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REPORT BY THE SECRETARY-GENERAL UNDER COUNCIL RESOLUTION 271 (X)
ON THE CONSERVATION AND UTILIZATION OF RESOURCES

Proposals for United Nations Action

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Scope of the Report

1. At its tenth session, the Economic and Social Council adopted resolution 271 (X), which recognized the importance of deriving the fullest benefits from the United Nations Scientific Conference on the Conservation and Utilization of Resources and requested "the Secretary-General to study the proceedings of the Conference and to report to the Council such proposals for the consideration of the Council as he may deem appropriate; and in this connexion to consult with the specialized agencies concerned and with such of the Conference participants as he may deem useful". The present report contains two proposals made as a result of a study of the proceedings and of consultation with certain of the specialized agencies and participants in the Conference. These proposals would provide for: (a) a United Nations programme to promote the systematic survey and inventory of non-agricultural resources; and (b) international conferences on particular resource problems.

2. The Conference emphasized the difficult and complex task involved in realizing the existing potentialities for expanding the flow of goods and services by the more effective use of resources. Progress in use of resources depends on action at all levels, ranging from individual consumer and producer activities to various forms of international co-operation. On the technical side, such progress depends on a great deal of knowledge of particular resources and of the practical effects of the application of scientific production techniques to these resources. It requires the co-operation of many types of specialities. The matter is complicated by the fact that the development of any one resource is frequently associated with that of other resources, in either a complementary or a competitive relationship. Furthermore, the initiation of particular resource projects or production techniques must often be accompanied by economic and social actions, including such diverse activities as the creation of new industrial and transportation facilities, the institution of health, education and training programmes or the modification of the terms of land tenure. After technical and natural factors have been taken into account, decisions on particular techniques or projects must be based not only on their merits, but also on the practical economic resources available and their more general impact on related resources and economic activities. Thus the Conference pointed to many ways in which a more effective use of resources could be achieved and also

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stressed the importance of an integrated approach to resource problems.

3. In deciding what proposals could usefully be presented to the Council at this time, it was considered that they should be limited to international programmes, in so far as they are not already provided for, which would assist Member Governments in understanding and appraising their own resources and the manner in which these could be most effectively used.^{1/} The numerous actions which governments, organizations and individuals might themselves initiate as a result of the work of the Conference can best be determined, it is believed, by direct study of the proceedings of the Conference which are now being published. The principal lines of international effort emphasized in the work of the Conference were:

- (a) The promotion of an integrated approach and a systematic analysis of problems of resource conservation and use;
- (b) The promotion of systematic surveys and appraisals of resources;
- (c) The provision of adequate facilities for the international exchange of information on resource techniques and their application; and
- (d) The continuation and expansion of technical research designed to develop new resource techniques or to adapt or improve known techniques.

4. The greatest gap in such international activities exists with respect to non-agricultural resources for which there is no over-all international service available equivalent to that now being provided for agricultural resources by the United Nations Food and Agriculture Organization. The study of the Conference proceedings and the advice of experts show that the most useful activity which the United Nations could undertake at the present time to close this gap would be a programme for promoting the systematic survey and appraisal of non-agricultural resources through the development of techniques and international standards of comparability for use by the appropriate national or international bodies. A proposal to meet this need is set forth in the present report. In addition, a proposal is set forth for the holding of international conferences on particular resource problems as a means of promoting the systematic analysis of resource

^{1/} The United Nations is utilizing the proceedings in this manner in connexion with the technical assistance programme, and in its economic studies bearing on resources. See, for example, World Iron Ore Resources and Their Utilization (United Nations Department of Economic Affairs, 1950).

problems on a continuing basis, particularly at the regional level. Together with the programme for promoting resource survey and inventory activities, the holding of such conferences would provide an effective means of ensuring the maintenance of the necessary international effort with respect to non-agricultural resources.

5. No specific recommendations are made at this time with respect to economic analysis, the exchange of information on resource techniques or technical research. Considerable and growing international activity along these lines is already taking place through the United Nations, its specialized agencies and numerous international technical societies and organizations. Consultations are, however, being continued with a view to the possible submission of additional proposals to the Council at a later session if it appears advisable.

