



1988
Annual Report

The
United
Nations
University



THE UNITED NATIONS UNIVERSITY

■ Strikingly different in structure from the traditional university – with no students or faculty in the usual sense, no central campus. While headquarters are in Tokyo, the University, through its world-wide research, training and dissemination activities, has “its location at the site of each centre or programme.”

■ First proposed in 1969 by U Thant, then Secretary-General of the United Nations, as a university that would be “truly international and devoted to the Charter objectives of peace and progress.” After world-wide consultation, a United Nations-appointed committee recommended that, to promote international scholarly and scientific co-operation, a new kind of university was needed. The concept was enshrined in the UNU Charter adopted by the United Nations General Assembly in 1973; the University began work in 1975.

■ Operates through global networks of individuals and institutions. The University Centre in Tokyo is the main programming and co-ordinating body. UNU research and training centres and programmes, set up in various parts of the world, enable the University to make a distinctive intellectual and scientific contribution to long-term problems. In addition to these operations of its own, the University reinforces its global mandate through links with existing academic institutions and organizations throughout the world.

■ Concentrated in 1988–89 on eight programme areas that respond to today’s interlocking global concerns: 1) Peace, culture and governance; 2) The global economy and development; 3) Global life-support systems; 4) Alternative rural-urban configurations; 5) Science, technology and society; 6) Food, nutrition and biotechnology; 7) Human and social development; and 8) Global learning and informatics.

■ Funded by voluntary contributions from governments, bilateral and multilateral agencies, foundations and other sources. The UNU receives major contributions to its Endowment Fund which is invested to yield basic annual income; it also receives annual-type operating contributions as well as specific programme and project support.

■ Current Rector is the Brazilian educator and scientist, Heitor Gurgulino de Souza, who took office on 1 September 1987 on appointment by the Secretary-General of the United Nations after consultation with and the concurrence of the Director-General of UNESCO. At the time of his appointment, he was President of the Latin American University Group and head of the Planning Committee of the Federal Council of Education of Brazil.

ANNUAL REPORT

1988

The United Nations University





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MESSAGE FROM THE RECTOR

From a number of important perspectives, the year 1988 represented an important time in the life of the United Nations University – a period in which, despite financial difficulties, the larger vision of this unusual and distinctive international academic institution continued to take concrete form. Elements of this vision are threaded throughout the UNU's work over the year, as I believe this Report* makes clear.

There was growing evidence of the University's increasing institutional and programmatic visibility around the globe:

Thanks to the generosity of the Government of the Netherlands, the launching of the University's second research and training centre, the Institute for New Technologies (INTECH) in Maastricht, is well on track. The first such UNU centre, the World Institute for Development Economics Research (WIDER) in Helsinki, Finland, now in its fourth year of operations, has clearly already begun to put its intellectual stamp on international economic thinking.

While it has not yet been possible for the University to formally inaugurate operations at the Institute for Natural Resources in Africa (INRA), we very much hope to be able to begin certain start-up activities in the coming year. A programme in biotechnology activities for Latin America and the Caribbean will shortly be underway in Caracas following the agreement signed in 1988 with the Venezuelan Government.

Two other potential UNU research and training centres – one on outer space and society in Austria, the second on computer software development in Macau – are under intensive exploration. Interest has also been expressed by authorities in Catalonia, Spain, in supporting a UNU facility, concerned with problems of governance, in Barcelona. Finally, on the institutional front, planning is moving along well on the proposed Institute of Advanced Studies in Japan, which has been conceived as an important intellectual component of the University Centre complex in Tokyo.

This quickening scenario of a global system of institutions and activities marks the beginning of a major change in the life of the University. The growing intellectual resonance of the UNU, around the world, may well require some adjustment in thinking as regards the role of the University Centre in Tokyo. Among other things, this unfolding process of decentralization forces us to look at our allocation of resources in a different light.

* Material in this report is adapted from the Report of the Council of the United Nations University (January–December 1988) to the United Nations General Assembly.

Not that our present financial problems can be taken lightly. But it needs to be recognized that their main impact has been largely on our yen-based operations at the Tokyo Centre. On the other hand, there are encouraging indications that the very process of establishing our own research and training centres in other parts of the world can attract considerable funding. And the fact remains that the revised biennial budget for the years 1988–89, adopted by the Council at their meeting this past December, is the largest budget – at just over \$50 million – in the University's history.

This is in no way to diminish the importance of the University Centre. It is the basic hub of the programming and co-ordination of the UNU's entire world-wide system. It is essential to maintain a strong and effective Centre to promote a shared sense of purpose and direction throughout our far-flung networks, and at the same time to fertilize innovative thought. Two basic hallmarks of the United Nations University must be coherence and diversity – and the resultant tension that this inevitably sets up will always be stimulating and healthy to the intellectual life of the University.

In addition to institutional growth, the University's progress over the year was also promising on the programmatic front. The results from a number of earlier projects were disseminated through the publication of books and other printed material as well as in other



*Rector Heitor Gurgulino de Souza.
At rear, model of new UNU head-
quarters facility in Tokyo.*

forms. During the process of reflection on completed activities that went on in 1988, as we considered future pathways for the University, the wide range of problems which we were addressing during the First Medium-Term Perspective (1982-87) began to coalesce into a relatively few critically important clusters of concerns. This sharpening of the University's focus will aid us in achieving greater programme coherence and effectiveness, as we enter a new phase of work with the Second Medium-Term Perspective for the period 1990-95 (adopted by the Council at their December 1988 session).

The agenda of the Second Medium-Term Perspective tries to anticipate the global trends and forces that will shape the world of the 21st century. The work will be motivated by a heightened awareness that human activities are now capable of altering our world in unprecedented fashion. Strivings for social and material progress are bringing about marked transformations in the systems that support life on Earth. There is urgent need to improve understanding of the interrelationships among biophysical and social forces that are reshaping the human habitat everywhere – and are capable of, among others, igniting large-scale political, social and cultural upheavals.

The University had already, some years ago, begun to respond to the looming environmental crisis in a number of very specific ways. The most notable new venture is its partnerships, with the International Federation of Institutes of Advanced Study and the International Social Science Council, in the project, "The human dimensions of global change." This will be a major long-term effort by the international social science community to improve understanding of the ways in which human actions – through, for example, exponential population growth or profligate waste of the globe's resources – could well doom our home, the Earth.

With such a broad canvas, all our work needs to be co-ordinated closely with that of other members of the United Nations family, and this aspiration is reflected in the extensive discussion we had over the year, in New York, Geneva, Paris, and elsewhere, with high-level officials of the UN and its various organs. The University is well positioned to anticipate critical issues that many UN agencies will have to deal with in the coming decades. Its flexibility, autonomy and academic nature make it a valuable asset to the United Nations system. We could be particularly well placed, I believe, to perform a "global alert" function – helping to point the direction for potential upstream scientific responses to problems, both within the UN and elsewhere. At the same time, we must utilize fully our Charter-given autonomy in order to preserve our distinctive academic character.

In our efforts, we remain very cognizant of the special debt of gratitude that the University owes to our host country. Japan has demonstrated its commitment to the ideals of the UNU in a manner

still unmatched by any other nation. We have kept in close touch over the year with leaders from Japanese academic and governmental circles, both in Tokyo and at academic institutions and research organizations throughout the country. For its part, the Government of Japan has shown its firm resolve to proceed with the construction of the UNU permanent headquarters in central Tokyo, and has now committed a total of \$80 million for this project. We hope 1989 will see the formal ground-breaking for Kenzo Tange's distinctive building, which will be our permanent home.

On balance, I believe that a review of the activities of the University for the year 1988 offers substantial grounds for optimism and hope about the future of this very special effort at international scholarly communion that is the United Nations University. In view of our current financial situation, it was necessary that various of my senior colleagues and I had to devote a good deal of time in 1988 to fund-raising efforts in various parts of the world. We were fortunate to receive contributions and pledges from 17 countries, totalling over \$10.7 million. All in all, I think this constitutes a very encouraging vote of confidence in the enlarging vision – and the maturing practical worth – of the United Nations University.



Heitor Gurgulino de Souza
Rector

HIGHLIGHTS OF THE YEAR

The year 1988 witnessed continued growth in the institutional presence and visibility around the globe of the United Nations University. It was also essentially a period of consolidation for the University – occasioned, in part, by financial trends largely beyond its control (a falling dollar, lower return on investments), and, in part, by the University's own decision to adjust its calendar more closely to the work schedule of other major United Nations organs (with the years 1990–1995 adopted by the Council as the period to be covered by the Second Medium-Term Perspective (MTP II).

- Continuing efforts were made to strengthen UNU co-operation with scientific organizations such as the International Council of Scientific Unions (ICSU). A major international social science effort to improve understanding of the human dimensions of global environmental changes, which will complement the work



Human strivings for social and material progress are now so enmeshed in massive environmental change that international collaboration is essential in bringing together the work of both natural and social scientists.

United Nations already underway through ICSU's International Geosphere/Biosphere Programme, is being jointly organized by the University with the International Federation of Institutes for Advanced Study (IFIAS) and the International Social Science Council (ISSC). An important step forward in implementation of the new project was taken at an international symposium at the Tokyo Centre in September that brought together 100 leading social and natural scientists and representatives of relevant organizations to help develop an agenda for the programme's activities.

- A total of 28 new books, including one from WIDER, were published in 1988 in various languages by the Tokyo headquarters or co-publishers around the world. Another 40 books are expected to be published in 1989. Of previously published titles, 5 were reprinted. Fifteen issues of the University's 4 journals were published: *ASSET*, 3 issues; *Journal of Food Composition and Analysis* (quarterly), 4 issues; *Food and Nutrition Bulletin* (quarterly), 4 issues; and *Mountain Research and Development* (quarterly), 4 issues. A collection of Working Papers and Country Studies

A selection of UNU publications during 1988. Dissemination "to increase dynamic interaction in the world-wide community of learning and research" is one of the main functions of the UNU.



were issued by WIDER, and a number of books, booklets and research papers were also produced by the University's research networks.

