



THE UNITED NATIONS UNIVERSITY

condition of being universal in scope or character. **PROOF**
sality.

Universality (yū·nivərsæ·liti). n. 1. The fact, quality, or condition of being universal, in various senses. 2. The collective whole of something regarded collectively, as the world, a people, a nation.

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Universe (yū·nivərs). n. ~~1~~. The whole of created or existing things regarded collectively; all things, including the earth, the heavens, and all that is in them, considered as constituting a systematic whole.

Universitas (yūnivərsitæs). n. *Sc. Law*. The whole (of an estate or inheritance).

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U·ni·ver·si·ty (yūnivərsiti), n. pl. -ties. [^] a degree-granting educational institution embodying colleges, with teachers and students pursuing, at a particular place, the higher branches of learning; the buildings, classrooms, etc., belonging to such an institution.

2. New/
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[^] An international community of scholars working to increase understanding of the causes and solutions of major global problems, e.g., world hunger, use and management of natural resources, and human and social development. As UNITED NATIONS UNIVERSITY, founded 1973, with headquarters in Tokyo and a network of research and advanced training operations in some sixty countries.

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U·p·grade, n. A. *sb.* An upward slope or incline. b. *On the up-grade*: ascending, rising; *fig.* improving, making progress.

Uphold, v. 1. *trans.* To support or sustain physically; to keep from falling or sinking. 2. To support the cause or contribute to the preservation or prosperity of ME. b. To maintain at the same level or standard. c. To sustain spiritually.

†**Up·on**, *adv.* 1. Upon it; upon its surface; upon one's person. 2. Thereupon, thereafter.

Upper (v·pə), *adj.* 1. Consisting of or occupying higher (and usu. more inland) ground ME. 2. Situated higher than or above another or others. Freq. in proper names of villages, etc. b. Of rooms, etc.: Occupying or forming (part of) the higher or highest portion of a building.

THE UNIVERSITY IN BRIEF

What Is It?

The United Nations University is a new kind of institution—not a traditional degree-granting university with a campus, but a world-wide network of research and advanced training operations designed to:

- Increase understanding of causes and solutions of major global problems;
- Fill critical gaps in knowledge and expertise on such problems by organizing collaboration among scientists and scholars across national boundaries;
- Strengthen research and advanced training in developing countries;
- Collaborate with other international organizations and avoid duplication of costly research.

Where Is It?

Its planning and co-ordinating headquarters is located in Tokyo. Its networks of research and advanced training, in collaboration with research institutions, are in many countries. Work is conducted with research centres, universities, and scholars throughout the world. About 100 institutions are already involved in some 60 countries in Africa, Asia, Europe, the Middle East, and North and South America.

How Is It Funded?

The University is funded primarily by income from a permanent Endowment Fund which ensures the objectivity of its research and protects it from many pressures that would accompany other forms of funding. The ultimate goal is a fund that will produce annual budget support of at least US\$25 million for world-wide research and advanced training operations. As of June 1978, Japan has pledged US\$100 million and has paid US\$70 million. Nineteen other countries have pledged or contributed US\$26.4 million.

What Subjects Are Now Being Researched?

Three main subject areas are being researched. Examples of work going on in each include:

World Hunger Programme

- producing urgently needed information about protein and energy requirements in people's diets in developing countries which will be directly applicable in agricultural policy planning and the fight against malnutrition;
- developing and disseminating knowledge about techniques to reduce huge current losses (up to 40 per cent) of food after harvest in developing countries due to rodents, insects, and spoilage;

Human and Social Development Programme

- providing a global, non-political forum for dispassionate, reasoned evaluation of development strategies by scholars from many regions, ideologies, and cultures;
- assessing the process by which technologies—both modern and traditional—can best suit the needs of the rural poor of the world, one-quarter of all humanity;

Programme on the Use and Management of Natural Resources

- making knowledge about solar energy technology available to the developing world, where it can have immediate impact on the quality of life;
- analysing the reasons for failure to apply existing knowledge to improve the lives of peoples of arid lands, the "poorest of the poor", who make up one-eighth of the globe's population.

How Does the University Benefit the World?

The University provides:

- Increased understanding of complex global problems and their possible solutions;
- Practical knowledge in areas of deep concern to the world—human needs, energy, the environment, and food availability and consumption;
- More rapid and effective communication of advanced knowledge produced by researchers throughout the world;
- Useful and cost-effective sharing of research responsibilities among institutions working on identical problems in various parts of the world—avoiding duplication and needless repetition of experiments;
- Increased effectiveness of development assistance from the industrialized countries;
- Increased capacity of developing countries to achieve self-reliance.

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THE UNIVERSITY AT WORK — SOME EXAMPLES

Looking at problems comprehensively

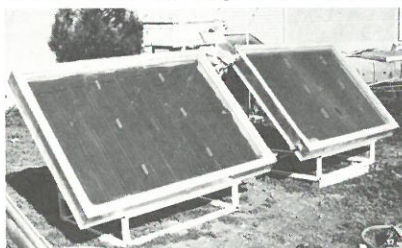
Reducing malnutrition is not simply a matter of protein or calorie deficiencies; even when the precise nature of the deficiency is known, the remedy has to be acceptable socially and culturally and has to be compatible with the planning policies of the local government.



Political scientist Chadwick Alger of Ohio State University, known for his studies of how typical American citizens are affected by global interdependence, directs the US component of a multidisciplinary evaluation by scholars of 17 nations of the elements of development. Development strategists have become increasingly aware that development based on pursuit of economic growth alone has not been successful, but there is little agreement, and often confrontational debate, about what should replace it. This University project is providing an urgently needed scholarly forum in which planners from all forms of society, from wealthy and poor nations, can come together as equals to discuss objectively the different emphases that should be given to development.

Finding out what knowledge already exists and how it can be used more effectively

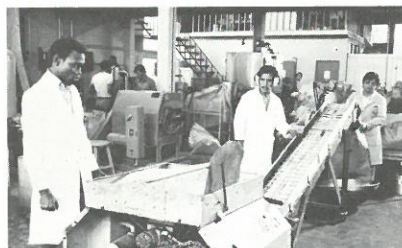
It is often assumed that once information is available it naturally flows to useful outlets; in fact the reverse is often true — much of the world's knowledge lies unused behind dams of ignorance, indifference, and inefficiency.



French physicist Maurice M. Lévy, a leading authority on solar energy use and senior consultant to the University, notes that advances in solar energy technology are made largely in the industrialized countries, but research results rarely reach scientists active in this field in developing countries, where their use in rural areas could have immediate impact. A University network will connect and transmit results of relevant work on alternative energy sources (solar, biogas, and wind) to several hundred researchers, most of them in the developing world. The aim is to direct the latest scientific information where it can be used immediately, reducing the scholarly isolation which now often produces duplication and inefficiency with resultant critical manpower losses.

Identifying important gaps in existing knowledge and organizing work to fill them

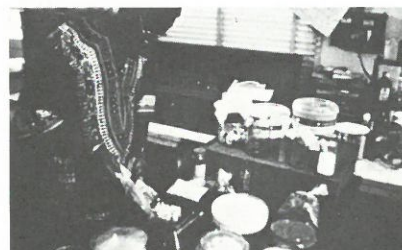
Research on the same subject in different institutions and countries is often duplicated, while other subjects are ignored; if research is better planned and co-ordinated, useful results can be achieved more quickly and effectively.



Nigerian biochemist A.O. Ketiku, a UNU Fellow in Guatemala, is doing chemical and biological evaluations of nutritive qualities of common Nigerian foodstuffs. His work is part of a collaborative research effort by scientists from Latin America, Asia, and the Caribbean which this year is expected to produce important, badly needed information about basic human nutritional requirements in the developing world, particularly in the humid tropics. Until now, data about diet requirements has been based almost entirely on tests among college-age students in the West, obviously inappropriate standards for populations subject to chronic infections, and other environmental stresses, in the tropics.

Strengthening the ability of scholars and institutions in the developing world to solve their own problems

Many of the best researchers from developing countries gravitate to industrialized countries; often it would be better for their work, and for their countries, if they were encouraged by financial and intellectual support to continue their research at home.



Senegalese food scientist Cheikh N'Diaye, a UNU Fellow, is studying improved packaging techniques for transportation and storage of agricultural goods in Senegal at a leading Indian research institute. Confronted with staggering losses of food after the harvest due to rodents and insects, Indian scientists have developed techniques to conserve and store food which are directly applicable to similar problems in Senegal. The Central Food Technological Research Institute in Mysore provides the central direction in the University's studies of post-harvest losses. On his return to Senegal, N'Diaye's new expertise will be passed onto other UNU Fellows to be trained at the Institute of Food Technology in Dakar, which will soon join the network of research institutes active in this area of the University's concern.

Maintaining an open mind on problems and their solution

It is all too easy, once commitment is made to a particular approach to solving a problem, to ignore signs that it is faulty or inadequate; the intellectual objectivity of a university is an important counter to this, particularly if it can be combined with an international overview reflecting many perspectives.



Sri Lankan development expert Chandra Soysa, Director of the University-affiliated Marga Institute in Colombo, argues that "... all types of efficient, rational technology, both traditional and modern, should exist side by side. It is wrong to assume that development means reaching the high points in a technological continuum." The Marga Institute is co-ordinating a University investigation in villages of eight Asian nations on how and why traditional technology develops, why it is sometimes more appropriate than modern technology and which technologies might be successfully transferred to other societies. Success could point the way to broader education efforts among one billion people, a quarter of humankind, still living in pre-industrial conditions and depending on agriculture for their livelihood.

THE COUNCIL OF THE UNIVERSITY

"ARTICLE IV, 1. There shall be a Council of the United Nations University . . . to be established on a broad geographical basis with due regard to major academic, scientific, educational, and cultural trends in the world, taking into account the various fields of study . . . The Council shall have twenty-four members serving in their individual capacity, who shall be appointed jointly by the Secretary-General of the United Nations and the Director-General of UNESCO . . . The Rector shall be a member of the Council . . . 4. The Council shall . . . Formulate principles and policies which shall govern the activities and operations of the University . . ." (*From the Charter of the University*)

Council Members

Appointed Members

Dr. Marcel Roche, Investigator Titular, and former Director, Venezuelan Institute for Science Research, Caracas, Venezuela (Chairman of the Council)

Dr. Jacob Festus Ade-Ajayi, Vice-Chancellor, University of Lagos, Lagos, Nigeria, and former Chairman of the Council (1976–1977)

Dr. (Mrs.) Estefania Aldaba-Lim, Special Representative for the International Year of the Child, UNICEF, New York, USA, and former Vice-President, Philippine Women's University

Dr. Pawel Bozyk, Professor of Economics, Central School of Planning and Statistics, Warsaw, Poland

Lord Briggs, Provost, Worcester College, University of Oxford, Oxford, UK

Dr. Carlos Chagas, Director, Institute of Biophysics, Rio de Janeiro, Brazil

Dr. Wilbert Kumalija Chagula, Minister for Community Affairs, Arusha, the United Republic of Tanzania, and former Chairman, Tanzania National Scientific Research Council

Dr. Jean Coulomb, President, Academy of Sciences, Paris, France

Dr. P.N. Dhar, Professor of Economics, Institute of Economic Growth, University of Delhi, India (Vice-Chairman)

Dr. Shams E. El-Wakil, Ambassador, Permanent Delegate of the Arab Republic of Egypt to UNESCO, Paris, France, and former Minister of Higher Education

Dr. Roger Gaudry, President, International Association of Universities, Montreal, Canada, former Rector of the University of Montreal, and former Chairman of the Council (1974–1975)

Dr. Hans Löwbeer, Chancellor of the Swedish Universities, Stockholm, Sweden

Dr. Felipe E. MacGregor, former Rector, Catholic University, Lima, Peru

Mr. Yoshinori Maeda, former President, Japan Broadcasting

Corporation, Tokyo, Japan

Dr. Abdelsalam Majali, Minister of Education and Minister of State for Prime Ministry Affairs, Amman, Jordan, and former President of the University of Jordan (Vice-Chairman)

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

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

Dr. Majid Rahnema, Special Advisor to the Prime Minister and to the Imperial Organization of Social Services, Member of the Executive Board of UNESCO, and former Minister for Science and Higher Education, Teheran, Iran

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

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

Dr. Edward W. Weidner, Chancellor, University of Wisconsin, Green Bay, Wisconsin, USA

Dr. (Mrs.) Ines Wesley Tanaskovic, UNESCO National Commission of Yugoslavia, and Professor of Informatics, Medical Academy, Belgrade, Yugoslavia (Vice-Chairman)

Dr. Eric Eustace Williams, Prime Minister, Trinidad and Tobago

Dr. (Miss) Keniz Fatima Yusuf, former Secretary, National Education Council, Ministry of Education, Islamabad, Pakistan

Rector

Dr. James M. Hester

Ex-officio Members

Mr. Kurt Waldheim, Secretary-General, United Nations, New York, USA

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

Dr. Davidson Nicol, Executive Director, United Nations Institute for Training and Research, New York, USA



During the year under review, the Council of the University held its ninth session in Tokyo on 5–9 December 1977, and its tenth session in Vienna on 26–30 June 1978 at the invitation of the Government of Austria. During these ten days of meetings, the Council continued to orient and shape the development of the University and its programmes. At the tenth session, the Council discussed the work of the University during the year 1977–1978 and issued its annual report to the General Assembly and the Economic and Social Council of the United Nations and the Executive Board of UNESCO.

