

**REPORT OF THE COUNCIL
OF THE UNITED NATIONS UNIVERSITY**

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NOTE

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

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REPORT OF THE COUNCIL OF THE UNITED NATIONS UNIVERSITY

1. The Council of the United Nations University held both its eleventh and twelfth sessions in Tokyo, from 4 to 8 December 1978 and from 25 to 29 June 1979, respectively. During 1978-1979, the Council met for a total of 10 days to consider the University's programmes, problems and progress. In addition, the Council's Nominating Committee for a new Rector, headed by the Chairman of the Council, met several times in Tokyo and also at Geneva, while its Chairman and other members made extensive consultations on possible candidates, both personally and in writing. (For a list of the members of the Council and of the Nominating Committee, see annexes I and II below.)
2. Following acceptance of the resignation of Mr. Marcel Roche as Chairman of the Council, the Council, at its eleventh session in December 1978, unanimously elected Mrs. Ines Wesley Tanaskovic as the new Chairman, and her term as Chairman began at the end of that session. During the same session the Council also unanimously elected Mrs. Estefania Aldaba-Lim and Mr. Carlos Chagas as Vice-Chairmen of the Council. (For the full list of present officers, standing committees and chairmen, see annex III below.)
3. At its session in June 1979, the Council received, examined and discussed the report of the Rector (see annex IV below).
4. The Council draws attention to the substantial progress of the University during the past year - expansion of its activities, increasing interaction between its three programmes, and a welcome but still inadequate strengthening of its financial support through the Endowment Fund.
5. The Council welcomes the following signs of expansion of activities and of increasing interaction between its three programmes - World Hunger, Human and Social Development and the Use and Management of Natural Resources:
 - (a) The University signed association agreements with 9 institutions to conduct advanced training and research, bringing the total number of associated institutions to 23. Of these, 15 are in developing countries and 8 in industrialized countries.
 - (b) Some 1,400 scholars, scientists and policy-makers participated in various types of scientific and scholarly meetings organized by the University, including 49 programme meetings held in 26 countries, and the final two consultative meetings, held at Accra and Nairobi in March, attended by 150 academic and government leaders from 22 African nations. These consultative meetings end the series of 14 such meetings initiated in 1976 to acquaint the world-wide academic community with the nature and initial programmes of the University.
 - (c) Thirty-one United Nations University Fellows completed their training during the year and are now working in home institutions in developing countries. They represent the University's contribution toward the realization of its objective of strengthening experience and knowledge in the developing world.

Almost half the United Nations University fellowships granted over the last three years began during the year under review.

(d) Sixteen networks are now in operation: four in World Hunger, five in Human and Social Development, and seven new ones in Natural Resources. They link together scientists and scholars working on these projects in some 60 countries and collaborating on problems that transcend national boundaries.

(e) A major advance in programme interaction was achieved through the launching of joint activities among the University's three programmes: (i) an assessment of the field of biomass conversion, at a workshop of the World Hunger and Natural Resources Programmes held in Guatemala in November 1978 (see annex IV, para. 51), (ii) an examination of the problem of identifying alternative goals, processes, and indicators of food and nutrition policy by the World Hunger and the Human and Social Development Programmes, at a joint workshop held at the Massachusetts Institute of Technology, Cambridge, Massachusetts, in March 1979 (see annex IV, para. 51); (iii) research and training on solar food conservation systems for rural communities by the World Hunger and the Natural Resources Programmes; and (iv) research into resource systems and traditional technology by the Human and Social Development and Natural Resources Programmes. The Council attaches the utmost importance to this interaction at the level of particular projects.

(f) The University launched two periodicals which have been widely circulated - Food and Nutrition Bulletin (WHFNB-2/UNUP-191), published quarterly, and ASSET (Abstracts of Selected Solar Energy Technology) (NRAS-2/UNUP-39), published monthly.

(g) Thirty publications have appeared, designed to inform scientists and scholars about the University's programmes. The Council noted in particular the important first technical report of the World Hunger Programme, Protein-Energy Requirements under Conditions Prevailing in Developing Countries: Current Knowledge and Research Needs, and the first of a series of publications on the Japanese experience of technology transfer.

6. The Council is greatly encouraged by the continuing financial support of the Government of Japan, the total contribution of which now amounts to \$80 million, and by the broadening of the base of the University's Endowment Fund by the pledge from the United Kingdom of Great Britain and Northern Ireland of £5 million (approximately \$US 10 million), the pledge from the Federal Republic of Germany of DM 8 million (approximately \$US 4.4 million), and the pledge from Thailand of \$US 0.5 million. During the past year 17 other countries made annual pledges or contributions. Altogether, 26 Governments have now pledged or contributed a total of \$US 142.4 million to the Endowment and operating funds of the University. At the same time, the Council emphasizes strongly that a further strengthening of financial support is essential if the University is adequately to fulfil its objectives.

7. The Council received an oral report from the Rector on his 12-day visit to the People's Republic of China in May 1979, at the invitation of the Chinese Academy of Social Sciences in Beijing. The visit reflected the growing interest of the People's Republic of China and the scientific and academic communities of that country in the University's work. The Vice-Rectors accompanied the Rector on the visit.

8. The Council reaffirms its confidence in the University's basic approaches: (a) focusing its programmes on aspects of major world problems that can be usefully examined through collaborative work by scientists and scholars from many parts of the world; (b) combining knowledge from many disciplines in its efforts to find practical solutions to specific global problems; and (c) associating itself with other international institutions and organizations in the fields of hunger, development and natural resources.

9. It believes that further action is still necessary, however, to ensure that the University enhance the distinctiveness of its basic approaches through combining the analysis of problems, the dissemination of knowledge, training, and effective action at the grass roots level. It will consider such further action at its next general session.

10. As was stated in the previous report of the Council, 1/ the fact the University has been in existence for only a short time does not permit a full assessment of the success of its three programmes and most of the projects within them. The Council agrees, however, that it is time to reflect on medium-term proposals for the future development of the University, taking into account the objectives of the University as laid down in the Charter and possible options depending on the level of income. The Council proposes to examine this subject further at its fourteenth session and has asked for relevant papers to be prepared.

11. The Council considered an important report by the Rector on relationships between the programmes of the University, noting their common assumptions and characteristics, and the principles underlying United Nations policies, as set out in the Charter of the United Nations, three documents on universal human rights, the Final Document of the Tenth Special Session of the General Assembly (Assembly resolution S/10-2) and four Assembly resolutions on establishing a new international economic order. It noted the programme implications of the Rector's report in relation to the experience of current programmes and the formulation of possible future programmes. It will consider them more fully in the light of a more extended report to be presented to its next session.

12. The Council directs attention to the significance of the work carried out in its three programmes during the past year, noting that they are at different stages of development and that each programme has devised different methods of operation to suit its particular interests and needs.

(a) World Hunger Programme

13. This Programme first became operational in 1976, and by June 1979 the number of associated institutions had increased to nine. An agreement was made with the National Food Research Institute in Japan for training scholars, and agreements are ready to be concluded with institutions in Colombia and Holland.

14. Nearly 95 United Nations University Fellows have now been selected and over 40 Fellows and 30 Management Fellows have completed their fellowship training. Research projects concerning food and nutrition policy, post-harvest food

1/ Official Records of the General Assembly, Thirty-third Session, Supplement No. 31 (A/33/31), para. 29.

conservation and human nutritional requirements in developing countries are supported in Brazil, Chile, Colombia, Guatemala, India, Indonesia, the Republic of Korea, Mexico, the Philippines, Thailand and Venezuela.

15. Close co-operation has continued with FAO, WHO, UNESCO and UNICEF, and agreements of co-operation with the United Nations Research Institute for Social Development (UNRISD) and the International Food Policy Institute are in process. The first three issues of the World Hunger Programme's Food and Nutrition Bulletin have been well received.

16. The first technical report of the Programme, Protein-Energy Requirements, as mentioned in paragraph 5 above, has been distributed.

17. A fourth workshop on Interfaces of Food and Nutrition with Agriculture was held from 6 to 10 November 1978 at Guatemala City, Guatemala, and a workshop on "Nutrition and Fertility" was held from 7 to 12 May at Lomé, Togo. Arrangements have been made for selected committees of the International Union for Nutritional Sciences and the International Union of Food Science and Technology to carry out specific activities in pursuit of the goals of the World Hunger Programme.

(b) Human and Social Development Programme

18. The Human and Social Development Programme, in its third year of operation, is broadly organized into two main subprogrammes: Problems of Development and Technology for Development. The programmes depend upon the creation of a critical forum where different schools of thought interact in order to analyse the economic, social, political and cultural forces that affect the development process and to deepen the dialogue on alternative approaches to development.

19. Work has continued on the four initial research projects and three new projects, ranging from detailed studies at the village level to global analysis. In addition, studies have been carried out on the social and cultural consequences of the transfer of technology in Japan.

20. Eight thematic workshops and two regional symposia have been held in co-operation with international, regional and national academic bodies, and more than 200 pre-publication research notes and papers have been presented and discussed by the research units in the different networks. During the same period, consultation and co-operation with different United Nations agencies, especially UNESCO, UNITAR and UNRISD, have enriched the Programme's development and harmonized it with the work of those agencies.

(c) Programme on the Use and Management of Natural Resources

21. The Natural Resources Programme was only effectively established during the period under review: it is wide-ranging in its scope and geographical range and concerns the ecological basis for rural development in the humid tropics, the assessment of the application of knowledge to arid lands, and energy for rural communities.

22. From the time of the inauguration of the Programme in 1977 to the starting date of this annual report (1 July 1978), the main task has essentially been to identify possible projects within these large fields and to explore opportunities in order to determine which problems and subjects should be considered and where research and training activities could most effectively be carried out.

23. In the year under review, the number of associated institutions increased from one to nine, six of which held scientific workshops. An important conference on energy alternatives was co-sponsored by the University from 9 to 12 January 1978 and held at the East-West Center in Honolulu, Hawaii, United States of America.

24. The fellowship programme is well advanced, and exploratory missions have been carried out to over 30 different countries by the programme staff or consultants. Ten research and training units have been established, and nine more are in the planning stage. Six monthly issues of ASSET have been published and circulated to some 200 institutions.

25. At every stage in the planning and execution of projects the Natural Resources Programme has given careful attention to other international programmes in order to avoid duplication of effort. It has worked in co-operation with UNESCO, FAO, UNDP, UNEP and other bodies, including the International Geographical Union and Scientific Committee on Problems of the Environment.

26. The Council welcomes the increased attention paid during the year to the interaction of these three programmes, recognizing that, unless there is linkage and interaction at every level - including the local level of action, the real problems of development cannot be tackled effectively. Combinations of insights and techniques are necessary.

27. The Council is encouraged by the increasing impact of the University's intensified efforts to strengthen world-wide awareness and understanding of the distinctive role of the University among opinion-formers and policy-makers. It believes, however, that a continuing effort is necessary to publicize the work of the University and make known the increasing volume of support it is receiving. In financial terms, approximately \$28 million was pledged or contributed in 1978-1979 as compared with \$16 million in 1977-1978, and in the light of its fund-raising experience the Council discussed and clarified its strategies for future fund raising in different parts of the world.

28. The Council believes that the University has now reached a level that makes it possible, with the addition of only a few more administrative personnel, to continue extending its programme activities around the world and to initiate new programmes if adequate funds become available. The demand for further programmes, particularly in the developing world, has been pressed at such conferences as the consultative meetings held at Accra and Nairobi in March 1979.

29. The Council approved a number of guidelines for its future publishing arrangements, particularly in the field of scholarly publication. It reaffirmed its policy of relying as much as possible on existing scholarly and other publication outlets.

30. The Council gave careful consideration to General Assembly resolution 33/109 in which the Assembly requested the Secretary-General to transmit the text of a proposal of the President of Costa Rica for the establishment of a University for Peace and Assembly resolution 33/109 to the 107th session of the Executive Board of UNESCO. It welcomed a delegation from Costa Rica, led by the Vice-President, who explained the Costa Rican initiative. A statement was prepared by the Council which is set out in full in annex VII.

31. The Council considered the most effective mode and scale of participation by the United Nations University in the important United Nations Conference on Science and Technology for Development to be held in Vienna during the summer of 1979. It underlined the need for the United Nations University to make a distinctive contribution not only to the preceding colloquium, but to the work of the main Conference.

32. During a private session the Council received a report from the Committee which it had appointed to prepare nominations for the position of Rector. It decided to hold a supplementary session (the thirteenth session) in October to complete its consideration of this subject and its fourteenth session in December 1979.

ANNEX I

Members of the Council of the United Nations University

Appointed members

- Mrs. Ines Wesley Tanascovic, UNESCO National Commission of Yugoslavia and Professor of Informatics, Medical Academy, Belgrade, Yugoslavia (Chairman of the Council)
- Mr. Jacob Festus Ade-Ajayi, former Vice-Chancellor, University of Lagos, Lagos, Nigeria (former Chairman of the Council, 1976-1977)
- Mrs. Estefania Aldaba-Lim, Special Representative for the International Year of the Child, UNICEF, New York, United States of America; former Vice-President, Philippine Women's University (Vice-Chairman)
- Mr. Pawel Bozyk, Professor of Economics, Central School of Planning and Statistics, Warsaw, Poland
- Lord Briggs, Provost, Worcester College, Oxford University, Oxford, United Kingdom of Great Britain and Northern Ireland
- Mr. Carlos Chagas, Director, Institute of Biophysics, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil (Vice-Chairman)
- Mr. Wilbert Kumaliya Chagula, Ambassador, Permanent Mission of Tanzania to the United Nations in Geneva; former Minister for Community Affairs, Arusha, United Republic of Tanzania
- Mr. Jean Coulomb, former President, Academy of Sciences, Paris, France
- Mr. Shams E. El-Wakil, Ambassador, Permanent Delegate of the Arab Republic of Egypt to UNESCO, Paris, France; former President of the Arab University of Beirut
- Mr. Roger Gaudry, President, International Association of Universities, Montreal, Canada; former Rector of the University of Montreal (former Chairman of the Council, 1974-1975)
- Mr. Hans Löwbeer, Chancellor of the Swedish Universities, Stockholm, Sweden
- Mr. Felipe E. MacGregor, former Rector, Catholic University, Lima, Peru
- Mr. Yoshinori Maeda, former President, Japan Broadcasting Corporation, Tokyo, Japan
- Mr. Abdelsalam Majali, Minister of Education and Minister of State for Prime Ministry Affairs, Amman, Jordan; former President of the University of Jordan (Vice-Chairman)

Mr. Malu wa Kalenga, Commissioner of Nuclear Sciences and Director of Kinshasa Regional Centre for Nuclear Studies, National University of Zaire, Kinshasa, Zaire

Mr. Antonio E. Marussi, Professor of Geodesy, Institute of Geodesy and Geophysics, University of Trieste, Trieste, Italy

Mr. Majid Rahnema, Ambassador; former Minister for Science and Higher Education, Teheran, Iran

Mr. Marcel Roche, Investigador Titular; former Director, Venezuelan Institute for Scientific Research, Caracas, Venezuela (former Chairman of the Council, 1978)

Mr. Seydou Madani Sy, Rector, University of Dakar, Dakar, Senegal (Vice-Chairman)

Mr. Stephan Verosta, Professor of International Law, International Relations and Jurisprudence, University of Vienna, Vienna, Austria (Vice-Chairman)

Mr. Edward W. Weidner, Chancellor, University of Wisconsin, Green Bay, Wisconsin, United States of America

Miss Keniz Fatima Yusuf, former Secretary, National Education Council, Ministry of Education, Islamabad, Pakistan

Rector

Mr. James M. Hester

Ex officio members

Mr. Kurt Waldheim, Secretary-General, United Nations, New York, United States of America

Mr. Amadou Mahtar M'bow, Director-General, United Nations Educational, Scientific and Cultural Organization, Paris, France

Mr. Davidson Nicol, Executive Director, United Nations Institute for Training and Research, New York, United States of America

ANNEX II

Members of the Council's Nominating Committee for a New Rector

Mrs. Ines Wesley Tanascovic (Chairman)

Mr. Felipe E. MacGregor

Mr. Yoshinori Maeda

Mr. Jean Ripert (appointed by the Secretary-General of the United Nations)

Mr. S. Tanguiane (appointed by the Director-General of UNESCO)

ANNEX III

Officers of the Council of the United Nations University

Chairman: Mrs. Ines Wesley Tanascovic

Vice-Chairmen: Mrs. Estefania Aldaba-Lim

Mr. Carlos Chagas

Mr. Abdelsalam Majali

Mr. Seydou Madani Sy

Mr. Stephan Verosta

Chairman of the Finance and Budget Committee:

Mr. Stephan Verosta

Chairman of the Programme and Institutional Relations Committee:

Mr. Majid Rahnema

ANNEX IV

Report of the Rector of the United Nations University
to the Council of the United Nations University
(July 1978-June 1979)

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I. HIGHLIGHTS OF THE FOURTH YEAR

1. During the past year, the University signed association agreements with nine institutions to conduct advanced training and research - bringing the total number of associated institutions to 23. Eight of the new associations are in the rapidly expanding Programme on the Use and Management of Natural Resources, the last of the University's three programmes to begin operation. Of the University's 23 associated institutions, 15 are in developing countries and 8 are in industrialized countries.
2. Over the course of the year, some 1,400 scholars, scientists and policy-makers participated in various types of meetings organized by the University. A total of 49 programme meetings were held in 26 countries. The final two consultative meetings, in the series of 14 meetings initiated in London in October 1976 to acquaint the world-wide academic community with the nature of the University, were held at Accra and Nairobi in March. They were attended by 150 academic and government leaders from 22 African nations.
3. Among the most distinctive features of the University is its world-wide networks of scientists and scholars collaborating on problems that transcend national boundaries. There are now a total of 16 networks in operation, 4 in World Hunger, 5 in Human and Social Development, and 7 in Natural Resources which were created during the past year (see listing following para. 20 below).
4. The publications programme grew considerably during the year as the results of the University's initial research activities became available. Two periodicals were launched: the Food and Nutrition Bulletin, published quarterly, and ASSET (Abstracts of Selected Solar Energy Technology), published monthly. The University also issued 30 other publications designed to inform scientists and scholars about the work of its programmes.
5. Of the 87 United Nations University fellowships granted over the last three years, 37 began during the year under review. Thirty-one Fellows completed their training during the year and are now working in home institutions in developing countries. They are tangible evidence of the University's efforts to strengthen the academic and scientific resources of the developing world.
6. Joint activities among the University's three programmes were inaugurated during the year. The World Hunger and the Natural Resources Programmes joined in an important assessment of the field of biomass conversion at a workshop in Guatemala in November 1978. In March 1979 at the Massachusetts Institute of Technology, the programmes on World Hunger and Human and Social Development jointly conducted an examination of the problem of identifying alternative goals, processes and indicators of food and nutrition policy.
7. The base of the University's financial support was considerably broadened during its fourth year. The United Kingdom of Great Britain and Northern Ireland pledged £5 million (approximately \$US 10 million) to the Endowment Fund, the Federal Republic of Germany pledged DM 8 million (approximately \$US 4.4 million),

and Thailand pledged \$US 0.5 million. Eighteen other countries made pledges or contributions of an annual type. Twenty-six Governments have now pledged or contributed a total of nearly \$US 143 million to the Endowment and operating funds.