Proposal for a United Nations Programme to Promote the Systematic Survey and Inventory of Non-Agricultural Resources

6. The work of the Conference demonstrated that an important factor in any programme for the more effective use of resources is the organized collection of knowledge concerning the kinds of resources that exist and their quantities. Such an inventory would embody the results of many individual explorations and surveys. The method of survey varies with both the type of resource and the degree of precision sought. Historically, resource surveys have been intimately associated with practical efforts to utilize resources. Knowledge of resources has been gained as the resources have been used. The introduction of new scientific approaches and tools in all phases of economic activity, including resource use, has served to emphasize the value of systematic surveying. Moreover, the development of a variety of resource surveys and appraisal techniques, including both improved physical (geo-physical, aerial photographic, aero-magnetic, etc.) and statistical techniques, has increased the speed and reduced the cost of surveys. An important element in a survey and appraisal of any kind of natural resource in an area is an adequate and suitable map. Due consideration has already been given by the Economic and Social Council and by the Committee of Experts on Cartography to the problems and needs existing in this field, and the Council has laid down (resolution 261 (IX)) a desirable course of action, having as its prime objectives the stimulation of cartographic activities on the part of governments and the co-ordination of cartographic work carried on by the United Nations and specialized agencies.

agencies.^{1/} The work of the Conference, as well as subsequent consultations with individual participants and with the specialized agencies concerned, re-emphasizes the importance of developing this activity as rapidly as possible and of providing the funds necessary for this purpose. Surveys are not, of course, ends in themselves, and all resource conservation and development projects need not await the results of elaborate surveys or national inventories. Numerous water power, irrigation, reclamation and similar resource projects may be successfully established on the basis of available local knowledge. Nevertheless, to the extent that national programmes are established to make more effective use of resources, it becomes essential to perfect the fund of knowledge of the physical resources of the country. Basic data are required as the foundation for practical decisions, so that the choice of the most effective use of resources is possible, taking into account not only natural and technical factors but also economic and social costs and benefits.

7. The Conference papers and discussions emphasized the fact that present knowledge about the types and regional distribution of natural resources is markedly uneven in extent, and that in nearly all respects present information is less than adequate for possible resource development. In the case of the many less developed countries in which increasing attention is being given to problems of economic development, the lack of sufficient knowledge about existing natural resources is especially acute. While resource survey and appraisal activities in each country are essentially the concern of its government, each country has much to gain through international co-operative action, since the effective long-range development and use of the resources of any one country benefits by an exchange of relevant experience and knowledge with other countries. It is essential that governments should be assisted to undertake adequate resource surveys in high priority fields. The surveys should be organized so as to lend themselves to better utilization of the resources for economic development, and the results should be comparable, for use in conjunction with one another. The main effort should be national. The important international contribution would be the development of a common set of standards and the assembly of the data for

^{1/} Under the expanded technical assistance programme, governments may be provided with help in planning and making a land survey, aerial photographic survey or other basic cartographic activity.

individual countries in the form of national surveys^{1/} into world inventories of particular resources. The development of international standards would bring to national inventories the benefits of the experience of other countries and would be especially useful to the many countries which have not yet made national inventories but contemplate doing so in the near future. The assembly of national data into world inventories could be useful to countries in providing an understanding of the world distribution of resources and their use, thus giving an insight into the potential role of specific national resources both in national development and in international trade.

8. There is already in progress considerable continuing international activity having as its general objective the achievement and improvement of world inventories of the various classes of natural resources. The Food and Agriculture Organization is serving in many ways to encourage, aid and co-ordinate inventories of forest, fishery and other agricultural resources, including certain aspects of water resources. However, with respect to mineral and water resources generally, including fuel and energy, there is at present no over-all inter-governmental organization which might serve as a centre or clearing-house for inventory and related activities though valuable pioneer work has been done by a number of organizations, for example, by the World Power Conference and the International Geological Conference. The proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources provide evidence of the concern of experts in many countries regarding the absence of a similar international centre for non-agricultural resources and of their conviction that a useful function could be performed in this connexion by the United Nations. These experts considered that the United Nations could and should undertake a programme of continuing activity designed to encourage and aid the surveying and appraisal of non-agricultural natural resources.