In summary, the Council:

Wholeheartedly reaffirmed the Council's belief in the objectives of the University's Charter and in the programme priorities and programme activities launched since 1975.

Welcomed the substantial expansion of activities in 1977–1978, noting that an international network had been created involving 60 countries and linking 16 associated institutions.

Noted that 20 UNU Fellows had now completed their courses of training and returned to their countries.

Emphasized that the three programmes of the University were directly related to each other as part of a common strategy; a joint meeting in April 1978 of the three Programme Advisory Committees, concerned with the interaction and integration of the three programmes, had been a landmark in the history of the University.

Stressed the need for critical scrutiny and evaluation of the programmes and for the widest diffusion of information about their results.

Expressed deep concern about the financial problems of the University and concluded that unless substantial new funds were received the planning, scale, and mode of operation of the University would have to be thoroughly reviewed.

Noted the progress made in the three programmes of the University (*see detailed programme reports*).

Emphasized that:

a. The expanded activities of the University in 1977–1978 now made it possible to assess its contribution to the United Nations family, not merely in terms of aspiration but of performance.

b. Much of the year 1977–1978 was necessarily spent at this stage of the University's history in extensive and continuing consultations. The work of the University was still not widely enough known and there had to be frequent dialogue with individuals, institutions, and governments.

c. The Council intended to critically evaluate the operation of the United Nations University, particularly the process of implementation and application of its programmes, and to give an account of the results in future reports.

Noted that the contribution of the University as a new autonomous institution is specific and yet complementary to that of other academic bodies and of United Nations agencies, particularly UNESCO and UNITAR. It is part of the United Nations system, and as such can have a wide impact through its linkages to

all parts of that system. Yet as an autonomous university, it can draw freely upon science and experience in diverse cultures and establish the conditions that encourage creative thought. It is charged by its Charter (Article 1, paragraph 2) with identifying "pressing global problems of human survival, development, and welfare" and with pursuing multidisciplinary programmes of research and training designed to deal with those problems. As such global problems multiply, they require radically new ways of approaching them.

Emphasized that the University, which is creating its own global network system across the boundaries of nations and of academic disciplines, was already able in 1977–1978 to draw on the services of scholars from all parts of the world and on pioneering individuals and teams engaged in scattered community action throughout the world. The University has been seeking at every point to establish the conditions for creative research and for effective interchange.

Considered that the University's form of organization, along with its emphasis on tackling problems at different levels in a comprehensive framework, distinguished it both from a traditional university and from a specialized United Nations agency; but that it must not only initiate and, when necessary, co-ordinate, but also complement and share. Although the global network system was unique, specificity not uniqueness was a better criterion for defining the objectives and content of each University programme.

Agreed that the University made an increased public impact in 1977–1978, generating interest and enthusiasm in many parts of the world, including some of the developing countries which looked to its future with great hopes.

Reiterated its deep concern that unless there was a substantial improvement in the financial position in 1978–1979, it would be impossible to maintain and develop the present pattern, let alone to extend it and realize the full potential of the University within the terms of its Charter.

(The foregoing summary is taken from the Proceedings of the tenth session of the Council.)

The basic premise of the United Nations University is the fact of global interdependence....Its task is to organize scholarly collaboration to identify and alleviate "pressing global problems of human survival, development, and welfare".



THE THIRD YEAR, 1977–1978*

"The vision . . . has now clearly become reality."

The United Nations University, as an international community of scholars, expanded rapidly during the past year. The vision of such a community, explicitly stated in its Charter, has now clearly become reality.

The experience and perspectives gained in developing this unique new institution and its world-wide activities have enabled the University to define an operating concept that gives unity and coherence to its three priority programmes concerned with world hunger, human and social development, and natural resources. One of the most exciting intellectual events in the University's young history took place in April 1978, when scholars and scientists from a number of disciplines and from many parts of the world, who serve on its three Programme Advisory Committees, met jointly for the first time to consider increased programme interaction and launch joint activities in different parts of the world. Such interaction is becoming a major distinctive characteristic of the University's work as the programmes develop more fully.

During the year under review, the University continued to develop its networks of collaborating scholars and scientists, now from some 60 countries, whose work is planned and co-ordinated from a small centre in Tokyo with a staff of seventy-five from 16 countries.

Operationally, "the University" can be described as the members of its governing Council, Programme Advisory Committees, headquarters and field staff, the research and training staff of associated institutions, research units, other participating scholars, and Fellows appointed for advanced training.

Programme Advisory Committees

While the formulation of general principles and policies is the responsibility of the Council, working in collaboration with the Rector and his senior staff, the more specific activities of the University's programmes are shared by the Programme Advisory Committees. Each programme is assisted by an Advisory Committee made up of leading scholars and scientists from the world-wide academic community. Collectively, they provide continuing and critical planning and evaluation and increase the University's outreach throughout the world.

Relations with Other Institutions

As a general principle, the University seeks to develop relationships with other institutions around the world that are directed towards mutually beneficial partnerships, maximum flexibility, and avoidance of rigid formulae. A guiding policy, consistently endorsed by the Council, is that all such relationships should be closely related to the University's programme priorities.

Three different types of relationships have been approved by the Council in response to Charter directives: associated institutions, incorporated institutions, and contractual or other arrangements with appropriate institutions or individuals.

Associated institutions are organizations with which the University signs formal agreements of co-operation to accomplish specific research, advanced training,

and knowledge dissemination objectives over specified periods of time. The University seeks to form associations with institutions, or parts of institutions, where the programme activities of the University can be most successfully advanced and regional needs can be met. The first such associations were formed in 1976; by the end of 1978, the University will have 26 associated institutions, 20 of them in developing countries.

Incorporated institutions are organizations established by the University to fulfil specific needs and whose governance is the responsibility of the University. No incorporated institutions have been established to date.

Contractual arrangements are made with institutions or units within institutions or with individual scholars to conduct research and undertake programme activities within project networks. This type of relationship has proven to be of particular benefit to the Human and Social Development Programme, providing flexibility and variety in the development of its research networks. The other two programmes — in world hunger and natural resources — are also awarding research grants to individuals and institutions or commissioning research reports designed to advance programme objectives.

UNU Fellowships

UNU fellowships are awarded for purposes of advanced training and research at the various associated institutions of the University. The main objective of the fellowships is to train professionals in multidisciplinary applied research and in policy formulation and planning for posts in key institutions in developing countries.

UNU fellowships, thus far, have been awarded only by the World Hunger Programme, which was the first programme to be launched. Fifty persons have been awarded fellowships to date, 9 of whom are women. They come from 23 countries in Asia, Africa, the Middle East, and Latin America. Twenty have completed their studies and 29 are presently in training.

In addition, seven UNU senior fellowships have been awarded to date to heads of applied research and training institutions or departments in universities to enable them to visit appropriate associated institutions and observe the organization and management of research, including project planning and evaluation.

Fellowship selection includes a preliminary assessment of a potential candidate and his institutional environment by a University representative or a University-nominated site visitor. Following a favourable assessment, a selection committee in the associated institution where training is proposed evaluates the candidate.

Appraisal during the training period includes periodic reporting by the Fellows, assessment by the tutor/adviser in the institution, and evaluation by the selection committee periodically and after completion of training. Upon recommendation by the associated institution, Fellows who satisfactorily complete training receive a certificate issued jointly by the associated institution and the University. A major aspect of the fellowship programme is continuing follow-up of the Fellows' work after they return to their home countries to assist them in effective application of their expertise.

* From the Rector's Report to the Council at the tenth session in Vienna, 26–30 June 1978.

WORLD HUNGER PROGRAMME

"focused on . . . adequate nourishment for all human beings."

The World Hunger Programme is focused on the most basic material human need: adequate nourishment for all human beings. By June 1978, the programme was associated with eight institutions, and negotiations were in progress to add four others.

The specific projects within the programme were concerned, as in 1976–1977, with (1) Human Nutritional Needs and their Fulfilment; (2) Post-Harvest Conservation of Food; and (3) Food and Nutrition Objectives in National Planning and Development. The last of these projects was conceived of as providing the programme's main focus.

World Hunger Programme Associated Institutions

The eight associated institutions working in the programme's activities are:

- Institute of Nutrition of Central America and Panama, Guatemala
- Central Food Technological Research Institute, Mysore, India
- Nutrition Center of the Philippines, Manila
- Institute of Nutrition and Food Technology, Santiago, Chile
- Tropical Products Institute, London, UK
- Venezuelan Institute for Scientific Research, Caracas
- International Food and Nutrition Policy and Planning Program of the Department of Nutrition and Food Science and the Center for International Studies, Massachusetts Institute of Technology, and the Harvard School of Public Health, Cambridge, Massachusetts, USA
- Centre for Research in Nutrition, Laval University, Quebec, Canada

University Fellows in research and training at the Institute of Nutrition of Central America and Panama in Guatemala are involved in activities relevant to the three sub-programmes. This gives them a better understanding of the multifaceted nature of world hunger problems, the multisectoral approaches to their solution, and the multidisciplinary research needed. Applied research projects undertaken by the Fellows include:

- studies on the effect of energy intake on protein requirements, of Central American pre-school-age children in determining the most favourable energy-protein ratio in local diets;
- biochemical and physiological studies to determine the consequences of new national salt iodization

programmes;

- work on the nutritional value and physical characteristics of Nigerian diets, and development of inexpensive, practical approaches to modify them to increase their nutritional potential;
- studies on ways of meeting iron needs through diet enrichment, and the implications of iron deficiency with special reference to its effects on immune response status;
- research on population factors and characteristics as determinants of infant mortality rates, and the effect of nutrition and other means to modify them;
- studies on the contribution that plant breeding can make to selecting better varieties of legumes, with higher nutritional value, and physical and chemical characteristics more suitable for processing with low-cost technology.

The Central Food and Technological Research Institute in India offers facilities for study and investigation of problems of post-harvest conservation and preservation and processing of foods, directed particularly to the typical needs of developing countries. The applied research initiated by the Fellows as part of their training includes the following:

- development and testing of inexpensive packaging made from indigenous material to prevent losses of grains, fruits, and vegetables during handling, storage, and transportation;
- development of simple methods of preservation of fruits for off-season use, with particular reference to preservation of fruits and vegetables in the form of concentrates;
- utilization of oilseed meals for the development of nutritious food for child-feeding programmes;
- development of appropriate models for efficient management of research and development institutions in the area of food science and technology in the developing countries;
- primary processing of cereal grains;
- development of a training programme in food science and technology in the Sudan.



UNU Fellows from Indonesia and Burma (left) working on a field project of the University's associated institution in the Philippines, the Nutrition Center of the Philippines. In the World Hunger Programme, fifty UNU fellowships have been awarded to Fellows from 23 countries.

An FAO Expert Consultative Meeting on simple technologies for conservation, milling, and processing of grain legumes was held at the Central Food Technological Research Institute during November 1977. The Fellows at the Institute and two Fellows from the Institute of Nutrition of Central America and Panama took part in the meeting.

Three training cycles involving University Fellows have been completed by the Nutrition Center of the Philippines. The training has provided opportunities to the Fellows to plan and implement food and nutrition programmes at national and community levels, and included several weeks of practical training in rural areas.

During the last week of the second training cycle, the Center arranged for a study mission of 11 senior health programme administrators from the countries of the participating Fellows. The purpose was to familiarize the visitors with the joint United Nations University-Nutrition Center of the Philippines training programme. By informing these administrators about the content and objectives of the training, it is expected that they will be able to make better use of the Fellows after their return. In keeping with this, mission members indicated that Fellows from their countries trained earlier have returned to positions of responsibility in the area of food and nutrition planning.

The five interlinked projects being undertaken at the Institute of Nutrition and Food Technology in Chile deal with human nutritional requirements and the capacity of local diets to satisfy them, and with food and nutrition objectives in national development planning. The projects are:

- (1) Iron deficiency anaemia in infancy and its prevention;
- (2) Evaluation of a Chilean mixed diet to meet the protein and energy requirements of adults in low-income groups under customary living conditions;
- (3) Role of education motivation in stimulating breast-feeding in marginal urban communities;
- (4) Evaluation of environmental sanitation as a tool for nutrition improvement;
- (5) The purchasing power of low-income urban families and its effects on food consumption as the basis for developing economic indices to predict the groups susceptible to high nutritional deficiency.