- The University also continued to move forward in the creation of its own research and training centres (RTCs). The Government of the Netherlands made an offer of 30 million Dutch florins – approximately US\$14.3 million – to the Endowment Fund, plus another 1 million florins indexed annually, for the establishment and operation of a new research and training centre, the Institute for New Technologies (INTECH) in Maastricht. The first University RTC, the World Institute for Development Economics Research (WIDER), was in its fourth year of operations. In 1988, the Government of Finland made an additional contribution of \$2.26* million to WIDER over and above its initial endowment and operating pledge of \$30 million. In addition to the 1987 pledges already made by the Governments of Norway and Sweden, the Government of India recently pledged \$1 million to WIDER. As to the Institute for Natural Resources in Africa (INRA), one of the two African host countries, Zambia, has recently** paid \$600,000 on its initial \$2 million pledge, and it is hoped that Côte d'Ivoire, the other host, will soon be able to make a first payment. A number of other countries and agencies have also already contributed or signalled their intention of providing financial support. Two other potential UNU research and training centres, one on outer space and society, the second on computer software development are being explored through feasibility studies funded respectively by the Governments of Austria and Macau, the latter with support of the Governments of Portugal and China.
- Discussions continued on the establishment of a research and training centre in Japan in close consultation with international and Japanese academics; particularly valuable input on possible directions for the Japanese RTC was provided by the Rector's Advisory Committee which met for the first time in Tokyo in October. The premises and funds for the initial operation of the RTC in Japan will be available thanks to the generosity of the Tokyo

* Unless otherwise indicated all dollar figures are in US dollars.

** As of January 1989.

Metropolitan Government. The Government of Japan has also decided on the initial allocation of funds in the amount of ¥1 billion (approximately \$8 million) to begin construction work on the permanent headquarters building in Tokyo. A total of \$80 million has been committed to complete the headquarters facility.

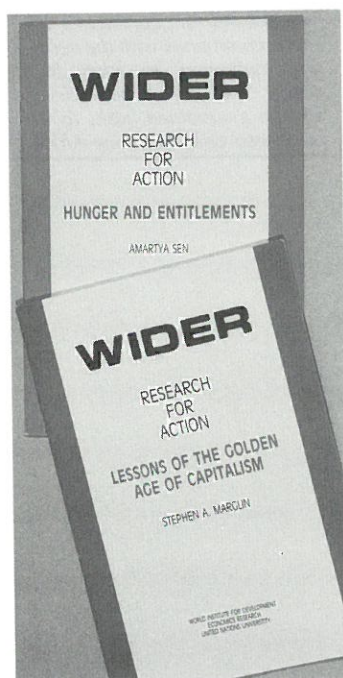
- An agreement was signed with the Venezuelan Government concerning a programme in biotechnology activities for Latin America and the Caribbean; Venezuela made a contribution of \$2 million (from their original \$10 million pledge to UNU) for this purpose. A Co-ordinator and a Scientific Advisory Committee have been appointed, facilities to house the co-ordination office have been made available in Caracas, and actual activities should start in the beginning of 1989.
- The first UNU Fellows marked their tenth anniversary of the completion of their training in 1988. Thirty-nine more fellows completed their terms, bringing to 947 the total number of fellows who completed training since 1976. To increase the yearly number of fellows and further promote training in developing countries, the University worked out a cost-sharing agreement on training with two institutions in Brazil, and similar agreements are being negotiated with China, Colombia, India and other countries.
- Efforts to create local UNU support groups were successful during the past year. The Indian Council for the UNU was established in the spring to promote and strengthen the concept and work of the University in that country. There were also discussions with interested parties in Canada about setting up a local support group, and the establishing of similar groups in Argentina and Brazil are being explored. A US support group, the American Council for the UNU, has been in existence for some years.
- Events over the year, as the University moved toward finalization of MTP II, provided evidence that the UNU has entered a phase of its institutional and programmatic evolution in which the global network envisioned in the Charter is coming ever closer to reality – a growing decentralization that itself has stimulated new funds.
- During 1988, 17 governments pledged and/or contributed \$10.74 million. As of 31 December 1988, a total of \$199.08 million had been pledged to the Endowment and Operating Funds of the University by 47 governments. Of the amount now pledged, \$172.53 million has been received.

INSTITUTIONAL DEVELOPMENT

"The United Nations University ... shall function ... through a central programming and co-ordinating body and a network of research and post-graduate training centres located in the developed and developing countries."

Charter of the University, Article I, Section 1

The UNU continued to move forward in 1988 with the creation of its own research and training centres. The University has now entered a phase of its institutional and programmatic development in which the global network envisioned in its Charter is becoming a reality. There are, moreover, a number of encouraging indications that the establishment of its own research and training centres or research and training programmes could attract major funding from potential host countries and other sources.



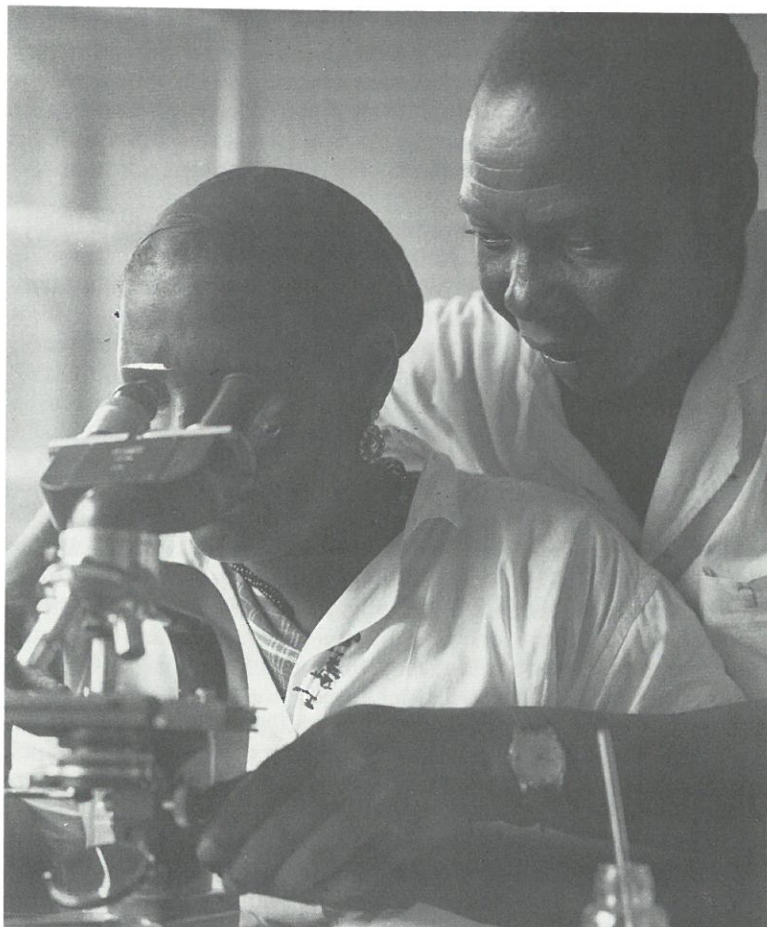
World Institute for Development Economics Research (WIDER):

The first of these is the World Institute for Development Economics Research (WIDER) in Helsinki, Finland, which was formally established by the Council in December 1983 and began work in the spring of 1985. WIDER is very much intellectually alive and firmly established on the world academic scene.

In addition to providing accommodation for the new institute, the Government of Finland has pledged \$25 million as the nucleus of the UNU's Endowment Fund for WIDER, and has also pledged operational and project contributions totalling another \$5 million. A further \$2.26 million was pledged by Finland in 1988. A further measure of WIDER's success in the eyes of governments were the pledge to its Endowment Fund this year of \$1 million from the Government of India and the \$2 million contribution from the Government of Sweden. Also in 1988, an additional \$316,000 was contributed by the James S. McDonnell Foundation of St. Louis, Missouri, United States; to date the McDonnell Foundation has contributed just over one half million dollars in support of visiting scholars at WIDER. Five noted economists, from Belgium, France, Hungary, India and the UK, spent part of the summer of 1988 at WIDER as McDonnell Distinguished Scholars.

The principal purpose of the Institute is to help identify and meet the need for policy-oriented research on pressing global economic problems, particularly those impacting most directly in the developing countries. Its work is carried out by staff researchers and visiting scholars in Helsinki and through networks of collaborating institutions and scholars around the world. WIDER has begun to produce a series of well-received reports about a broad spectrum of development issues, ranging from hunger and poverty in the Third World, to technological transformation and problems in the basic functioning of the international economic system. It has also been issuing short, non-technical reports aimed at policy-makers and their advisers in both developed and developing countries.

Institute for Natural Resources in Africa (INRA): The second UNU research and training centre, whose establishment was agreed to by the Council in December 1986, is the Institute for Natural Resources in Africa (INRA). It was created after four years of study by some of the most distinguished scientists in Africa and extensive consultations with government leaders and national and international organizations and institutions. INRA is designed to strengthen



The Institute for Natural Resources in Africa (INRA) is designed to help provide the continent's scientific community with the necessary framework to apply high quality research without delay, and on a sustained basis, to the prolonged crisis besetting Africa.

United Nations

national institutions in Africa, help scientists throughout the continent attract others back to Africa, and, in general, help provide the African scientific community with the necessary management framework to ensure that the results of high quality research are applied rapidly and on a sustained basis in areas where they are urgently needed.