8. The Rector and the four Vice-Rectors made a 12-day visit to the People's Republic of China in May 1979. The visit, at the invitation of the Chinese Academy of Social Sciences in Beijing, reflected the increasing interest in the University's work shown over the year by the People's Republic of China and the scientific and academic communities of that country.

II. THE SPECIFIC CHARACTER (SPECIFICITY) OF THE UNITED NATIONS UNIVERSITY

9. The specific character of the United Nations University lies in the combination of its sponsorship, mandate, method of operation and emphasis. This combination gives the University a specific role in helping the United Nations to fulfil its purposes.

A. Sponsorship

10. The University was created by the General Assembly and is sponsored by the United Nations and UNESCO. Its charter (see A/9149/Add.2) was adopted by the General Assembly on 6 December 1973 (resolution 3081 (XXVIII)) and its Council and Rector are appointed by the Secretary-General of the United Nations in collaboration with the Director-General of UNESCO, both of whom serve ex officio on its governing body, the Council. The University reports on its work to the sponsoring organizations each year and is an integral part of the United Nations system mandated to perform special functions within that system as the University of the United Nations.

B. Mandate

11. Article I, paragraph 1, of the charter of the University directs it to engage in "research, post-graduate training and dissemination of knowledge in furtherance of the purposes and principles of the Charter of the United Nations" and concerning (para. 2) "the pressing global problems of human survival, development and welfare that are the concern of the United Nations and its agencies". Article II, paragraph 1, of the charter grants the University "autonomy within the framework of the United Nations" and academic freedom, particularly in "the choice of subjects and methods of research and training, the selection of persons and institutions to share in its tasks, and freedom of expression". It also states that "the University shall decide freely" on the use of its financial resources. These provisions, by granting the University both the responsibility and the authority for the choice of subjects and for organizing research, post-graduate training, and dissemination of knowledge on comprehensive, multidisciplinary bases under conditions of academic freedom, give the University an institutional character like that of a university rather than an intergovernmental organization or specialized research institute. The University's methods of governance through a Council of members serving in their

individual capacities and financing through income from a permanent Endowment Fund further strengthen its autonomy and academic freedom.

C. Method of operation

12. Article I, paragraph 1, of the charter of the University directs it to function "through a central programming and co-ordinating body and a network of research and post-graduate training centres and programmes located in the developed and developing countries". This provision establishes a distinctive method of international operation that distinguishes the United Nations University from traditional nationally-oriented universities and provides the basis for the sustained networking activities that enable the University to mobilize world-wide scholarly resources and focus them on problems of concern to the international community. In accordance with its mandate the University disseminates knowledge generated by its programmes and other sources in a variety of publications and meetings and other media designed to reach scientists, scholars and policy-makers throughout the world.

D. Emphasis

13. Article I, paragraph 6, of the charter states that "the University shall have as a central objective of its research and training centres and programmes the continuing growth of vigorous academic and scientific communities everywhere and particularly in the developing countries" and that "it shall endeavour to alleviate the intellectual isolation of persons in such communities in the developing countries which might otherwise become a reason for their moving to developed countries". In accordance with these charter provisions, the University, within the execution of its broad mandate, gives special emphasis to working through association with scholars and institutions in developing countries.

E. Initial programmes

14. The University has three initial programmes that reflect the characteristics of its specificity in various ways. The World Hunger Programme and the Programme on the Use and Management of Natural Resources seek answers to urgent policy, scientific and technological problems through collaborative research conducted by networks of institutions and individuals in developing and industrialized countries with an emphasis on strengthening research and advanced training capabilities in developing countries. The Human and Social Development Programme has organized networks of research units in industrialized and developing countries as contributing elements of an international scholarly forum reflecting diverse social, economic, ideological, cultural, and academic points of view for analysis of development problems and for exploring new methodologies for enhancing human and social development, both material and non-material. Joint programme activities of the three programmes are designed to integrate knowledge from many fields to increase comprehensive understanding of complex problems.

F. Summary

15. Additional programmes will be undertaken in the future, but the University is already mobilizing extensive resources of the world-wide academic community to increase understanding, knowledge and expertise (especially in developing countries) to help solve pressing global problems of concern to the United Nations and its agencies and in furtherance of the purposes and principles of the Charter of the United Nations in a manner for which no other academic or international organization is designed.

III. THE UNIVERSITY'S PROGRAMMES IN BRIEF: COMBINING KNOWLEDGE FROM MANY DISCIPLINES

16. The University focuses its programmes on aspects of major world problems that can be usefully examined through collaborative work by scientists and scholars from many parts of the world. In addition, because the University's efforts are concerned with finding practical solutions and not just gathering specialized data, it must combine knowledge from many disciplines. It seeks to add new dimensions to work being carried out by other national and international organizations in the fields of hunger, development, and natural resources.

17. A major component of the World Hunger Programme, for example, is national food and nutrition policy, a subject widely ignored in the past. Another project deals with staggering losses of food after harvest, an area in which there has been only little, highly fragmented research and inadequate training efforts. Another project is concerned with developing comprehensive information on human nutritional requirements in tropical areas of the developing world, where such information has been severely lacking. In all this work, the World Hunger Programme is strengthening the efforts of other organizations concerned with increased food production and better nutrition.

18. The thrust of the Human and Social Development Programme reflects widespread disappointment with the results of past development strategies aimed primarily at economic growth. The programme is providing a global forum for scholarly debate and evaluation of development strategy alternatives, thereby bringing scientific objectivity to a subject frequently clouded by political controversy. The areas of study being pursued include problems of development and technology for development.

19. The work of the Programme on the Use and Management of Natural Resources is focused on problems of ecology and energy. Special attention is being given to the humid tropics and to arid lands, huge zones encompassing most of the developing world. In the humid tropics, social, economic and other changes have put a severe strain on traditional resource systems. The programme seeks to develop better understanding of: (a) rural energy systems; (b) the mixing of trees, crops and livestock in agro-forestry systems; (c) interactions between land and water, especially in the coastal zones; and (d) ecological, social and economic interactions between highland and lowland areas. Concerning the problems of arid lands, analysis is being made of the reasons for failure to apply existing knowledge more effectively. In the field of energy, the focus of the programme is on the potential for alternative energy sources (solar, biogas, wind and others) to meet the growing energy demands of rural areas of the developing countries.

20. Each of the three programmes is at a different stage of development. World Hunger became operational in early 1976; Human and Social Development in late 1976; and Natural Resources in late 1977. Each has devised different methods of operation to suit particular needs. But from the outset, the University has promoted interaction among the programmes in the recognition that real problems can only be fully understood and solved as intimately linked aspects of the human condition. The ecological consequences of deforestation, for example, have clear implications for the food scientists in understanding the underlying causes of hunger, which, in turn, is a consideration for the development strategist. The basic premise of the United Nations University is the growing interdependence of issues, nations and regions. This interdependence requires new intellectual approaches and new forms of organization of research, advanced training, and dissemination of knowledge which the University is providing.

PROGRAMME NETWORKS

A. World Hunger Programme

1. Food and nutrition policy and programme planning

Food and nutrition objectives in national planning and development: associated institutions in Canada, Chile, Guatemala, the Philippines and the United States of America with links to institutions in Australia, Colombia, and the Philippines.

2. Post-harvest conservation of food

Post-harvest conservation: associated institutions in Canada, Guatemala, Ghana, India and the United Kingdom of Great Britain and Northern Ireland with links to a training unit in Japan and to institutions in Indonesia, Mexico and Senegal.

3. Nutritional needs and their fulfilment through local diets

(a) Protein and energy needs in developing countries: associated institutions in Chile, Ghana, Guatemala and the United States of America with links to institutions in Colombia, Mexico, Republic of Korea and Thailand;

(b) Iron deficiency anaemia and its prevention: associated institution links in Chile, Guatemala, and Venezuela.

B. Human and Social Development Programme

1. Problems of development

(a) Goals, processes, and indicators of development: co-ordinated by associated institution in Switzerland with links to institutions in Argentina, Belgium, Canada, 2 in the Federal Republic of Germany, India, 2 in Italy, Jamaica, Japan, Malaysia, Mexico, New Zealand, Norway, Papua New Guinea, Poland, Romania, Senegal,

Sri Lanka, Sweden, Tanzania, the United Kingdom of Great Britain and Northern Ireland, and 2 in the United States of America;

- (b) Socio-cultural development alternatives in a changing world: co-ordinated by an institution in France with links to institutions in Bangladesh, Canada, Egypt, France, 2 in India, Japan, 2 in Mexico, Spain, the United Kingdom of Great Britain and Northern Ireland, and Venezuela.

2. Technology and development

- (a) Sharing of traditional technology: co-ordinated by associated institution in Sri Lanka with links to institutions in Indonesia, Japan, Malaysia, Nepal, the Philippines, and Thailand;
- (b) Research and development systems in rural settings: co-ordinated by associated institution in Mexico with links to institutions in Ethiopia, Mexico, and the Philippines;
- (c) Technology transfer, transformation, and development: the Japanese experience: co-ordinated by associated institution in Japan with links to 23 other institutions in Japan.

C. Programme on the Use and Management of Natural Resources

1. Energy for rural communities

- (a) Solar energy: information centre, Japan (ASSET), associated institution in Algeria with projected links to institutions in India, Iran, Mali, Tanzania, the United States of America and Upper Volta;
- (b) Geothermal energy: associated institution in Iceland with projected links to institutions in Italy, Japan, and New Zealand.

2. Assessment of the application of knowledge to arid lands problems

Arid lands: links associated institutions in the Sudan and Australia with projected links to institutions in Argentina, India, Mexico, Pakistan, and Peru.

3. The ecological basis for rural development in the humid tropics

- (a) Rural energy systems: associated institution in Nigeria with projected links to institutions in Ghana and Malaysia;
- (b) Agro-forestry systems: associated institutions in Costa Rica and Thailand with projected links to an institution in Cameroon;
- (c) Highland-lowland interactive systems: associated institutions in Thailand and the United States of America with links to institutions in Nepal, Papua New Guinea, and a projected link to an institution in Switzerland;

- (d) Water-land interactive systems: associated institution in Indonesia with links to an institution in the Philippines and a projected link to an institution in the People's Republic of China.

IV. WORLD HUNGER PROGRAMME

21. Since the far greater resources of FAO and international agricultural institutions are primarily concentrated on agricultural production, the World Hunger Programme has focused its efforts on other important aspects of the hunger problem. It is specifically concerned with multidisciplinary approaches to the pressing problems of: (a) food and nutrition policy analysis and programme planning and implementation; (b) post-harvest food losses; and (c) the lack of knowledge of human dietary needs in the developing countries of the tropics. As the conceptual framework for the World Hunger Programme has evolved, the research and training carried out in the second and third areas have come to be seen as providing valuable input for the first, more broadly based, area.

A. Summary of the year

22. During the year under review, an agreement was concluded with a new associated institution, the University of Ghana, Legon, bringing to nine the number of associated institutions in the programme. Negotiations for two more associated institutions, in the Netherlands and Colombia, are in progress. An exchange of letters with the National Food Research Institute, Tsukuba, Japan, resulted in an agreement for training United Nations University Fellows at this institute.

23. Twenty-seven University Fellows started their training in associated institutions during the past year joining the 19 already on fellowships. Ten Special Fellows (formerly designated Senior Fellows) a/ also received training.

24. Research projects on human protein energy requirements in the tropics received University support in Thailand, Guatemala, Mexico, the Republic of Korea, Colombia, Chile and Jamaica. Work in this area was also being carried out in the United States by a United Nations University Fellow from India as part of his training, and new research projects are being launched in Brazil, Chile and the Philippines. Projects dealing with iron requirements received University support at associated institutions in Venezuela and Chile. Research on questions of food and nutrition policy planning was inaugurated in Chile and Colombia. New research on problems of post-harvest food conservation was initiated in Indonesia, supplementing the work already being done in this field as part of the training of University Fellows at associated institutions in India and Guatemala.

25. Eight technical meetings and workshops were organized during the year, in which some 500 scientists participated. The first three issues of the World Hunger Programme quarterly journal Food and Nutrition Bulletin appeared.

a/ A category for shorter duration fellowships for study at associated institutions by senior personnel of similar institutions (see UNU/C/8/L.4).

The proceedings of two workshops were published as separate supplements to this journal, and two more are undergoing final editing for publication. During the year, the programme staff, interregional co-ordinators, and consultants made site visits to institutions in more than 30 countries of Africa, Asia, Central and South America, and Eastern and Western Europe.

B. Perspectives and activities of the subprogrammes

1. Food and nutrition policy and programme planning

(a) Programme

26. This predominant subprogramme incorporates the research and training experience developed in the other two subprogrammes - in post-harvest food conservation and human nutritional needs in the tropics - and is establishing its own specific research and training efforts. It is also the chief vehicle by which the World Hunger Programme is developing increasing interaction with the other two programmes.

27. The subprogramme is concerned with understanding the factors responsible for hunger and malnutrition and the effects of alternative interventions, both direct and indirect, and intentional and unintentional. This requires the perspectives of many disciplines, since in all economic and political systems the factors that determine whether food needs are adequately met are multiple and complex.

28. In theory the gap between effective demand for food and human food needs can be approached in many different ways. For example, people can buy more food if prices are lowered by price controls, subsidies, decreased production costs, lower distribution costs, etc. The same result can be achieved by an increase in purchasing power through better employment and income generation, minimum wages, reduced taxes, subsidies and the like. For some families, increased home production or procurement can help close the gap. Each of these measures has disadvantages as well as advantages.

29. Nutritional deficiencies can sometimes be overcome, at least in part, by improving the nutritional value of foods. Examples of such improvements are the iodization of salt to prevent endemic goiter, vitamin A fortification of sugar or another appropriate food vehicle for the prevention of nutritional eye disease, and improving the iron value of food in different ways. For the poorest and most vulnerable individuals, free or greatly subsidized distribution of food may be introduced as a temporary measure while specific programmes to improve their economic situation are implemented. Measures to control infectious diseases can help close the gap by decreasing human food need. Because hunger is in large measure due to poor food choices and habits, nutrition education is a part of this subprogramme.

(b) Activities

30. The subprogramme seeks to increase understanding of these factors and their interplay. Its research and training efforts involve a wide range of disciplines - economics, political science, anthropology, sociology and

systems analysis, along with the various nutritional, agricultural and health sciences.

31. The initial focal point for training in this subprogramme is the International Food and Nutrition Policy Program (IFNP), a co-operative undertaking of two institutions in the United States, the Massachusetts Institute of Technology (MIT) and Harvard University. IFNP, which became associated with the University in February 1978, draws on the resources of the MIT's Department of Nutrition and Food Science and Center for International Studies and the Harvard School of Public Health. Certain United Nations University Fellows now receiving interdisciplinary training at the MIT-Harvard consortium will go on to further field-level training in the application of planning and policy at the Nutrition Center of the Philippines. Advanced training of Fellows will also be conducted at associated institutions in Canada, Guatemala and Ghana.

32. The subprogramme's first research grants were made this year. Two research projects are being supported at the Institute of Nutrition and Food Technology, an associated institution in Chile. One project has demonstrated distinct nutritional and health improvement for poor urban families who adopted an environmental sanitation package that includes safe water and sanitary toilets within the home. Another analysed the reasons for the decline in breast-feeding in Chile and proposed a series of measures to reverse this trend. A University Fellow now at MIT has the data from the national nutrition survey in Chile on computer tape and is carrying out a multifactorial analysis of the correlates of malnutrition in that country as a guide for policy-makers. A project in Colombia is identifying the relative contributions of the many factors responsible for malnutrition and is developing a model which allows for the selection and testing of specific interventions.

2. Post-harvest conservation of food

(a) Programme

33. An estimated 20 to 40 per cent of cereal grains and over 50 per cent of fruits and vegetables in many tropical developing countries are lost after harvest because of rodents, insects, mould, spoilage, and other storage and handling losses. Reducing such losses through application of appropriate technology could effectively improve food supplies.

34. Since these losses are particularly serious for subsistence farmers and food-short rural areas, prevention of food losses is an important means of improving their nutritional health status. Yet the attention given to food production has not extended to food conservation until very recently, and this has been due, at least in part, to the stimulus of the World Hunger Programme.

35. The economically feasible prevention of such losses requires interpretation and dissemination of those indigenous practices that are effective in this regard, as well as the adaptation of appropriate modern technology to village conditions. For both, evaluative and adaptive research at the rural level is required. This must cover the handling, storage, processing, and transport, as well as the distribution and ultimate use of food, and serve as the basis of interdisciplinary applied research and practical training. Families often feel

helpless in the face of losses that could be readily prevented by the use of a combination of indigenous methodologies and adaptation of modern techniques or materials.

(b) Activities

36. The Central Food Technological Research Institute at Mysore, India, has been the main associated institution for research and advanced training efforts in this area to date. Scientists at the Institute have had 25 years of experience developing techniques to cope with India's own immense post-harvest losses. The Indian experience has proved to be of particular application for University Fellows from African countries.

37. United Nations University Fellows have also received training in post-harvest technologies at the Institute of Nutrition of Central America and Panama, an associated institution in Guatemala. Further training efforts are now being organized at two associated institutions in industrialized countries, the Tropical Products Institute in London, and the Centre for Research in Nutrition at Laval University, Québec, Canada (the latter will primarily train Fellows from French-speaking countries). A fellowship training programme is also being developed at the associated institution at the University of Ghana. During their period of training, all of the Fellows in this subprogramme conduct research, and their findings help advance the over-all goals of the subprogramme.