The results of these investigations can be used in planning suitable programmes for nutrition improvement throughout Latin America and in many other countries.

University association with the Venezuelan Institute for Scientific Research extends the Institute's effective programme of applied research on the problem of human iron deficiency to other Latin American countries. It will contribute to its prevention through the identification of suitable foods and procedures for iron fortification in these countries, and in other parts of the world. The Institute co-ordinates its research with its counterparts in Guatemala and Chile.



In the developing world six out of ten children suffer from malnutrition and undernourishment. UNU Fellows and researchers at the University's associated institution in Guatemala, the Institute of Nutrition of Central America and Panama, are working in all three sub-programmes of the World Hunger Programme and producing urgently needed information about nutritional requirements in traditional diets.



A UNU Fellow from Senegal at work in the laboratory of the University's associated institution (Central Food Technological Research Institute) in Mysore, India. Fellowships enable scientists and research administrators, holding important positions, to broaden their experience by visiting University associated institutions in other countries having problems similar to those in their own.

The Tropical Products Institute in London provides training in post-harvest food conservation which supplements that at the institute in Mysore, India. It is one of the leading centres for the study of post-harvest problems, including the various scientific, technological, and economic issues arising in post-harvest handling, processing, preservation and storage, quality control, marketing, and utilization of foods as renewable natural resources. The Institute is particularly well placed to offer Fellows from Africa experience in practical research in selected areas of food conservation.

The International Food and Nutrition Policy and Planning Program of the MIT-Harvard consortium offers Fellows multidisciplinary training that includes nutrition and food science, as well as the social, economic, political, administrative, and public health considerations necessary in the improvement of the nutritional status of developing countries. Formal training is followed by field experience in the Philippines, Guatemala, or India.

The Centre for Research in Nutrition of Laval University in Canada will provide Fellows with training and applied research experience, designed specifically for Fellows from French-speaking Africa, in post-harvest food conservation and food and nutrition policy considerations in planning.

The World Hunger Programme is also negotiating with the following institutions:

- Department of Nutrition and Food Science of the University of Ghana, Legon, in collaboration with the other University departments, the Institute of Statistical, Social, and Economic Research, the Food Research Institute, and the Institute for Population Studies

- Institute of Food Technology, Dakar, Senegal
- Institute of Nutrition Sciences and Food Technology, Teheran, Iran
- National Food Research Institute, Tokyo, Japan

The associations being developed with the Department of Nutrition and Food Science at the University of Ghana and with the Institute of Food Technology in Senegal are intended to strengthen their applied research activities and to help them to develop appropriate training programmes. The Centre for Research in Nutrition of Laval University will lend particular assistance to the development of the Senegalese institute. The Institute of Nutrition Sciences and Food Technology in Iran is expected to become an associated institution of the University later in 1978. A co-operation with the National Food Research Institute in Japan is under discussion. This institution could provide training for Asian and other scientists that would help reduce the nearly one-third of harvested rice lost in milling and processing.

Applied Research Projects

Research project grants are awarded by the World Hunger Programme to support the training of Fellows and to help strengthen applied research competence and research networks in developing countries. The research projects will yield new knowledge for application in solving food and nutrition problems.

To help fill a clear gap in existing knowledge of human nutritional needs, the programme is concentrating on the problem of protein and energy requirements under conditions prevailing in developing countries.



The Nutrition Center of the Philippines is one of eight associated institutions of the World Hunger Programme. It contributes particularly to the advanced training work of the University in the planning and implementation of food and nutrition programmes at national and community levels.

The research instruments developed at the programme's technical workshop held early in 1977 are being tested through University-supported studies in five research centres and through studies in three other research centres without United Nations University financial assistance. With respect to iron deficiency anaemia and vitamin A deficiency, two other serious types of malnutrition, grants are being awarded for research to supplement work already being carried out by other groups and agencies and where knowledge gaps hampering decision-making are clearly identified. University research on iron utilization is being carried out in this manner at associated institutions in Chile and Venezuela.

Practical research projects on post-harvest conservation of food have been initiated. Several Fellows trained in this area will soon return to their positions and are expected to develop appropriate research programmes.

Research on important aspects of food and nutrition policy and planning is urgently required for the formulation of realistic objectives. To remedy the lack of competent researchers in this area, the University will develop and support fellowship training through its association with the MIT-Harvard consortium's International Food and Nutrition Policy and Planning Program.

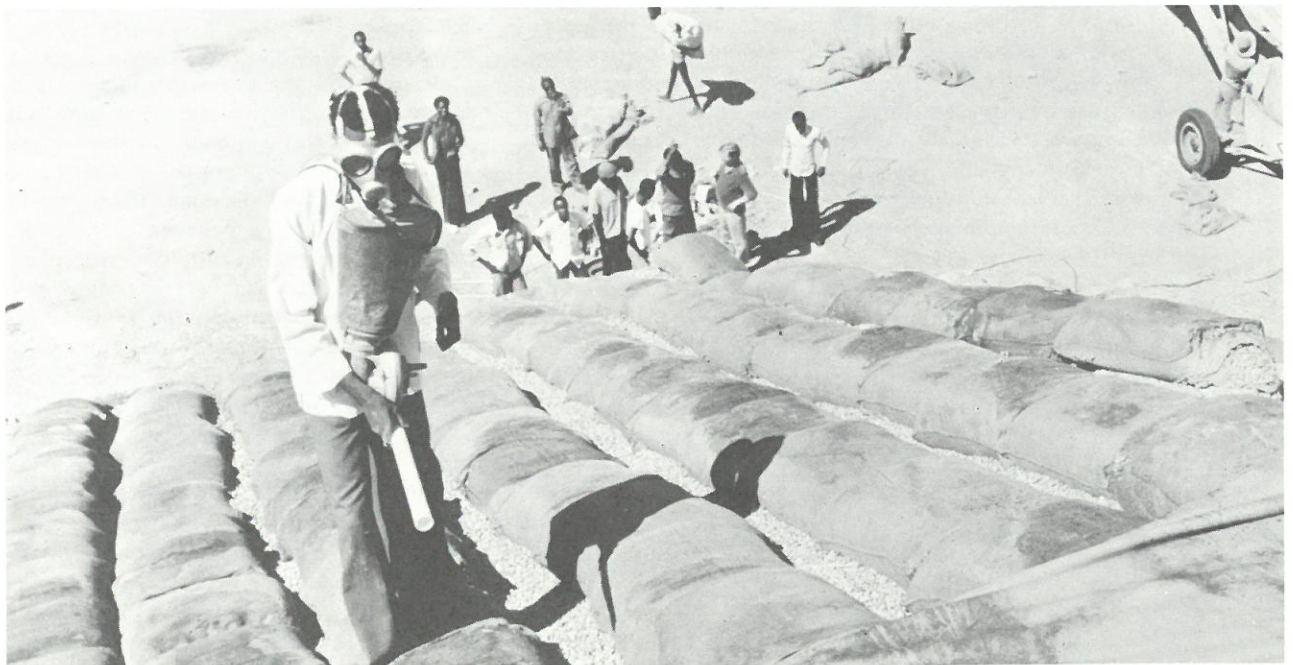
Programme Co-ordination

Co-ordination of programme activities is presently undertaken through meetings of the World Hunger Programme Advisory Committee and its Steering Committee, the sub-committees on Fellowship and on Research, meetings of the Resident Co-ordinators of associated institutions, University staff visits to associated institutions, and exchange visits among institutions.

The part-time Interregional Co-ordinators of the programme, appointed early in 1978, play an important role in co-ordinating the activities of the various associated institutions in addition to their other duties.

Advisory Committee Meeting

The programme's Advisory Committee held its second meeting on 17–21 October 1977 at the Institute of Nutrition of Central America and Panama in Guatemala. Reviewing programme work since its first year, the Advisory Committee emphasized the need for various ways of linking the associated institutions so that they can benefit from their wide variety of experiences and standardize procedures and co-ordinate network and programme development efforts. The Committee indicated that the long-term academic future of the University will depend considerably on the successful development of the fellowship training and on the fullest utilization of the experience of the Fellows after their return to their home countries. Both the associated institutions and the Fellows are expected to help in evolving effective networks of institutions through which the University can pursue its goals.



Effective preservation of crops after harvesting is probably as important to ensuring adequate world food supplies as increasing the size of harvests. In Senegal work on post-harvest conservation at the Institute of Food Technology is linked with University associated institutions in Canada, India, and the United Kingdom.

"examination of often difficult but always fundamental human issues."

The Human and Social Development Programme, which was in its second year of operation, was pursued through a network of five associated institutions, in Switzerland, Sri Lanka, Mexico, Iran, and Argentina, and about 50 research units scattered throughout the world. The programme brought together scholars from different disciplines, schools of thought, cultural traditions, and ideologies. In examination of often difficult but always fundamental human issues, three major areas of study are being pursued based on the research activities of the University: (1) Problems of Development, (2) Technology for Development, and (3) Education for Development.

During the year under review, the programme concentrated on continued clarification of its underlying assumptions and on building its networks of research institutions around the world in order to advance the formulation, organization, and implementation of its research projects and activities. As a result, the nature and role of the programme have been delineated, and an increasing number of scholars have begun to work together in internationally co-ordinated networks in search of new goals, processes, and indicators of development and of ways to improve the technical basis of life among the rural poor in developing countries.

The five institutions now associated with the programme are:

- Institute of Development Studies, University of Geneva, Geneva, Switzerland
 - Marga Institute, Colombo, Sri Lanka
 - El Colegio de Mexico, Mexico City
 - Bu-Ali Sina University, Hamadan, Iran
 - Latin American Faculty of Social Sciences, Buenos Aires, Argentina
- (See box for individual research units)

The programme is seeking to lay the foundations on which the University, as the academic arm of the United Nations, can develop as a critical forum for the international academic and scientific community on development problems and alternatives. It is implementing its research projects and activities under three major components: two sub-programmes, (1) Problems of Development and (2) Technology and Development, and a project in Education for Development.

The principal parts of the two sub-programmes are:

- (1) Problems of Development,
 - a. Research project on Goals, Processes, and Indicators of Development,
 - b. Research project on Socio-Cultural Evaluation of Development Alternatives in a Changing World,
 - c. Research activity on Human Rights in the Context of Development;
- (2) Technology and Development,
 - a. Research project on Sharing of Traditional Technology,
 - b. Research project on Research and Development Systems in Rural Settings,
 - c. Research project on Technology Transfer, Transformation and Development: The Japanese Experience,
 - d. Research project on Transfer of Technology among Developing Countries.

The University as a Critical Forum on Development

As a basis for its broad conception of the role of the University in international development, the Human and Social Development Programme has adopted certain assumptions that are indispensable for its successful development and for the effectiveness of the University. The assumptions recommended by the programme's Advisory Committee in its meeting on 3 to 5 November 1977 at El Colegio de Mexico in Mexico City are:

- a. the "pressing global problems of human survival, development, and welfare" are closely interrelated, therefore, a programme treating the gaps in knowledge separately is unsatisfactory;
- b. the solution of world-wide problems depends not only on technical knowledge on each problem, 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 and not to fill a few gaps in knowledge here and there;
- 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 of ways of solving them, based on various disciplinary backgrounds and cultural traditions.

Accordingly, the programme assumes that the intellectual challenge posed by pressing global problems can be met only if scholars from different schools of thought, belonging to different disciplines and cultural traditions, can engage in a sustained dialogue with each other. This requires an international, pluralistic, and multidisciplinary forum. Through the Human and Social Development Programme, the University is establishing such a forum.

In order for the University to serve as a development forum, the programme is integrating its research projects and activities through common themes, interdisciplinary approaches, internetwork collaboration, interprogramme co-ordination, and dialogue. Each project and activity is undertaken by a network of research units which base their research on different conceptual frameworks. Thus, a dialogue leading to critical comparison and evaluation of concepts and findings can take place through the exchange of researchers and pre-publication material and through joint sub-projects, workshops, and educational activities.

The programme will also serve as a critical forum for the international academic and scientific community by organizing regional or disciplinary seminars, joint projects, and joint activities with United Nations research institutions and international or regional scientific organizations. For such collaboration, it is crucial that the programme initiates and carries out innovative research projects and activities representing major conceptualizations. Thus it can play a catalytic role in the world-wide academic and scientific community.

PROBLEMS OF DEVELOPMENT

Goals, Processes, and Indicators of Development

The scholars designing this research project defined development as the development of people in specific societies, not the growth or productivity or the effectiveness of any abstract system. Such a concept means the satisfaction and further development of human needs, both material and non-material. Departing from conventional practice in research on development, the project emphasizes an integrated approach to the research on development goals, on the processes leading to those goals, and on the indicators of progress in development efforts.