The Governments of Côte d'Ivoire and Zambia have pledged \$5 million and \$2 million, respectively to the UNU's Endowment Fund for INRA and have offered to provide buildings and other physical facilities. (In January 1989, Zambia paid an initial \$600,000 on its pledge.) The main centre of INRA would be located at Yamoussouk-

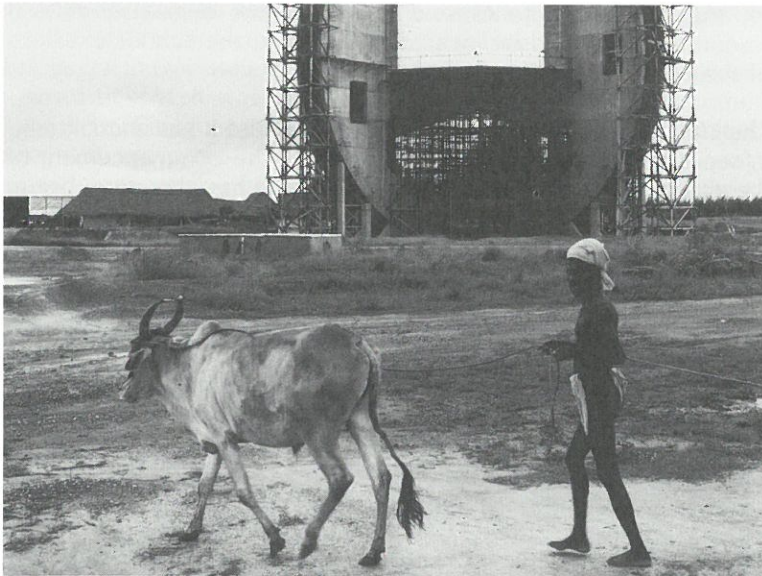
ro, the capital of the Côte d'Ivoire and the Institute's mineral resources unit would be located in Lusaka at the School of Mines of the University of Zambia.

The University is concerned over the difficulties it has encountered in securing the necessary contributions for the commencement of the activities of INRA, as originally pledged. It has, therefore, begun to explore ways in which it might proceed as soon as possible with certain start-up programmatic activities in the area of INRA's concern, since such action is urgently called for on the African continent. It is recognized, however, that this will have to be done in ways that will not put undue strain on the University's already limited financial resources. The World Bank has recently offered to consider the possibility of funding senior scientific staff for an initial period, and to take a lead in convening a working meeting of potential donors in the spring of 1989.

Meanwhile, a number of other African governments have assured the University of their support and readiness to co-operate once INRA becomes functional. The Government of Ghana has made a contribution of \$250,000 (the remainder of its initial pledge of \$2.5 million to the UNU Endowment Fund, and the Government of Nigeria has pledged an initial operating contribution of \$150,000 over a three-year period of which it has paid \$50,000 so far. Outside of Africa, the Government of France has made an initial pledge of 20 million francs (approximately \$3.5 million) toward the operation of INRA for three years. UNDP has committed its support for the Institute's training programmes once it becomes operational. The OPEC Fund will provide a grant of \$175,000 for equipment for the mineral resources unit. A private individual in the US has contributed \$100,000 for research associates. The Governments of the Federal Republic of Germany, Italy and the United Kingdom have indicated their interest in considering project support after INRA begins operations. The European Development Fund and the African Development Fund have a request for funding under active consideration.

Institute for New Technologies (INTECH): The establishment of an Institute for New Technologies (INTECH), to be located in Maastricht, Netherlands, was approved by the Council in July 1988. INTECH's work will focus primarily on the implications of new technologies – micro-electronics and biotechnology in the first instance – for development strategies and industrialization policies. Its activities will be carried out in co-operation with institutions in both the developing and developed countries, the latter particularly to take full benefit of work being done at the cutting edge of new technological advances.

INTECH was established following a feasibility study which was underwritten by the Government of the Netherlands; this examination included country studies by researchers in Brazil, China, India



"...the new technologies have important implications for development strategies in general and for industrialization strategies in particular... existing research activity does not provide a sufficient basis for understanding these implications."

INTECH Feasibility Study

and the Republic of Korea. Following on the report of this study, the Government of the Netherlands has made an offer of 30 million Dutch florins (approximately \$14.3 million) to the Endowment Fund, plus another 1 million florins indexed annually, for the establishment and operation of the new institute and offered to provide suitable premises in Maastricht, Province of Limburg.

Institute of Advanced Studies in Japan: Discussions continued over the year, in close consultation with international and Japanese academics, on the establishment of a research and training centre in Japan that would take the form of an institute of advanced studies. It is now envisioned that such an institute would eventually be located adjacent to the UNU Centre, with facilities and initial operational funds provided by the Tokyo Metropolitan Government. The city of Fukuoka in Kyushu has also offered to host a UNU research and training centre or programme.

In its deliberations on the centre to be located in Tokyo, the University has benefitted from close consultations with a special Japanese advisory group; valuable input was also provided during the Rector's Advisory Committee in October. Once this important institute becomes operational, the University will be able to co-operate more actively with the Japanese academic and scientific community, enhance its visibility, and expand its work both in Japan and throughout the world.

Biotechnology activities in Latin America and the Caribbean: The University signed an agreement in 1988, with the Venezuelan Government concerning biotechnology activities for Latin America and the Caribbean, with a co-ordinating office in Caracas. It is envisioned that the activities may evolve into a UNU research and

training centre or programme on biotechnology. The activities aim at promoting the application of biotechnology, including genetic engineering, for the socio-economic well-being of developing countries, with particular emphasis on Latin America and the Caribbean. This activity is financed by Venezuela's contribution of \$2 million from its original \$10 million pledge to the UNU.

* * *

Further institutional developments involve feasibility studies of two other research and training centres – one concerned with the implications of space science and society, the second with computer software development:

Institute for Outer Space and Society: The feasibility study of the proposed Institute for Outer Space and Society, completed in 1988, was funded by a grant of \$70,000 by the Government of Austria. At an international advisory meeting in Trieste, Italy in May, the feasibility study team discussed their interim report with a number of other experts in the field. It was agreed that such an institute should deal with a broad range of space activity considerations – including their social, cultural, political, economic, environmental, ethical and also philosophical dimensions. One of its major roles would be to evolve novel approaches to the creation, sharing and dissemination of knowledge in the field.

Centre on computer software development: A feasibility study began in December on the desirability of establishing a research and training centre in Macau to help develop computer software for developing countries. The Government of Macau is underwriting the study with a grant of \$150,000; officials of the Macau Government came to the Tokyo Centre for consultations with the University last spring. The Government of Portugal has expressed its willingness to co-operate in the creation of such a centre and the proposal has also received the endorsement of the Government of the People's Republic of China.

It is envisioned that the centre would help disseminate information about the potential benefits of computers in maximizing socio-economic welfare in developing countries and offer software packages and application systems geared to their needs. It would also offer training in software development methods, particularly to technical personnel in the user countries.

Associated and other co-operating institutions and organizations: In addition to research and training centres and programmes of its own, the University also continues to implement the work of its global networks of scientists and scholars through linkages with existing associated and other co-operating institutions and organizations around the world. These enable the UNU to carry out its global mandate and draw on the intellectual resources of cultures and regions world-wide.



"In the space perspective, earth appears as an integrated, interdependent system, with all of us as stewards of the planet, responsive not only to our contemporaries but also to future generations for the use and conservation of the natural and cultural heritage."
Institute on Space and Society
Feasibility Study

PROGRAMME ACTIVITIES – 1988

“The University shall devote its work to research into the pressing global problems of human survival, development and welfare that are the concern of the United Nations and its agencies...”

Charter of the University, Article 1, Section 2

At its thirty-first session in July 1988, the Council of the University decided to adopt the years 1990–95 as the period to be covered by the University's Second Medium-Term Perspective so that it would coincide more closely with the planning periods of the United Nations and UNESCO. During the 1988–89 biennium, therefore, the University's programme is essentially a transitory one in which, on the one hand, the activities undertaken as part of the First Medium-Term Perspective (1982–87) are being concluded and the results disseminated while, on the other hand, the activities to be carried out under the Second Medium-Term Perspective are being planned.

The 'global alert' role: In fashioning a potential agenda for the Second Medium-Term Perspective, it is envisioned that a most appropriate and useful role for the University would be that of a global alert – helping to point the direction for potential scientific responses to emerging problems, whose thrust often lies outside the traditional academic mainstream. While all three of the basic University Charter functions of research, training and dissemination would provide input to such an intellectual “distant early warning” system, responsibilities would logically fall most heavily in the area of dissemination – whether print, film, computerized data bases, teaching seminars or other means for transmitting and sharing knowledge. With the appointment of an Academic Vice-Rector for dissemination, particular emphasis is already being given to the ways in which dissemination activities can aid the University's research and advanced training to have a more effective impact on the international community of scholars, the UN system and the concerned public.