38. During the past year, research grants were also made to institutions in Indonesia and Colombia. The Agricultural University in Indonesia is doing research on the modernization of traditional packaging technologies for grain storage, with emphasis on farm and village-level technologies. The Foundation for Higher Education in Colombia is doing research on the extent of that country's post-harvest food losses.

3. Nutritional needs and their fulfilment through local diets

(a) Programme

39. Knowledge of nutritional requirements is essential for estimating the adequacy of food supplies and consumption, for developing sound nutritional education messages, and for planning food policies and nutrition interventions. Yet most studies of nutritional requirements have been carried out in the relatively privileged populations of a few industrialized countries. The requirements of the populations of developing countries, who live under conditions of frequent, acute and chronic infections and consume low-calorie diets of low nutrient density with factors which interfere with nutrient absorption, are extrapolations that have not been validated by evidence from studies of such populations. The University has established requirements for protein and energy and on means of improving the available iron in local diets.

40. Human dietary needs are conditioned by interaction of physical, biological, and social influences in the environment with individual genetic characteristics and physiological and pathological status. The perspectives of many disciplines are needed to consider the requirements for biological survival as well as those for better learning and behaviour, desirable social and economic activity, and relative freedom from disease.

(b) Activities

41. The University's activities in this subprogramme have centred initially on the Institute of Nutrition of Central America and Panama in Guatemala, which has helped to co-ordinate a multi-nation research effort, including its own research programmes, and also provided training to Fellows from Latin America, Africa, and Asia. As in the case of the subprogramme on post-harvest food losses, the research interests of the United Nations University Fellows at this Institute are tailored to their own particular needs and also to serve the over-all objectives of the subprogramme. Fellows are also receiving training in this area at the International Food and Nutrition Policy Program at the MIT-Harvard consortium.

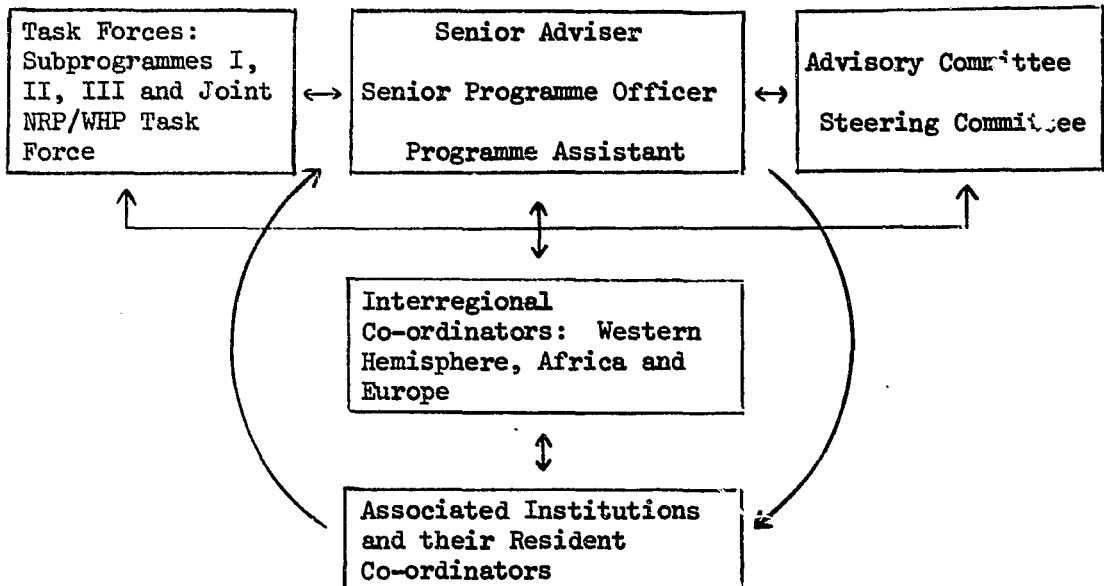
42. The work at the Institute in Guatemala has been enlarged by the creation of an extensive research network to obtain information on protein-energy requirements of populations living in a variety of developing countries, and the capacity of their local diets to meet them. To this end, projects have received University support in the Republic of Korea, Thailand, Mexico, Colombia, Guatemala, Jamaica, Brazil and Chile. These studies are providing the best and most comprehensive information to date of nutritional needs of non-Caucasian populations and on groups living under unfavourable environmental conditions. They are demonstrating that the frequent, acute and chronic gastro-intestinal infections, including those caused by parasites, experienced by these populations, lead to changes in the gastro-intestinal tract that reduce the efficiency of absorption of both dietary energy and protein. The acute infections lead also to increased protein losses. The diets for some young children in developing countries are so high in water and fibre relative to protein and energy density that they cannot eat enough of the diet for satisfactory nutrition. The study of the Republic of Korea shows a distinct improvement in intestinal absorption following deworming. The earliest results of the study are included in the first supplement to the Vol. 1, No. 3, issue of the Food and Nutrition Bulletin and will be further summarized in a meeting of the principal investigators scheduled for early 1980. Investigators at Tokushima University in Japan and the Massachusetts Institute of Technology are co-operating in these studies at no cost to the United Nations University.

43. Also in this area of human nutritional needs, University-supported research in Venezuela and Chile, complemented by studies in Guatemala supported by other sources, is determining the relative availability of iron from different dietary sources and developing means of preventing iron deficiency through fortification of staple foods with biologically available and palatable forms of iron. This work is important because iron deficiency contributes to reduced resistance to infections, poorer performance in scholastic tests, and reduced physical work capacity.

C. Co-ordination

44. The co-ordination of programme activities is implemented through meetings of the Advisory Committee and Steering Committee, separate task forces for each subprogramme, meetings of the co-ordinators of associated institutions, programme staff visits to associated institutions, and exchange visits among institutions. An organization chart of the programme is shown below.

Figure I



45. Close collaboration with WHO and FAO is maintained through participation of senior officials of these agencies in Advisory Committee meetings. The programme is represented on the Sub-Committee on Nutrition - the body established by the United Nations Administrative Committee on Co-ordination to harmonize all nutrition activities in the United Nations system and to initiate appropriate new activities directed towards reducing global malnutrition. The Sub-Committee includes representatives of WHO, FAO, UNICEF, WFP, IFAD, UNDP, UNEP, WFC, the World Bank, the ILO, UNESCO, United Nations and United Nations University.

1. Associated institutions

46. During the past year, one additional institution became associated with the programme: the University of Ghana, Legon, including its Department of Nutrition and Food Science and other relevant departments in agriculture and health, as well as the Institutes for Statistical, Social and Economic Research and for Food Research. The initial emphasis of this institution will be on institutional development and applied research.

The programme now has a total of nine associated institutions:

- (a) Central Food Technological Research Institute, Mysore, India;
- (b) Centre for Research in Nutrition, Laval University, Quebec, Canada;
- (c) Department of Nutrition and Food Science, University of Ghana, Legon, Ghana;

- (d) Institute of Nutrition of Central America and Panama, Guatemala City, Guatemala;
- (e) Institute of Nutrition and Food Technology, University of Chile, Santiago, Chile;
- (f) International Food and Nutrition Policy Program, Massachusetts Institute of Technology and the Harvard School of Public Health, Cambridge, Massachusetts, United States;
- (g) Nutrition Center of the Philippines, Makati, Philippines;
- (h) Tropical Products Institute, London, United Kingdom;
- (i) Venezuela Institute for Scientific Research, Caracas, Venezuela.

The programme also includes one training unit based at the National Food Research Institute, Tsukuba, Japan.

2. Future associations

47. Associations are being explored with the following institutions:

(a) Institute for Animal Nutrition Research, Wageningen, the Netherlands, for co-ordination of the work being carried out by the joint World Hunger and Natural Resources programmes on the bioconversion of organic residues for rural communities and the advanced training and applied research directly relevant to it.

(b) The Foundation for Higher Education in Colombia through the University del Valle and other institutions in the Cauca Valley in Colombia, which will undertake a comprehensive interrelated programme of research projects in all three subprogramme areas. Initially these will be studies of post-harvest food losses, nutrition policies, nutrition intervention programmes, protein-energy requirements, and the stimulus of small farm food production systems. It is anticipated that training of United Nations University Fellows will begin in the second year of the association with this institution.

48. Negotiations are in progress for two additional associations: the National Institute of Nutrition of Mahidol University, Thailand, and the University College of the West Indies in Jamaica and Trinidad. Active collaboration has been established between the associated institution at Laval University in Canada and the Institute of Food Technology in Senegal through promotion of joint research projects which has tended to increase the capacity and contributions of the latter institution.

3. Fellowships

49. During 1978-1979, 27 United Nations University fellowships were awarded for training at associated institutions, bringing the total awarded to date to 77. Five Fellows are from Africa, 9 from Asia, 3 from the Middle East, 9 from Latin America, and 1 from the United States; 7 of these are women. Plans call for 15 more Fellows to start training in the second half of 1979.

50. During the year, 31 Fellows completed training and returned to their home institutions. Ten Special Fellows have also received training at associated institutions; 2 are from Asia, 5 from Africa, and 3 from Latin America. The countries of origin of Fellows are shown in the following table.

Fellowships awarded during the period
July 1978-June 1979

Country	Male	Female
Argentina		2
Bangladesh	1	
*Chile	1	
Costa Rica	2	
Colombia		1
Ecuador	1	
*Ecuador	2	
Ghana	1	
India	1	
*India	1	
Jordan	1	
*Kenya	1	
Liberia	1	
*Libyan Arab Jamahiriya	1	
Mexico	2	
Morocco		1
Nepal	2	
Nigeria	1	
*Nigeria	2	
Pakistan	1	
Peru		1
Philippines	1	2
Saudi Arabia	1	
Sri Lanka	1	
*Thailand	1	
Tunisia	1	
Turkey	1	
United States of America	1	
*Zambia	<u>1</u>	
Total	30	<u>7</u>

* Special Fellows

4. Technical meetings and workshops

51. The following is a list of meetings held between July 1978 and June 1979:

- (a) 29 August 1978 United Nations University symposium on nutritional impact of food conservation and processing (held as part of the International Congress of Nutrition), Rio de Janeiro, Brazil;
- (b) 22 September Symposium on potential of post-harvest food conservation and processing for alleviating world hunger, (held as part of the International Congress of Food Science and Technology), Kyoto, Japan;
- (c) 6-10 November Regional workshop on the interfaces of agriculture, food science and nutrition (fourth in the series), Guatemala City, Guatemala;
- (d) 13-17 November Joint WHP-NRP international conference on the state-of-the-art of bioconversion of organic residues for rural communities, followed by a two-day task force meeting, Guatemala City, Guatemala;
- (e) 27 January 1979 Seminar on food and nutrition constraints in the developing world - the perspectives of our roles and contributions, Tokyo, Japan;
- (f) 26-29 March WHP-NRP joint workshop on goals, processes and indicators of food and nutrition policy, MIT, Cambridge, Massachusetts, United States;
- (g) 7-12 May Integrated nutrition and family planning workshop, Lomé, Togo;
- (h) 1-2 June Joint WHP-NRP task force on the state-of-the-art of bioconversion of organic residues for rural communities, Stockholm, Sweden.

5. Publications

52. Publications to date include:

(a) Interactions of Agriculture, Food Science and Nutrition (report of an interface workshop held in the International Rice Research Institute, Los Baños, Philippines) - in press;

(b) The quarterly Food and Nutrition Bulletin - first two issues (October and January) distributed; third issue in press; fourth issue in manuscript preparation;

(c) Protein-Energy Requirements under Conditions Prevailing in Developing Countries: Current Knowledge and Research Needs - published as supplement to Food and Nutrition Bulletin;

(d) Impact of Food Price Policies on Nutrition - manuscript in final stages of editing for publication;

(e) Bioconversion of Organic Residues for Rural Development - in press;

(f) Interaction of Agriculture, Food Science and Nutrition: Regional Workshop held in Guatemala - Spanish manuscript ready for publication.

6. Third Advisory Committee meeting

53. At its third meeting, held in Tokyo in January 1979, the Programme Advisory Committee recommended:

(a) Assistance to countries at a very low level of development

The University must find ways of assisting the development programmes of these countries. It can do so without abandoning its existing policies and strategies by introducing flexibility in its approaches to these countries. The Committee recommended:

- (i) Drawing the attention of other agencies to the basic needs for development of institutions, to train lower-level professionals, and to assist in basic level research training;
- (ii) Making available United Nations University management level fellowships to carefully selected government officials or scientists with decision-making powers or leadership potential;
- (iii) Providing a number of fellowships for training local professionals in some selected disciplines with a view to assisting with the creation of "a critical scientific mass" within the country of institution, which will help stimulate further development in the fields of research and training;
- (iv) Giving particular attention to the needs of Francophone Africa where the creation of an "incorporated institution" may need to be considered.

(b) Women and post-harvest food conservation

It was recommended that the training of women in post-harvest preservation and processing of foods at the village level be recognized as deserving specific attention in its own right. It was recommended that the World Hunger and Human and Social Development Programmes should undertake a joint programme of work on the role of women in post-harvest food conservation to help define the problems, to identify the research studies to be undertaken, and to take necessary steps to implement the research projects on the following topics:

- (i) Post-harvest food technologies traditionally used by women, analysed for their usefulness in terms of economy, time use, food value, and potential for improvements;
- (ii) Technologies suggested for village-level use in the light of their usefulness for women under prevailing conditions;

- (iii) A review of the attention presently given to food technologies useful to women at the various associated institutions of the University, with possible policy suggestions.

V. HUMAN AND SOCIAL DEVELOPMENT PROGRAMME

A. Introduction

54. The Human and Social Development Programme is attempting to redefine the conventional development wisdom of the recent past which tended to equate economic growth with improvement in the over-all quality of human life. This has often proved not to be the case, most notably in the developing countries. In particular, the rural villagers of the third world, who comprise the bulk of the population, have realized few benefits from national economic growth. If anything, gains elsewhere have made their current plight stand out more sharply.

55. Thus there is now widespread realization that new development concepts need to be evolved and analysed dispassionately in order to understand better the complex interplay of social, cultural, economic and political forces that affect the development process on a world-wide basis.

56. The basic assumptions underlying the work of the Human and Social Development Programme are the following:

(a) The pressing global problems of human survival, development and welfare are closely interrelated, and therefore an approach which treats gaps in knowledge separately is unsatisfactory.

(b) The solution of world-wide problems depends not only on technical knowledge, but also on a clear understanding of the causal relationships among the socio-cultural, economic, and political factors determining the nature of the problems.

(c) The major task of the academic and scientific community is to identify the key determining factors of the problems.

(d) The international academic and scientific community is composed of a variety of schools of thought which propose different theories and models of pressing global problems and ways of solving them, based on various disciplinary backgrounds and cultural traditions.

57. It is a basic tenet of the programme that the intellectual challenge posed by pressing global problems can be met only if representatives of different schools of thought, belonging to different disciplines and cultural traditions, can interact in sustained discourse. It is stimulating and encouraging such discourse at various levels: between scholars espousing different cultural and philosophical approaches; between social and natural scientists; between researchers and villagers; and between different regional and national experiences.

58. This forum function of the programme is performed in close liaison with the United Nations research organizations and with international or regional

organizations such as the Consejo Latino Americano de Ciencias Sociales and the Council for the Development of Economic and Social Research in Africa. Thus the multidisciplinary scholarly examination of problems that flourishes in a university atmosphere is always kept in close touch with the world realities reflected in the United Nations.

B. Summary of the year

59. During the period under review - the third year of operation for the Human and Social Development Programme -- the nature and role of the Programme became more clearly delineated. There was continuing progress in refining the concepts underlying the various activities, in evolving new research methodologies, and in building networks of research institutions around the world. The Programme now has contractual arrangements with some 73 research units around the world and with the following associated institutions:

- (a) El Colegio de Mexico, Mexico City, Mexico;
- (b) Institute of Developing Economies, Tokyo, Japan;
- (c) Institute of Development Studies, Geneva, Switzerland;
- (d) Marga Institute, Colombo, Sri Lanka;
- (e) The Latin American Faculty of Social Sciences, Mexico City, Mexico.

C. Perspectives and activities of the subprogrammes

60. The work of the two subprogrammes, Problems of Development, and Technology and Development, is designed to be complementary and mutually reinforcing. The first subprogramme is a long-term research effort involving social scientists and other scholars around the world and seeks to develop new insights about the nature of development problems. The second is directed at the store of practical knowledge that has built up at the village level over the centuries. It seeks to learn more about how local technologies are developed, how they should be linked with the modern sector, and how transfer of such technologies could help meet national, regional and international needs.

61. The major components (and research units) of the two subprogrammes are the following projects:

Problems of development

Goals, processes, and indicators of development (25 research units);

Socio-cultural development alternatives in a changing world (13 research units);

Human rights, peace, and international law in the context of development (planning stage);

Technical co-operation among developing countries (planning stage).

Technology and development

Sharing of traditional technology (7 research units);

Research and development systems in rural settings (4 research units);

Technology transfer, transformation, and development: the Japanese experience (24 research units).

1. Problems of development

(a) Goals, processes and indicators of development

62. This five-year research project, now in its third year, is attempting to shed new light on the complex and troubling question of why development strategies of the last two decades have produced such disappointing results. While providing a forum for the expression of different political and economic philosophies - from all parts of the world - a common thread of its research is a concern with human needs, both material and non-material.

63. The project stresses the importance of seeing goals, processes and indicators of human development in their relation to each other, and not as separate entities. Much previous research on development has tended to detach indicators from the other two components and focus on what is available and measurable. Similarly, goals of development have often been set which ignore practical considerations of those processes that have actually worked effectively and those that have produced disappointing results.

64. The project is co-ordinated through the Institute of Development Studies of the University of Geneva, which was established in 1961 as a research centre on general third world issues. The association agreement between the United Nations University and the Institute became operative in March 1978.

65. During the past year, the 25 research units affiliated with the project developed their initial activities on the several subthemes of the study, which include: (a) visions of desirable worlds; (b) visions of desirable societies; (c) alternative ways of life; (d) basic needs; (e) food and nutrition policy; and (f) forms of presentation. The results of these initial activities were presented and discussed at the project meeting held at Geneva in October 1978. Of the 72 papers presented at the meeting, 40 are now in preparation for publication.