Since the first research meeting in Tokyo, in April 1977, 21 research institutions have been selected to form the network of this project and 24 sub-projects have been developed. A second project meeting took place in Geneva in January 1978 to discuss the conceptual framework and methodology, and six workshops are scheduled in 1978 on selected project themes. The first workshop, Visions of Alternative Societies, was held in April 1978 in Mexico. Other workshops will be on Alternative Life Styles, Human Needs, Dialogues, World Models, and the Linking of Human Rights and Human Needs.

The project seeks new perspectives that will make it possible for leaders, administrators, and citizens to deal effectively with development problems in various types of societies. Consequently, the project is devising organization and research methods that will build into the inquiry the conceptions that people themselves have of their needs, of the goals of development, and of processes leading to development. Dialogues will be initiated both with planners and decision-makers concerned with development problems and people in general in selected project areas. The research network involves institutions in both industrialized and developing countries so that scholars from both may work together in evolving concepts and strategies that will focus on the satisfaction of human needs everywhere.



The Marga Institute in Colombo, Sri Lanka, is one of the associated institutions of the Human and Social Development Programme. It is co-ordinating a research network working in several Asian countries on the Sharing of Traditional Technology project.

RESEARCH UNITS

Goals, Processes, and Indicators of Development

Bariloche Foundation, San Carlos de Bariloche, Argentina
University of Sussex, Brighton, UK
University of Bucharest, Bucharest, Romania
Mershon Center, Ohio State University, Columbus, Ohio, USA
African Institute for Economic Development and Planning (IDEP), Dakar, Senegal
University of Dar-es-Salaam, Dar-es-Salaam, Tanzania
Indian Council of Social Science Research, New Delhi, India
Hiroshima University, Hiroshima, Japan
University of the West Indies, Kingston, Jamaica
University of Oslo, Oslo, Norway
McGill University, Montreal, Canada
University of Science Malaysia, Penang, Malaysia
University of Papua New Guinea, Port Moresby, Papua New Guinea
Max Planck Institute, Starnberg, Federal Republic of Germany
Polish Academy of Science Committee "Poland Year 2000", Warsaw, Poland
Peace Research Institute Sweden (PRIS), Göteborg, Sweden
United Nations Institute for Training and Research (UNITAR), New York, USA

Society for International Development (SID), Rome, Italy
Union of International Associations (UIA), Brussels, Belgium
World Future Studies Federation (WFSF), Rome, Italy
Science Centre Berlin, Berlin, Federal Republic of Germany
Socio-Cultural Comparative Evaluation of Development Alternatives in a Changing World

National Centre of Scientific Research, Paris, France
University of Kyoto, Kyoto, Japan
National University of Mexico, Mexico City, Mexico
Central University of Venezuela, Caracas, Venezuela
University of Teheran, Teheran, Iran

Research and Development Systems in Rural Settings

Latin American Faculty of Social Sciences, Mexico City, Mexico
Ethiopian Science and Technology Commission, Addis Ababa, Ethiopia
Economic Development Foundation, Rizal, Philippines
Institute for Studies of Rural Development, "Maya A.C.", Mexico City, Mexico

Sharing of Traditional Technology

Thammasat University, Bangkok, Thailand
Development Research and Consulting Group, Kathmandu, Nepal
Dian Desa, Yogyakarta, Indonesia
University of Science Malaysia, Penang, Malaysia
Development Academy of the Philippines, Manila, Philippines
Gakushuin University, Tokyo, Japan

Technology Transfer, Transformation, and Development: The Japanese Experience

Institute of Developing Economies, Tokyo, Japan
Tokyo Metropolitan University, Faculty of Social Sciences and Humanities, Tokyo, Japan
Seikei University, Department of Humanities, Tokyo, Japan
Senshu University, Faculty of Commerce and Economics, Tokyo, Japan
Aichi University, Department of Law and Economics, Nagoya, Japan
Shinshu University, Faculty of Arts, Nagano, Japan
Rikkyo University, Faculty of Arts, Tokyo, Japan
Hosei University, Faculty of Economics, Tokyo, Japan
Tokyo Gakugei University, Tokyo, Japan
University of Tokyo, Faculty of Technology, Tokyo, Japan
Hitotsubashi University, Institute of Economic Research, Tokyo, Japan
Wako University, Tokyo, Japan
University of Tokyo, Faculty of Economics, Tokyo, Japan
Hanazono University, Tokyo, Japan
Hiroshima University, Faculty of Political Science and Economics, Hiroshima, Japan
Kansai University, Faculty of Sociology, Osaka, Japan
Hokkaido University, Institute of Environmental Sciences, Hokkaido, Japan
University of Tokyo, Faculty of Social Sciences and Humanities, Tokyo, Japan

Socio-Cultural Comparative Evaluation of Development Alternatives in a Changing World

This research project focuses on the cultural and civilization dimensions of development. During the first phase, concentration will be on the themes "cultural identity and national socio-political change" and "endogenous intellectual creativity". The second phase will concentrate on "new and emerging perceptions of prospects of human civilization" and "specificity and universality".

The project was initiated at a meeting of scholars from many parts of the world held in Tokyo in June 1977. It is being co-ordinated from the National Centre for Scientific Research in Paris. When fully organized, it will involve a network of about 50 institutions. Two regional symposia will be held within the next year: one for Latin America (to be held in Mexico City), and another for Asia (in Kyoto), for which approximately 24 research papers have been



The readiness of developing societies to accept new techniques is determined by a complex range of factors which have not always been sufficiently recognized; sometimes traditional techniques may be more effective than newer methods. Several aspects of the Human and Social Development Programme are concerned with gaining greater understanding of this problem.



The pursuit of economic development without adequate consideration of all its consequences often leads to suffering and deprivation. The Human and Social Development Programme is studying the Right to Health and a Healthy Environment as part of its sub-programme on Human Rights in the Context of Development.

commissioned. A third symposium is planned for the Middle East. The project plans to develop links with non-governmental organizations, particularly some of the international social science professional associations, and to organize special sessions on the programme's research work at upcoming international conferences in sociology, philosophy, anthropology, political science, and other fields.

The project will eventually cover all regions of the world: Europe, North America, South America, and the Caribbean, tropical Africa, the sub-Saharan, North Africa, the Middle East, West Asia, East Asia, South Asia, South-East Asia, and the Pacific. Social scientists and humanists, including historians and leaders of religious thought, will participate. Each regional group of researchers will be sponsored by one or more institutions in the region actively involved in research in the social sciences and the humanities.

Human Rights in the Context of Development

In the struggle of the world's political and economic institutions, as well as its institutions concerned with knowledge, to cope with immense global problems, a focus on human rights issues offers a way of ensuring that universal human values will be fostered and protected. Along with the satisfaction of human needs, human rights is one of the building blocks of a democratic theory of development. It is for these and other reasons that the programme's Advisory Committee, at its meeting in April 1978, affirmed the importance of human rights in the Human and Social Development Programme as approved by the Council of the University.

Although to date programme activities on human rights have been linked closely only with the project on Goals, Processes, and Indicators of Development, they will also be combined with the other projects. Human rights are conceived broadly and related to the larger context of development in particular societies, including, but not limited to, political rights and civil liberties.

To begin with, in July 1978, the programme held a colloquium on the Right to Health and a Healthy Environment in co-operation with the Academy of International Law at the Hague. This will be followed by an interdisciplinary colloquium on the significance of human rights in development. Participants will be historians, jurists, social scientists, members of the programme's Advisory Committee, and programme staff and Co-ordinators.

TECHNOLOGY AND DEVELOPMENT

Sharing of Traditional Technology

This research project is concerned with sharing traditional technologies to improve the lives of poor people in rural communities through a fuller and more efficient use of local resources. Rural groups will be helped by project researchers to build their own research and development capacity. Special attention

will be given to their technologies relating to food, to the protection and care of the human body, and to housing, and to how such technologies may be improved by learning first from other communities.

Two project meetings were held in the past year in Tokyo, Japan, and in Kathmandu in Nepal. During the meeting in Tokyo, the research project team decided to regard the first year as a pilot phase and concentrate its research activities in Asia. The project is co-ordinated by the Marga Institute in Sri Lanka, a University associated institution, which has established a network of research institutions, groups, and individuals in Sri Lanka, Thailand, Iran, Nepal, Indonesia, Malaysia, the Philippines, and Japan. Research by all the co-operating institutions is carried out in rural villages selected on the basis of their degree of exposure to modernization, degree of market orientation, occupational patterns, ethnicity, and type of land tenure system.

The dialogical approach is being employed in this project. It requires that the researchers understand the social and ecological conditions of the village and draw out the responses of the villagers. The field researchers, who are living in the selected villages for extended periods, and the villagers are thus engaging in a genuine exchange of knowledge and information.

Research and Development Systems in Rural Settings

This research project is helping design alternative strategies for generating technologies in developing countries and develop a new methodology of technological research. By effectively connecting the "R & D systems" in the modern sector of a developing country with the whole society, and with the body of traditional knowledge the rural people already possess, technologies appropriate to their specific needs and resources can be generated. R & D systems refer to the combination of institutions in any society that are specifically devoted to scientific and technological research and those public and private organizations that apply the results of research to the production of goods and services.

Co-ordinated through the Latin American Faculty of Social Sciences in Mexico, the project monitors the research progress of groups studying problems of technological development in Mexico, Ethiopia, Iran, and the Philippines. Researchers are in direct contact with rural people and are learning with and from them the causes of achievements and failures in introducing technologies in rural areas. Field tests are now under way on a new methodology of linking R & D systems with the people's existing knowledge in order to develop new local solutions to technological problems. Plans call for two rounds of field experiments and revisions of methodology.

Technology Transfer, Transformation, and Development: The Japanese Experience

As a complement to the above two research projects in rural technology, the programme completed the design of a research project on Technology Transfer, Transformation, and Development: The Japanese Experi-

ence. Unlike other programme projects, this is a country study, rather than a comparative study, looking at the unique experience of Japan in development. Focused on the interrelationship between endogenous technology and foreign technology, it will examine case studies where: (a) imported modern technology replaced traditional or endogenous technology (i.e., iron, steel, railway transport, etc.); (b) imported modern technology co-existed with traditional or endogenous technology (i.e., mining industry); (c) imported modern technology failed to replace traditional or endogenous technology (i.e., tractor farming); and (d) imported modern technology was integrated with traditional or endogenous technology (i.e., irrigation).

The project will emphasize the linkage between technology and labour, the structure and dynamism of the working population, employment opportunities, acquisition of certain techniques and their dissemination, organization and discipline of labour, working conditions, and the human rights aspect of technology and development. A network of universities and research centres in Japan will participate in the project which will be co-ordinated by the Institute of Developing Economies in Tokyo.