Programme areas: The University's work in 1988–89 covers eight programme areas:

- (1) Peace, Culture and Governance
- (2) The Global Economy and Development
- (3) Global Life-Support Systems
- (4) Alternative Rural-Urban Configurations
- (5) Science, Technology and Society
- (6) Food, Nutrition and Biotechnology
- (7) Human and Social Development
- (8) Global Learning and Informatics

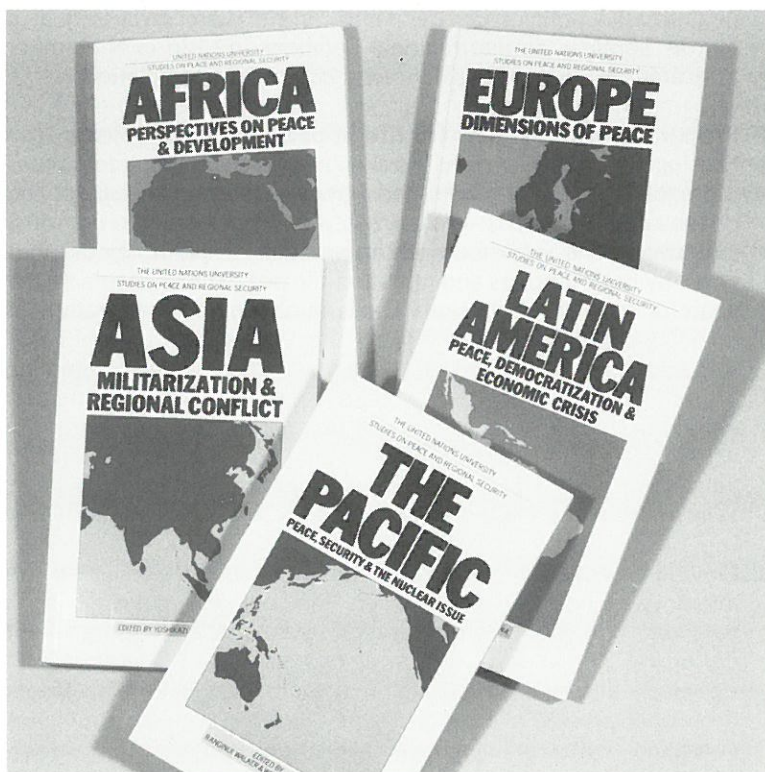
Interlinking concerns: The work of these areas is, of course, closely interlinked in many ways, as befits the University's overall goal of seeking to respond flexibly and realistically to today's interlocking global concerns. The governance of society in peace and harmony is tied to shifting international economic forces. Misuse of the planet's finite resources can result in violence, environmental ravage, and hunger, all of which can set tides of humanity afoot in search of new homes. Technology's reach extends into the daily lives and cultures of societies everywhere, and its appropriate use is essential to true human development. Finally, in a world as complex and rapidly changing as the present one, access to new knowledge, and the capacity to absorb and make use of it, are essential requirements for all levels of society today.

Programme Area 1: Peace, Culture and Governance

The present-day interface between peace, culture and governance is an area that calls for critical examination of the world situation and for the development of alternative ways to create a better life for all human beings. Our global society is being buffeted by many different forces for change. A fundamental shift, from a bipolar to a multipolar world, is underway. New power configurations are emerging, based in large part on economic and technological capacity, not military strength. But this is leading to a situation in which all societies are becoming exposed to forces and processes beyond their control, and there is a global sense of vulnerability. Increasing poverty, growing population densities, widespread violations of human rights, and, above all, the threat to all human existence from the arms race are taxing the governance capabilities of our institutions. New kinds of institutions – political and otherwise – that can manage human affairs more effectively and equitably need to be created. Equally important to the establishment of new institutions, however, is improved understanding of the ways in which traditional cultures are being affected by changes, particularly those societies uprooted and disturbed by technology-led development.

In its earlier studies on peace and global transformation, the University has built up extensive regional and global networks of researchers in this general field representing different disciplines and schools of thought. These networks provide the basis for the UNU's ongoing activities in this area (in 1988, this phase of the work was supported by the remaining funds from a Ford Foundation grant of \$112,500).

- **Peace and governance:** The ongoing project on peace and governance is assessing the findings from earlier University research which suggested that the contemporary world lacks effective governance tools to cope with problems like armed conflict, environmental disruption, population explosion, or hunger. The current project is researching how the preconditions for peaceful coexistence might relate to different systems of governance at various social levels.



Publications from UNU project on peace and regional security, which analyzed sources of conflict in different parts of the world.

- **Military R&D, development and peace:** Two meetings in the concluding phase of some of the earlier peace and conflict resolution studies took place at the University Centre in Tokyo during the period under review. A January 1988 meeting, organized with the co-operation of the Science Council of Japan, explored the interrelationships between high technology and world peace, in particular, the manner in which violence often seems to be embedded in modern science and technology. The symposium considered the alternatives to the current domination of so much of science by the military, and ways to turn modern technology to the service of larger humanitarian purposes. This issue was further explored in a March seminar, jointly organized with the Peace Research Institute of Meiji Gakuin University, which examined the present trends in military R&D and their implications for development. Both meetings provided an occa-

sion to disseminate the research results in Japan of the UNU peace and global transformation work, and further strengthen the University's visibility and collaboration with the host country academic community.

The role of Europe in peace and global transformation was reviewed at a conference in Amsterdam in January 1988 which considered publication plans for the commissioned papers exploring the possibilities of a new detente on that continent. The impact of European policies on the Third World were discussed at a Nordic Seminar on Interregional Relations in Oslo in November as a final phase of the UNU study of Euro-South relations.

- **Preparation of societies for life in peace:** A training seminar in Helsingor, Denmark in July, organized jointly with the International People's College, considered how the research results of the peace and global transformation project might be put to use most effectively. The work focused in particular on possible contributions, by both scholars and rank-and-file peace movements, to the goals of the United Nations Declaration on the Preparation of Societies for Life in Peace. The training course made use of *UNU Work in Progress* (Volume 10, No. 3) which provided a sampling of the work of the UNU's peace and global transformation network. That same issue has also been used for course work by a graduate seminar on peace and conflict resolution in Japan and an undergraduate political science course at the University of Wisconsin in the United States.
- **Development and collective survival:** Issues touching on the interlinkages between development and collective survival in both the North and South were explored in five UNU panels, organized during the 19th World Conference of the Society for International Development (SID) in New Delhi, India, in March. The five panels drew on the results of a variety of previous UNU research activities concerned with conflict resolution and human and social development. While the panel discussions ranged widely, three basic questions figured large: 1) how to make development ecologically healthy; 2) how to achieve peace and development simultaneously; and 3) how to respect cultural diversities in the development process.
- **Impact of migration:** The migration of millions of workers from the poorer to the richer areas of the globe has posed some of the most complex issues of our age. The arrival of new migrants is rarely welcomed by the receiving societies, with resulting tensions and clashes along ethnic, linguistic or religious fault lines. Problems faced by migrant workers returning to their home societies can be equally perplexing, if not as overtly apparent.

The project on enhancement of household capacity in the post-migration phase, completed in 1988, dealt with the problems

faced by returning migrant workers. It built on the findings of an earlier UNU study of migrant workers to the Arab Gulf States from seven Asian nations. The project explored the ways in which families adjust (or fail to adjust) to various new stresses, including new income, that result from the migration of a household member. The University is acting as Associated Executing Agency for this study, which is part of the larger Asian Regional Programme on International Labour Migration being conducted by ILO and financed by UNDP; the two agencies have thus far contributed \$178,790 to UNU in support of the current activities.

Another migration project, now being planned for the second half of the current biennium, will be concerned with intra-regional Asian migration and cultural conflicts. It will deal with the changing character of the Asian labour market which is helping to trigger migrations within the region and the cultural responses, both negative and positive, to such movements. The bulk of the research activities will take place next year, with a final report anticipated in 1990.

In search of a better life, people are flocking to already crammed and unworkable cities. Migrant worker homes in Europe.



International Labour Organization

- **Third World and world development:** The insights gained through previous study of regional perspectives on the development process – in distinct but closely linked investigations over a four-year span by scholars in Africa, the Arab World, Asia and Latin America – are being pulled together and a synthesis of the findings being prepared by the new project on the Third World and world development. It addresses the question of the impact on the Third World of the contemporary global economic crisis and the ways countries and regions are responding to it.

The project is attempting to integrate the regional findings through the prism of five interrelated themes: transnationalism, social movements, the role of the state, the role of culture, and new forms of conflicts. Two project workshops were held this year. The first, in conjunction with the SID World Conference in New Delhi mentioned above, brought together research work done in the different regions of the Third World on “Social movements, the redemocratization process and development alternatives”; a book-length global synthesis report on this theme is now being prepared. The second, in Tepoztlan, Mexico in August, discussed the draft manuscript prepared on the topic, “The nation-state, emerging democracy and power structures: Political responses to the crisis.” The Government of Italy has provided \$300,000 for this project through the Third World Forum.

- **Ethnic minorities and development:** Whereas a major focus of the regional studies has been on the role of the State, such polities are only one part of the kaleidoscope of cultural differences in the world today. Cultural and ethnic groups number in the several thousands, yet their interests are often overlooked in the modernization process. The project on ethnic minorities and human and social development is trying to gain better understanding of the relationship between ethnic minority groups and national development processes; particular attention is being given to the contributions such minority cultures might make to the search for development alternatives. In 1988, the project has completed a computerized inventory and guidebook on ethnic minorities covering more than 500 ethnic groups; computer diskettes are being made available to researchers and policy makers.

Publications*

Peace, culture and governance

A total of 99 scholars from 38 countries contributed to the actual publications in the field of peace, culture and governance in 1988. As was the case with virtually all UNU publications, a number of other scholars, from all parts of the world, were also involved in the research whose results are reported in the publications.

Asia: Militarization and Regional Conflict, edited by Y. Sakamoto [Studies on Peace and Regional Security], published with Zed Books, London, UK

Ethnic Conflict and Human Rights, edited by K. Rupesinghe, published with Norwegian University Press, Oslo, Norway

Europe: Dimensions of Peace, edited by B. Hettne [Studies on Peace and Regional Security], published with Zed Books, London, UK

Global Challenges and East European Responses, edited by P. Bozyk, published with Polish Scientific Publishers, Warsaw, Poland

Latin America: Peace, Democratization and Economic Crisis, edited by J.A. Silva Michelena [Studies on Peace and Regional Security], published with Zed Books, London, UK

New Technologies across the Atlantic: US Leadership or European Autonomy?, by M. Pianta, published with Harvester Wheatsheaf, Sussex, UK

Science, Hegemony and Violence: A Requiem for Modernity, edited by A. Nandy, published with Oxford University Press, New Delhi, India

Towards a Liberating Peace, by The Peace and Global Transformation Core Group, published with Lokvani, New Delhi, India

* In some instances, the publications listed under the separate programme headings in this report are the result of research conducted in the same broad subject area by earlier UNU projects; as such, they constitute an essential part of the intellectual groundwork on which present studies are based. Unless otherwise noted, the sole publisher is the United Nations University, Tokyo.

