMITTEE ON HARMONIZATION OF SCIENCE AND TECHNOLOGY ACTIVITIES AND POLICY

10. The group noted that the harmonization of science and technology activities and policy in the United Nations system was from the beginning perceived to be intrinsic to the evolution of two additional exercises in the United Nations--the restructuring of the economic and social sectors of the United Nations and the preparations for the United Nations Conference on Science and Technology for Development. However, their interaction had not occurred. The harmonization of science and technology activities and policy had much in common with the restructuring, but interaction between the two had not been possible. It was unfortunate that the report of the Advisory Committee had not been prepared sufficiently early to feed into the national and regional papers for the Conference. However, it was important to note that the report of the Working Group could still be relevant and meaningful for the continuing preparations for the Conference and in the formulation of the Conference programme of action.

11. In general, the Group agreed that, although past work by the Advisory Committee on harmonization should continue to be built upon, it was essential to stress practical advice for implementation of harmonization of science and technology activities and policy and especially to orient work towards concrete suggestions for the Conference. The policy and its harmonization were bound to be affected by the decisions taken at the Conference because the Conference would deal specifically with the question of institutional arrangements for science and technology activities in the United Nations system. Thus, the Working Group should be able to give advice on alternative institutional arrangements.

12. The representatives of FAO and IAEA suggested that the Advisory Committee should not concern itself with questions related to restructuring and institutional arrangements, since those were currently being discussed by the Administrative Committee on Co-ordination (ACC).

13. The representative of UNCTAD agreed with his colleagues from FAO and UNIDO, but he also noted the need for the work on harmonization of science and technology policy and activities and that of restructuring to be mutually reinforcing. Of prior importance, however, the Working Group must establish clear policy tasks. Towards that end, the UNCTAD representative made three suggestions: (a) to encourage and co-ordinate national policies for science and technology; (b) to assist countries to develop priorities for science and technology policy; and (c) to encourage co-operation on global problems, such as meteorology and the environment.

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14. The representative of UNIDO concurred with those suggestions and also stressed that the Working Group should focus on the specifics of Member States' needs in United Nations policy.

15. Over-all, the Group emphasized again that the prerequisites for the report included consideration of (a) the extent to which the United Nations system under present conditions responds to the needs of Member States; (b) the necessity of harmonization of science and technology activities; and (c) the specific requests from Member States regarding their needs and aspirations. Furthermore, it was noted that those questions would be discussed at the United Nations Conference on Science and Technology for Development, so it was important for the report to address specific proposals to the Conference.

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II. DISCUSSION OF THE DRAFT WORKING PAPER

A. General remarks

16. There was considerable discussion as to whether document E/C.8/49 or the new draft working paper of 15 May 1978 should be used as the basis for a further report. One Advisory Committee member stated that the 15 May document represented a major departure from earlier work carried out by the Ad Hoc Working Group and that it involved a shift of emphasis with which he was not in agreement.

17. The question was also raised as to whether the language of the 15 May draft was consistent with earlier reports from the Ad Hoc Working Group. It was stressed by the Group that there was no need to reword objectives nor restate the definition of science and technology activities.

18. In general, the Group noted the paper was lacking in some respects. It was agreed that the 15 May draft working paper was too descriptive and that any further report should be more prescriptive and include a discussion of institutional arrangements. The Group decided that the best way to proceed was to produce an additional document which would draw on material from both document E/C.8/49 and the 15 May draft working paper, and, where necessary, to supplement that material with new work.

19. The representative of FAO suggested that a further report which might also benefit from inclusion of concrete examples for illustrative purposes which should be organized by subject or function.

20. Finally, the Group noted that there was not sufficient time during the course of the meetings for it to draft an additional paper. It therefore decided to provide the secretariat with clear directives regarding the content and arrangement of a further report and to request that the secretariat carry out the drafting accordingly.

B. Harmonization of science and technology activities and policy within the United Nations system

21. One of the members of the Group stated that his major difficulty with the 15 May draft working paper was that it seemed to reduce the problem of policy formulation to one of institutional arrangements only. There was too rigid an approach to the question of policy-making. Instead, there should be more emphasis on the dynamic and evolutionary characteristics of policy, and on the fact that there was no single packaged approach towards harmonization.

22. It was also suggested that the further report should contain discussion of the problems of vertical versus horizontal integration of science and technology activities.

23. Other members of the Group raised the need to consider the degree of preparedness of Member States to carry out harmonization at the national level. The harmonization of science and technology activities and policy must be viewed as part of an interplay between national policies and United Nations policy for science and technology. That also included concern for the ability of the United Nations policy to help Member States co-ordinate their science and technology activities and to learn how to use the United Nations system more efficiently and more effectively.

24. The representative of UNIDO stated that the draft working paper did not reflect the real science and technological needs of member countries and that it dealt merely with organizational matters. He suggested that the role of a United Nations science and technology policy should be (a) to establish and formulate national policy for science and technology; (b) to identify priorities; and (c) to co-ordinate activities on global problems.