9. It is therefore suggested that the United Nations should initiate a programme for promoting the systematic survey and appraisal of non-agricultural resources, including evolving international standards for resource surveys and assembling the results of national surveys in inventories of particular resources. The

1/ National surveys might be given additional assistance under the expanded technical assistance programme upon the request of individual governments.

essential procedure in each major sub-division of non-agricultural resources would include a preliminary collection of available data, both as a first step towards an inventory and as a means of ascertaining the problems involved in developing international standards. A committee of experts for the particular field would be convened to draw up provisional standards which would be published as an expert report. The development of international standards for surveys and inventories may in the case of certain resources require the development of standard procedures and methods, and this subject would be covered, where appropriate, by the experts' report. These provisional standards would be submitted to Member Governments for their consideration and advice. In addition, learned societies and individual experts might be invited to review and comment upon the provisional standards. After the advice, comments and suggestions had been received, the Secretary-General would submit the recommended standards to the Council as a basis for the future survey and inventory of the particular resources.^{1/}

10. The Conference participants consulted by the Secretary-General have pointed out that the United Nations will not require large funds in promoting systematic surveys and inventories of resources, but have considered it important for the programme to be begun quickly. The development of standard concepts, terminology methods and procedures is not a costly but a lengthy process. Considerable time must be allowed for the definition of problems and their consideration by experts and, in due course, for the review of the findings of such experts by Member Governments, leading to their final adoption for use. It was pointed out that each major sub-division of resources, such as coal, iron, ores, non-ferrous ores, water power, would need several years work to arrive at universally acceptable standards. An additional period would be required to incorporate and use these standards in the preparation of comparable national inventories. In providing such a nucleus for continuing inter-governmental activity in this relatively neglected field, the United Nations would be meeting a need which is almost universally recognized by

^{1/} In the development of standards and terminology for resource surveys and inventories, the work should be carried out in several languages. The United Nations Educational, Scientific and Cultural Organization has a programme under way for an international scientific and technical terminology. The experience under the latter programme would be useful to the proposed activities, and it may be possible to co-ordinate certain of the activities under both programmes.

those familiar with the current position. Should the Council approve the proposal which has been set forth, it may wish to consider the draft resolution contained in Annex A of the present report.

Proposal for International Resource Conferences on
Particular Resource Problems

11. The United Nations Scientific Conference on the Conservation and Utilization of Resources demonstrated the value of personal exchange of technical information in a Conference in which economic and technical factors were considered simultaneously. In the consultations with individual participants and specialized agencies subsequent to the Conference, it was recognized that a considerable number of years would be required for the full assimilation of the results of the recent Conference and that it would not be useful, in view of the cost and effort involved, to convene another world resources conference for some time. It has been suggested, however, that to promote the work of the Conference towards an integrated approach to the problems of resource development, it would be extremely useful to hold conferences of more limited subject matter and geographical scope, for the systematic exploration and exchange of information on resource conservation and development techniques pertaining to certain resource problems peculiar to a group of countries. In considering proposals for particular conferences, the active participation of the governments concerned, and, when appropriate, regional economic commissions and specialized agencies, would be sought in drawing up the conference programmes; ample time would be allowed to select the topics and to define the scope of each conference so that papers might be specially written and distributed in advance to the participants of the particular conference. Under the proposal, each conference would be confined to consideration of techniques related to certain types of resources or to resource problems common to a group of countries (e.g., development of the domestic use of certain minerals or fuels, development or conservation of water supplies, development of alternative technique in the absence of metallurgical coke); the subjects would be considered in terms of available knowledge, both technical and economic, and emphasis placed on an exchange of experience and an exploration of problems designed to bring out practical possibilities. Inasmuch as the Food and Agriculture Organization regularly organizes international

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conferences as a means of exploring agricultural resource problems, the conferences proposed in the present report would in the main deal with non-agricultural resources and the integrated use of resources.^{1/}

12. Should the Council consider that this proposal offers an opportunity for effective international action, it is suggested that the Secretary-General should explore with Member Governments the possibilities of particular conferences and make such suggestions to the Council as he then deems appropriate, on the basis of the work of the United Nations Scientific Conference on the Conservation and Utilization of Resources and other work of the United Nations, including those of the regional economic commissions. When a particular conference has been approved by the Council, the Secretary-General would proceed with the advance preparations, making full use of the secretariats of regional commissions in the planning and organizing of such conferences where appropriate. Should the Council approve this proposal for resource conferences, it may wish to consider the draft resolution contained in annex B.