Programme Area 2:
The Global Economy and Development

The continuing state of disarray in the world economy is reason for widespread concern – for governments, institutions, and individuals around the world. Slowed growth, and increased financial instabilities and uncertainties have had varying effects on different regions – but everywhere they have accelerated processes of differentiation and polarization. This has not only widened the gap between the North and South; growing issues between “haves” and “have nots” now also rend the landscape of the Third World itself. As a result, fundamental assumptions about development theories and strategies are being called into question.

The central aim of UNU’s studies of the global economy is to improve understanding of some of the current phenomena at play, with particular emphasis on assessing their implications for developing countries. The University’s activities in this area have been centred largely at its World Institute for Development Economics Research



“Trade patterns in developing countries have distinctive characteristics. First and foremost, the commodities they exchange internationally are non-competitive – exports are not consumed in large quantities at home and imports are not produced.” Lance Taylor, Economic Openness – Problems to the Century’s End (WIDER Working Paper 41). Groundnuts at docks in Senegal.

(WIDER) in Helsinki. A distinctive feature of WIDER is the multinational perspective it is bringing to the economic picture by scholars from many different parts of the world who contribute to its work, either while in residence at Helsinki or in work done for WIDER from universities and research agencies in their own countries. In the few short years of its existence, this new institute has clearly made its mark in international economic circles. Its ideas on recycling the Japanese surplus, for instance, published in two WIDER Study Group Reports, have been endorsed by the Prime Minister of the Netherlands and widely acclaimed by the financial press.

While the bulk of WIDER's work in 1988 is covered in this section on the global economy and development, some of its ongoing activities are providing specific input to other programme areas and are thus reported elsewhere in the appropriate programme section. An array of specific economic and financial concerns are now receiving the attention of WIDER-linked scholars, including, for example, questions of foreign debt repayments, new trade theories, and the management of deficits and surpluses. But the work also ranges well beyond what one normally takes to be economic interests. One current area of investigation at WIDER, for instance, is studying the link between violence and knowledge domination. Another is wrestling with the philosophical implications for feminists of upholding cultural integrity.

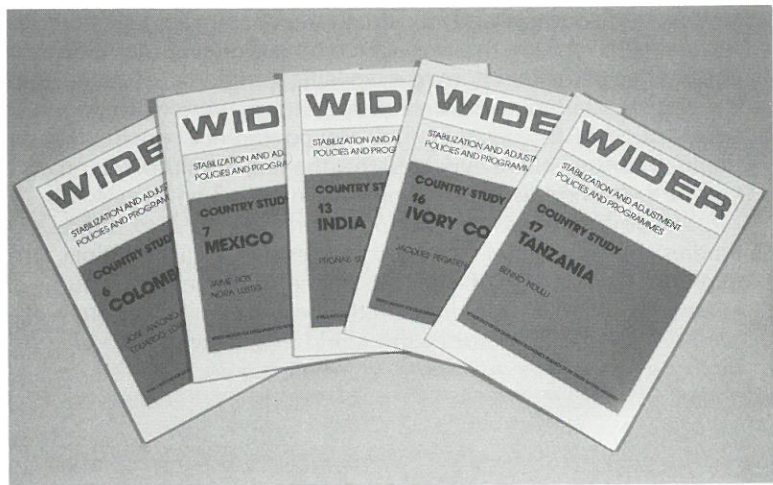
The work was not limited to its home base in Helsinki. In February, for example, WIDER helped organize an international colloquium on the world economy in Cairo, Egypt, which discussed the possibilities for research co-operation among various institutions. The proceedings of this colloquium are to be published by the Arab Thought Forum in Amman, Jordan. In March, it brought together leading debt negotiators for developing countries at a meeting in Mexico, to consider future debt strategies in the wake of Mexico's debt reconstruction; growing interest was evinced at the meeting in WIDER's plan for passing on to the developing countries the interest discount when debt is traded in secondary markets. A London workshop in July, held jointly with the London School of Economics and Political Science, dealt with the subject of social security in developing countries; as in the Cairo meeting, the goal was to stimulate further research and extend the world-wide research interests of the institute.

A set of WIDER projects come under the heading of "Money, Finance and Trade-Reform for World Development." They address current macro-economic problems within and between nations, ranging from unemployment to stabilization and adjustment policies to new patterns of trade. Also treated are specific economic problems of global significance, such as the US deficit, the crisis in commodity trade, and Japan's balance of payment surplus.

- **Macro-economic policies:** An overview project on Macro-economic Policies is trying to deepen understanding of how the global economy works – and why it does not work. It focuses on the interaction of international and domestic constraints in determining growth and output. An innovative feature is the attempt to marry economic history and theory: Why did the world economy have such remarkably strong and steady growth during the 1950s and 1960s? Why have conditions deteriorated so much since then? Collaborators in the project include researchers from the Pontificia Universidade Catolica in Brazil, the Council of Economic Advisers to the Prime Minister of India, Harvard University and the University of Massachusetts (Amherst), USA, and Oxford and Cambridge Universities, UK.

- **Real wages and unemployment:** A major reason behind the reluctance of the world's two major surplus economies – Japan and the Federal Republic of Germany – to expand demand is the fear that, with inflation re-ignited, the world economy will subsequently settle at permanently higher levels of both real wages and unemployment. Such a prescription would have serious implications for Third World growth and ability to absorb additions to the labour force. Many economists, however, have questioned the validity of this fear, and the issue remains a controversial one. The WIDER project on real wages and unemployment is seeking to establish empirically a theoretical framework on the relations between wages and investments; it builds on the previous WIDER research on the impact of higher real wages on investment and is investigating, through computer simulation, responses to investment under situations of wage shocks.

- **Correcting the US deficit:** The world's major macro-economic problem in recent years has been the huge and growing US deficit. It is now widely recognized that a failure by the United States to correct its deficit could bring on a crisis of confidence in the dollar, triggering a substantial rise in US interest rates, and leading to a world-wide recession. Equally worrisome could be the impact on the global economy of an unco-ordinated US response to its deficit, particularly one resulting in a new inflationary cycle. A WIDER project on correcting the US deficit: the impact on the world economy and developing countries is exploring a "least-cost" course to global economic adjustment where the burden would fall on those countries most able to afford it, and surpluses could be recycled in support of Third World development. It is assessing how far the correction in the US deficit needs to go to restore confidence in the dollar and avoid widespread protectionism in the United States and at the same time be allocated equitably on an international basis. The project is developing a global model capable of investigating the interactions of macro-economic policies in the developed and developing countries.



- **Stabilization and adjustment:** An earlier WIDER study explored the manner in which 18 nations adjusted, depending on their local situations, to internal and external shocks to their economic systems; it determined essentially that, whatever the response, a long period of economic stabilization had resulted. Now that these nations have stabilized, how might they return to a long-run growth path? Possible policy directions for the future are being explored in the WIDER project on stabilization and adjustment policies and programmes in developing countries. Particular attention focuses on Medium-Term strategies which might be feasible and most beneficial. The project is supported by a \$120,000 grant from the Ford Foundation.
- **Reform and stabilization in socialist countries:** A study of economic reforms and stabilization policies in socialist countries is investigating the ways in which economic reforms in these nations are part of a much broader global process of adjustment – while at the same time having their own particular momentum and timing. The research, which is being co-ordinated through the Institute of National Economy in Warsaw, includes case studies of the experience of reform in China, Hungary, Poland and USSR, with researchers from the specific countries involved. In addition to the work in their home institutions, each of the researchers spent from two to six weeks this past summer at WIDER in Helsinki.
- **New trade theories:** Few issues have excited more policy controversy over the years than trade strategy. In the past 20 years, the policy of encouraging exports and deriding import substitution acquired the status of a new orthodoxy. Recently, however, new theoretical approaches have led to rethinking this “conventional” wisdom; the work, however, has largely centred on trade flows among industrialized countries. The WIDER project

on new trade theories and industrialization in developing countries is seeking to remedy that imbalance by addressing the relevance of the "new" theories to the specific problems of small and developing countries. Seventeen research papers were commissioned and reviewed at a Helsinki conference on new trade theories in August. It is expected that the final results of the project will be published in 1989.

- Studies by individual scholars in residence at Helsinki are exploring a number of specific concerns. One such study is examining international efforts in the post-war period to strengthen the commodity sector of the world economy, with a view to evolving guidelines for more coherent commodity strategies.



Japan's economic success has put it in the forefront of development aid donors. WIDER has done extensive and well-received studies on potential use of the Japanese trade surplus.

Another is assessing the prospects for Japanese lending and investment in developing countries, with consideration of the financial instruments to be used for possible intermediation of Japan's balance of payment surplus. A third is studying the present economic crisis in Tanzania with particular emphasis on the role of the State and the expansion of the informal sector.

- **Differentiation and polarization:** Also in this programme area, the University Centre in Tokyo is co-ordinating an investigation of the forces that contribute both to unity and to diversity in the Third World in the project on differentiation and polarization processes and their implications for development. These forces have been increasingly visible with the emergence of the so-called "Newly Industrialized Economies" (NIEs). However admirable their growth and economic success, it is indisputable that they are leaving in their wake a group of poor countries of the "Fourth World," struggling for their very survival and all the more aware of their lot.

A leading role in this study is being played by the Starnberg Institute, Federal Republic of Germany, which was principally responsible for conceptualizing and obtaining external funds of \$250,000 for the project, and hosted the first scientific meeting of the project in November. Others expected to be included in the network will be: the Institute of Advanced Studies, University of Malaya; the Economic Commission for Latin America and the Caribbean (ECLAC); and the Chinese Academy of Sciences.

Publications

The global economy and development

A total of 59 scholars from 29 countries contributed to the actual publications in the field of the global economy and development in 1988.