66. Besides the activities of the research units, subproject meetings on selected themes were organized in co-operation with international research bodies. The following meetings were held:

- (a) 8-9 February 1979 Forms of presentation, Geneva, Switzerland;
- (b) 8-10 March Expansion and exploitation processes/Autonomy and liberation processes, Starnberg, Federal Republic of Germany;
- (c) 15-16 March Alternative strategies and scenarios, Geneva, Switzerland;

- (d) 20 March Rights, Geneva, Switzerland;
- (e) 6-10 April Alternative ways of life, Sicily, Italy;
- (f) 4-6 May Networks, Paris, France;
- (g) 17-18 May Socio-cultural alternatives and social cosmology, Paris, France;
- (h) 25-28 May Visions of desirable societies, Mexico City, Mexico;
- (i) 4-6 June Energy study group, Crottorfschloss, Federal Republic of Germany;
- (j) 11-13 June Needs, Berlin, Federal Republic of Germany;
- (k) 14-17 June Visions of desirable worlds, Bucharest, Romania.

67. Through its various activities, the project is proving to be a forum for valuable and intensive interaction between different schools of intellectual thought about development. Concepts have been refined, and a deepening understanding of the processes of development is in evidence. Linkages have been established between researchers and institutions in the industrialized and developing countries. As the project moves ahead, its output will include teaching and education and development action, apart from the research itself.

(b) Socio-cultural development alternatives in a changing world

68. This project focuses on the cultural and civilizational dimensions of development. Co-ordinated from the National Centre of Scientific Research in Paris, the project was in its first year of operation during 1978-1979. The year was devoted essentially to launching its programme activities side by side with the organization of the project network and publications planning.

69. The project is conducting two types of scientific meetings simultaneously.

70. The first is a series of regional symposia on the theme "Endogenous intellectual creativity" in which leading exponents of major intellectual schools of thought and action participate. The symposia are being held in each of the major cultural areas of the world - East, South-East and South-West Asia, Europe, the Arab region, sub-Saharan Africa, Latin America, North America and Oceania. At the symposia, position papers prepared by experts representing the various elements within a cultural area are presented and discussed. In addition to the historians, philosophers, social scientists and other scholars from a given cultural area, international participants also attend the symposia and take part in the discussions. The findings of each regional symposium are carried over and discussed at subsequent ones. The series aims at evolving a methodology for meaningful comparison between different cultures which could lead to identification of universally valid findings and orientations.

71. The series on endogenous intellectual creativity was launched at a symposium at Kyoto, Japan, in November 1978, attended by 66 participants from 14 Asian

countries and 8 other nations. Four dimensions of endogenous intellectual activity in Asia were analysed - philosophical approaches, historical testimony, social roots, and the emerging patterns of a more human and equitable international order.

72. A second symposium brought Latin American scholars together at Mexico City in April 1979. The discussions provided a deepening diversification and enrichment of the findings of the Kyoto symposium.

73. The second is a series of international seminars on the theme "The World in transformation" to examine the major component areas of a new international order. These will include: science and technology; economy and society; culture and thought; religion and philosophy; history and international relations; and civilizational prospective. This series aims at establishing a systematic fund for thought and action by leading experts in the field, open equally to all schools of thought. The series will start in October 1979 at the University of Belgrade where 25 to 30 leading experts will focus on science and technology. The other component areas will be examined in subsequent seminars.

(i) Project network

74. The project network, during its first phase, is organized around 13 research institutions in different countries. It is expected that the network organization will be completed by summer 1979, involving 25 research institutions from all parts of the world.

75. Research grants are being allocated for joint research activities dealing with different subthemes and scientific areas of the project. Each will involve organization of a yearly workshop by a research unit, resulting in one research report as well as other papers for publication in the project series. At the same time, a limited number of research reports by leading individual experts are being commissioned.

(ii) Additional subprojects

76. Following the meeting of the project's advisory board at Kyoto in November, two new subprojects are being initiated, one concerned with families and societies, the second with new developments in religious thought.

(iii) Publications

77. Four types of publications are now being actively planned:

a. Books: There will be a series of two volumes published for each of the regional symposia and international seminars - the first reporting the proceedings, the second a volume of closely edited discussions. It is hoped that a paperback version of the second volume will be circulated to a wider public. Other books are expected from the workshops.

b. Research reports: It is expected that about six research reports will be ready by autumn 1979, the first in a series of booklets of about 100 pages each.

c. Occasional papers: Some 8 to 10 will be published by the end of 1979, beginning with reports on the Kyoto and Mexico City symposia.

d. Readers: Preparations are proceeding on a series of readers on creative new thought in the hitherto "hidden" parts of the world (basically Asia, Africa, and Latin America) which will be linked comparatively to new intellectual trends in Europe and North America.

(iv) Planning for 1980

78. Two regional symposia are now being organized for 1980 - one at the Kuwait University in February dealing with the Arab region, a second at Vienna in the autumn dealing with Europe. The second international seminar, devoted to "Economy and society," will be held at the Central University of Venezuela, Caracas, in spring 1980. A continuing series of workshops is also planned, as are further publications.

(c) Human rights, peace, and international law in the context of development

79. This project conceives of human rights in a broad sense. They are related to the larger context of development and the material and non-material needs of people and are not limited to political rights, civil liberties and relations to States.

80. During the year under review, the project organized a colloquium on the right to health and a healthy environment in co-operation with the Academy of International Law at The Hague. A volume reporting the discussions at the colloquium, The Right to Health as a Human Right, was co-published in April 1979; it is being distributed widely to law faculty libraries around the world. A task force meeting was also held at The Hague to refine further the concepts that could guide this research project; a second workshop is planned for later in 1979.

2. Technology and development

(a) Sharing of traditional technology

81. This project focuses on the role of traditional technologies in 23 villages in eight Asian countries. It seeks not only to ascertain the feasibility of sharing traditional technologies, but also to determine to what extent, and how, the sharing and development of traditional technology could play an important role in improving the immediate living standards of the rural poor.

82. The project is co-ordinated through the Marga Institute in Sri Lanka. Established in 1972, the Institute has particular interest in developing issues in Sri Lanka. It also maintains an effective network of linkages with scholars interested in development elsewhere in Asia and the rest of the world.

83. During the year, in-depth studies in 16 of the 23 villages were completed. Researchers continued to live in these villages and have successfully established a good rapport with the villagers. They have formed village-level networks of governmental and non-governmental institutions and individuals and promoted discussions between these groups and the villagers. Village-level seminars have

already been held, as well as a few national seminars, and many researchers have been able to visit each other and familiarize themselves with ongoing field activities in the other villages. Specific technologies have been identified and recorded, and technical panels have been set up at the national level for further evaluation of these technologies.

84. Two progress review meetings were held during the year, in Thailand in November and in Indonesia in April, which contributed significantly to the conceptual and methodological evolvement of the project. Such meetings are vital to the co-ordination of the widely distributed research units in countries with different administrative and academic traditions.

85. The village studies are continuing to concentrate on technologies related to some of the most vulnerable clusters of activity and management - interactions of the infant and mother, maintenance of the human body, the efficient management of shelter, water, land and climate, and the processing and preservation of food. It has also been decided to select certain specific items common to all the villages and identify their varied uses. Those chosen were bamboo, banana trees, cattle dung and rain-water.

86. In the research to date, it has been noted that the traditional technologies identified often appear to be of minimal hard economic value to the users. Although at first this would seem to be detrimental to its value as an instrument of development, closer evaluation shows that the value of some traditional technologies must not be judged on economic criteria alone. The value of what appear to be marginally valuable technologies are thus being looked at afresh. An example would be the non-medical value of a massage for a child which transmits intimacy, warmth and love during the first months of an infant's life; this could be important to the mental and physical development of a child born and bred in rural deprivation.

87. Such valuable and interesting insights on rural life and their significance for the development planner or rural development worker are constantly emerging. The Asian village mother, for example, traditionally carries her child while working. Yet if one relieves her of this "burden" by providing playpens for children, the increased mobility of the child in the playpen often leads to the worsening of its nutritional condition unless supplementary food is given. Also in the area of nutrition, a fresh look is being taken at traditional forms of exercise such as yoga, Chinese shadow boxing, and rhythmic dances. Such exercises use far less calories than the western forms of physical training to which the undernourished village children are often subjected in the early morning before they commence their school lessons. Such examples reinforce the value of this project to development workers, encouraging them to examine closely the linkages of traditional technology before changing or replacing them.

88. The project has been seeking to distinguish between community-based traditional technologies - such as shramadana, the sharing of labour - from those that can function independently of a society's socio-cultural or religious backdrop. This helps to identify those technologies which may be most easily transferred. An example would be the practice of drying cooked rice in Nepal so that it can be carried long distances and consumed without cooking through the addition of cold water. While this technology arose out of peculiar needs in a country like Nepal, it is one which is easily transferable and could be of great practical use in other societies.

89. Among the problems being encountered as the project moves forward is the manner in which to take advantage of traditional technologies without encouraging a negative self-reliance based on the past. Researchers are seeking methodologies in the transfer process which stimulate a positive self-reliance based on links to modern technology and the outside world when necessary. Another problem is the difficulty for researchers, who are often western-trained, to enter this field of study without an anthropological bias; they must be open to consideration of a wide range of traditional technologies. The recent developments in Iran and the People's Republic of China underscore the vital role of tradition in development, both politically and technologically.

90. The work being done by the project is contributing to the wider debate over alternative work patterns and life-styles - the "other development" the world is seeking in the increasing global crisis of human alienation. Its ultimate goal is the development of socio-economic structures in the developing countries which will produce restrained and humanized technologies. The project expects to expand the scope of its activities during the latter half of 1979 with the inclusion of research efforts by groups in India and the People's Republic of China.

(b) Research and development systems in rural settings

91. The central objective of this project is to integrate modern research and development systems in developing countries with the experience and knowledge of the traditional societies in order to tackle the technological problems of rural development.

92. Specifically, the project is developing a methodology for:

- (a) Generation of technologies for use by the rural poor through a process that involves their interaction with research groups;
- (b) Utilization of capabilities and knowledge of the traditional societies - linking these to research and development systems of the modern sector to optimize the benefits for the rural poor;
- (c) Assessment of the strategy utilized by the participating research groups to develop technologies for rural areas and to undertake a comparative analysis of these strategies in different socio-economic situations.

93. To this purpose the project has put together research groups in three developing countries, Mexico, Ethiopia and the Philippines, which are applying a common methodology of research. A monitoring and evaluation system has been designed to assess the effectiveness of the proposed approach.

94. The project is co-ordinated by the Latin American Faculty of Social Sciences, an international organization established by the Latin American countries in 1957 to promote teaching and research in the social sciences.

95. The methodology being used involves the following steps:

- (a) General evaluation of the characteristics of the particular research

target area to determine the "problem situation," i.e., the socio-economic, cultural and political conditions in which a technological problem is always immersed;

(b) Analysis of the current situation by the local population and the research team together; and selection based on this analysis of certain problem areas for further research;

(c) Determination of the functions that a required technology is expected to fulfil; not in order to build a blueprint for technology, but to establish the set of constraints and requirements it should satisfy;

(d) Analysis of the solutions that the local community has traditionally given to the problems identified, with special emphasis on the knowledge and ideas contained in those technologies;

(e) A general survey of the natural resources of the area; not of natural resources in an absolute sense, but rather as the combination of some natural object with science and technology;

(f) From the information gathered by the foregoing efforts, a set of assumptions or paradigms will be derived. These will constitute the frame of reference for the final step of developing the required technology. The set of assumptions, which will contain scientific, technological, economic, psycho-social, and anthropological information, will define a technological space. All possible solutions that fit the technological space are considered.

96. A one-year pilot project was begun in March 1978 to test and refine the methodology to be used in the field. Research teams from the following institutions participated in the pilot project:

(a) Institute for Studies of Rural Development, "MAYA, A.C.," Mexico;

(b) Ethiopian Science and Technology Commission, Ethiopia;

(c) Economic Development Foundation, the Philippines.

97. The pilot project sought to determine the effectiveness of the proposed technology in achieving the stated goals. The research teams were concerned, for example, with the best mechanisms to obtain a fruitful and positive interaction with the local community, or modifications in the methodology to adapt it to local conditions.

98. One of the main achievements of the pilot phase is that all of the teams succeeded in establishing effective community interaction. Although there were variations, depending on the particular situation, certain common elements emerged. The peasants initially tended to be distrustful, owing to previous negative experiences with outside researchers. It was important, therefore, that the scientists convince the peasants that they were not going to impose solutions, but rather seek possible solutions through joint action. This required living in the villages for extended periods of time and behaving as much as possible like the local people.

99. All of the teams agreed that effective interaction with the peasants was essential to successful completion of the initial socio-economic study. Having laid this groundwork, they could begin to identify the technological problems and analyse local solutions.

100. The case of Ethiopia stresses the importance of true interaction with the peasants. There was far less initial distrust encountered because the rural populations had already been organized into peasant associations responsible for their own social, political and administrative affairs. As a consequence, their attitude towards government officials has completely changed.

101. In Mexico, the researchers found that, owing to socio-economic constraints, the peasants were not willing to give their support to the activity - even though the researchers had been able to identify technological problems. As a result of this, the MAYA team, during the next phase of the project, will seek to determine which are the minimum socio-economic constraints under which a technological solution is viable.

102. A research meeting attended by all team leaders was held in Mexico in October 1978 to discuss the work to date. It was agreed that the pilot project had permitted successful testing of the most important elements of the methodology, namely, the socio-economic analysis, mechanisms of interaction between researchers and villagers, and identification of specific problems of the links between rural communities and the research and development sectors. The project is continuing with special emphasis on the methodological steps dealing with generation of technologies.

(c) Technology transfer, transformation and development: the Japanese Experience

103. This project seeks to study the interrelationships between endogenous and foreign technology during the process of industrialization in modern Japan. To this end it is studying four types of situations that occurred during the process: (i) replacement of traditional or endogenous technology by modern technology; (ii) co-existence of the former with the latter; (iii) failure of modern to replace traditional technology; and (iv) integration of the two types of technology.

104. Emphasis is placed on the linkage between technology and labour (the working population being the meeting place between the old and new values); on the acquisition and dissemination of modern skills; on business management systems; and on the organization of labour, working discipline and conditions.

105. The project is co-ordinated by the Institute of Developing Economies in Tokyo. During the year under review 34 scholars from 23 institutions throughout Japan were involved in the project. They formed seven study groups on the following subjects: (i) technology and urban society; (ii) technology and rural society; (iii) the iron and steel industry and transportation; (iv) textile industries; (v) small-scale industries; (vi) mining industries; and (vii) technology transfer and the development of Hokkaido.

106. Twenty-eight study meetings of these groups were held and 30 field surveys were conducted jointly by the collaborating scholars and the staff members of the

University project team at the Institute of Developing Economies. The main findings of this first year were the following:

(a) The rise of modern industrial cities in Japan invited a rapid urbanization on a national scale, but unemployment and underemployment, rather than a shortage of skilled workers, were a serious problem.

(b) In order to feed the urban population, introduction of modern technology was required to improve rice cultivation; the rural communities had to accommodate themselves to this painful process of adaptation.

(c) The iron and steel industries were a new and hard experience for Japan, but a basic national need at the initial stage. Appropriate technologies were invested by local engineers and scientists to suit the Japanese condition (against the plan drawn up by foreign experts). The same was true in the case of the national railway network, which played an important role in strengthening the national integration.

(d) The textile industries were a leading sector in Japanese industrialization; mechanization in this sector was possible because of an existing division of labour, both in the production process and in the specialization of products in different areas of the country. But the key factor for successful import substitution and export orientation is the manual skill of female workers.

(e) The necessities of daily life were mostly produced by small-scale enterprises. In some of these industries, e.g., buttons and towels, production technology was imported, but the process was divided into several work processes. Some work was done on a piece-work basis by underemployed farmers' families. Use of cheap labour of this kind enabled these small-scale enterprises to compete in the world market.

(f) The mining industries were the most successful examples of the introduction of modern technology, but this was limited to transportation and drainage techniques. The actual work system was untouched, leading to trouble afterwards.

107. Findings from the work to date will be published as a series of working papers. Continuing research is planned to produce more elaborate and comprehensive results on each subject. A feasibility study is also planned on the Ryukyu Islands as a case of development of remote island regions.

3. Education for development

108. In addition to its two subprogrammes concerned with problems and technologies of development, the Human and Social Development Programme is organizing an international educational programme focused on the global problems addressed by the University's three priority programmes. The three programmes will co-operate in this venture, which aims at achieving better integration, dissemination and application of knowledge about development. This would entail educational activities in both the industrialized and developing countries.

109. A consultant from the Institute of Development Studies of the University of

Sussex, United Kingdom of Great Britain and Northern Ireland, prepared an initial paper on this subject. The proposal has been discussed by the Council and the Programme Advisory Committees, and consultations have been held with UNESCO regarding the concepts that should guide the project design and its scope. A further meeting will be held in September 1979 to elaborate the concepts underlying the project design.

INSTITUTIONS WHERE RESEARCH UNITS OF THE HUMAN AND SOCIAL
DEVELOPMENT PROGRAMME ARE BASED

1. Project on goals, processes and indicators of development

- (a) Institute of Development Studies, Geneva, Switzerland (co-ordinating institution);
- (b) African Institute for Economic Development and Planning, Dakar, Senegal;
- (c) Bariloche Foundation, San Carlos de Bariloche, Argentina;
- (d) Centre for the Study of Developing Societies, New Delhi, India;
- (e) Committee "Poland Year 2000", Polish Academy of Science, Warsaw, Poland;
- (f) El Colegio de Mexico, Mexico City, Mexico;
- (g) Hiroshima University, Hiroshima, Japan;
- (h) Marga Institute, Colombo, Sri Lanka;
- (i) Max Planck Institute, Starnberg, Federal Republic of Germany;
- (j) McGill University, Montreal, Canada;
- (k) Mershon Center, Ohio State University, Columbus, Ohio, United States of America;
- (l) Peace Research Institute, Goteborg, Sweden;
- (m) Science Centre Berlin, Berlin, Federal Republic of Germany;
- (n) Society for International Development, Rome, Italy;
- (o) Union of International Associations, Brussels, Belgium;
- (p) United Nations Institute for Training and Research, New York, United States of America;
- (q) University of Auckland, Auckland, New Zealand;
- (r) University of Bucharest, Bucharest, Romania;
- (s) University of Dar-es-Salaam, Dar-es-Salaam, United Republic of Tanzania;
- (t) University of Oslo, Oslo, Norway;
- (u) University of Papua New Guinea, Port Moresby, Papua New Guinea;
- (v) University of Science Malaysia, Penang, Malaysia;
- (w) University of Sussex, Brighton, United Kingdom of Great Britain and Northern Ireland;
- (x) University of the West Indies, Kingston, Jamaica;
- (y) World Future Studies Federation, Rome, Italy.