Transfer of Technology among Developing Countries

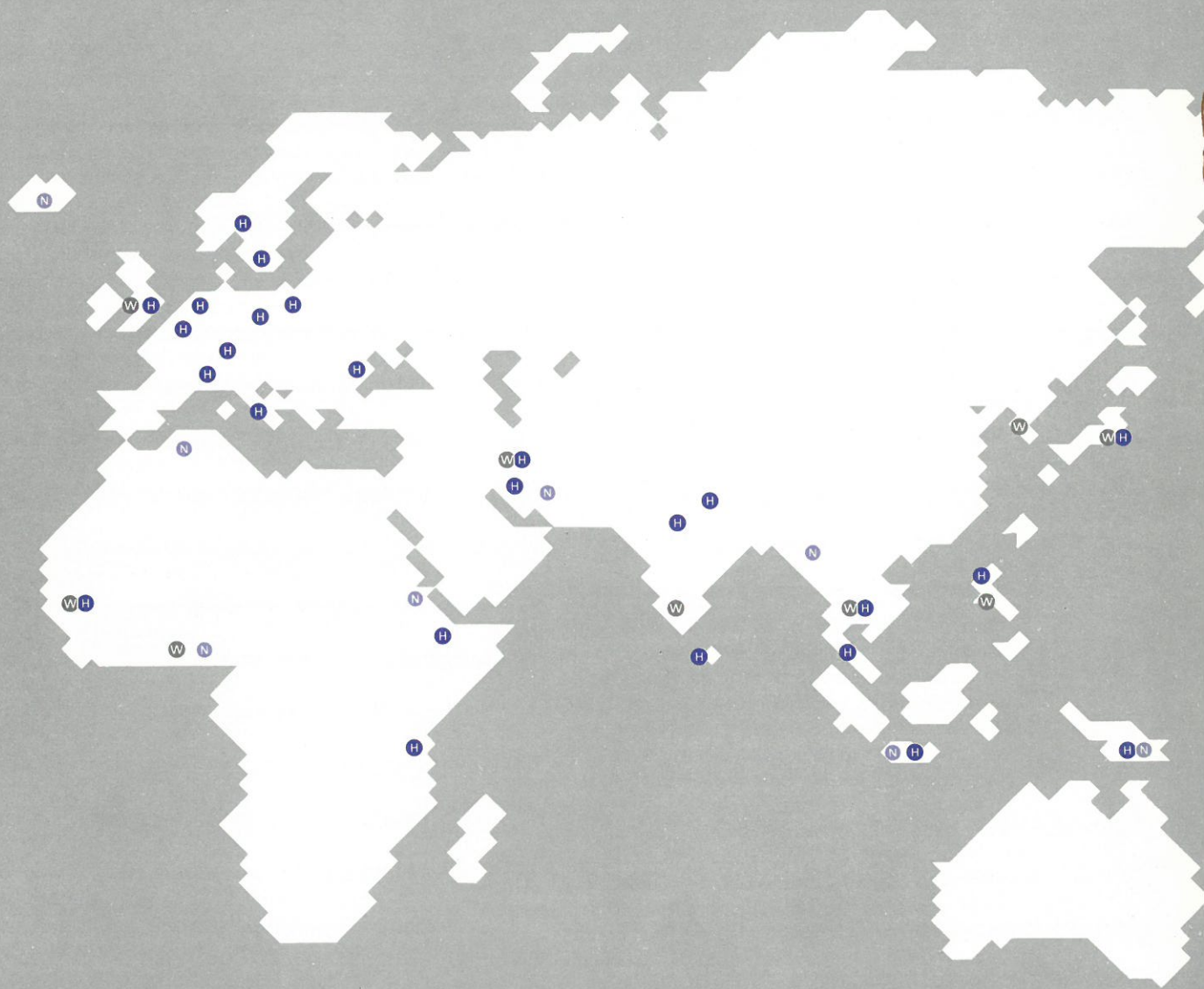
The Human and Social Development Programme is planning to launch a research project in the area of technology transfer among developing countries. This will be jointly implemented by the Latin American Council of Social Sciences and the Council for the Development of Economic and Social Research in Africa.

EDUCATION FOR DEVELOPMENT

The programme is developing an international educational programme focused on the global problems addressed by the University's three priority programmes and involving participants from different cultures, and socio-economic and political systems. All three programmes will co-operate in this venture to develop better integration, dissemination, and application of knowledge about development. This would entail carrying out educational activities in developing countries as well as in industrialized countries.

The education programme, developed with the help of a consultant from the Institute of Development Studies of the University of Sussex, would be one of the most important methods of disseminating the University's research results, particularly when these have implications for development strategy, and of fostering world-wide awareness of global interdependence and the imperative of international collaboration in solving global problems. Its educational activities would include not only, or mainly, central government officials, but also many types of people, especially the young. It would help university scholars and officials in international organizations to keep up with advancing knowledge in human and social development.

THE GLOBAL NETWORKS OF THE UNIVERSITY



Map shows associated institutions, research units, and contractual arrangements with institutions and individuals.

Not included are UNU Fellows and other links with individual scholars and researchers.

Note: The 20 research units in Japan have not been indicated individually.

- W World Hunger Programme
- H Human and Social Development Programme
- N Programme on the Use and Management of Natural Resources.



"ways to protect the environment and increase productivity. . ."

The Programme on the Use and Management of Natural Resources, which was initiated in February 1977, established its first associated institution in the same year and was negotiating with several others.

The programme is focusing its efforts on three areas: (1) ways to protect the environment and increase productivity through improved management of natural resources in the humid tropics, (2) the effective application of existing knowledge to the problems of arid lands, and (3) the shortage of energy in rural areas of developing countries. Working in co-operation with the programmes on World Hunger and Human and Social Development, Natural Resources is setting up comprehensive sub-programmes in each of the three areas: (1) The Ecological Basis for Rural Development in the Humid Tropics; (2) Assessment of the Application of Knowledge to Arid Lands Problems; and (3) Energy for Rural Communities.

Inasmuch as the past year and a half has been devoted to programme planning and initial organization, the following concentrates on the practical problems being addressed, the rationale of the programme, and the conceptualization of its approaches to those problems. The rapid progress achieved in programme development and organization is reflected in concrete projects being launched and the emerging collaboration with various institutions.

In 1978, the work of the programme will be developing in the following associated institutions:

- Tropical Agricultural Research and Training Centre, Turrialba, Costa Rica
- University of Ife, Ile-Ife, Nigeria
- Bogor Agricultural University, Bogor, Indonesia
- Chiang Mai University, Chiang Mai, Thailand
- University of Papua New Guinea, Port Moresby
- University of Khartoum, Khartoum, Republic of the Sudan
- Pahlavi University, Shiraz, Iran
- The National Energy Authority, Reykjavik, Iceland
- National Office for Scientific Research, Algiers, Algeria

The programme's activities were initially formulated by expert panels whose proposals were scrutinized, modified, and finally endorsed by the programme's Advisory Committee in May 1977. In April 1978, the Steering Committee and Project Co-ordinators met to review the progress of the programme and suggest future activities. It should be stressed that, although the projects are presented here for convenience as separate topics, they should not be regarded as individual entities. There are many interactions among the projects and efforts are being made to maximize these through the networks.

THE ECOLOGICAL BASIS FOR RURAL DEVELOPMENT IN THE HUMID TROPICS

The purpose of this sub-programme is to analyse traditional resource systems, and 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 local populations. Problems in this area are being researched by utilizing the concept of

"resource systems", which can be roughly defined as the chain of processes through which resources, human or natural, undergo transformation into an end-product or a service. Such a concept is useful for both research and education as it provides a comprehensive view of the problems and facilitates interdisciplinary co-operation. Four resource systems were selected for the initial investigation: (1) rural energy systems, (2) agro-forestry systems, (3) water-land interactive systems, and (4) highland-lowland interactive systems.

The resource systems approach itself is being assessed, and attempts are being made to further develop theory and methodology. For these purposes, a task force was assembled in May 1978 in the Philippines, and several studies and publications are anticipated.

Rural Energy Systems

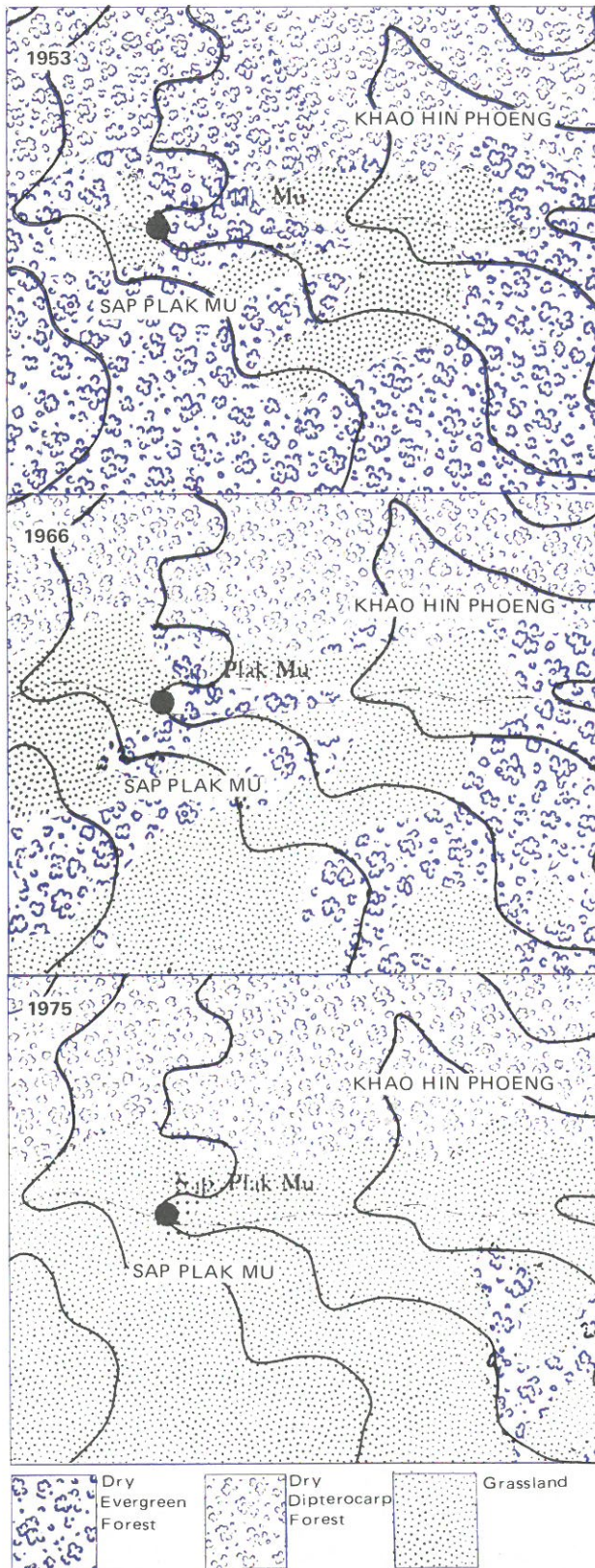
Adequate energy supplies are critical to development. Therefore, the first area under investigation is rural energy systems. For example, the primary source of fuel in many rural areas of the humid tropics is wood, and an overdependence on this source can lead to environmental deterioration and can hinder development progress. By examining the mix of energy sources available and analysing the economic and social processes that determine the production and distribution of fuels, both practical and theoretical insights can be gained. A better understanding of rural energy systems will contribute to effective management policies, which could not only increase 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 simpler means, such as more efficient cookstoves, are also being investigated.

A comprehensive study has begun at the University of Ife. Encompassing much of south-western Nigeria, it is investigating fuel supply systems serving the cities of Ile-Ife and Ogbomoso, and the large urban centre of Ibadan. Several University Fellows are expected to begin working with the project there in early 1979.

Possibilities exist for complementary studies that would provide insights into the common aspects of energy supplies and their relationship to development, as well as yield practical results for policy-making and technological innovation. Malaysia is being proposed as the site for one such study, while others are being considered for rural areas of industrialized countries.

Agro-forestry Systems

In much of the humid tropics, increasing population and rising demands for food and raw materials for export are putting a great strain on traditional systems that have evolved mainly to meet subsistence needs and local exchange. The resulting intensification of agriculture that often adopts inappropriate techniques developed in temperate areas has almost invariably led to the vicious cycle of environmental deterioration and a lowering of productive capacity. One of the most promising methods for sustaining high productivity



Deforestation can take place very rapidly. These thematic maps, made in Thailand, show the loss of forest over a 22-year period in the Sakaerat Environmental Research Station. Most of the loss was due to the clearing of forest by shifting cultivators. A study of the ecological consequences and possible remedies of such loss is part of the Programme on the Use and Management of Natural Resources (agro-forestry project)

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 farming methods that are location-and-culture-specific.

The Tropical Agricultural Research and Training Centre in Turrialba, Costa Rica, became the programme's first associated institution in October 1977. A workshop on agro-forestry systems for small farmers will be held there late in 1978. Research on the scientific basis of agro-forestry systems and traditional land-use practices will take place in co-operation with the newly formed International Center for Research in Agro-Forestry.

Other activities in agro-forestry systems will be initiated at associated institutions in Thailand and Indonesia. The exchange of Fellows and participation in meetings will serve as the first step towards an exchange of scholars and information, particularly among developing countries.

Water-Land Interactive Systems

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. Freshwater swamps, rivers, and estuaries are an important source of protein over extremely large areas for people who often live 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. This project will seek a better understanding of the role of water management in systems such as rice paddies or estuarine fisheries and more comprehensive knowledge of the interactions between land and water. Results envisioned include policy guidelines and possible techniques for the enhancement of productive capacity.

The Bogor Agricultural University in Indonesia is expected to be the initial base for these activities, and negotiations to make it an associated institution are under way. A workshop is being held in September 1978, and research and advanced training activities should begin shortly thereafter.

Coastal zone resource management is another area being studied and since coastal zones are also regarded as water-land interactive systems, close ties between the two projects should develop. A task force meeting on coastal zones was held in late April 1978 in Tokyo, and a number of proposals were discussed regarding activities in the Middle East, South-East Asia, and Latin America.

For many of these projects considerable assistance from outside will be needed before they can be fully implemented. The University is planning to initiate a training course on the techniques of resource assessment as a guide to planning and development. The

course will be held in Indonesia and will involve both young Indonesian scientists and several UNU Fellows. An evaluation mission is being sent to the Middle East in mid-1978 to explore project possibilities there.

Highland-Lowland Interactive Systems

Highlands in the humid tropics often have a limited but nonetheless valuable resource base to support large populations. 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 these 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.