Afrique: la longue marche vers la démocratie [Popular Struggles for Democracy in Africa], edited by P. Anyang' Nyong'o [Studies in African Political Economy], published with Editions Publisud, Paris, France

Development as Social Transformation: Reflections on the Global Problématique, by H. Addo, et al. [2nd printing]

Development Planning in Mixed Economies, edited by M. Urrutia and S. Yukawa

Economic Development Policies in Resource-Rich Countries, edited by M. Urrutia and S. Yukawa

Financial Liberalization and the Internal Structure of Capital Markets in Asia and Latin America, edited by M. Urrutia

Mining in Africa Today: Strategies and Prospects, by F. Yachir [Studies in African Political Economy], published with Zed Books, London, UK

Transforming the World Economy? Nine Critical Essays on the New International Economic Order, edited by H. Addo [2nd printing]

Varieties of Stabilization Experience, by L. Taylor, published with Clarendon Press, Oxford, UK (WIDER)

The World Steel Industry Today, by F. Yachir [Studies in African Political Economy], published with Zed Books, London, UK

Programme Area 3: Global Life-Support Systems

Most environmental issues today are caught up in a tightly-knit web of social, political, economic and technological forces and balances. There is growing concern about the prospects of sustainable development in the face of increasing exhaustion of the planet's finite supplies of air, earth and water.

From its inception, the UNU has been addressing problems of the resource management of fragile ecosystems such as highland-lowland interactive systems, agroforestry systems, and the humid tropical forests. In addition, studies of energy use and management have recognized the close links with sustainable development through problems of deforestation – caused to some extent at least by energy demands – and global atmospheric change resulting from emissions from fossil fuel combustion.

- **Human dimensions of global change:** In 1988, various new directions were under consideration for the UNU work in improving understanding of global life-support systems. The first of these, the human dimensions of global change (HDGC) programme, aims to complement the effort already underway through ICSU's International Geosphere/Biosphere Programme (IGBP), which is intending to improve understanding of the world's physical systems. The new programme, a collaborative effort with the International Federation of Institutes for Advanced Study (IFIAS) and the International Social Science Council (ISSC), is primarily concerned with the way in which environmental changes are influenced by human action; it seeks to bring the perspective of human sciences to the IGBP research by natural scientists.



On an increasing scale, human activities are seriously disrupting the globe's life-support systems. Increasing populations, demands for food, are degrading traditional systems. UNU research on impact of "slash-and-burn" cultivation is carried on in hill country of Thailand.

A major step forward in implementation of this new programme was the convening of an international symposium at the UNU Tokyo Centre in September, jointly organized with IFIAS and ISSC; it brought together some 100 leading social, natural and policy scientists and representatives of relevant organizations to help develop an agenda for the programme's activities which are anticipated to carry through to the end of this century. The purposes of the new programme will be:

- to improve scientific understanding and increase awareness of the complex dynamics governing human interaction with the total Earth system;
- to strengthen efforts to study, explore and anticipate social change affecting the global environment;
- to identify broad social strategies to prevent or mitigate undesirable impacts of global change, or to adapt to changes that are already unavoidable;
- to analyze options for dealing with global environmental change, and promoting the goal of sustainable development.

■ **Highland-lowland interactions:** Misuse of the world's mountain environments can affect over half the population of the globe through impacts on soil erosion, land slides, flooding and disruption of hydrological regimes; the tragic reality of this was brought starkly to the world's attention in 1988 with the floods in Bangladesh which scientists linked to population pressures, erosion in the Himalayan highlands with resulting flooding and siltation downriver in the lowlands. The results of UNU investigations into environmental problems in that mountain system, a part of its project on highland-lowland interactions, will be published in 1989.

Other UNU work on mountain environments has thus far taken place in south-west China, Ethiopia and Kenya. This work has been partially supported by the Swiss Agency for Development Cooperation and Humanitarian Aid; the agency has thus far provided more than \$3 million through the University of Bern, a UNU associated institution, for research activities in eastern Africa.

An August meeting in Honolulu considered the feasibility of establishing a UNU research and training programme on mountain ecology and development as an outgrowth of the highland-lowland work. Institutions that are now involved in this work include: the Chinese Academy of Sciences; the International Centre for Integrated Mountain Development, Nepal; the Soviet Academy of Sciences, the African Mountain Association, the University of Bern, Switzerland, and the International Mountain Society.

- Deforestation and land use:** The data collection activities of the project in the Okomu rain forest in south-eastern Nigeria are continuing into the final year of measurements. This data, based on four years observance of various ecological parameters in different land-use systems, is expected to yield unique information about the levels of sustainability achievable in these Nigerian rain forests. This will assist in building a basic body of knowledge on the rational use of land and water resources in the humid tropics. Five films on the Nigerian rain forest research have been produced and are being readied for release. Preparatory work is now underway to extend the University's investigations to ocean, climate and vegetation interactions in maritime South-east Asia, one of the most densely populated areas on earth. An international conference to review and discuss these interactions will be held in 1989 in Indonesia.

Conversion of tropical forests in Central America

Country	Total area (km ² × 10 ³)	Forests and woodland (km ² × 10 ³)	
		1961	1978
Costa Rica	50	28	19
El Salvador	21	2	0
Guatemala	108	84	44
Honduras	112	71	39
Nicaragua	130	64	44
Panama	75	41	32
Total	496	290	178

Source: Myers 1981

From Forests, Climate, and Hydrology, ed. E. Reynolds & F. Thompson, 1988, UNU.

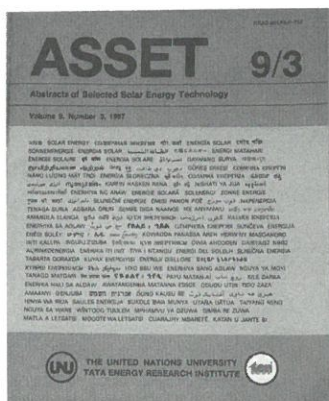
- Agroforestry systems:** In the project on agroforestry systems, centred at CATIE (Tropical Agricultural Research and Training Centre), a UNU associated institution in Costa Rica, scientific papers describing the results obtained continue to be published. Main UNU research efforts to date have studied: various mixed cropping systems at CATIE; indigenous systems at the University of the South Pacific; and agroforestry as a substitute for shifting cultivation at the Wau Ecology Institute in Papua New Guinea and the University of Chiang Mai, Thailand. There has also been a network of institutions studying nitrogen fixation in stem-modulated legumes and actinorrhizal plants. The concluding activities of this project, which began in 1980, aim at promoting scientific understanding and use of agroforestry systems based on UNU research results. A new phase of the UNU work in this area, begun this year, is developing and testing a microcomputer-based expert system to assess in a relatively short time the viability, productivity and sustainability of agroforestry systems, without having to wait a number of years for such systems to fully mature. The combinations of trees and crops which could be most beneficially raised together in a given setting are being analyzed through computer modelling. The work is being done jointly by scientists

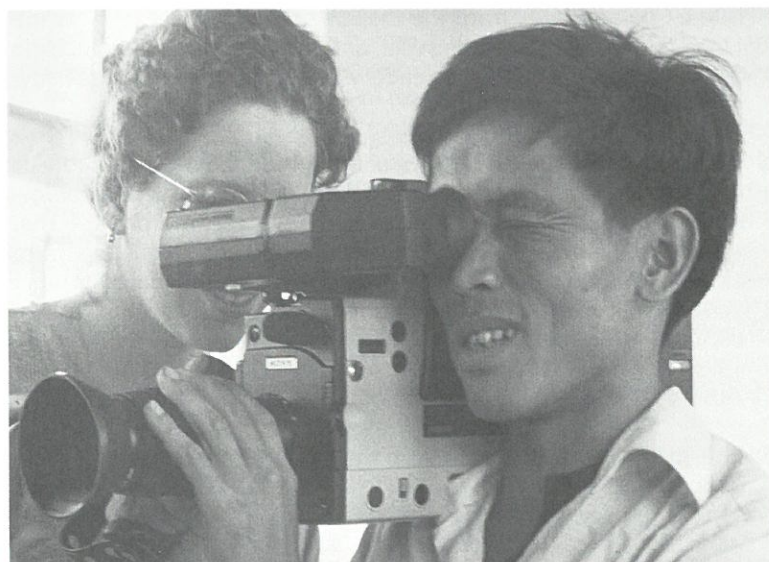
in the United States from the Department of Agroforestry at the University of Florida, Gainesville, and the Department of Decision Science and Computer Science at George Mason University, Fairfax, Virginia.

■ **The cloud forests:** CATIE's location in the high mountain forests of Costa Rica, and its long experience in humid tropics ecology, make it the logical site of a proposed new research project, that was being planned in 1988, on the science and management of cloud forests, particularly the geophysical mechanisms that govern their hydrological functions. Very little research has been conducted on the cloud forests, which generally are situated on windward mountain slopes at altitudes of 1,000–2,500 metres and can play a key role in the hydrological cycles of large river basins.

■ **Energy systems and policy:** In the study of energy systems and policy, the editorial home base of the UNU journal *ASSET* (*Abstracts of Selected Solar Energy Technology*) has been successfully transferred to the Tata Energy Research Institute in New Delhi, India, and the first three issues produced there have already appeared. An earlier endeavour in this area was the Energy Research Group (ERG), jointly organized and financed by the UNU and the International Development Research Centre (IDRC) of Canada. The group, made up of energy experts and policy-makers from developing countries, has surveyed Third World energy capabilities with particular reference to policy implementation. An overview of their work was presented in a special issue of *The Energy Journal*, distributed this year, in furtherance of the ERG's dissemination goals.

■ **Integrated rural energy systems:** The final phases of the project on integrated rural energy systems, which has been supported by IDRC, Canada, has now been launched. The concept involves integrating several renewable energy sources and modern and traditional technologies in rural areas with due regard for the specific socio-cultural and environmental conditions of each site. Since experimental work was begun by UNU several years ago, both FAO and UNEP have become interested in the concept. A workshop in Quebec, Canada in August, held in co-operation with the Brace Research Institute (where the integrated energy work is co-ordinated) and IDRC, dealt with questions of solar water purification, and attempted to define future research needs for that rural energy source.