25. The representative of UNCTAD also felt that a clear definition of United Nations science and technology policy was lacking and noted that the direction of the United Nations science and technology policy could be: (a) to urge and help countries in elaborating national science and technology policy in order to strengthen their technological capability; (b) tohhelp countries in establishing national priorities in science and technology activities; and (c) to improve international co-operation and co-ordination of the United Nations organizations to solve global problems, such as those of the environment.

26. The representative of UNCTAD also suggested that United Nations science and technology policy should be evaluated within the whole framework of the new international economic order, and he pointed out that some of the earlier comments from UNCTAD addressed to the Committee on Science and Technology for Development at its fourth session andtcontained in document E/C.8/49/Add.1, which stressed the need for an analysis of specialized agency activities in science and technology, had not been taken into consideration in the 15 May draft working paper.

27. The Group agreed that it was important to take the remarks from UNCTAD into account in drafting the new report.

28. One of the representatives of UNESCO supported the idea expressed in the draft working paper that effective science and technology budgeting is an essential tool for assisting in harmonization of science and technology activities and policy in the United Nations system, and he noted that this was consistent with what UNESCO was currently advocating. In that regard, he referred to the recommendations adopted by the fifth meeting of the intergovernmental Standing Conference of the Directors of National Councils for Science Policy and Research of the Latin American and Caribbean Member States, held at Quito, 13 - 18 March 1978, and to the UNESCO proposal on the budgeting of national activities in science and technology (UNESCO/ MINESPOL II/8 of 15 May 1978) prepared for the Minespol II Conference.

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29. The Ad Hoc Working Group requested UNESCO to undertake a pilot survey of the budgets and staff of the agencies of the United Nations system that are devoted to scientific and technological activities. The pilot survey would have to call on the informal participation of the United Nations agencies and would cater to both science and technology functions (such as research and development, scientific/technological services) and subject matters (such as medical, agricultural, technological and environmental sciences). As a first step, the pilot survey would be limited to the natural sciences and technology, leaving aside the social and economic sciences and the humanities.

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III. HARMONIZATION OF SCIENCE AND TECHNOLOGY ACTIVITIES AND POLICY AND THE RESTRUCTURING EXERCISE

30. The Group noted that one of the original intentions of harmonization of science and technology activities and policy in the United Nations system was to use it as an input into the restructuring of the United Nations economic and social activities. Political realities and other constraints had prevented this from occurring at the initial stages so it was currently important for the Working Group to concentrate on ways by which it could still influence the process of restructuring.

31. The Secretariat indicated that the General Assembly resolution on restructuring (Assembly Resolution 32/197 of 9 January 1978) had been adopted and that its implementation was now in the hands of the General Assembly, the Economic and Social Council and the Secretary-General.

32. The Working Group agreed that it had a mandate to give advice on issues affecting science and technology in the United Nations, including such matters as institutional and procedural arrangements. In particular, it was felt that this was such an important subject, with far-reaching implications for science and technology policy harmonization and co-ordination, that the Working Group would be neglecting its duty if it did not fully analyse the aspect of the restructuring process.

IV. HARMONIZATION OF SCIENCE AND TECHNOLOGY ACTIVITIES AND POLICY AND THE UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

33. The Chair welcomed the participation in the Working Group of the Deputy Secretary-General of the Conference, who summed up the preparations to date for the Conference and especially as these related to the participation of and contributions from the Advisory Committee. He noted that one of the ways in which the policy exercise could inform preparations for and discussions during the Conference was through proposals for and analysis of various alternative institutional arrangements in science and technology which could enhance harmonization of science and technology activities and policies in the United Nations. He stated that the work now being undertaken by the Ad Hoc Working Group was especially relevant to agenda item 6 of the Conference.

34. The Group agreed that it wanted to be both action-oriented and relevant to the Conference. Towards that end, it decided that it would call attention in its report to alternative institutional arrangements for science and technology in the United Nations system.

V. DECISIONS TAKEN REGARDING PREPARATION OF A FURTHER REPORT

35. In order to produce the further report requested by the Committee on Science and Technology for Development at its fourth session, the Ad Hoc Working Group decided to prepare a new document which would incorporate some of the material from document E/C.8/49, would draw from some of the sections of the 15 May draft working paper and, where necessary, supplement that with additional material. In particular, the specific issues requested by the Committee on Science and Technology for Development would be taken into consideration. These were: (a) the New International Economic Order; (b) the restructuring of the economic and social sectors of the United Nations; (c) the comments contributed by the agencies of the United Nations system; (d) the United Nations Conference on Science and Technology for Development; and (e) an assessment of whether "any overlapping missions among organizations and bodies within the United Nations system constitute healthy pluralism or wasteful redundancies (in science and technology activities)".

36. An outline of the new report, with some indication of additions, deletions and annotations to the draft working paper, follows:

Introduction

37. This section would contain a brief history of the work carried out by the Ad Hoc Working Group on Policy for Science and Technology within the United Nations system since its first session in 1975. It would emphasize the significance of document E/C.8/49, its acceptance by the Committee on Science and Technology for Development at its fourth session in 1978 and the relation between E/C.8/49 and the new report.