Whereas the effects of highland-lowland interactions have long been known in areas such as South-East Asia and Latin America, such interactions are only now beginning to have significant effects in Papua New Guinea. A comprehensive study there to increase understanding of these interactions will yield long-term benefits for improving resource planning and minimizing future environmental damage. As a result of an evaluation mission to Papua New Guinea in May 1978, a study is being planned in conjunction with an associated institution. This project is complementary to UNESCO's Man and the Biosphere Programme, and the possibilities to make it a joint UNU-UNESCO venture are being explored.

As part of highland-lowland studies, the programme's task force meeting in October 1977 recommended that a pilot project in natural hazards mapping be initiated. Present plans are for a pilot study in the southern Himalayan region, with the goal of improving land-use and resource planning through the mapping of areas susceptible to natural hazards such as landslides, avalanches, and flooding. Early identification and proper planning can significantly lessen future difficulties.

ASSESSMENT OF THE APPLICATION OF KNOWLEDGE TO ARID LANDS PROBLEMS

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 as the "poorest of the poor". The patchy coverage of development planning and projects have generally passed over arid lands, resulting in even larger income gaps for their populations when compared to other areas. Overgrazing, dryland farming, and the stripping of wood and other organic materials for feed and fuel have been found to seriously impair the capacity of the land to sustain life. Fluctuations in rainfall, a natural characteristic of arid lands, intensify the existing problems of poverty and environmental deterioration.

In recent years, considerable funds have been spent and much knowledge has been gathered about arid lands, but major mismanagement — or lack of management — has continued. The United Nations Conference on Desertification, held in August and 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 is focusing on factors that prevent the effective use of knowledge, and the subsequent development and implementation of means to overcome these difficulties.

More specifically, the programme will assess past development projects in order to determine to what extent existing knowledge was applied, and the effect this had on the eventual outcome of the projects. The programme has already commissioned studies on the settlement of nomads, the criteria for the assessment of past development projects, and the evaluation of various projects in specific areas. Of great potential value are other assessment studies being sponsored by the programme that are examining the obstacles to the application of knowledge from desert research institutions to local problems. A workshop is scheduled for



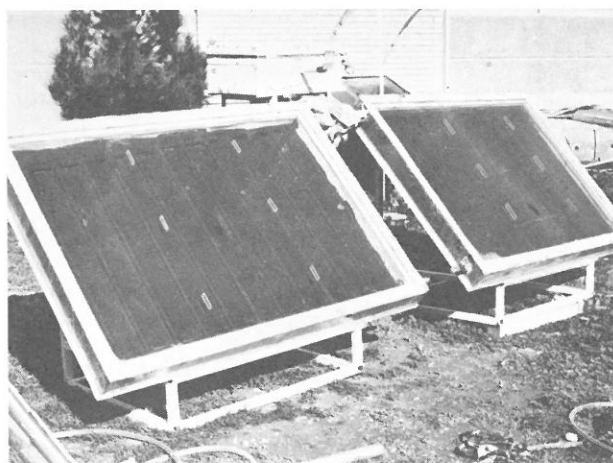
A study of interaction between highlands and lowlands is an important part of the University's sub-programme on the Ecological Basis for Rural Development in the Humid Tropics. Forest degradation caused by farmers using shifting cultivation in the highlands of Papua New Guinea will receive special attention in this research and training project.

early 1979 to draw together the results of these studies and plan the next set of activities. Plans also call for a publication integrating the studies. It is hoped that this approach will reduce the present resistance to assessment studies, and encourage evaluation as a feedback mechanism to the planning process.

The programme is also planning publications that will provide planners and decision-makers with useful information about the management options available to them. Task forces will prepare a typology of arid lands based on natural, social, and cultural characteristics, and this will be the basis for the delineation of management options.



Arid lands comprise about one-third of the world's land surface. Existing knowledge is probably sufficient to alleviate the most urgent problems of these areas but it is inadequately disseminated and applied. The Programme on the Use and Management of Natural Resources includes a project to investigate factors which have prevented the effective use of scientific knowledge in the past and possible ways of overcoming these obstacles in the future.



Most of the work being done on solar energy is concerned with applications in industrialized countries. Yet there are important possibilities for using solar energy in developing countries and particularly in small and remote rural communities. The Programme on the Use and Management of Natural Resources has several projects concerned with the application of alternative energy resources (solar, biogas, and wind) to rural communities. The illustration above shows part of the solar energy laboratory at Pahlavi University, Shiraz, Iran, an associated institution in this project.

The way in which people perceive their environment and their problems must be understood if any development project is to succeed. All too often there are large differences in the goals and values of planners and decision-makers on the one hand and the local population on the other. These topics are the concern of several more programme-sponsored studies being conducted in both developing and industrialized countries.

Efforts are also being made to strengthen the research and training capabilities of existing institutions in the areas of interest to the programme. Based upon the recommendations of an evaluation mission, the University of Khartoum in the Sudan will serve as the primary institutional base for the programme's arid lands projects, and negotiations to make the University of Khartoum an associated institution are in their final stage. In addition to sponsoring research and advanced training, the programme will assist the University of Khartoum in developing a curriculum for an advanced degree in arid lands management, as such a programme apparently does not exist anywhere. The evaluation mission was sent to the Middle East in June 1978 to explore possible links between the University of Khartoum and other institutions. Advanced training programmes for scientists and decision-makers from developing countries may also be initiated at institutions in Australia, India, and the United States.

ENERGY FOR RURAL COMMUNITIES

The sharp and sudden increases in oil prices beginning in late 1973 have made many nations, both rich and poor, aware that oil is a finite resource that is now being rapidly depleted. Many are coming to the realization that alternative energy sources, particularly renewable sources such as solar, biogas, and wind, must be developed. However, there are basic differences between the energy requirements of industrialized countries and those of developing countries, and the capacity of adapting to renewable sources. Industrialized countries need to adapt alternative sources of energy to a complex system that is centralized and largely dependent on electricity, oil, and natural gas. In maintaining high levels of energy use at least cost, they have access to various high-technology and capital-intensive alternatives such as nuclear fission.

On the other hand, developing countries require increasing amounts of energy merely to satisfy minimal needs. They generally do not have complex production and distribution systems, and most of their needs can be satisfied by decentralized, low-temperature sources. At present, much of the energy in developing countries is supplied by locally available fuels, primarily wood, but an overdependence on these resources can hinder development and bring about environmental deterioration. Alternative sources of energy could have their greatest and most immediate impact in rural communities in developing countries where the energy crisis is most acute and where its long-term effects can be most damaging.

Pilot Projects

A primary activity of the sub-programme on energy is the establishment of a series of integrated pilot projects to test and demonstrate the use of solar, biogas, and wind energy in rural communities in developing countries. Since the technology for non-conventional energy sources is either already well developed or under intensive study, the programme will emphasize three topics: (1) the integration and adaptation of existing technology to local conditions and local materials; (2) socio-cultural problems of introducing non-conventional energy sources, including economic and political aspects; and (3) training and dissemination of information. In each pilot project, a mix of energy sources will be utilized, depending on the resources available and the type of energy required (heat, mechanical, or electrical).

The programme is establishing the first pilot project in central Iran with Pahlavi University as an associated institution and US\$1 million support to be provided by the Government of Iran over five years. Research and training will focus on various devices such as hot water heaters, solar autoclaves for sterilizing medical instruments, solar cookers, and solar power generation.

A second project, concerned primarily with architecture, building materials, and energy use, is planned for Algeria. With the country building large numbers of new villages, the development of energy-efficient houses and building materials would be of obvious benefit. Part of the work will involve use of solar energy for such tasks as desalinization and water pumping.

Bioconversion

One of the priority areas of the programme is the development of appropriate methodologies for the production of biomass and biogas from organic wastes, especially in rural areas. For its part, the World Hunger Programme is concerned with the establishment of the nutritional value and safety of non-conventional feed and food products derived from organic wastes. Given their converging interests, Natural Resources and World Hunger activities in these areas are being dovetailed

in a joint project.

A task force meeting was convened in Athens in March 1978, at which it was recommended that the Natural Resources and World Hunger programmes jointly sponsor a conference to be held at the Institute of Nutrition of Central America and Panama in Guatemala in late 1978. This conference will focus on the state of the art of bioconversion of organic residues for rural communities, and a working group meeting following the conference will formulate recommendations for future activities.

Energy Studies

In addition to these technically oriented projects, the Programme on the Use and Management of Natural Resources is actively exploring the possibility of setting up a centre of expertise in India to analyse trends in energy production and consumption, and recommended policy. With the Government of India providing most of the funds, this institution could also be associated with the University. At the present time, a feasibility study is being conducted by the University with UNDP in order to determine the value and purpose of such an institution.

Geothermal Energy

Geothermal energy is another area of the programme's concern, although as a result of its relative complexity and centralized nature, it is often more appropriate to those countries which already have a well developed energy distribution system. The purpose of the programme's activities is to give those developing countries that have the potential for utilizing geothermal energy the capability to develop these resources. Thus, the programme is negotiating with the National Energy Authority for the establishment of an associated institution in Iceland that will serve as a University centre for research and advanced training. A workshop in June 1978 planned the project and brought together the experts now involved in geothermal training.



The Tropical Agricultural Research and Training Center (CATIE) in Turrialba, Costa Rica, was the first associated institution of the Programme on the Use and Management of Natural Resources. During 1978, eight other associated institutions will be linked with the programme's world-wide network of universities and research institutions.

JOINT PROGRAMME ACTIVITIES

"a landmark in history of the University..."

Because of the many interfaces among the University's three priority programmes, every opportunity is being taken to co-ordinate and integrate their efforts. This is achieved through Council discussions, University staff meetings, joint meetings of members of the programme Advisory Committees, and joint workshops. In April 1978, the steering committee members of the three Programme Advisory Committees, the Programme and Project Co-ordinators, and the University staff met for the first time at the University headquarters in Tokyo.

On that occasion, a joint steering committee meeting of the World Hunger Programme and the Human and Social Development Programme was also held to develop plans for joint studies on goals and indicators for food and nutrition policy planning. Future joint activities will be developed by the two programmes in the common area of sharing endogenous technology, with special reference to village-level post-harvest food conservation.

Earlier, the World Hunger Programme and the Programme on the Use and Management of Natural Resources developed a joint project on microbial processing of organic residues at the village level for animal feeding. At a planning meeting held in March 1978 in Athens, Greece, the staff of the two programmes met with experts in this field from FAO, UNESCO, the International Federation of Institutes for Advanced Studies, and the Institute for Animal Nutrition Research, the Netherlands, to design a continuing programme of work in this field. An initial activity will be a World Hunger-Natural Resources programme workshop on bio-conversion of organic residues for rural communities, to be held in Guatemala in November 1978. The use of solar energy in food drying is another area where both programmes will evolve joint activities in the future.

The Human and Social Development Programme is initiating for the University an international educational programme called Education for Development. Through the educational activities of this evolving programme, the three priority programmes can jointly disseminate the results of their research and involve in their discussion and utilization many scholars and decision-makers throughout the world. At the same time, the educational activities would help countries to design educational programmes that will promote a greater awareness of global interdependence and the need for international co-operation in solving common problems.

CO-OPERATION WITH UN AGENCIES

"to achieve maximum complementarity..."

In the development of the programmes, great care has been taken to ensure that there is close contact and full co-operation with other agencies in the United Nations family, as well as with other international institutions and organizations. The aim is to achieve maximum complementarity with other organizations interested in the same general fields and eliminate duplication.

The World Hunger Programme, for example, has concluded agreements for co-operation and co-ordination with WHO and FAO. Close collaboration with these and other UN agencies is being maintained through the participation of senior officials in the food and nutrition programmes of these agencies as experts in the Programme Advisory Committee meetings. The University contributes to the training of high quality manpower needed in developing countries for the activities of other UN agencies concerned with the elimination of world hunger.

The University is also represented on the United Nations ACC Sub-Committee on Nutrition, and, in co-operation with this newly established body, has taken over publication of the former *PAG* (Protein-Calorie Advisory Group) *Bulletin*. The new periodical, called *The Food and Nutrition Bulletin*, will carry technical articles and information on efforts to combat the world hunger problem.

The Human and Social Development Programme maintains close contact with other UN agencies and international organizations. The research activities of the sub-programme on Problems of Development are being co-ordinated with those of UNESCO, UNITAR, UNRISD, UNIDO, as well as the African Institute for Economic Development and Planning and the Latin American Faculty of Social Sciences. The Technology and Development sub-programme is co-ordinating its activities with UNCTAD, UNIDO, UNDP, and the Advisory Committee on the Application of Science and Technology to Development. There is also close collaboration with regional development organizations, in particular with the Society for International Development, the World Future Studies Federation, and the Union of International Associations.