Telling their "success story" to others. Chinese villager in charge of biogas operations in his commune learns video techniques from UNU-supported communications expert.

■ **Disseminating biogas technology:** Also in the energy area, the culminating phase of the project on dissemination of biogas technology has begun. Originally launched (during the First MTP) to test the hypothesis that information availability is a critical factor in the spread of biogas technology in rural areas, the project led to the development of a unique approach to such dissemination. The project began with the videotaping by Chinese villagers themselves of their experience in installing biogas digesters in their commune. The experience was then transferred successfully to Guyana and Jamaica, using the Chinese videotapes (with English voice-over) as teaching tools. Biogas digester programmes in both of those countries have been implemented successfully – and the UNU participation concluded in much the same way as it began: with Guyanese and Jamaican farmers telling their story on videotapes, thereby helping other farmers in other countries with the introduction of biogas technology. Guidelines for the design of biogas technology dissemination programmes for rural areas in the Third World are now being prepared for publication and will be distributed to local planners and decision-makers.

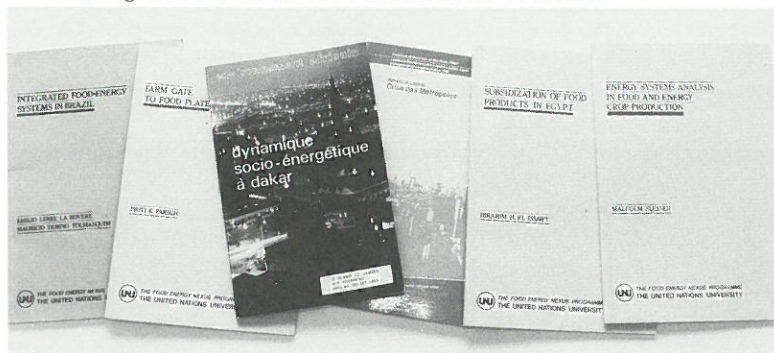
■ **Energy planning and management:** The project on energy planning and management responds to the need, stressed at the 1981 Nairobi Conference on New and Renewable Sources of Energy, for developing countries to plan their own energy futures, using their own instruments and methodologies and not simply transferring technology from the North. The UNU work complements that of the institutional network established by the Commission of European Communities (CEC) at the time of the Nairobi Conference to determine energy supply and demand in developing countries. In the first phase of the work, which ended in 1986, a joint UNU-CEC methodology for energy planning was devel-

oped. In the second phase, to be completed in 1989, this methodology is being applied by the UNU in Bolivia, with a complementary research effort by CEC-supported local teams in Argentina, Brazil and China.

■ **Network on new and renewable sources:** Also in the energy field, a feasibility study of the establishment of an international network of research centres on new and renewable sources of energy has been initiated with the support of a \$162,000 contribution from the Government of Italy. The proposal was discussed this spring at the Fourth Session of the United Nations Committee on the Development and Utilization of New and Renewable Sources of Energy and at the Seventh Session of the interagency group concerned with this area.

■ **Food and energy linkages:** The food-energy nexus project is examining the linkages between the food and energy crises by exploring integrated planning approaches that might simultaneously ease both problems. It is studying resource patterns that result in socially desirable, economically viable and ecologically sustainable development in diverse settings. The project held an international conference in August in Brasilia on resource management, employment and development financing; the concentration was on efforts in Brazil, where much of the initial UNU research work has been conducted. Participants in the meeting came from various Brazilian government agencies and research centres as well as from UNESCO, UNDP and the World Bank. The conference was co-sponsored by CENDEC, a branch of the Planning Secretariat of the Government of Brazil.

Sample of reports from the food-energy nexus project.



Activities of the project have also been carried out in India and China, and UNEP has asked that the research results be made available to the African ecodevelopment programme whose urgency has been stressed by the African Ministers of Environment.



After her UNU fellowship at University of Colorado, USA, in North American Rockies, Sumitra Manandhar returned to her native Nepal. Here she questions local residents near Kathmandu about landslide damage in research on UNU studies of highland-lowland interactive systems.

Publications

Global life-support systems

A total of 100 scholars from 31 countries contributed to the actual publications in the field of global life-support systems in 1988.

Agricultural Expansion and Pioneer Settlements in the Humid Tropics, edited by W. Manshard and W.B. Morgan

Energy Research Group Review Series (Series of 14 volumes; 3 published in 1988), edited by A.V. Desai, published with

IDRC, Ottawa, Canada and Wiley Eastern, New Delhi, India
Forests, Climate and Hydrology: Regional Impacts, edited by E. R. C. Reynolds and F. B. Thompson

ASSET: Abstracts of Selected Solar Energy Technology, published with Tata Energy Research Institute, New Delhi, India (3 issues)

Mountain Research and Development, published with the International Mountain Society, Boulder, Colorado, USA (issued quarterly)

Programme Area 4: Alternative Rural-Urban Configurations

In the little bit more than a decade that is left to the 20th century, it is estimated that there will be an unprecedented growth in the absolute number of urban residents in the Third World – an increase of more than one billion people. Sixteen of the 20 largest cities in the world will be in the developing countries. Not surprisingly, therefore, the vast majority of governments in the developing nations see population distribution as a far more serious problem than population increase. Existing rural-urban configurations are worrisome – and will likely grow more so unless new policies and strategies are adopted.

Most of the UNU work in this area is new to this biennium and much of it therefore is of a planning nature. One project, aimed at evaluating present urban management policies in different parts of the world and identifying potential research topics, held its initial seminar in January 1989 in Honolulu in collaboration with the East-West Center; UNCHS, UNCRD, UNICEF, UN Population Division and the World Bank will be among the collaborating institutions in this activity. An anticipated follow-up activity discussed in Honolulu would be focused on the demographic and management problems of mega-cities.

Projected Growth of Urban Poor – 1980–2000

	Number of households ('000s)		
	1980	1990	2000
East Asia and the Pacific	4,156	5,111	5,744
South Asia	13,970	21,255	32,555
Latin America and the Caribbean	14,023	16,798	19,328
Europe, Middle East, and North Africa	6,250	7,574	8,743
Eastern Africa	1,369	2,544	4,703
Western Africa	1,405	2,266	3,227
Total	41,173	55,548	74,300

Source: Churchill, World Bank, 1980

From "Urbanization and nutrition in low-income countries," B.M. Popkin & E.Z. Bisgrove, Food and Nutrition Bulletin, Vol. 10, No. 1, March 1988

Many of the activities in the rural-urban configurations area will naturally be linked to existing UNU research projects. The meeting of the food-energy nexus project in Brasilia noted above, for example, in addition to reviewing research already done in the area of food-energy linkages, also discussed possible themes for a proposed new project on rural-urban configurations as they relate to emerging alternative industrialization patterns. The key to preventing the further creation of huge metropolitan centres may well rest with decentralized industrialization – but little is known about the kinds of industries which have been successful outside of urban areas.

Programme Area 5: Science, Technology and Society

Technological advances in fields such as microelectronics and biotechnology can have profound implications for developing countries societies – but frequently today such benefits either bypass these societies entirely or are imposed on them in inappropriate form or manner.

Relying on the extensive networks that it has built up representing different disciplines, perspectives and cultural values, the UNU seeks to investigate the broad cultural, social and economic implications of the inroads of new technologies in different communities – and to recognize their potential socio-cultural impact before they are put in place (often with irreversible damage).

- **Third World capacity:** The project on technological capacity and prospectives in the Third World, which started in 1983, has been concentrated in Latin America. The work to date has been supported by a \$198,943 grant from IDRC. The focus has been on the kind of R&D strategies needed to foster creativity during the present period of immense socio-economic transformation. A co-ordinating meeting was held in Campinas, Brazil, in April 1988. Draft manuscripts now in preparation will deal with various technological concerns in Latin America, including: R&D capacity, environment and development, endogenous development, trends in science and technology, and the impact of new technology on urban development. Research has been conducted through a network of institutions in Argentina, Brazil, Mexico and Venezuela.
- **Latin America 2000:** The project on high technology in Latin America 2000 is a follow-up of the Second Conference of Ministers Responsible for the Application of Science and Technology to Development (CASTALAC) and is based on the expressed interest of the governments concerned: Argentina, Brazil, Colombia, Mexico and Venezuela. National research institutions from each of these nations are involved in the project which is also supported by UNDP. It is concerned essentially with the role of a new generation of technologies – in, for example, microelectronics, biotechnology, new materials and advanced chemistry – in the transformation of the industrial production structure. The objective of the project is to strategically plan multinational action in Latin America to meet social needs and strengthen the economies of the region to be internationally competitive through jointly enhanced technological capabilities.

A better future for her? The UNU project on Latin America 2000 seeks to help the nations of that continent meet the social needs of their people through mastery of a new generation of technologies, which challenge traditional advantages in raw materials and cheap labour.



United Nations

- **Transformation in traditional societies:** The project on development and technological transformation in traditional societies is exploring the issue of the social control of technology. It has two particular areas of interest: (i) the "why" of the erosion in the social compact which had allowed various traditional communities to live at peace; and (ii) the manner in which dominant knowledge systems, usually from the North, tend to shrink the space for indigenous alternatives. Seventeen research papers have been commissioned and will be reviewed at a meeting early in 1989.
- **Technology in Third World: WIDER:** In the research on development and technological transformation in the Third World, which is being conducted by WIDER in Helsinki, nineteen country case studies, covering a wide spectrum of experience, are analyzing progress and problems since the 1950s with various aspects of technology. The project is supported by a \$100,000 grant from the Government of Norway. Fifteen of the case studies are from Third World countries, two (Japan and the Soviet Union) are from large industrial countries, and two (Finland and Greece) from small industrial countries. A research conference at WIDER in August reviewed the parallel and contrasting experiences in technological development that had emerged from the case studies.