2. Project on socio-cultural development alternatives in a changing world

- (a) National Centre of Scientific Research, Paris, France (co-ordinating institution);
- (b) Cambridge University, Cambridge, United Kingdom of Great Britain and Northern Ireland;
- (c) Central University of Venezuela, Caracas, Venezuela;
- (d) Centre for Studies in Social Sciences, Calcutta, India;
- (e) Complutensian University of Madrid, Madrid, Spain;
- (f) Institute of Arab Research and Studies, Cairo, Egypt;

- (g) Institute of Human Sciences, National Centre of Scientific Research, Paris, France;
- (h) Jawaharlal Nehru University, New Delhi, India;
- (i) McGill University, Montreal, Canada;
- (j) National Institute of Anthropology and History, Mexico City, Mexico;
- (k) National University of Mexico, Mexico City, Mexico;
- (l) University of Chittagong, Chittagong, Bangladesh;
- (m) University of Kyoto, Kyoto, Japan.

3. Project on research and development systems in rural settings

- (a) Latin American Faculty of Social Sciences, Mexico City, Mexico (co-ordinating institution);
- (b) Economic Development Foundation, Rizal, Philippines;
- (c) Ethiopian Science and Technology Commission, Addis Ababa, Ethiopia;
- (d) Institute for Studies of Rural Development "Maya A.C.", Mexico City, Mexico.

4. Project on sharing of traditional technology

- (a) Marga Institute, Colombo, Sri Lanka (co-ordinating institution);
- (b) Consumers Association of Penang, Penang, Malaysia;
- (c) Development Academy of the Philippines, Manila, Philippines;
- (d) Development Research and Communication Group, Kathmandu, Nepal;
- (e) Dian Desa, Yogyakarta, Indonesia;
- (f) Gakushuin University, Tokyo, Japan;
- (g) Thai Khadi Research Institute, Thammasat University, Bangkok, Thailand.

5. Project on technology transfer, transformation and development: the Japanese experience

- (a) Institute of Developing Economies, Tokyo, Japan (co-ordinating institution);
- (b) Bunkyo Women's College, Tokyo, Japan;
- (c) Department of Agriculture, University of Tokyo, Tokyo, Japan;
- (d) Department of Humanities, Seikei University, Tokyo, Japan;
- (e) Department of Law and Economics, Aichi University, Nagoya, Japan;
- (f) Faculty of Arts, Rikkyo University, Tokyo, Japan;
- (g) Faculty of Arts, Shinshu University, Nagano, Japan;
- (h) Faculty of Commerce and Economics, Senshu University, Tokyo, Japan;
- (i) Faculty of Economics, Hosei University, Tokyo, Japan;
- (j) Faculty of Political Science and Economics, Hiroshima University, Hiroshima, Japan;
- (k) Faculty of Social Sciences and Humanities, Tokyo Metropolitan University, Tokyo, Japan;
- (l) Faculty of Sociology, Kansai University, Osaka, Japan;
- (m) Hanazono University, Kyoto, Japan;
- (n) Hokkaido College of Engineering, Sapporo, Japan;
- (o) Hokkaido Institute of Hygienic Sciences, Sapporo, Japan;
- (p) Institute of Economic Research, Hitotsubashi University, Tokyo, Japan;
- (q) Institute of Environmental Sciences, Hokkaido University, Sapporo, Japan;
- (r) Office of Policy Formation, Tokyo Metropolitan Government, Tokyo, Japan;
- (s) Sapporo Medical College, Sapporo, Japan;
- (t) Sendai Dai-ichi High School, Sendai, Japan;
- (u) Tokyo College of Engineering, Tokyo, Japan;
- (v) Tokyo Gakugei University, Tokyo, Japan;
- (w) Toyo University, Tokyo, Japan;
- (x) Wako University, Yokohama, Japan.

HUMAN AND SOCIAL DEVELOPMENT PROGRAMME MEETINGS HELD
BETWEEN JUNE 1978 AND JUNE 1979

- (a) 19-23 June 1978 Task force meeting on human rights, Vienna, Austria
- (b) 3-5 July Preparatory meeting for the seminar on human rights to be organized by the Hague Academy of International Law, the Hague, Netherlands
- (c) 17-21 July Preparatory meeting for the project meeting on socio-cultural development alternatives in a changing world, Mexico City, Mexico
- (d) 2-8 October Goals, processes and indicators of development project, third network meeting, Geneva, Switzerland
- (e) 16-20 October Project meeting on research and development systems in rural settings, Mexico City, Mexico
- (f) 30 October-3 November Project meeting on sharing of traditional technology, Chiang Rai, Thailand
- (g) 13-17 November Asian symposium on endogenous intellectual creativity, University of Kyoto, Kyoto, Japan
- (h) 20-22 November Programme Advisory Committee meeting, Tokyo, Japan
- (i) 9 January 1979 Consultative meeting with French scholars on the Human and Social Development Programme, Paris, France
- (j) 9-12 January Preparation for UNU/UNESCO joint meeting on Human Rights and Education Programme, Paris, France
- (k) 15-20 January Goals, processes and indicators of development steering group meeting, University of Bucharest, Bucharest, Romania
- (l) 21-27 January Programme Advisory Committee meeting, Tokyo, Japan
- (m) 5-7 February Food study group meeting (preparation for the WHP/HSDP joint workshop at MIT), Geneva, Switzerland
- (n) 26-29 March WHP/HSDP joint workshop on goals, processes and indicators for food and nutrition policy, MIT, Cambridge, Massachusetts, United States of America
- (o) 16-23 April Sharing of traditional technology project meeting, Yogyakarta, Indonesia
- (p) 23-30 April Goals, processes and indicators of development project, fourth network meeting, Dakar, Senegal

(q) 23-28 April

Latin American symposium on socio-cultural
development alternatives in a changing world
project, Mexico City, Mexico

Eleven additional subproject meetings of the project on goals, processes, and indicators of development are listed in para. 66 above.

VI. PROGRAMME ON THE USE AND MANAGEMENT OF NATURAL RESOURCES

A. Introduction

110. The basic purpose of the Programme on the Use and Management of Natural Resources is to help ensure that the capability for producing renewable natural resources remains unimpaired and that optimal use is made of existing resources. The programme is concentrating on rural areas in developing countries, as it is these areas that are most severely affected by the combination of poverty, rapid change, lack of alternatives, and lack of information on which to base management policies. As a division of an academic institution and not a technical assistance agency, the programme has selected topics for initial work that are susceptible to solution through research, advanced training, and the dissemination of information. Since problems such as insufficient manpower, inadequate knowledge, and poor use of existing information vary with both topic and location, the programme's emphasis changes considerably in order to attack the specific factors preventing the provident use of a given resource in a given area.

111. Many agencies are sponsoring research or training through short-term courses or fellowships at institutions, usually in the industrialized countries. However, few institutions are emphasizing the creation of networks and the exchanges between their centres. The specific mandate in the University's charter for conducting advanced training, the use of research as the primary vehicle for training, the multidisciplinary character of the University-sponsored projects, and the bringing together of researchers working either on different aspects of the same problem or the same problem in different areas provide the characteristics that, in combination, give the Programme on the Use and Management of Natural Resources its distinctiveness.

B. Summary of the year

112. The effective establishment of the programme - these six words summarize the work accomplished during 1978-1979. From the start of the programme through June 1978, the effort was essentially one of formulation and exploration - what topics should be considered and where could the programme carry out its research and training activities. In the year under review, the programme has increased the number of its associated institutions from one to nine, and has held scientific workshops at six of them. These workshops have defined the research and training activities that will be carried out during the initial three years of association. Ten United Nations University Fellows have been selected and are beginning their fellowships at associated institutions. The first three Special Fellows have completed their fellowships, and five more have started theirs. Exploratory missions have been carried out in over 30 countries by the programme staff or consultants. Seven research and training units have been established, and ten more are in the planning stage.

C. Perspectives and activities of the subprogrammes

1. The ecological basis for rural development in the humid tropics

113. The purpose of this subprogramme is to analyse traditional resource systems, and then to determine how modifications, adaptations, and the introduction of new technologies can be made to protect the environment, maintain or increase productivity, and satisfy the aspirations of the local population. Problems in this area are being approached by utilizing the concept of "resource systems", which can be roughly defined as the entire chain of events by which a raw material is collected and transformed into an end-product or a service. Such an innovative approach is useful for both research and education, as it helps to ensure a comprehensive view of the problems and to facilitate interdisciplinary co-operation. In a decision which has been reaffirmed by the programme's Advisory Committee, four resource systems were selected in May 1977 for the initial phase of the subprogramme: (1) rural energy systems, (2) agro-forestry systems, (3) water-land interactive systems, and (4) highland-lowland interactive systems.

114. In addition, the resource systems approach itself is being assessed, and attempts are being made to develop further the theory and methodology. Two seminars presenting various case studies have been held, one in the Philippines, 29 May-2 June 1978, the other in the Republic of Korea, 28 May-1 June 1979, and a report on these will be published later this year. Attempts will be made to adapt this approach to other areas of the programme.

(a) Rural energy systems

115. Inasmuch as adequate energy supplies are critical to development, the first of the resource systems under investigation is rural energy systems. The primary source of fuel in many rural areas of the humid tropics is wood, and an overdependence on this source can lead to environmental deterioration and hinder future progress. By examining the mix of energy sources available and analysing the economic and social processes that determine the production and distribution of fuels, a number of practical, as well as theoretical, insights will be gained. A better understanding of rural energy systems will contribute to more effective management policies, which would, if adopted, not only increase the available energy supplies but also lessen long-term environmental deterioration. The possibilities for technological innovation, whether through non-conventional energy sources such as biogas, or through less drastic changes such as more efficient cooking-stoves, are also being investigated.

116. A comprehensive study of this type has been initiated at the University of Ife in Nigeria. Detailed formulation of the project took place during a workshop in August 1978, at which time the agreement making the University of Ife an associated institution was signed. Five topic areas in the study are currently under investigation, which are:

- (i) Socio-cultural factors affecting rural energy preferences;
- (ii) Urban market influences on rural energy production and use;
- (iii) Geographical patterns of fuel wood production and depletion of supply;

- (iv) Fuel wood species in relation to vegetation dynamics and land use;
- (v) Supply of energy from fuel wood plantation and alternative sources.

117. These five topics will be pursued in relation to urban centres of varying sizes and in different ecological zones encompassing much of south-western Nigeria. In addition to the University support, \$US 25,000 is being provided by the Ford Foundation, and other sources of funding are also being sought. Following University practice, Fellows from areas with similar problems or conditions will be brought to the University of Ife to work in association with the project for a period of six to twelve months. After gaining additional knowledge and experience, the Fellows can then initiate similar projects in their own countries, thus multiplying the effectiveness of the University's activities. In this respect, as a first step, efforts are being made to start similar studies on a smaller scale in other parts of West Africa and Malaysia.

118. On a wider scale, a study has been commissioned to look at the traditional use of wood and charcoal throughout Europe, Africa and Asia. Utilizing existing data, a planned publication should provide a clear view of the dependence upon wood and the environmental consequences of this dependence. A similar study and publication are planned for Latin America.

(b) Agro-forestry systems

119. In much of the humid tropics, increasing population and rising demands for food and raw materials for export press heavily on traditional systems that have evolved mainly to meet subsistence needs and local exchange. The resulting intensification of agriculture, often by adopting inappropriate techniques developed in temperate areas, almost always leads to the vicious cycle of environmental deterioration and a lowering of productive capacity. One of the most promising methods for sustaining high productivity while minimizing social and environmental damage is agro-forestry systems, which combine tree and field crops, and sometimes livestock as well. Studies of traditional land-use practices could provide much of the information needed to develop appropriate agro-forestry techniques that are specific to a given culture and location.

120. The Tropical Agricultural Research and Training Centre in Turrialba, Costa Rica, is serving as the main centre for the project on agro-forestry systems. Typically, this associated institution conducts research under University auspices and serves as the main centre for training Fellows in this field. A workshop in March 1979 brought together scientists, primarily from the Latin American region, to discuss the state-of-the-art of agro-forestry in Latin America, and the proceedings are being published. Research has begun on the use of trees in pastures, in combination with perennial crops, as live fence posts and in stabilizing slopes.

121. Another nodal point in the network is Chiang Mai University in Thailand. Three Special Fellows from Chiang Mai visited the Tropical Agricultural Research and Training Centre in mid-1978. As a result, agro-forestry research has now become an integral part of the project in Chiang Mai, and a workshop on agro-forestry in South-East Asia is scheduled there for late 1979.

122. As a result of the recent world-wide surge of interest in agro-forestry, a number of possible training links are being explored. A small research and

training unit has been established at the Wau Ecology Institute in Papua New Guinea, and this is being used as the basis for the advanced training of local scientists. The creation of the International Council for Research in Agro-Forestry has resulted in a number of research projects throughout the humid tropics, and close consultation is taking place to determine the most appropriate interaction. The programme is planning to publish a regular newsletter on agro-forestry in co-operation with the International Union of Forest Research Organizations.

(c) Water-land interactive systems

123. Given the pressures for development and an expansion of production on the one hand and the environmental constraints so often present on the other, an examination of the interactions between land and water is critical for the future development of the humid tropics, especially in coastal areas. In large areas, freshwater swamps, rivers and estuaries are important sources of protein for populations that are often on minimal diets. In these areas, changes in the watershed, caused either by development projects or through the chain reaction of deforestation, erosion, flooding and sedimentation, can severely disrupt the local economic and social system and reduce its resource base. Beginning with a better understanding of brackish water fish ponds (tambaks) in Indonesia, the University project is attempting to develop management techniques that would ultimately be applicable to other areas.

124. A programmatic workshop in September 1978 formulated the research programme, and at this time Bogor Agricultural University signed the agreement that made it an associated institution and the institutional base for the project. Research is concentrating on tambaks as a resource system, and is investigating the links with both animal husbandry and rice farming. Through a better understanding of the inputs into and possibilities of tambaks, a more effective utilization of resources is possible. Again through the creation of a network and the sponsoring of UNU Fellows, it is hoped that the repercussions of the work will spread throughout South-East Asia.

125. Closely related to these activities is the emerging project on coastal zones, which can also be regarded as a type of water-land interactive system. A small task force meeting in April 1978 recommended establishing a series of one-year training programmes in developing countries. Initially based in Indonesia, where manpower training is one of the major goals of the country's current five-year plan, the pilot project will include a group of approximately six young scholars training in the techniques of survey, research and problem-solving necessary for effective coastal resource management. Intensive study of specific local problems will provide data useful for management and valuable experience for the graduates. Relevant material from other coastal regions will provide a broader basis for the assessment of coastal problems in general.

126. By continuing and expanding the course over several years, the project is attempting to establish a self-reinforcing network of trained scholars working on coastal resource management and research, and a set of scholarly baseline studies to illustrate particular kinds of human impact on coastal areas. Efforts are being made to establish a similar programme in the Middle East or Latin America.

(d) Highland-lowland interactive systems

127. Highlands in the humid tropics often support large populations on their limited but none the less valuable resource base. Excessive pressure on the resources can result in severe environmental damage, such as erosion, flooding, and sedimentation, and highland-lowland interactions have typically been evaluated only in these terms. However, the social and economic exchanges between those geographic areas must also be considered, not only the effects of the highlands on the lowlands, but also the effects of the lowlands on the highlands.

128. In Thailand, the work on agro-forestry, soil erosion and related topics is seen in this larger context, and it is hoped that the initial grass-roots work will lead into more comprehensive studies on the exchanges of labour, goods and capital between the highlands and the lowlands.

129. In Papua New Guinea, work which is primarily concerned with training nationals through research is being undertaken by the University of Papua New Guinea. In co-operation with UNESCO, one study is concerned with the movement of highland Goilala people from the interior to the area along the Hiritano highway and Vanapa River near Port Moresby, where the people settle both in planned schemes and more commonly as squatters. The research is focusing on the impact of settlement and cultivation, the type of cultivation systems, and the socio-cultural characteristics of the migrants. Efforts are now being made to establish similar projects in other areas, as there is a great need for both trained manpower and data on which to base management decisions.

130. The main activity within this project area is concerned with natural hazards, particularly landslides and flooding, in Nepal. Specifically, the objectives are: (1) to work with Nepalese authorities to develop a prototype natural hazards map; (2) to begin assessment of human responses to natural hazards; and (3) to lay the foundations for systematic natural hazards mapping by local workers who will be trained during the introductory phases of the project. Adapting techniques that have been developed in Switzerland and Colorado, in March 1979 a task force selected two areas of the middle mountains of Nepal with a representative range of landscape types and land-use practices for the testing and development of the mapping legend. Since training is an integral part of the project, three young Nepalese scientists are now at the University of Colorado at Boulder to participate in a mountain ecosystem training programme. The University of Colorado at Boulder became an associated institution in May 1979, with training as its primary role. In September 1979, systematic field work will begin with an interdisciplinary team of Nepalese and outside experts. The resulting maps should prove a valuable basis for land-use planning, and the project as a whole will provide a detailed case study on human responses to natural hazards. The project is being executed in close collaboration with the Man and the Biosphere programme of UNESCO.

2. Assessment of the application of knowledge to arid lands problems

131. Arid lands (including semi-arid and hyper-arid) comprise some 30 per cent of the world's land surface and include 14 per cent of the world's population, many of whom are considered the "poorest of the poor". The patchy distribution of development planning and projects has generally passed over arid lands, resulting in ever larger income gaps for their population when compared to other areas. Overgrazing, dryland farming, and the stripping of wood and other organic materials for feed and fuel can seriously impair the capacity of the land to

sustain life. Fluctuations in rainfall, a natural characteristic of arid lands, only intensifies the existing problems of poverty and environmental deterioration.

132. In recent years, considerable funds have been spent and much knowledge has been gathered about arid lands, but major mismanagement - or lack of management - continues. The United Nations Conference on Desertification, held at Nairobi from 29 August to 9 September 1977, emphasized that existing knowledge, while by no means complete, is sufficient to alleviate the most immediate problems of arid lands. Thus the Programme on the Use and Management of Natural Resources is focusing first on the factors preventing the effective use of knowledge, and then on the development and implementation of means to overcome the identified difficulties.