Relation of Proposed Programmes to Other
International Resource Activities

13. It has been pointed out that, though specific facilities do not exist for meeting the urgent needs for which the proposed programmes are designed, a wide variety of closely related international activities is already under way. These include the work of the specialized agencies, international scientific and technical societies and of the United Nations, both at Headquarters and in the regional economic commissions. Should the Council authorize the proposed programmes, it would be desirable to draw upon the experience of these groups and also to co-ordinate the new programmes with their activities, in order to avoid duplication and the better to advance all the programmes. The draft resolutions contained in Annexes A and B therefore make provision for action through the regional economic commissions and for co-operation with specialized agencies, international scientific and technical societies and other organizations.

^{1/} As noted earlier in the report, the work of the United Nations Scientific Conference on the Conservation and Utilization of Resources emphasized the importance of integrated approaches to resources and the inter-dependence of developments among the major types of resources,

/The Secretary-General

The Secretary-General would, of course, ensure the necessary co-ordination with related activities of the United Nations.

14. It is impossible to foresee all the situations in which co-operation with the specialized agencies would be desirable, but the need is especially great in connexion with water resources. The Food and Agriculture Organization of the United Nations, the World Health Organization, the United Nations Educational, Scientific and Cultural Organization and the World Meteorological Organization are concerned with water resources and have initiated various related activities. It would therefore be essential to co-ordinate work under the proposed programmes, to the extent that they deal with water resources, with that of the specialized agencies. These considerations apply not only to the programme for promoting surveys and inventories but also to the proposed programme of international conferences. A conference on the integrated development of river basins, for example, would be of interest to a number of the specialized agencies, and their co-operation should be solicited in the original planning and in the organization of such a conference.

15. The proposed programmes should be co-ordinated with numerous activities at present under way within the United Nations. The United Nations, both at Headquarters and in the regional economic commissions, has been actively engaged in the compilation of data on resources in connexion with economic studies, and has also undertaken useful studies, particularly on a regional basis, with respect to standards of measurements of resources. These useful activities would not be limited by the adoption of the proposed programmes but the activities under the proposed programme and the existing programmes, both at Headquarters and in the regional economic commissions, would be co-ordinated to ensure a minimum of duplication and the most rapid advancement of the various related projects in terms of the available staff. It has been noted earlier that national surveys of resources could be aided under the provisions of the expanded technical assistance programme; such aid would parallel and supplement the contemplated programme for promoting resource surveys. In particular, the conduct of surveys requires the establishment or strengthening of competent government organizations and the training of personnel, and these essential steps could be facilitated under the expanded technical assistance programme. It would be desirable that the programme for promoting resource survey and inventory activities be closely co-ordinated

with the cartographic programme authorized under Council resolution 261 (IX), especially since an important contribution of the latter programme would be the fostering of national cartographic activities which are indispensable to resource survey and inventory work.

Financial Implications

16. During 1951 initial explorations and planning could be undertaken for both programmes. These activities would require the services of several expert consultants and the part-time services of two professional officers and of one secretary. Costs during 1951 would be met from the provision already made for consultants and for established posts and temporary assistance for the Department of Economic Affairs, and consequently there would be no additional financial implications during 1951.

17. The workload during 1952 is envisaged as being two to three times heavier than that which can be expected during 1951. However, the Secretary-General will attempt to provide for this extra workload by according to the proposed programmes a certain priority in allocation of the funds available to the Department of Economic Affairs for consultants and by review of the work allocations of the staff.

- (iii) To consult with and seek the co-operation of interested specialized agencies and, to the extent he deems appropriate, scientific and technical societies and other organizations having important responsibilities, experience, or interest in fields related to the programme; and
- (c) To give the most serious consideration to requests from governments for technical assistance in the organizing, planning, conduct and training of personnel for their surveys and inventories of non-agricultural resources; and
- (d) To report, not later than the fifteenth session, to the Council concerning his activities under this resolution.