The Programme on the Use and Management of Natural Resources co-operates closely with other United Nations agencies concerned with ecology and energy, including FAO, UNEP, and UNESCO. A project on highland-lowland interactive systems is complementary to UNESCO's Man and the Biosphere Programme. There has also been co-operation with bilateral agencies and with scientific organizations such as the International Council of Scientific Unions, including the Scientific Committee on Problems of the Environment.

DISSEMINATING INFORMATION

The University disseminates information resulting from its work and from other sources in various ways. During the period under review, all three of the programmes conducted or made plans for workshops designed to communicate information. In addition, Academic Services began a programme of publications, a number of which dealt with the material discussed at the workshops.

Workshops

The University initiated its workshops on the interfaces of agriculture, food science, and nutrition in Ibadan, Nigeria in 1976. This was followed by another one in Los Baños, the Philippines in 1977. The cost of both was shared with the Rockefeller Foundation. The third was held jointly with the Hungarian Academy of Sciences and the Royal Swedish Academy of Science in June 1978 in Hungary. A fourth workshop will be held in October 1978 at the Institute of Nutrition of Central America and Panama in Guatemala, with the participation of the National Institute for Agricultural Research, El Salvador, the International Centre for Tropical Agriculture, Colombia, the International Centre for Wheat and Maize Research, Mexico, and the International Institute of Tropical Agriculture, Costa Rica. Future workshops are planned for South America, Iran, Indonesia, and East Africa.

A technical workshop on the Impact of Food Price Policies on Nutrition was held in March 1978 in Mexico, jointly with the Centro de Estudios Economico y Sociales del Tercer Mundo. The workshop examined the impact on food consumption and nutrition of different economic policies affecting food prices in various Latin

American countries. It also defined priority areas for further study and the most appropriate methodologies to be used.

A technical workshop on Protein and Energy Needs in Developing Countries was held in Costa Rica early in 1977. In July 1978, a meeting will be held to finalize the draft for publication in order to incorporate significant new research findings.

Following the Human and Social Development Programme Advisory Committee meeting in November 1977, the programme and the Latin American Council of Social Sciences held a joint seminar at El Colegio de Mexico in Mexico City. The main purpose of this seminar was to involve 60 Latin American scholars from different social science disciplines in the programme's research activities and put them in touch with the programme staff, the Project Co-ordinators, and the Advisory Committee members. After a presentation and discussion of the programme's research projects, the seminar discussed the research being conducted in Latin America which is related to the priority areas of the programme. As a result of the seminar, concrete suggestions were made to relate ongoing research in the region to University projects and vice-versa. More research seminars in other regions are being planned by the programme.

At the global level, one of the major handicaps in developing alternative rural energy sources is the isolation of researchers in developing countries. To solve this pressing need, the Programme on the Use and Management of Natural Resources has set up a network to collect and distribute the most recent scientific publications at minimal costs to those scientists active in developing countries. Based in Japan, this information



network is just beginning to operate on a trial basis. It should lead to less duplication, much greater co-operation, and a generally better diffusion of knowledge than has hitherto been the case.

Finally, to link all its rural energy sources activities, the University is planning a workshop for early 1979 on the global assessment of energy alternatives. Held in co-operation with the International Institute for Applied Systems Analysis in Vienna and the East-West Center in Honolulu, this workshop will examine the various barriers, both social and technological, to the utilization of non-conventional energy sources. The results and the papers presented will be collected and published by the University as a realistic guide to the problems and value of adopting non-conventional energy sources.

Academic Services

In addition to the scientific meetings held by the three priority programmes, the University's dissemination of knowledge effort in the period June 1977—June 1978 also included the initiation of three series of programme publications by Academic Services. The division serves the programmes of the University, both by providing them with a variety of information necessary for their activities and by disseminating the knowledge generated by them and from other sources. Its functions include publishing, the United Nations University central library, and referral.

During the period under review, Academic Services concentrated on establishing the framework for its work in becoming an academic and scientific information centre. It began implementing some of the guidelines formulated by the expert group on the Dissemination of Knowledge, which met in January 1977, and discussed by the Council at its eighth session.* Also, various computer retrieval systems are being developed in conjunction with existing international information projects, particularly with those of UNESCO.

Some 13 titles have been published or are being processed for publication by Academic Services in 1978.

Consultative Meetings

From its inception, the United Nations University has simultaneously carried out several interrelated responsibilities: the conception and execution of distinctive programmes; the establishment of effective institutional relationships to carry out its programmes; fund-raising; and the promotion of effective understanding of the novel concept of the University throughout the world.

To serve all these purposes, and particularly the last,

the University has continued the series of consultative meetings it commenced in October 1976. The main functions of these meetings are to inform intellectual, scientific, and governmental leaders in different parts of the world about the University's purposes, methods, and priority programmes, and to obtain, in return, reactions and ideas about the ways the University can be of greatest service in helping solve "pressing global problems of human survival, development, and welfare".

The initial consultative meetings were held in London (October 1976), in Paris, Bonn and Stockholm (March 1977), and in Kuala Lumpur (May 1977). In the period under review, meetings were held in Caracas, Washington and Ottawa (October 1977), in Tokyo (December 1977), in New Delhi and Doha (February 1978), and in Athens (March 1978). Some 945 participants drawn from 69 countries and several international organizations have participated in the meetings to date. In addition, in November and December 1976, consultations took place on the occasion of the General Conferences of the Association of Arab Universities in Baghdad and the Association of African Universities in Khartoum.

Consultative meetings are scheduled to be held in Nairobi, Accra, and Mexico City March and April 1979.

Participants in the meetings held included vice-chancellors, rectors, and presidents of colleges and universities, directors of research institutions, directors of polytechnics and other higher educational institutions, professors and heads of departments, officers of research councils and national academies of sciences, representatives of the ministries of education, foreign affairs, science and overseas development, of United Nations organizations, of educational, cultural and other non-governmental organizations, of trusts and foundations, of United Nations Associations, and of UNESCO National Commissions, people who had taken part in various United Nations University expert meetings, members of the organizing committees, and members of the Council of the University. The University was represented by the Rector and his senior colleagues.

Participants in these meetings discussed the nature and work of the University in general, its initial programmes, and its possible future directions; they raised various issues, especially those concerning the distinctive character of the University and the special, global contributions to knowledge in various parts of the world. Participants in the different regions of the world placed varying emphases on particular programmes of the University.

*" . . . the University faces a very large and peculiar task of communicating. This follows from its special characteristics, particularly the dispersion of its work among many associated institutions all over the world; but also from the number of languages used by those working for it and by its potential audiences; its commitment to policy improvement; its obligation to reduce the isolation of scholars in remote places; its policy of seeking public reaction to its work; and the concentration of its research in a limited number of multidisciplinary fields."

From Report of Expert Group on Dissemination of Knowledge, January 1977.

FUND-RAISING AND BUDGET

Fund-raising

The funding of the United Nations University is unusual in the UN system of institutions. It is derived largely from income from an Endowment Fund made up of voluntary contributions by Member States, annual operating contributions, and specific project support. Unlike most United Nations organizations, the University is not financed by regular annual subventions provided by the General Assembly or Member States, but receives income basically from interest earned by Endowment Fund resources.

The University has set a target of US\$500 million for the Endowment Fund, which would be five times the initial generous pledge of US\$100 million made by the Government of Japan before the University began to operate. Annual income from this target would range from roughly US\$25 million to US\$40 million, which are not large sums for the basic financing considering the scope of the University's world-wide mandate. It is projected that, when the Endowment is fully funded, roughly 12 per cent of income would be spent on headquarters operations, including programme planning, supervision and evaluation, and 88 per cent on programme activities throughout the world.

The Government of Japan made its pledge with the expectation that contributions would also be made by other countries and sources. To date, of the US\$100 million pledged, the first four instalments, totalling US\$70 million, have been received, and the Government of Japan has budgeted another contribution of US\$10 million for 1979. Pledges and contributions have been made by 19 other Governments (see box). As of June 1978, pledges and contributions totalled slightly over US\$126 million and actual contributions received by the University totalled US\$78,066,012. In addition to contributions to the Endowment Fund, countries such as Greece, the Netherlands, Norway and Sweden have made operating contributions similar to those given to international organizations on an annual basis. Most of these have been given as temporary measures to enable the University to initiate programme activities.

The University's main financial problem is that the present level of endowment income does not permit the implementation of the full scope of the three priority areas and does not reflect an acceptable balance between the cost of necessary headquarters operations and adequate external programme activities. Since the principal purpose of the University is its programme activities around the world, external programme support outside the Tokyo centre should far exceed headquarters expenses and should be firmly supported by endowment income.

The University's problems in its fund-raising include initial lack of understanding of the identity of this new institution, ignorance about its true nature, and residual opposition to the original concept of the University as a traditional campus-based institution, especially among some of the industrialized countries. Thus, in seeking to raise its Endowment and other funds, the University has a two-fold task before it: (a) to eliminate ignorance

and alleviate scepticism among governments and academic leaders, and thereby create general and greater acceptance; and (b) to obtain material support from all Member States.

The Rector and the Vice-Rector for Planning and Development, either jointly or individually, have visited over 65 countries to make solicitations to government leaders and to explain the work of the University to them and to academic leaders. A number of countries have been visited on several occasions. Virtually all of these countries have indicated their intention to contribute when economic circumstances permit. Endowment contributions are now under active consideration by several Governments in Europe, the Middle East, and North America.

ENDOWMENT FUND		
	Pledged	Paid
Japan	US\$100 000 000	US\$70 000 000
Venezuela	10 000 000	4 000 000
Saudi Arabia	5 000 000	1 070 000
The Sudan	5 000 000	
Ghana	2 500 000	1 000 000
Senegal	1 000 000	
India	750 000	75 000
Sweden		231 215
Holy See		50 000
TOTAL	US\$124 250 000	US\$76 426 215
OPERATING CONTRIBUTIONS		
Austria	US\$ 238 800	(January 1977)
	61 600	(pledged annually; October 1977)
Sweden	208 877	(November 1977)
Norway	180 018	(April 1976)
	189 251	(May 1977)
	194 780	(February 1978)
Switzerland	182 796	(March 1978)
Netherlands	100 000	(July 1976)
	100 000	(July 1977)
Zaire	100 000	(July 1977)
Libya	50 000	(December 1976)
	50 000	(February 1977)
	50 000	(August 1977)
Philippines	50 000	(June 1978)
Greece	20 000	(January 1976)
	20 000	(December 1977)
Senegal	22 087	(January 1975)
Ghana	14 750	(May 1975)
	14 790	(November 1975)
	14 790	(June 1977)
Tunisia	10 000	(November 1977)
Cyprus	1 291	(June 1978)
Total	US\$1 873 830*	

*Pledged and/or paid. Actual contributions received amount to US\$1,639,797.

Budget

The University's total estimated income was US\$ 6,108,367 for fiscal year* 1977 and US\$9,133,352 for 1978.

At this stage in the University's development, carry-over funds result from certain circumstances. In order to provide the programmes the full opportunity for forward planning, maximum available funds are allotted to them when budgets are developed during the previous

year. In the course of implementation, however, careful scrutiny is made of all institutional arrangements before funds are expended. Since institutional associations are being made now for the first time, not all allotted funds are spent, and carry-over funds result. As the University gains more experience, however, its budgeting can be predicted more accurately and carry-over funds will decline.

* Same as calendar year.