133. As the first step in assessing the effectiveness of the transfer of knowledge, the programme has commissioned 10 studies on topics such as the assessment of various development projects, a critical look at nomad sedentarization schemes, the variations in the perception of desertification, and the obstacles to the extension of knowledge from research stations or scientists to the people in the surrounding area. Most of these studies are now undergoing review in preparation for publication, and the results will be brought together at a workshop in late 1979. This workshop, together with an additional theoretical study now being concluded, will serve to guide the next stage of the subprogramme in developing specific management manuals, training materials, and general management guidelines.

134. Activities are centred at the University of Khartoum in the Sudan, and at a planning workshop there in late October 1978 the agreement of association was signed. The workshop, the findings of which are being published, identified five topic areas for assessment studies: (1) conservation of resources; (2) social acceptance of new ideas; (3) perception gap relative to change; (4) administrative structure and the links between plans and action; and (5) the flow of research information. Specific aspects of each topic are being investigated through a series of assessment studies in the Sudan, and these should be concluded by the end of 1980. The programme will then move into the second phase of work, trying to develop means of improving the transfer of information. Work at the University of Khartoum is being supported both by additional work in the Sudan through the University of Swansea, United Kingdom, and scholarships at the University of Khartoum and the University of Hamburg, which are being provided by bilateral funds from the Federal Republic of Germany.

135. Considerable expansion is foreseen in this subprogramme over the next two years, with emphasis in Latin America. The Vice-Rector will visit Peru, Argentina and Chile to explore the possibilities in South America, and activities there will begin with a workshop scheduled for Mexico in early 1980. Continuing contact with the Central Arid Zone Research Institute in Jodhpur, India, will probably lead to the formal establishment of a link. The University of New South Wales in Sydney, Australia, became the second associated institution in this subprogramme in April 1979. Its functions will be primarily to provide advanced training that is not available at other existing or proposed centres in the network. The first UNU Fellow in this subprogramme began training at the University of New South Wales in June 1979; other potential Fellows are now being identified.

136. In all these activities, close collaboration is maintained with the United Nations Environment Programme, which is responsible for the co-ordination of the

Plan of Action to Combat Desertification, a/ and other United Nations organizations, such as the United Nations Sahelian Office and UNESCO. Many close links are also being maintained with the academic community, as evidenced by the joint United Nations University-International Geographical Union meeting on desertification held in Arizona in January 1979.

3. Energy for rural communities

137. With the increasing global awareness of the important role played by energy in determining the quality of life, it has become apparent that most rural areas in developing countries have always subsisted at very low levels of energy consumption. With 60 per cent of the world's population in rural communities, it is appropriate that the programme begin working on energy in rural communities in developing countries. Dependable sources of substantial quantities of energy can lead to an increase in local agricultural and industrial production, conservation of the surrounding vegetation, an increase in the time available for children to learn and for mothers to care for their families, and an opportunity for the rural society to extend its horizons beyond a subsistence economy to a society which is capable of technological and cultural development among endogenous lines.

138. The emphasis of this subprogramme on the use of renewable decentralized sources to provide needed energy is dictated by the dispersed nature of most rural communities. Electrification of these communities through power grids is advancing at a very slow pace, and fossil fuels are generally too costly to provide a generally viable alternative. In view of the fact that appropriate small-scale energy systems based on renewable sources do exist at low cost, the programme is working to adapt this technology to local conditions and to devise ways of introducing new systems into rural communities. The primary goal of this subprogramme is, therefore, to conduct multidisciplinary research and advanced training which will lead to the successful introduction of energy systems based on the optimal utilization of available solar, bioconversion, wind, and other environmentally sound, renewable sources. This work is carried out primarily through existing institutions, as one of the primary goals of the University is to strengthen research and training capability in developing countries. A principal component of these efforts is an information dissemination service to provide scientists with up-to-date information concerning technologies applicable to their local conditions, and contacts with colleagues working on similar problems in other developing countries.

(a) Pilot projects

139. The primary methodology selected to achieve the programme's goals is the establishment of a series of pilot projects, each of which is concerned with the introduction of renewable energy systems to rural communities. The objective of every pilot project is to demonstrate the use of those locally available renewable energy sources most appropriate to each task within the geographical and social context. Emphasis is placed on utilizing a diversity of energy sources, while at the same time integrating these energy systems into the fabric of the local society. Thus, the multidisciplinary approach covers not only the adaptation of

a/ See A/CONF.74/36, chap. I.

existing technology to local conditions but also the economic, socio-cultural, environmental, institutional and health aspects which will determine the acceptability of the system to the users. Each pilot project will include a training component in the technological adaptation as well as in the process of selecting, integrating, and introducing components of new systems and improved traditional systems into communities in their countries.

140. The first pilot project was launched in Algeria in September 1978. The National Organization for Scientific Research is the associated institution undertaking the planning and execution of the project. A pilot village will be constructed at Ain Hnache in the Wilaya of M'Sila by the Organization's Research Centre on Architecture and Urbanism, and it will serve as the practical centre for the project. As the result of discussions at a workshop held in April 1978 at Algiers, the project, which is concerned primarily with architecture, building materials and energy use, will include the application and integration of solar energy to tasks such as water pumping, heating and desalination.

141. The second project is planned for Iran. A significant difference in the proposed Iranian project is that its emphasis will be on adapting renewable energy devices to a traditional village and its structures rather than constructing a new village, as is the case in the Algerian project. It is planned that the technology will be introduced to and assessed by the villagers through an existing system of rural health clinics. The solar energy devices to be demonstrated and used in the health clinics include autoclaves for sterilizing medical instruments, water heaters and power generation for lighting and telecommunications.

142. As a network of these village pilot projects is planned, an evaluation mission visited the Sahel region and East Africa in April and May, and discussions are continuing regarding possible projects in these areas. The annual subprogramme workshop for 1980 is also planned for this region in order to continue building the necessary scientific and institutional links.

143. Establishment of small research and training units is planned to complement these major pilot projects. Initial units will probably be associated with the joint project on Solar Food Conservation for Rural Communities (see paras. 158-159 below) and might be located in Latin America and Africa south of the Sahara.

(b) Energy studies

144. Energy planning and policy making are now given high priority in many developing countries. However, in most nations, studies of energy resources, supply, and utilization are carried out independently by government agencies on the one hand and the producers and suppliers of various types of energy on the other. The programme, realizing the value of co-ordinating these activities, is continuing to explore the possibility of establishing national centres for data collection, modelling, and planning in the field of energy. Such a centre could supply short-term and long-term policy recommendations consistent with national goals. Progress on the establishment of the first such centre is awaiting the approval of the Government of India.

(c) Dissemination of information

145. A comprehensive programme of information dissemination is being developed to break the isolation of scientists in developing countries working in the fields of solar, bioconversion, and wind energy technologies. The first phase of this effort began in January 1979 with the launching of a monthly publication ASSET: Abstracts of Selected Solar Energy Technology. Each issue includes abstracts from recently available books, articles, reports, and conference papers relevant to rural communities in developing countries. Recipients of ASSET are organized into an information exchange network of scientists working in solar energy in the developing world, with each participant expected to provide his own scientific contributions for ASSET. Once the ASSET network has stabilized, with an estimated 500 participants, distribution at cost is planned upon request of full copies of all documents abstracted in ASSET.

146. A University-sponsored Conference on Energy Alternatives took place in Honolulu in January 1979. With the co-operation of the East-West Center, the University of Hawaii, and the International Institute for Applied Systems Analysis, this conference was held to discuss the anticipated global energy situation over the next 50 years and to determine the role that alternative energy sources would be able to play in satisfying the growing energy demand. The environmental and social impacts of the various alternatives were considered at length. The proceedings of the conference were published early in the year.

147. Finally, a series of monographs on renewable energy sources and their utilization is being commissioned. These monographs are intended to provide up-to-date information on: (1) the state-of-the-art of these energy technologies and their relevance to rural communities in developing countries; (2) hitherto neglected traditional technologies and the principles upon which they operate; and (3) the social, cultural, economic, environmental, and institutional aspects involved in introducing these technologies in developing countries.

(d) Geothermal energy

148. The many developing countries possessing geothermal energy fields are at various stages in their efforts to harness this energy source. Five are already utilizing geothermal energy for electricity production and other applications, 19 have begun exploration and research programmes to determine their potential for exploitation, and 18 others are expected to commence exploration in the near future. In view of the level of interest and the fact that geothermal energy in some countries can be a very significant, environmentally and economically sound energy source, activities have been initiated in this field. A workshop on training needs in geothermal energy was held in Laugarvatn, Iceland, in July 1978, with participants from the United Nations, UNESCO, representatives from the other international training programmes, and various specialists from selected developing countries. The workshop reached a consensus on the need for a practical, high-level training programme. Thus the programme has launched such a training programme in co-operation with the National Energy Authority of Iceland. This consists of a series of eight short courses specializing in specific aspects of geothermics. On the basis of another recommendation of the workshop, the University will establish an international geothermal studies forum to co-ordinate existing training programmes, and to recommend new and modified programmes. The first meeting of this forum is planned for mid-1980 in either Italy or New Zealand.

149. The programme is planning to expand its activities by helping to strengthen an academic training course on geothermal energy at Kyushu University in Japan. Established solely for personnel from developing countries, this course will be complementary to the more practical course in Iceland. Indeed, some of the people who have completed the theoretical course in Japan may then proceed to the Icelandic programme.

D. Relations with other organizations and institutions

150. Throughout the formulation process, the Programme on the Use and Management of Natural Resources has given careful attention to other international programmes already operating in order to avoid any duplication of effort. Experts and consultants from other United Nations agencies, including UNESCO, FAO and UNEP, participated in the initial formulation of the proposed activities in 1979. Since then, representatives from these and other agencies have been involved in the planning meetings for specific projects, and this is reflected in the development of joint activities. The UNESCO Man and the Biosphere Programme has been assisting with University projects in Nepal and Papua New Guinea, and the University plans to co-sponsor a workshop in Mexico with the Intergovernmental Oceanographic Commission, UNESCO and the United Nations. In the field of geothermal energy, UNESCO, UNDP and the Centre for Natural Resources, Energy and Transport agreed that the University should play a co-ordinating role. Discussions are under way whereby the United Nations Disaster Relief Organization would provide assistance to the project on natural hazards mapping. In regard to arid lands, close communication is being maintained at both official and working levels with UNEP, as UNEP has the primary responsibility for co-ordinating all activities relating to the Plan of Action to Combat Desertification. a/ Consultations are also taking place with the United Nations Sahelian Office and the UNESCO programme.

151. In regard to non-governmental organizations, close ties are being maintained with a number of the different unions within the International Council of Scientific Unions. With the International Geographical Union, the University co-sponsored a meeting on desertification, and discussions for joint activities with the Scientific Committee on Problems of the Environment have been under way. Finally, a joint newsletter on agro-forestry is being discussed with the International Union of Forest Research Organizations. Foundations have been contacted for additional project funding, and bilateral assistance from Switzerland, the Federal Republic of Germany and the United States is strengthening various programme projects.

152. Thus through a number of personal and official ties active communication lines are being maintained, and this produces the visible results in complementary programming. On their travels, programme staff and consultants make every effort to consult personally all relevant organizations. Indeed, the vastness of the problems being attacked means that sufficient funds, efficient utilization of resources, and good planning are all more important than the potential "overlap" of agencies grappling with a complex global deficiency of knowledge.

INSTITUTIONS INVOLVED OR PROJECTED IN WORK OF THE
PROGRAMME ON THE USE AND MANAGEMENT OF NATURAL
RESOURCES

A. Associated institution

1. Actual

- (a) Bogor Agricultural University, Bogor, Indonesia
- (b) Chiang Mai University, Chiang Mai, Thailand
- (c) National Energy Authority, Reykjavik, Iceland
- (d) National Organization for Scientific Research, Algiers, Algeria
- (e) Tropical Agricultural Research and Training Centre, Turrialba, Costa Rica
- (f) University of Colorado, Boulder, Colorado, United States of America
- (g) University of Ife, Ile-Ife, Nigeria
- (h) University of Khartoum, Khartoum, Republic of the Sudan
- (i) University of New South Wales, Sydney, Australia

2. Projected

- (a) Academia Sinica, Beijing, People's Republic of China
- (b) Institute for Animal Nutrition Research, Wageningen, Netherlands (jointly with World Hunger Programme)

B. Institutions where research and training units are based

1. Actual

- (a) International Institute for Aerial Survey and Earth Sciences, Enschede, Netherlands
- (b) National Institute of Oceanology of the Indonesian Institute of Sciences, Jakarta, Indonesia
- (c) National Institute of Science and Technology, Manila, Philippines
- (d) National Planning Commission, Kathmandu, Nepal
- (e) University of Papua New Guinea, Port Moresby, Papua New Guinea
- (f) University of Swansea, Swansea, United Kingdom
- (g) Wau Ecology Institute, Wau, Papua New Guinea

2. Projected

- (a) Autonomous Agricultural University "Antonio Narro", Saltillo, Mexico
- (b) Central Arid Zone Research Institute, Jodhpur, India
- (c) Centre of Excellence for Arid Zone Studies, Quetta, Pakistan
- (d) East-West Center, Honolulu, Hawaii, United States of America
- (e) Kagoshima University, Kagoshima, Japan
- (f) Pahlavi University, Shiraz, Iran
- (g) Southeast Asian Fisheries Development Center, Manila, Philippines
- (h) University of Campinas, Campinas, Brazil
- (i) University of Hamburg, Hamburg, Federal Republic of Germany
- (j) University of Malaya, Kuala Lumpur, Malaysia

PROGRAMME ON THE USE AND MANAGEMENT OF NATURAL RESOURCES

Meetings held between July 1978 and June 1979

- (a) 3-9 July 1978 Workshop on geothermal training, Laugarvatn, Iceland
- (b) 28-29 July Programmatic workshop on highland-lowland international systems and agro-forestry systems, Port Moresby, Papua New Guinea
- (c) 10-12 August Workshop on rural energy systems, Ile-Ife, Nigeria
- (d) 18-22 September Workshop on water-land interactive systems, Bogor, Indonesia
- (e) 22-26 October Programmatic workshop on arid lands management, Khartoum, the Sudan
- (f) 13-17 November Programmatic workshop on highland-lowland interactive systems, Chiang Mai, Thailand
- (g) 13-17 November Joint WHP-NRP international conference on the state-of-the-art of bioconversion of organic residues for rural communities, followed by a two-day task force meeting, Guatemala City, Guatemala
- (h) 3-8 January 1979 Intercongress meeting of international Geographical Union Working Group on desertification in and around arid lands and UNU-NRP arid lands subprogramme, Tucson, Arizona, United States of America
- (i) 9-12 January Conference on energy alternatives, Honolulu, Hawaii, United States of America
- (j) 22-26 January Steering Committee and Advisory Committee meetings, Tokyo, Japan
- (k) 26-30 March Workshop on agro-forestry as a tool for development in tropical American region, Tropical Agricultural Research and Training Centre, Turrialba, Costa Rica
- (l) 15-22 April Task force on natural hazards mapping, Kathmandu, Nepal
- (m) 28 May-1 June Task force on resource systems theory and methodology, Seoul, Republic of Korea

- (n) 31 May Mini-symposium on decentralized recycling methods for waste management in industrialized countries, Stockholm, Sweden
- (o) 1-2 June Joint WHP-NRP task force meeting on the state-of-the-art of bioconversion of organic residues for rural communities, Stockholm, Sweden
- (p) 1-2 June Seminar on solar technology in rural settings: assessments of field experiences, Atlanta, Georgia, United States of America

VII. INTERPROGRAMME ACTIVITIES

A. Introduction

153. A major advance during the past year has been the formulation and initiation of joint activities between the three programmes. From the outset, the University has been committed to the proposition that the world's pressing problems can only be understood realistically as intimately linked aspects of the human condition, which in turn can only be understood by integrating knowledge from many disciplines and areas of the world.

154. As the programmes have developed, the complexities of the problems involved have become increasingly more evident and the need for the programmes to share perspectives more compelling. Four distinct interprogramme activities were launched over the course of the year and several others are in the early formulation stage. Continuing efforts are being made to expand the scope and number of interprogramme activities, and this will continue through such mechanisms as the joint meetings of the Advisory Committees, the second of which was held at the University's Tokyo headquarters in January 1979. A week of meetings brought together humanists and natural and social scientists from all parts of the world, leading experts in their own fields, who help shape the specific activities of the University programmes. They heard reports on the specific interprogramme activities to date and discussed ways to promote and implement further interaction.

B. Activities

155. The four activities initiated during this year were:

1. Bioconversion of organic residues for rural communities (World Hunger and Use and Management of Natural Resources Programmes)

156. In man's efforts to produce food and fibre from plants and animals, literally billions of tons of organic materials (e.g., straw, manure and various types of husks) are left as wastes. Different village-level technologies have been developed to utilize some of these wastes, but the unrealized potential of these residues is staggering because many of them are readily convertible either into energy or high-quality animal feed. Given that the basic transformations to

energy or feed are not only similar but often intertwined, this topic was identified as being appropriate for joint activities by the World Hunger and Natural Resources programmes early in 1978.

157. A task force has been established, and in the year under review a major conference was held in Guatemala with over 40 participants from 14 countries. The proceedings of the Conference are being published as a state-of-the-art report, and recommendations have been drawn up regarding further action. An evaluation mission to India identified a number of different projects at various institutions that will be brought into the bioconversion network. Providing that outside project funding is forthcoming, the Institute for Animal Nutrition Research, Netherlands, will become a joint associated institution of the two programmes (it is already collaborating with the World Hunger Programme) for work on the production of biomass, especially for use as animal feed. Another task force meeting in June recommended that a workshop on the production of feed and energy from rice straw and sago be held in South-East Asia. An agreement has been worked out with the International Cell Research Organization to co-sponsor two publications - a monograph on the microbial conversion of residues at the village level, and a handbook on tropical fermented foods.