Relevant issues of concern to United Nations policy-making bodies

This section would contain four major subheadings: (a) a restatement of the scope and components of harmonized science and technology activities and policy within the United Nations system; (b) a discussion of the current lack of harmonized science and technology activities and policy and an analysis as to why such a situation exists; (c) an argument supporting the need for harmonized science and technology activities and policy, including the need for corresponding structural arrangements; and (d) an examination of the difficulty of measuring science and technology activities in the United Nations system.

Furthermore, it was agreed that the tables on United Nations expenditures for science and technology activities, which appeared in the 15 May draft working paper, would be deleted.

Policy goals for science and technology in the United Nations system

This section would describe the science and technology policy goals expressed within the framework of the New International Economic Order. The emphasis would be on identifying the dominant science and technology goals in the United Nations system.

Alternative approaches to harmonization of science and technology activities and policy-making

This section would refer to the material contained in paragraphs 22 through 44 of the 15 May draft paper. It was decided that the section would be prefaced with an explanation that it was primarily a theoretical exposition of policy-making in general and not specifically policy-making for science and technology. The language used throughout to define the components of a policy would be made consistent with the language and concepts adopted in E/C.8/49, with particular reference to paragraphs 43 through 47 and with the additional acknowledgement of programme budgeting, projects implementation, monitoring/control and evaluation as integral parts of policy.

The footnotes describing the co-ordination machinery of the United Nations would be moved from this section to a discussion of the co-ordinating mechanisms of the United Nations system in a separate section. The "options" would be referred to as "alternative approaches"; the descriptive material would be illustrated through the use of examples; the advantages and disadvantages of each approach would be listed at the conclusion of each discussion; and the dynamic and evolutionary characteristics of policy-making would be emphasized.

CO-ORDINATION FOR SCIENCE AND TECHNOLOGY IN THE UNITED NATIONS SYSTEM AND THE CURRENT RESTRUCTURING PROCESS

In this chapter the pre-restructuring co-ordination mechanisms of the United Nations system would be outlined. Juxtaposed to this would be a description of the "restructured" United Nations, to the extent that the information was available, and again with emphasis on the co-ordination machinery.

In particular, attention would be drawn to the role of the Committee for Programme and Co-ordination and to the recommendations made in paragraph 43 of General Assembly Resolution 32/197, concerning the development of "harmonized budget presentations and a common methodology of programme classification and description of content". It would be noted that UNESCO had agreed to attempt to develop the harmonized budget presentations for the consideration of the Advisory Committee in its further work on harmonization of science and technology activities. The report would also state that the Advisory Committee considered the process and implications of restructuring to be of the greatest importance and relevance for its continued work on harmonization and that the Committee believed that

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deliberate analysis of the entire history of the restructuring exercise could afford it the opportunity to be highly responsive to the needs of Member States. (Therefore, towards that end, the Ad Hoc Working Group intended to withhold its judgment on restructuring but to pursue the question during the next few months by carefully analysing the restructuring process. It should be noted that such action was consistent with the restructuring resolution, Assembly Resolution 32/197, which requested that reports to the Economic and Social Council be action-oriented.

HARMONIZATION OF SCIENCE AND TECHNOLOGY POLICY AND THE UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

This section would note that, regardless of the process of restructuring of the economic and social sectors of the United Nations, the Conference, under agenda item 6, would be discussing the subject of institutional arrangements for science and technology activities throughout the entire system. Consequently, the Advisory Committee would fulfill its advisory role by listing several alternative institutional arrangements for consideration by Member States.

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Appendix I

AGENDA

1. Election of officers

2. Adoption of the agenda and organization of work

3. Review of the history and purpose of the work of the Advisory Committee on harmonization of science and technology activities and policy in the United Nations system

4. Consideration of the draft working paper on policy for science and technology within the United Nations system

5. Integration of the work on a science and technology policy into the United Nations Conference on Science and Technology for Development

6. Other business

7. Adoption of the report of the working group

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Appendix II

LIST OF PARTICIPANTS

Members of the Working Group

V. Urquidi (Mexico) - Chairman

L. Berlinguet (Canada) - Rapporteur

P. Gacii (Kenya)

E.E. Galal (Egypt)

B. Delapalme (France) /part-time/

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S.V. Radcliffe (expert)

United Nations

Department of International Economic and Social Affairs Office for Science and Technology:	K.H. Standke M.P. Williams
United Nations Conference on Science and Technology for Development:	G.B. Gresford
United Nations Conference on Trade and Development:	V. Gromeka
United Nations Industrial Development Organization:	H.A. Janiszewski
United Nations Institute for Training and Research:	V. Rittberger

Specialized Agencies and the International Atomic Energy Agency

Food and Agriculture Organization of the United Nations:	B. Müller-Haye
United Nations Education, Scientific and Cultural Organization:	V. de Hamptinne K.M. Sape
International Atomic Energy Agency:	M.A. Titkov