INCOME**

1977

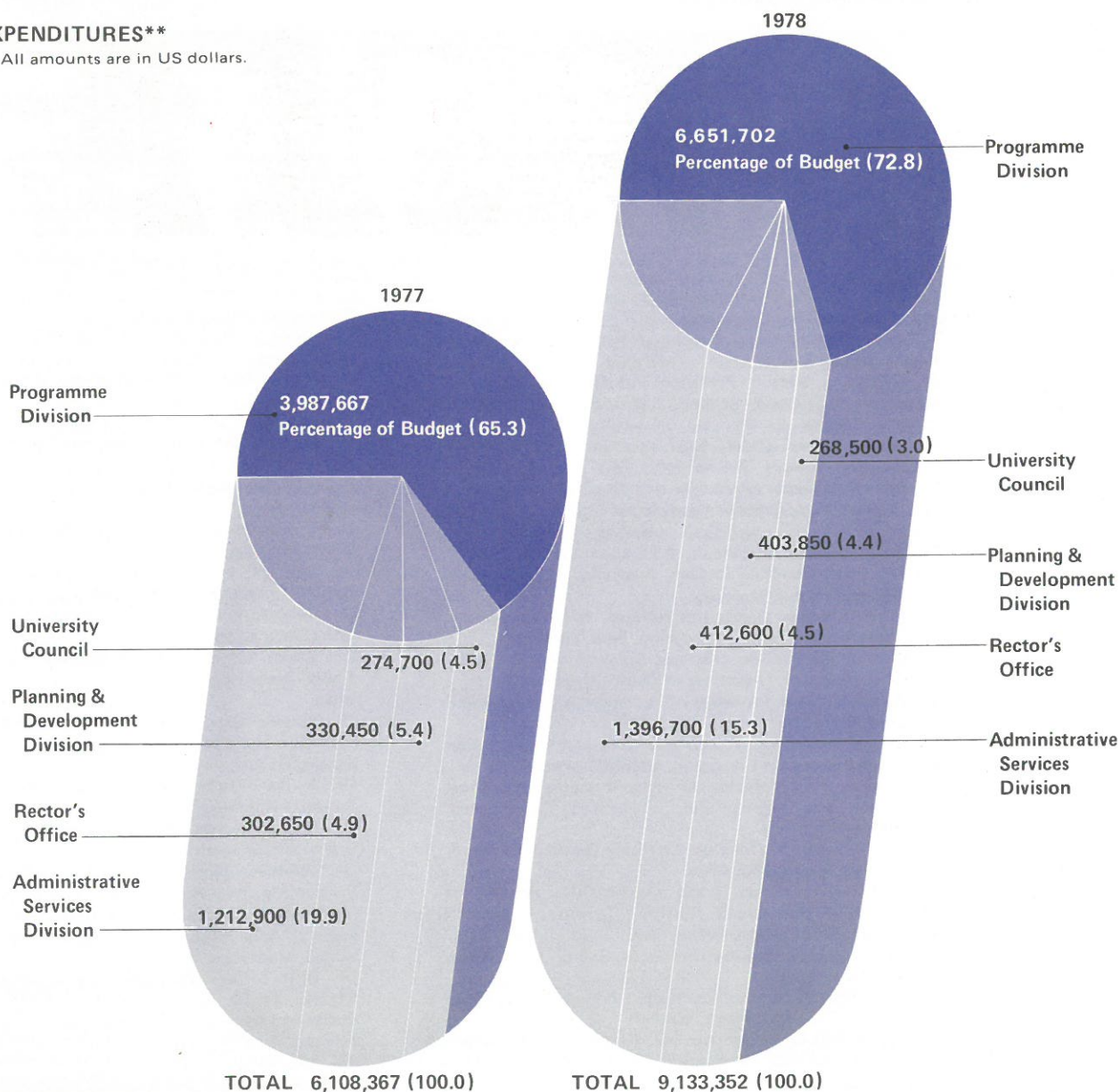
Interest income from the Endowment Fund	4,778,367
Carry-over to 1977 programme budget	500,000
Expected surplus from 1976 budget carried over to 1977 income	830,000
	<u>6,108,367</u>

1978

Interest income from the Endowment Fund	5,021,539
Expected additional Endowment income	854,286
Carry-over	1,850,000
Operating contributions	1,407,527
	<u>9,133,352</u>

EXPENDITURES**

** All amounts are in US dollars.



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Holism—the view that problems can only be understood as a complex of interacting causes and effects—has characterized the UNU's approach from the outset. Malnutrition, for example, is not only due to lack of food; indirectly, it also stems from faulty distribution systems, and is often due to lack of money to buy food. Moreover, malnutrition itself can impair an individual's earning capacity—thus perpetuating a vicious cycle.

Ways in which the three UNU programmes—in world hunger, human and social development, and the use and management of natural resources—could be more formally organized to attack problems such as malnutrition 'holistically' were discussed in April in Tokyo at the first joint meeting between the programmes. Participants from 22 countries included members of the Programme Advisory Committees, Project Co-ordinators, consultants, and University programme staff members.

"The feeling I have about this meeting is really one of great excitement," commented Dr. Guillermo Arroyave of Guatemala, a Regional Co-ordinator for the World Hunger Programme. "We are embarking on something here that is truly a novel, new approach." Dr. Johan Galtung of Norway, who directs a Human and Social Development project, echoed these sentiments: "This meeting may prove to be an almost historic occasion—one that may, in fact, turn the slogan of 'holism' into a very viable reality."

The potential framework for interaction was discussed, both at the conceptual and administrative level. The need for a "common vision of a desirable world" was stressed. It was emphasized, however, that such a vision should not be fixed or static—rather the values implied in the UNU's Charter should be interpreted in terms of a fast-changing world in which pluralism is inevitable.

Dr. Ponna Wignaraja of the UN Asian Development Institute in Bangkok remarked: "We are looking really at the world that may be around the corner—dealing with a revolution in the minds of men. This instrumentality is the only one we have if we are not going to fight . . . a bloody revolution. New social forces are calling for change, and the UNU has a unique opportunity to respond."

Suggestions were made by the participants for possible new administrative structures to encourage programme interaction. However, the consensus was that any major restructuring might be premature at the present stage of programme development; more specifically, it might turn out to be simply an administrative solution to what is really a much larger, more complex intellectual problem of achieving true multidisciplinary. The necessary willingness to interact, evident from all the disciplines represented at the conference table, was of first importance.

"To be frank, many of us have achieved reputations in our respective fields because we were specialists in some particular area," noted Dr. Gerardo Budowski of Costa Rica, a Project Co-ordinator for the Natural Resources programme. "To use words such as 'holistic' or 'interrelation' demands a considerable effort to remove

some of our built-in, subconscious mental blocks. Nevertheless, we have to do it."

Following three days of discussion, three proposed areas of programme interaction were presented:

I. EDUCATION FOR DEVELOPMENT: All three programmes will co-operate in this venture . . . Its aim is to develop better integration, dissemination and application of knowledge about development. Education is viewed as a "two-way street," one which analyses and channels useful information to where it is needed, while, at the same time, feeding back reactions from those who receive it.

II. GOALS AND INDICATORS FOR FOOD AND NUTRITION POLICY PLANNING (World Hunger; Human and Social Development): This project seeks to bring social scientists into an area which has largely been the domain of food scientists, agriculturalists and nutritionists—the planning of policies designed to alleviate hunger and reduce malnutrition. As a first step, a multidisciplinary technical workshop is planned to study social and economic relationships inherent in such policy planning.

III. BIOCONVERSION OF ORGANIC RESIDUES FOR RURAL COMMUNITIES (World Hunger; Natural Resources): At the core of this joint effort is the "integrated village" concept—developing non-conventional energy systems (solar, biogas, and wind) to fit both the life of the individual and the life of the community. One process being studied is the "bioregenerative farm," which recycles waste materials through a series of steps to produce both energy and animal feed, the latter of obvious interest to the world hunger work.

Discussion of this project led social scientists present to stress the importance of the social and cultural implications. They noted that care must be taken to insure that the effort does not appear to be merely a means of introducing low quality foodstuffs into rural communities, thereby freeing higher quality goods for export or upperclass diets. The need to understand village sensitivities was underscored by Chandra Soysa of the Marga Institute, Sri Lanka, which co-ordinates a UNU project on traditional technology, in his observations on the failure of a water pipe system that had been introduced by outside experts: "The water piped into the village—chlorinated, clean and tasting differently—was not acceptable to the local people. For them, water does not mean something in a pipe. Water means a place where the whole community meets—they wash their clothes, they meet girls, they fall in love—it's part of the whole social fabric."

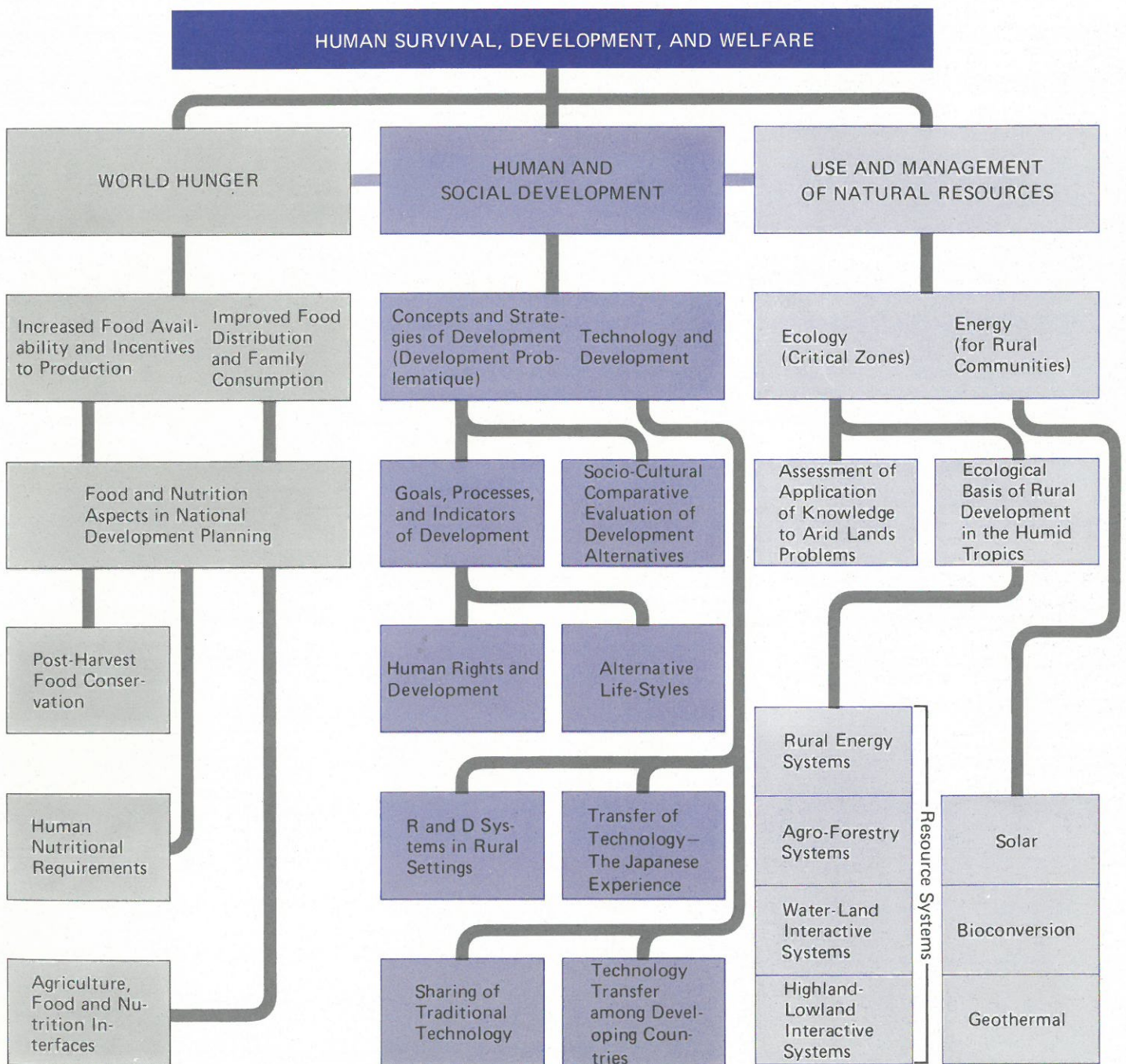
A similar viewpoint was expressed by Dr. G.J. Afolabi Ojo of Nigeria, a Natural Resources Project Co-ordinator, when he told participants: "We are dealing with man as an entity—as an individual and as a member of a group. Whether you look at him either as an individual or as a group member, one must think of him as a rather complex and complicated entity—not something simple for which you have devised simple values."

Dr. James M. Hester, Rector of the University, summed up the significance of the joint programme meeting as follows: "It was the recognition that prob-

lems of human survival, development, and welfare are all of one piece that led to the creation of the United Nations University in the first place. We have passed

a significant milestone here. With this meeting, the University is taking its most important step thus far in unifying research efforts on serious world problems. . . .”

CHARTER OBJECTIVES



The basic premise of the United Nations University is the fact of global interdependence. Among the implications of this fact are many problems that transcend national boundaries—problems such as world hunger, the impediments to adequate human and social development, and the improvident use and management of the earth's natural resources. Coping with problems of such magnitude is beyond the capabilities of scholars and scientists of any single nation or region. Perspectives and expertise from different parts of the world are required to understand and make progress with such complex matters. But there has been no world-wide academic organization to plan and develop co-ordinated research, advanced training, and dissemination of knowledge concerning major global problems on a systematic and sustained basis. The University has been created to meet this need. Its task is to organize scholarly collaboration to identify and alleviate "pressing global problems of human survival, development, and welfare."

In planning the University and organizing its work, emphasis has been placed on learning from the experiences of the academic world and existing international agencies and on complementing and reinforcing their activities. Although it is sponsored by the United Nations and UNESCO, the University is an autonomous academic institution and not an intergovernmental organization. The University's Charter guarantees it academic freedom in the choice of subjects and institutions and individuals through which to work, and freedom of expression. The United Nations has thus created an instrument through which the scholars and scientists of the world can collaborate freely to share their knowledge and perspectives for the benefit of all people.

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