2. Solar food conservation systems for rural communities (World Hunger and Use and Management of Natural Resources Programmes)

158. The Programme on the Use and Management of Natural Resources is actively working to find environmentally sound and socially acceptable ways of overcoming the limited energy supplies available in rural communities, while a priority area in the World Hunger Programme is the development of post-harvest food preservation technology effective in developing countries. Thus, an obvious area of common interest is the use of solar energy to dry agricultural crops, meat, and fish as a means of preservation. Particularly important is the research and advanced training necessary to optimize the speed, efficiency, and reproducibility of this process under varying climatic and geographical conditions, and to match this technology to the cultural, nutritional, and economic requirements for food conservation.

159. In January 1979, the two Advisory Committees strongly recommended the establishment of such a joint programme. In June 1979, an evaluation mission to Brazil examined the possibilities of establishing a research and training unit there on solar food conservation. As a result of this mission, a task force meeting is being planned for the University of Campinas. This meeting will bring together staff from the natural resources and world hunger programmes and outside experts to examine the state-of-the-art of solar crop drying, to propose research priorities and to recommend sites for the joint project.

3. Goals, processes and indicators for food and nutrition policy (World Hunger and Human and Social Development Programmes)

160. This collaboration is an offshoot of the World Hunger Programme activities in the interfaces of food and nutrition, agriculture, and national planning and the project on goals, processes, and indicators of the Human and Social Development Programme. The two programmes held a joint workshop in March 1979 at the World Hunger Programme's associated institution at the MIT-Harvard consortium, Cambridge, Massachusetts, United States.

4. Resource systems and traditional technology (Human and Social Development and Use and Management of Natural Resources Programmes)

161. In 1978, the Human and Social Development Programme launched a project on sharing of traditional technology. One of the studies within this project deals with the socio-economic consequences of replacing the traditional slash-and-burn or shifting agriculture with other techniques. From the perspective of the Programme on the Use and Management of Natural Resources, shifting cultivation is a major form of land management that can have severe environmental consequences when fallow periods are insufficient. The consequences of soil erosion and lowered fertility often affect an entire region, either through socio-economic means or direct physical means such as flooding and sedimentation. This shifting cultivation is intimately linked with a number of the resource systems in the Natural Resources subprogramme on the ecological basis for rural development in the humid tropics, and the recognition of these related interests has led to the development of a joint project.

162. A relatively remote area on Palawan (the Philippines) was selected for this joint project, as it fits the conceptual matrix of the subprogramme on sharing of traditional technology, and the traditional resource use systems are closely interrelated. For example, in the uplands shifting cultivation is still practised, while further downslope crops are grown on the same land annually. In the lowlands there is wet rice farming, and in the coastal area there are brackish water fish ponds. Water and the exchange of foods are therefore only the most obvious of the many links which tie these "vertically distributed" resource systems together. Moreover, these interlinking resource systems are found in a relatively small area, and the products and services involved are utilized primarily for the subsistence needs of the community rather than for trade. Thus this project is serving as a self-contained model for the analysis of production and its seasonal variations, for studies on the perception by the villagers of resource systems and the external factors which may govern their perceptions, and for studies on the decision-making processes in regard to the distribution and use of natural resources, labour, time, and capital. Through the combination of expertise in the natural and social sciences, Human and Social Development and Natural Resources can usefully complement each other.

163. After the formulation of the joint project, a task force was sent to Palawan in April 1979. This was followed by a biological and physical assessment of the project area. A joint Human and Social Development and Natural Resources meeting in Palawan is scheduled to deal with the analysis of these data and the results obtained in the first phase of the project.

C. Future plans

164. Two other programme interaction projects are now in the early formulation stage. One is concerned with the production of food and feed in the context of agro-forestry systems (live fence posts, pasture trees), and will have input from the World Hunger and Natural Resources programmes. Another more theoretical activity will be the convening of a joint Natural Resources and Human and Social Development workshop to consider the utilization of energy as an indicator or even a goal of development.

VIII. PROGRAMME SUPPORT ACTIVITIES

A. Academic services

165. This division serves the programmes of the University by disseminating the knowledge generated by them and from other sources and by providing the programmes with a variety of information necessary for their activities. Its functions include publishing, the United Nations University Centre library, and information referral.

1. Publishing

166. The University's publications programme grew considerably during the year as the results of the University's initial research activities became available. Two periodicals were launched: the Food and Nutrition Bulletin, published quarterly, and ASSET (Abstracts of Selected Solar Energy Technology), published monthly.

167. The Food and Nutrition Bulletin carries scientific articles and technical information on the world hunger problem and efforts to combat it, with special attention given to the work of the World Hunger Programme. Published in collaboration with the Sub-Committee on Nutrition of the Administrative Committee on Co-ordination, it incorporates and continues the PAG Bulletin, formerly published by the United Nations Protein-Calorie Advisory Group. ASSET contains abstracts of currently available books, articles, reports, and conference papers, with emphasis on information of value to rural communities in the developing countries. It forms the basis of an information network in developing countries among scientists and engineers in this field who might otherwise remain isolated from one another and from valuable information.

168. During the year, the University also issued 30 other publications designed to inform scientists and scholars about the work of its programmes. This series was initiated in each of three programme areas.

169. The World Hunger Programme began a Technical Publication Series which contains reports of programme workshops, conferences, and other meetings. The series permits wide dissemination of the information derived from such meetings.

170. The Human and Social Development Programme launched three publication series: Development Publication Series, Research Paper Series, and Programme Document Series. The three series serve as media for increased international dialogue and dissemination of information about the emerging concepts of development and related approaches and policies discussed and analysed at meetings around the world.

171. The Programme on the Use and Management of Natural Resources began a Technical Publication Series and a Technical Report Series which present research results, reports of meetings, and state-of-the-art reports on subjects relevant to the programme's interests. Publications in these two series are designed to be useful not only to ecologists, environmental scientists, geographers and agriculturalists, but also to social scientists and other development specialists who are concerned with development in rural settings.

172. The programme also initiated a new type of publications activity in which well-known authorities will write a complete book on their area of concern. One eminent scholar has been contracted to write the first such volume, which is a book on energy-saving architecture. Continuing efforts are being made to find ways to disseminate information more effectively through local languages by co-operating with local publishers.

2. Referral and library services

173. The referral programme of Academic Services continues to undergo steady development. The University library is growing and its on-line retrieval system has started operation. Effective distribution channels for publications have been explored and are being developed. Much other informational work, including budget record control and mailing lists, are being served through the computer system maintained by Academic Services.

B. Information services

174. In September 1978, the newly-appointed Director of Information presented a paper on Information Policy and Operations, and its recommendations were accepted by the Executive Committee. The paper defined the objective of the information work as being "to increase world-wide awareness and understanding of the University among opinion-formers and policy-makers, particularly in academic, scientific, governmental and international communities, and to gain their support for its activities."

175. Taking into account the stage of the University's development and the resources available for information work, the paper's principal recommendation was that activity should be concentrated on the printed word and on relations with the media. A programme of revised and new publications was proposed, and by the end of the year the programme had been implemented to cover the following:

(a) An improved quarterly Newsletter containing more news about the programmes, including a "Work in Progress" supplement containing excerpts from research reports and proceedings of workshops and symposia of the University;

(b) An illustrated annual report containing additional material intended to make it a comprehensive statement of the University's role and activities;

(c) A brochure intended primarily for use in connexion with fund-raising containing essential information about the University including members of the Council and Advisory Committees, co-ordinators, and staff;

(d) A leaflet about the University entitled "Talking Points" intended to provide, in a convenient form, interesting facts and figures about the University and its activities.

176. The paper recommended that information representatives should be established in certain media centres. An experienced Information Officer was appointed in London (to cover Western Europe and agencies and publications serving Africa and the Arab world), and periodic contract arrangements were made in the United States. As a result, articles about the University have appeared in leading publications such as Le Figaro (France), the Daily Telegraph, the Guardian.

the Times Higher Educational Supplement (United Kingdom), the New York Daily News, the Washington Post, the Washington Star, the Christian Science Monitor (United States), and Al Hawadess - Events (Middle East). In addition, feature articles about the University were distributed very widely by Reuters and Gemini News Agencies. A number of specialist publications carried articles or news about programme activities.

177. Consultative meetings, workshops, and symposia attracted local publicity. United States Information Centres were helpful in assisting with this activity.

178. The Editor of the Newsletter visited associated institutions in the United States and Canada and attended a University conference in Hawaii. During the year a start was made in establishing a photographic library. Commissioned photographers visited West Africa and Thailand to photograph University projects. In co-operation with the Department of Public Information, United Nations, New York, new sequences were filmed for an updated version of the film "Knowledge Without Boundaries".

179. The Director of Information recommended that an increased information effort should be directed to Japan. An experienced Japanese journalist was recruited as Information Officer (Japan) to assist with this task.

180. A special Japanese edition of the University film was produced, featuring a well-known public affairs commentator of NHK (Japan Broadcasting Corporation) and interviews with Japanese scholars associated with the University. Distribution is being arranged through the United Nations and UNESCO associations in Japan and public film libraries. The premiere of the film was held in January, attended by about 200 representatives of the Japanese Government, educational and other organizations. Mr. Yoshinori Maeda, a member of the Council, spoke before the film was shown.

181. Links were established with the United Nations Association (47 chapters) and UNESCO Federation (243 chapters) in Japan. Each publishes a monthly newspaper with a combined circulation of 70,000. The University contributes a monthly feature to each about its activities. A number of articles of special interest to Japanese readers were written for the Japanese edition of the University Newsletter.

182. The Asian symposium on Socio-cultural Development Alternatives in a Changing World held in Kyoto in November 1978 attracted considerable publicity in the general and specialized press and on television, some of which continued for several months.

183. Only modest progress was made with three important tasks identified by the Director of Information in his paper: (1) distribution of the Newsletter and other publications is still only moderately efficient; a start was made with recategorizing the mailing lists and improving their quality, but a lot remains to be done; (2) news gathering within the University and its networks is an essential prerequisite of effective distribution of news to the media: this involves identifying and transforming often complex and specialist material into more accessible form. A small panel of free-lance writers resident in Tokyo was created to help with this work and, as a start, the regular production of feature articles on programme activities began; (3) co-operation with associated institutions, research units, and regional and project co-ordinators is an important aspect of the University's information work on which real progress remains to be made.

184. The Director of Information attended two meetings of JUNIC (Joint United Nations Information Committee), which brings together information specialists from the United Nations and its agencies. One subject which has been discussed thoroughly in this committee is the new information order and the work of the non-aligned news pool co-ordinated by Tanjug Agency based in Yugoslavia. Information Services is actively exploring ways of co-operating with the pool and its constituent members.

C. Administrative services

185. The Administrative Services Division continues to provide management, legal, conference, and administrative services and support to all the programmes, divisions and staff at the University Centre in Tokyo and in the field.

186. Following the establishment of a Budget Section, the Division now comprises six sections under the supervision of the Director of Administration. The other five sections are: Legal, Finance, Conference and General Services, Personnel and the University Liaison Office in New York. The world-wide expansion of the activities of the University has placed a heavy load on all sections, and it has been found necessary to increase the number of General Service staff members by three to enable the Division to continue to discharge its functions efficiently. The total complement of the Division, for fiscal year 1980, is now 9 Professional staff members and 30 General Service staff members. However, the percentage of financial resources allocated to the Administrative Services Division in the University's budget has declined from 15 per cent in 1978 to 13 per cent in 1979 and is projected at 12 per cent in 1980.

187. Substantial progress was made in all sections of the Division as the staff gained more experience and became more familiar with the rules and regulations of the United Nations system. Training for all categories of staff was organized both at the University Centre in Tokyo and abroad.

IX. FUND RAISING, FINANCE AND BUDGET

A. Fund raising

188. There were significant break-throughs in fund raising during the year. Major pledges to the Endowment Fund were made by two leading industrialized countries: the United Kingdom of Great Britain and Northern Ireland pledged approximately \$US 10 million and the Federal Republic of Germany approximately \$US 4.4 million. Among the developing countries, Thailand made an endowment-level pledge of \$US 0.5 million. The Governments of Chile, Malaysia, Nigeria, the Philippines, and the United Republic of Tanzania made annual pledges or contributions for the first time. Japan contributed another \$US 10 million, bringing its total contribution to \$US 80 million against its generous pledge of \$US 100 million.

189. The British pledge was made to that section of the Endowment Fund designated for work concerning the developing countries; provision for pledges for this purpose was approved by the Council of the University at its ninth session in December 1977. The new pledges received this year serve to endorse the importance of the endowment fund principle for the financing of the University and reflect confidence in its initial programme activities.

190. In all, a total of approximately \$US 28 million was pledged and/or contributed this past year, compared with \$US 16 million in 1977-78. Of the past year's total, approximately \$US 16 million constitutes new pledges, the remainder being payments on pledges already made and annual contributions. Pledges to the Endowment Fund and operating funds from 26 States now total \$US 142.4 million, of which \$US 92.3 million has been received.

191. Contributions for projects were also received from a number of government-related and non-governmental sources. Part of these funds were provided directly to hosts of United Nations University events. During the year under review, a total of approximately \$US 368,580 was received from or promised by the following sources: Canada - International Development Research Center; Japan - Toyota Foundation, Japan World Exposition Commemorative Fund, and Agricultural Chemical Society/Japanese Society of Food and Nutrition; Mexico - Centre for Economic and Social Studies on the Third World; United Kingdom - International Planned Parenthood Federation; United States of America - Ford Foundation, Henry Luce Foundation, Rockefeller Foundation, and United Nations Association, Long Beach Chapter.

192. Small contributions have also been received from individuals in Japan. UNESCO has committed a total of \$US 18,000 for programme activities. Moreover, a number of Governments, institutions and others have contributed funds in cash and in kind towards the organization of consultative meetings, workshops and seminars which are difficult to quantify. It should also be noted that the University's financial support to associated institutions, research units and other elements of the University networks has in turn helped in obtaining extra funds for the activities of those institutions from Governments and other sources within their countries.

193. The Rector and the Vice-Rector for Planning and Development visited or revisited 15 countries between 1 June 1978 and 31 May 1979. In addition, staff members of the Planning and Development Division visited 10 countries. The University Information Representative in London has undertaken a number of preparatory visits to countries in Europe. The University liaison office in New York keeps in regular contact with the Permanent Missions to the United Nations.

194. Dr. Abdelsalam Majali, Council member, accompanied the Vice-Rector for Planning and Development on a fund-raising mission to Kuwait and Iraq in October 1978. His participation proved to be extremely valuable in establishing high-level contacts with government officials.

195. During the year under review, the Planning and Development Division, in co-operation with the programme and other divisions of the University, evolved specific fund-raising strategies for various regions of the world. The Division also helped evolve a medium-term budgetary plan for the University for the five-year period 1979-1983. The basic premise is that the University has reached a level at which, without major growth in administrative costs, it is possible to continue increasing programme activities throughout the world if adequate funds are obtained. While the long-term goal for the Endowment Fund still remains at \$US 500 million, the University could confidently continue on a steady course of programme development, provided that pledges and contributions to the Endowment Fund reach a level of approximately half the \$US 500 million goal within that five-year period.

196. To mobilize the full co-operation and support of the embassies of various countries located in Tokyo and the Permanent Missions to the United Nations in New York, the Planning and Development Division has organized comprehensive briefing sessions for embassy officials; similar briefings have been held, both individually and collectively, for members of a number of missions to the United Nations. These briefings have proved to be very useful and will be continued.

197. It should be recalled that, unlike most United Nations organizations, the University is not financed by annual subventions from the General Assembly or Member States. Income is derived mainly from interest from an Endowment Fund which is a capital fund made up of voluntary contributions from Member States. The Endowment Fund has two parts: one for support of all the University's activities and another limited to support of activities concerning developing countries. In addition, the University receives annual operating contributions and specific project support.

198. The endowment fund concept provides stability for the planning and execution of the University's programme activities, ensures the objectivity of the University's research, and protects it from many pressures that might accompany other forms of funding. The University's Charter grants it autonomy within the framework of the United Nations, including full authority to allocate its funds as it deems appropriate for its programme activities. Its financial administration is conducted within the rules and regulations of the United Nations, and its funds are audited by the United Nations Board of Auditors.

B. Finance and budget

1. Income

199. During the 12-month period ending 31 December 1978, the assets of the United Nations University amounted to \$US 141,170,428. This amount includes \$US 47,146,213 of pledged contributions not yet received from Governments.

200. The total funds available to the General Operating Fund for 1978 amounted to \$US 7,430,402, including interest income of \$US 6,709,120 earned by the Endowment Fund during the year.

201. The 1979 budget of \$US 10,180,240 is based on income from the following sources:

	<u>US dollars</u>
Interest income from the Endowment Fund	7 300 440
Operating and specific programme contributions	578 350
Unencumbered fund balance	2 301 450
Total	<u>10 180 240</u>

202. Operating and specific programme contributions are those intended by the donor Governments for expenditure for current operations and not as contributions to the Endowment Fund. Use of these contributions for current operations, provided authorization is given by the donor Governments, was approved by the Council at its ninth session.

203. The unencumbered fund balance represents the excess of income over expenditure during the last four years. Until Endowment Fund income is disbursed, the unencumbered fund balance remains on deposit, earning interest.

2. Expenditures

204. During 1978, the total obligations incurred for the operations of the University amounted to \$US 7,446,864, of which \$US 1,707,796 was unliquidated obligations as at 31 December 1978. The actual 1978 expenditure and the planned expenditure for 1979 are shown below.

	<u>1978 actual</u>	
	<u>US dollars</u>	<u>Percentage</u>
Programme Division	5,121,378	68.77
Administrative Services	1,397,507	18.77
Rector's Office	467,511	6.28
Planning and Development	318,149	4.27
Council	142,319	1.91
	<hr/>	
	7,446,864	100.00
	<u>1979 planned</u>	
	<u>US dollars</u>	<u>Percentage</u>
Programme Division	7,533,440	74.00
Administrative Services	1,357,000	13.33
Planning and Development	515,200	5.06
Rector's Office	490,100	4.82
Council	284,500	2.79
	<hr/>	
	10,180,240	100.00

205. The components of the programme division's approved expenditure for 1979 are as follows:

	<u>US dollars</u>	<u>Percentage</u>
Programme (external) <u>a/</u>	4,926,800	65.40
Programme (internal) <u>b/</u>	1,134,700	15.06
Information Services	1,011,980	13.43
Academic Services	459,960	6.11
	<hr/>	
	7,533,440	100.00

a/ Includes all costs of programme activities with the exception of staff salaries and common staff costs.

b/ Includes all costs of staff salaries and common staff costs of the three programmes.

