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The Natural Resources Program at the United Nations University

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The new United Nations University, which began its initial operations in September 1975, now includes programs on the alleviation of world hunger, on human and social development, and on the use and management of natural resources. From its temporary headquarters in the Toho Seimei Building in Tokyo, the university, under the direction of Rector James M. Hester, former president of New York University, is beginning to fulfill its mandate to organize top scientific and scholarly collaboration to help identify and alleviate pressing global problems of human survival, development, and welfare. This new university does not have a campus, students, or degree courses, but rather it was founded on a unique concept whereby it operates from the central planning and coordinating center in Tokyo through networks of institutions and scholars all over the world.

In order to achieve its goals, the U.N. University organizes associated institutions and scholars to (i) identify critical international problems, (ii) to undertake internationally coordinated research and advanced training, (iii) to strengthen research and advanced training resources in developing countries, (iv) to disseminate the research results both to scholars and decision-makers, and (v) to encourage mission-oriented multidisciplinary research and advanced training. While the U.N. University is sponsored by the United Nations and the U.N. Educational, Scientific and Cultural Organization (Unesco), the university is not an intergovernmental organization, but an autonomous academic institution with financial independence and guaranteed academic freedom in the choice of subject matter, participating institutions, and individuals.

Among the three program areas of the university, the natural resources program is the newest, having just begun in February 1977 under the direction of Vice-Rector Walther Manshard, former director of the Institute of Geography at the University of Freiburg, Federal Republic of Germany. This is the U.N. University's response to the serious resource supply and management problems felt by people all over the world. As with the other program areas, all decisions on program priorities and implementation are made after extensive meetings and consultations with scientists and experts in order to draw upon their knowledge and experience, and after consultation with other organizations of the U.N. family, such as Unesco,

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Food and Agriculture Organization (FAO), and the U.N. Environmental Program (UNEP). These discussions ensure an effective sharing of resources, a complementarity of programs, and a minimization of duplication. Initially, the program will focus on multidisciplinary activities, which will be limited to three areas: (i) the subprogram on the ecological basis for rural development in the humid tropics, which will combat the increasing environmental deterioration and promote more efficient and sound management of natural resources; (ii) the subprogram on the assessment of the application of knowledge to arid land problems, which will determine the reasons for the ineffective application of knowledge to the management and development of arid and semiarid lands; and (iii) the subprogram on energy for rural communities, which will attempt to overcome the limited energy supplies available, especially in rural areas in developing countries. Finally, exploratory activities will begin on coastal zone management to determine the potential role of the U.N. University in the development and management of coastal zone resources. Each of these subprogram areas will consist of a carefully formulated combination of activities for research, training, and dissemination of information. Although the university's projects will be based largely in the developing countries, many possibilities for cooperation exist with the industrialized nations. The research and training capabilities of the industrialized countries will be closely integrated into the various networks being organized in order to make optimal use of the scientific and other resources available.

At present, the first operational steps are being taken, including the formation of networks of associated institutes in each subprogram area, the establishment of a program to select U.N. University fellows to study selected problems at associated or cooperating institutions and at meetings of experts, and the preparation of publications. Some research and training activities may begin in cooperation with associated institutes in late 1977, but it is expected that only during 1978 the associated institutes and all component activities will become fully operational.

The most advanced of the subprogram areas is the ecological basis for rural development in the humid tropics. The purpose of this subprogram is to analyze traditional rural resource systems in the humid tropics and to determine ways to modify, adapt, and introduce new technology in order to protect the environment, maintain or increase productivity, and satisfy the aspirations of the local population. This work is divided into four projects: (i) the rural energy systems project to improve rural energy supply systems while counteracting deforestation, with the inital base at the University of Ife, Nigeria; (ii) the agroforestry systems project to evaluate and develop various tree and field crop combinations, with its initial phase based at the Tropical Agricultural Research and Training Center, Costa Rica, with some additional research to be carried out in Southeast Asia; (iii) the agro-aquatic systems project to develop small-scale land and water crop combinations suitable to a wide variety of environments and to the different food and energy needs of the local populations, with the initial center tentatively being established at Bogor Agricultural University in Indonesia; and (iv) the highland-lowland interactive systems project to improve comprehensive natural resource planning at the regional level based on an improved socioeconomic and physical understanding of the interactions between highlands and lowlands. This last-named project will probably not be based at a single associated institution, as varied research and training activities will probably be organized at institutions in Thailand, Nepal, and Papua New Guinea. In addition to activities at the above-mentioned universities, research, training, and dissemination activities will also be initiated at other institutions in Southeast Asia, Latin America, and Africa.

The assessment of the application of knowledge to arid land problems is imperative in view of the disasters such as the Sahel drought from 1970 to 1972 and the impending drought in the same area—in spite of 25 years of research on those problems. Therefore, the purpose of this subprogram is to identify the factors causing the ineffective use of scientific knowledge and other information that could improve the environment and raise living standards in dry land areas and to develop and implement means to overcome the difficulties identified. For example, the University of Khartoum in Sudan is being evaluated as an associated institution for the initiation of these activities, while institutions in the United States and Australia may play a supporting role.

Finally, the aim of the energy for rural communities subprogram is to establish a series of demonstration and pilot projects in selected rural communities in order to demonstrate the feasibility of using small-scale nonconventional energy sources to satisfy the particular needs of the local communities. Since much of the technology is relatively well developed, the emphasis is on (i) the integration and adaptation of existing technology to local conditions; (ii) the social, economic, and cultural problems of introducing nonconventional energy sources; and (iii) training and dissemination of information. These pilot demonstration and research projects will serve to stimulate research and increased use of nonconventional energy sources, such as solar, wind, and biogas power, on an appropriate technological level for rural areas in developing countries. Iran and Algeria are the proposed sites for solar and biogas pilot projects.

In addition to their role in the pilot projects, the activities in bioconversion (biogas and biomass) will stimulate research on microbiological aspects for optimizing the projection of, and disseminating knowledge on, biogas production to developing countries that have a high need and potential for this energy source. A geothermal energy project is being developed to promote the use of this energy source, especially in energy-poor countries. Research and training on the use of geothermal energy will be undertaken in Iceland, while biogas and biomass activities may be initiated in Japan and India. Subsidiary activities—such as solar crop drying, architecture, and energy use—and the production of feed and energy from waste materials may be based in the United States, Brazil, Israel, and Japan.

The unique emphasis of this program, as summarized by Professor Manshard, "is less to increase the basic store of man's knowledge, than it is to organize, utilize and apply existing knowledge." With this insight, Dr. Manshard will join the rector and other vice-rectors to present the programs of the U.N. University at the next two consultative meetings to be held in Washington, D.C., and Ottawa in October. At that time, a number of academic and governmental participants will be urged to express their opinions and suggestions about these programs. In so doing, they will be helping to achieve the U.N. University's goal of alleviating the pressing global problems of human survival, development, and welfare.