206. Resources allocated in 1979 to the three programmes for external and internal costs are shown below:

US dollars

	<u>External</u>	<u>Internal</u>
World Hunger Programme	1,877,150	290,400
Human and Social Development Programme	1,662,000	443,500
Use and Management of Natural Resources	1,387,650	400,800
	4,926,800	1,134,700

207. When the 1979 programme and budget document was prepared, the expected and attainable income was projected at \$US 10,180,240. As at 1 May 1979, it is clear that the projected income figures for 1979 will be exceeded by over \$US 1,000,000. The additional funds will be used primarily for expanded programme activities.

SUPPORT FROM GOVERNMENTS FOR ENDOWMENT FUND
AS AT 29 JUNE 1979

(In United States dollars)

	<u>Pledged</u>		<u>Received</u>
Japan	100,000,000 (September 1973)	(over 5 years)	80,000,000
United Kingdom	10,416,667 (December 1978) <u>a/</u>	(over 5 years)	2,000,000
Venezuela	10,000,000 (August 1975)	(over 5 years)	4,000,000
Saudi Arabia	5,000,000 (March 1977)	(over 5 years)	2,070,000
Sudan	5,000,000 (December 1976)	(over 5 years)	-
Germany, Federal Republic of	4,395,604 (April 1979)	(over 4 years)	-
Ghana	2,500,000 (May 1976)	(over 5 years)	1,250,000
Senegal	1,000,000 (August 1977)	(over 5 years)	226,193
India	750,000 (February 1977)	(over 5 years)	243,750
Thailand	500,000 (March 1979)	(over 5 years)	100,000
Sweden	- (August 1975)		231,215
Holy See	- (February 1977)		50,000
TOTAL	139,562,271		90,171,158

a/ Earmarked for the Special Section of the Endowment Fund for support of programme activities concerning developing countries.

SUPPORT FROM GOVERNMENTS FOR OPERATING CONTRIBUTIONS AND
PROJECT SUPPORT

(Received or pledged as at 29 June 1979)

	<u>US dollars</u>	
Austria	238 800	(January 1977)
	61 600	(October 1977)
	72 000	(September and November 1978)
Sweden	208 877	(November 1977)
	114 155	(February 1979)
Norway	180 018	(April 1976)
	189 251	(May 1977)
	194 780	(February 1978)
	195 313	(Pledged December 1978)
Switzerland <u>a/</u>	182 796	(Pledged February 1978; paid \$115,491)
Netherlands	100 000	(July 1976)
	100 000	(July 1977)
	100 000	(December 1978)
Zaire	100 000	(July 1977)
Libyan Arab Jamahiriya	50 000	(December 1976)
	50 000	(February 1977)
	50 000	(Pledged August 1977)
	25 000	(Pledged September 1978)
Philippines	50 000	(Pledged June 1978; paid \$10,000)
Nigeria	50 000	(December 1978)
	30 000	(June 1979)
Greece	25 000	(July 1978)
	20 000	(January 1976)
	20 000	(December 1977)
Senegal	22 087	(January 1975)
	24 005	(July 1978)
United Republic of Tanzania	20 000	(February 1979)
Ghana	14 750	(May 1975)
	14 790	(November 1975)
	14 790	(June 1977)
Malaysia	10 000	(July 1978)
	10 000	(March 1979)
Tunisia	10 000	(Pledged November 1977; paid \$5,183)
Chile	5 000	(March 1979)
Cyprus	1 291	(June 1978)
 TOTAL	 <u>2 554 303</u>	

a/ Project support.

PROJECT SUPPORT FROM OTHER SOURCES

(Received or pledged as at 29 June 1979) a/

	<u>US dollars</u>	
<u>Canada</u>		
International Development Research Centre	42 735 <u>b/</u>	1978
<u>Japan</u>		
Toyota Foundation	25 150	1978
Japan World Exposition Commemorative Fund	16 745 <u>b/</u>	Pledged 1979
Agricultural Chemical Society/Japanese Society of Food and Nutrition	3 450 <u>b/</u>	Pledged 1979
<u>Mexico</u>		
Centre for Economic and Social Studies on the Third World	12 500 <u>b/</u>	1978
<u>United Kingdom of Great Britain and Northern Ireland</u>		
International Planned Parenthood Federation	30 000 <u>b/</u>	Pledged 1979
<u>United States of America</u>		
Ford Foundation	108 000	Pledged 1978; paid 83,000
Henry Luce Foundation	90 000	Pledged 1978; paid 60,000
Rockefeller Foundation	20 000 <u>b/</u>	1977/1978
United Nations Association, Long Beach Chapter	2 000	1978/1979
<u>UNESCO</u>	18 000 <u>b/</u>	Pledged 1978; paid 5,000
TOTAL	<u><u>368 580</u></u>	

a/ Small contributions have also been received from individuals in Japan.

b/ Paid directly to hosts of United Nations University events.

ANNEX V

Members of Programme Advisory Committees and co-ordinators of subprogrammes and projects of the United Nations University

A. World Hunger Programme

1. Members of the Advisory Committee

- *Dr. Guillermo Arroyave, Interregional Co-ordinator for Western Hemisphere and UNU Resident Co-ordinator;
- Dr. Moisés Béhar, Chief, Nutrition Unit, World Health Organization, Geneva, Switzerland;
- Dr. Sol H. Chafkin, Division of National Affairs and Social Development, The Ford Foundation, New York, United States of America;
- Dr. Freda Chale, Programme Officer, United Nations Children's Fund, Dar-es-Salaam, Tanzania
- Dr. Wenche Barth Eide, Institute for Nutrition Research, School of Medicine, University of Oslo, Oslo, Norway;
- Dr. Yujiro Hayami, Faculty of Economics, Tokyo Metropolitan University, Tokyo, Japan;
- Dr. Mogens Jul, Professor of Food Preservation, Royal Veterinary and Agricultural University, Copenhagen, Denmark;
- Dr. Paul Lunven, Chief, Food and Nutrition Assessment Service, Food Policy and Nutrition Division, Food and Agriculture Organization of the United Nations, Rome, Italy;
- Dr. H. A. B. Parpia, Senior Adviser, United Nations Conference on Science and Technology for Development, Research Development Centre, Agriculture Department, Food and Agriculture Organization of the United Nations, Rome, Italy;
- Dr. D. Picou, East Caribbean Medical Scheme, University of the West Indies General Hospital, Trinidad, West Indies;
- *Dr. Fred T. Sai, Interregional Co-ordinator for Africa, Middle East, and Europe;
- Prof. Tasho A. Tashev, Institute of Nutrition, Sofia, Bulgaria;

* Ex officio member.

Dr. Roger G. Whitehead, Director, Dunn Nutritional Laboratory, University of Cambridge and Medical Research Council, Cambridge, United Kingdom.

2. Co-ordinators

Dr. Guillermo Arroyave, UNU Resident Co-ordinator, United Nations University - World Hunger Programme Interregional Co-ordinator for Western Hemisphere, Institute of Nutrition of Central America and Panama, Guatemala City, Guatemala.

Dr. J. C. Dillon, UNU Resident Co-ordinator, Centre for Research in Nutrition, Laval University, Quebec, Canada;

Dr. Rodolfo Florentino, UNU Resident Co-ordinator, Nutrition Center of the Philippines, Makati, Philippines;

Dr. Miguel Layrisse, UNU Resident Co-ordinator, Venezuelan Institute for Scientific Research, Caracas, Venezuela:

Dr. Shinji Matsuura, UNU Resident Co-ordinator, National Food Research Institute, Tsukuba, Japan;

Dr. C. P. Natarajan, UNU Resident Co-ordinator, Central Food Technological Research Institute, Mysore, India;

Dr. Fred T. Sai, United Nations University - World Hunger Programme Interregional Co-ordinator for Africa, Middle East and Europe, Institute of Statistical, Social and Economic Research, University of Ghana, Legon, Ghana:

Dr. E. M. Thain, UNU Resident Co-ordinator, Tropical Products Institute, London, United Kingdom;

Dr. Ricardo Uauy, UNU Resident Co-ordinator, Institute of Nutrition and Food Technology, University of Chile, Santiago, Chile;

Dr. Barbara Underwood, UNU Resident Co-ordinator, Programme Assistant to the Senior Adviser of World Hunger Programme, the International Food and Nutrition Policy Programme, Massachusetts Institute of Technology and the Harvard School of Public Health, Cambridge, Massachusetts, United States of America.

B. Human and Social Development Programme

1. Members of the Advisory Committee

*Dr. Anouar Abdel-Malek, Project Co-ordinator;

Dr. Samir Amin, Director, African Institute for Economic Development and Planning, Dakar, Senegal;

* Ex officio member.

Dr. Elise Boulding, Professor, Dartmouth College, Hanover, New Hampshire, United States of America;

Dr. Celso Furtado, Professor of Economic Development, University of Paris, Paris, France;

*Dr. Johan Galtung, Project Co-ordinator;

Dr. Hab. J. W. Golebiowski, Professor and Director, Labour Institute, Warsaw University, Warsaw, Poland;

Dr. Manuel Perez Guerrero, State Minister in Charge of International Economic Affairs, Caracas, Venezuela;

*Dr. Takeshi Hayashi, Project Co-ordinator;

*Dr. Amilcar Herrera, Project Co-ordinator;

Dr. J. Ki-Zerbo, former Director of Education, National Ministry of Education, Ouagadougou, Upper Volta;

Dr. Rajni Kothari, President, Indian Council of Social Science Research, New Delhi, India;

Dr. Michio Nagai, Professor of Education, International College, Sophia University, Tokyo, Japan; former Minister of Education, Japan;

Dr. K. Soedjatmoko, Adviser, National Development Planning Agency, Republic of Indonesia, Jakarta, Indonesia;

*Mr. Chandra Soysa, Project Co-ordinator;

Dr. Rodolfo Stavenhagen, El Colegio de México, Mexico City, Mexico;

Dr. Alain Touraine, Institute of Human Sciences, National Centre of Scientific Research, Paris, France.

2. Co-ordinators

Dr. Anouar Abdel-Malek, Project Co-ordinator for the Project on Socio-Cultural Development Alternatives in a Changing World, Institute of Human Sciences, National Centre of Scientific Research, Paris, France;

Dr. Johan Galtung, Project Co-ordinator for the Project on Goals, Processes and Indicators of Development, c/o UNITAR Office in Geneva, Geneva, Switzerland;

Dr. Takeshi Hayashi, Project Co-ordinator for the Project on Technology Transfer, Transformation and Development: The Japanese Experience, Research Planning and Co-ordinating Office, Institute of Developing Economies, Tokyo, Japan;

Dr. Amilcar Herrera, Project Co-ordinator for the Project on Research and Development Systems in Rural Settings, State University of Campinas, Campinas, São Paulo, Brazil;

* Ex officio member.

Mr. Chandra Soysa, Project Co-ordinator for the Project on Sharing of Traditional Technology, Marga Institute, Colombo, Sri Lanka.

C. Programme on the Use and Management of Natural Resources

1. Members of the Advisory Committee

*Dr. Eric Bird, Project Co-ordinator;

Mrs. Margaret Biswas, International Institute for Applied Systems Analysis, Laxenburg, Austria;

*Dr. Gerardo Budowski, Project Co-ordinator;

Dr. James M. Harrison, Adviser and Consultant, former Assistant Deputy Minister, Department of Energy, Mines and Resources, Canada, and former Assistant Director-General, Programme on Science and Technology, UNESCO, Ottawa, Canada;

Dr. I. Kobori, Professor, Faculty of Science, University of Tokyo, Tokyo, Japan;

*Dr. Maurice Lévy, Project Co-ordinator;

*Dr. Jack A. Mabbutt, Project Co-ordinator;

*Dr. G. J. Afolabi Ojo, Project Co-ordinator;

*Dr. Kenneth Ruddle, Project Co-ordinator;

Dr. Sanga Sabhasri, Secretary-General, National Research Council of Thailand, Bangkok, Thailand;

Dr. Didin S. Sastrapradja, Deputy Chairman for Natural Resources, Indonesian Institute of Sciences, Jakarta, Indonesia;

Dr. Gilbert F. White, former Director, Institute of Behavioral Science, University of Colorado, Boulder, Colorado, United States of America;

Dr. Michael J. Wise, Professor, London School of Economics and Political Sciences, London, United Kingdom.

2. Co-ordinators

Dr. Eric Bird, Project Co-ordinator for the Project on Coastal Zone Management, Department of Geography, University of Melbourne, Parkville, Victoria, Australia;

Dr. Gerardo Budowski, Project Co-ordinator for the Project on Agro-Forestry Systems, Head, Natural Renewable Resources Programme, Tropical Agricultural Research and Training Center, Turrialba, Costa Rica;

* Ex officio member.

Dr. Jack D. Ives, Project Co-ordinator for the Project on Highland-Lowland Interactive Systems, Director, Institute for Arctic and Alpine Research, University of Colorado, Boulder, Colorado, United States of America;

Dr. Maurice Lévy, Project Co-ordinator for the Project on Energy for Rural Communities, Laboratory of Theoretical and High Energy Physics, Pierre and Marie Curie University, Paris, France;

Dr. Jack A. Mabbutt, Project Co-ordinator for the Project on Assessment of the Application of Knowledge to Arid Lands Problems, The University of New South Wales, Sydney, Australia;

Dr. G. J. Afolabi Ojo, Project Co-ordinator for the Project on Rural Energy Systems, Department of Geography, University of Ife, Ile-Ife, Nigeria;

Dr. Kenneth Ruddle, Project Co-ordinator for the Project on Water-Land Interactive Systems and Consultant, Research Associate, National Museum of Ethnology, Osaka, Japan.

ANNEX VI

Staff members of the United Nations University

Office of the Rector

Mr. James M. Hester, Rector
Mr. Saburo Okita, Senior Adviser to the Rector
Mr. Jose V. Abueva, Secretary of the University
Mr. Jose Mata, Special Assistant

Planning and Development

Mr. Alexander A. Kwabong, Vice-Rector
Mr. S. Chidambaranathan, Senior Governmental and Institutional Relations Officer
Mr. Vagn Kjellberg, Governmental and Institutional Relations Officer

World Hunger Programme

Mr. Nevin S. Scrimshaw, Senior Adviser to the Rector
Ms. Maria A. Tagle, Senior Programme Officer
Mrs. Rozanne Chorlton, Assistant Programme Officer
Mr. William Rand, Programme Officer (Research)

Human and Social Development Programme

Mr. Kinhide Mushakoji, Vice-Rector
Mr. Ponna Wignaraja, Senior Programme Officer
Mr. Pedro Henriquez, Programme Officer
Mr. Hossam Issa, Programme Officer

Programme on the Use and Management of Natural Resources

Mr. Walther Manshard, Vice-Rector
Mr. Richard S. Odingo, Senior Programme Officer
Mr. Walter C. Shearer, Programme Officer
Mr. Lee H. MacDonald, Assistant Programme Officer

Academic Services

Mr. Shigeo Minowa, Chief

Information Services

Mr. R. A. Fleming, Director

Administrative Services Division

Mr. Douglas T. Manson, Director of Administration
Mr. Zdenek Seiner, Legal Counsel
Mr. Rabinder N. Malik, Chief of Conference and General Services
Mr. Leslie Schenk, Chief of Personnel
Mr. Akio Komatsuki, Chief of Finance and Japan Government Liaison Officer
Mr. Wayne Ching, Budget Officer

New York Liaison Office

Mr. Hironobu Shibuya, Chief, Liaison Office, United Nations Headquarters

ANNEX VII

Opinion of the Council of the United Nations University
on the proposal of the Republic of Costa Rica for the
establishment of a University for Peace

(To be submitted to the Secretary-General of the
United Nations as requested by the Rector and
the Council of the United Nations University)

1. The Council of the United Nations University has given careful consideration to General Assembly resolution 33/109 of 18 December 1978 requesting the Secretary-General to transmit the text of the proposal of the President of the Republic of Costa Rica for the establishment of a University for Peace within the system of the United Nations University.
2. The Council had also before it the text of decision 5.1.2 adopted by the Executive Board of UNESCO at its one hundred and seventh session.
3. The Council had the privilege of hearing at its twelfth session the imaginative and constructive proposal of the President of Costa Rica as expounded by the Vice-President of the Republic of Costa Rica.
4. In considering the proposal, the Council has taken into full account the objectives of the University as set out in article 1, paragraph 1, of its Charter "The United Nations University shall be an international community of scholars, engaged in research, post-graduate training and dissemination of knowledge in furtherance of the purposes and principles of the Charter of the United Nations." Moreover, the Charter states in article 1, paragraph 3, that the research programmes of the University shall include among other subjects "co-existence between peoples having different cultures, languages and social systems; and/ peaceful relations between States and the maintenance of peace and security". Foremost, therefore, among the purposes of the Charter of the United Nations which the University is called upon by its own Charter to advance is the maintenance of international peace and security.
5. All the present programmes of the University - the World Hunger Programme, the Human and Social Development Programme and the Programme on the Use and Management of Natural Resources - have been designed to help bring about conditions, structures and processes of development that contribute to international peace and security. Within its Human and Social Development Programme particularly, the United Nations University has been developing a research project in the area of human rights, peace and international law in collaboration with several organizations, including the United Nations Educational, Scientific and Cultural Organization, the United Nations Commission on Human Rights, the Hague Academy of International Law, and various peace research institutes. The University hopes to expand this project if additional resources are made available.

6. Given the United Nations University's concern and ongoing programmes for international peace and development, the Council of the University welcomes the initiative taken by the President of the Republic of Costa Rica.

7. Since the bold idea of the University for Peace is still in the first stage of its formulation, the Council cannot determine at this point in time how and whether the United Nations University could include the proposed university within its system. Concerned as it is with the difficult problem of the financing of that system, it stresses that the financing of the proposed new university should be planned and organized in such a manner that it involves no diversion of financial resources for the United Nations University.

8. The Council would give the fullest consideration in the future, however, to including the University for Peace as an associated institution if, as an autonomous body, it establishes programmes which contribute to the effective operation of the network of collaborating institutions within the United Nations University system. At present this network includes 23 associated institutions and more than 80 research and training units.

كيفية الحصول على منشورات الأمم المتحدة

يمكن الحصول على منشورات الأمم المتحدة من المكتبات ودور التوزيع في جميع أنحاء العالم . استعلم عنها من المكتبة التي تتعامل معها أو اكتب الى : الأمم المتحدة ، قسم البيع في نيويورك أو في جنيف .

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