- **Human rights and technology:** A study of human rights and scientific and technological development is being carried out by the UNU at the invitation of the UN Commission on Human Rights and with a \$101,781 grant from the Ministry of Foreign Affairs of the Government of Japan. The project hopes to develop a conceptual framework which will better identify both negative and positive impacts of scientific and technological development on human rights and fundamental freedoms. Case studies will be conducted in several developing countries, and their results submitted to the Commission on Human Rights in 1990. Collaborating in the study are the UN Centre for Human Rights, UNESCO, Chulalongkorn University, Bangkok, Thailand, and the Academy of Sciences, Poland; further national research groups are expected to be identified as the work proceeds.

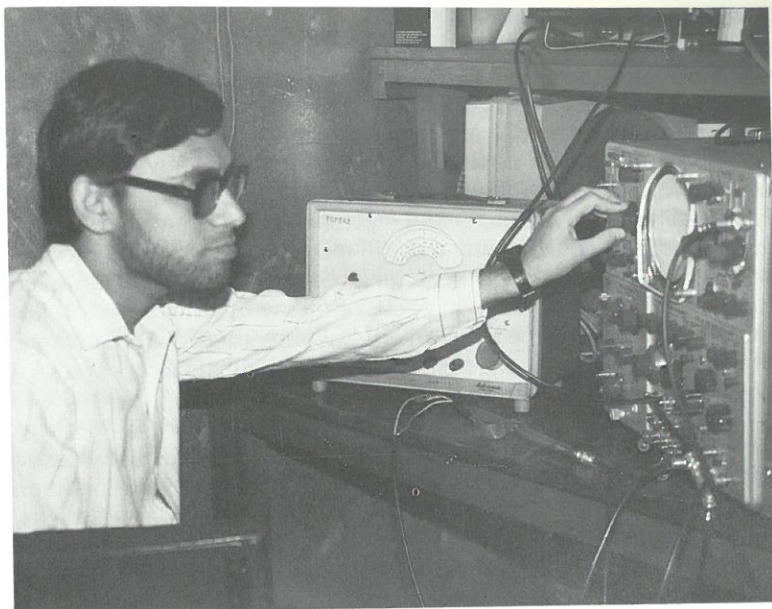


United Nations

What directions for the rural Arab World? Forecasts of the technical trends and needs of the rural parts of the Arab World – as here in Jordan – are often left out of predictive exercises. The UNU is assessing the impact of technical services on these previously ignored areas.

- **Technology in rural Arab World:** Field surveys are being carried out in a number of Middle East and North African countries in a project designed to assess technological capabilities in the rural areas of the Arab World. The institutions carrying out the research in the various Arab states are employing a common research methodology to (i) identify existing technological services directed to rural areas in the Arab World and (ii) measure the impact of these services on the local populations. The project aims at developing new methods for forecasting technological trends for those rural Third World populations who have normally been ignored in previous forecasting exercises. The cost of the work is being covered by a grant of \$209,000 from the Arab Gulf Programme for United Nations Development Organizations (AGFUND).

UNU Fellows in the training programme on plasma and laser technology at the University of Malaya have demonstrated that it is possible to apply sophisticated scientific thinking to the constraints of working under conditions prevalent in the developing countries. Here Mohammad Zaka-Ullah of Pakistan is testing a high frequency probe.



■ **Interactions between technology and society:** The insights gained from several previous UNU studies of the interactions between technology and society are being pulled together by the project on science and technology policies for development. The earlier work had a broad range of research activities dealing with cultural, ethical, ideological and human rights aspects of science and technology.

The new project is particularly concerned with the formulation of science and technology policies that could best meet actual Third World demands. Collaboration is expected with, among others, UNESCO, UNCSTD, IDRC (Canada), the International Council for Science Policy Studies, and the Science Policy Research Unit at the University of Sussex, UK. When the new UNU research and training centre, INTECH, in the Netherlands becomes operational, it will also be closely involved in the activities of this project. In 1988, a state-of-the-art survey of studies on science and technology policies is being planned, and further national and regional research institutes are expected to be identified to participate in the work. Research and training activities are due to start in 1989.

Programme Area 6:

Food, Nutrition and Biotechnology

The alleviation of hunger was one of the earliest priorities of the work of the University. Hunger was defined broadly – not only the starvation seen so readily and starkly in famine, but also the “hidden hunger” in nutritional deficiencies that can prevent poverty-stricken people from realizing their inherent potential, physically and mentally. The elimination of hunger and malnutrition have remained elusive goals, despite significant advances in increasing global food production. More and more, it is becoming recognized that the approach to hunger requires the approach of many disciplines – not just nutritionists or public health workers, but others across a broad range of disciplines: economists, political scientists, behavioural psychologists, agricultural experts, among others.

The work being carried out in this area encompasses activities in several University sectors: the efforts of the food and nutrition activities which are based at MIT in Cambridge, Massachusetts; studies in the area of biotechnology being directed from the University Centre; as well as activities at WIDER in Helsinki. Consideration is now also underway for developing a separately-endowed research and training framework for the food and nutrition programme area; a feasibility study was initiated in 1987 to examine the need for such a mechanism and the ways and means by which it might operate.

- **Cognitive effects of iron deficiency:** Research on the cognitive effects of iron deficiency in the daily diets of 2,000 school children in Bangkok, Thailand, was completed by the Institute of Nutrition, a UNU associated institution at Mahidol University. These results have reinforced the clear relationship of test performance to iron status suggested in earlier UNU studies. A joint workshop on iron



UNU Fellows investigated incidence of iron deficiency anaemia among Indian population of Guatemala as part of their research and training at the Institute of Nutrition of Central America and Panama in Guatemala City.

deficiency, cognitive performance and behaviour was held with the UN Administrative Co-ordinating Committee/Subcommittee on Nutrition (ACC/SCN) with which the University has worked closely in the area of food and nutrition problems for several years.

The iron deficiency research is being conducted by the project on the social and economic consequences of chronic energy deficiency, which is seeking to document behavioural, social and economic effects of chronically low energy intake, and to co-ordinate an international effort to apply results of the research to national policies. As part of the project, the UNU has established the International Dietary Energy Consultancy Group (IDECG) on behalf of the ACC/SCN.

- **New diet and health guidelines:** One way in which the University seeks to maintain its catalytic role in the field of food and nutrition is by sponsoring workshops and meetings that result in major monographs. Editing of the report of a 1987 Geneva

Health guidelines. In the Gambia, a mother listens to radio show about oral rehydration with flyer in hand. Joint use of media reinforces new information. UNU researchers studied ways in which advice about health reaches villagers.



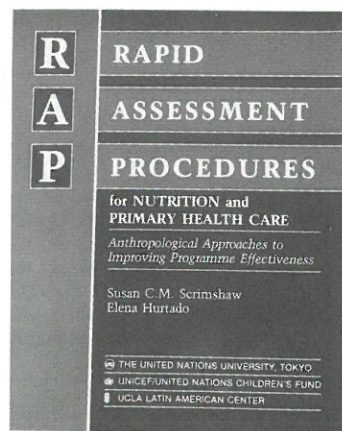
workshop held jointly with the ACC/SCN has been completed; the book is expected to be the basis for new national diet and health guidelines and policies. The volume is being published jointly in Spanish with the Fundación Cavendes. A Portuguese version of the conference recommendations is also being prepared, and an English version will appear in the *Food and Nutrition Bulletin*.

A report of the 1987 IDECG meeting in Guatemala has also been completed; it will be co-published with the Nestle Foundation. IDECG task forces on "Stable Isotope Methodology for Energy Measurements," "Long Range Goals of IDECG," and "Criteria and Definitions of Energy Deficiency" are continuing to make good progress. The Nestle Foundation provided \$40,000 in support of the IDECG in 1988.

- **Rapid assessment procedures:** Conventional surveys for evaluating nutritional interventions are costly, disruptive, and often produce results very difficult to analyze. The Rapid Assessment Procedures (RAP) methodology, pioneered by UNU and UNICEF with WHO endorsement, has demonstrated its ability to produce immediately useful information quickly and cheaply; it operates through participant observation and focused group discussion. The 1987 book, *Rapid Assessment Procedures for Nutrition and Primary Health Care*, has already sold out its first printing in English and a Spanish edition has been published. The RAP methodology is being applied for the field evaluations of programmes receiving WHO/UNICEF support.

A report on experiences in using the RAP methodology was presented at a workshop in Zagreb, Yugoslavia in July; the workshop was jointly sponsored by UNICEF and the Ford Foundation. Following the meeting, there was a symposium on the use of anthropological methodologies for evaluating and improving nutrition and health programmes, with special emphasis on the RAP techniques. The Ford Foundation has thus far supported the project with a \$200,000 grant; counterpart contributions have been made to the project by both UNICEF (\$113,000) and the World Food Programme (\$27,500).

- **INFOODS:** The International Food Data Systems Project – INFOODS – aims at facilitating the generation, access, retrieval, interchange and standardization of food composition data on a world-wide basis. In 1988, INFOODS released an updated version of its "International Directory of Food Composition Tables," and also began publication of the new UNU-sponsored *Journal of Food Composition and Analysis*. Global interest in participation in the INFOODS network continues high, and there are now regional liaison groups operating for ASIAFOODS, EUROFOODS, LATINFOODS (for Latin America), MEDINFOODS (for Mediterranean region), NOAFOODS (North America), and NORDINFOODS (Scandinavia). Groups for Oceania, Africa south of the Sahara, and the Middle East and North Africa are being organized. Regional meetings were planned this year in Asia, Africa, Europe and Latin America.



The feasibility phase of a new companion project to INFOODS, initiated to develop an "International Food Intake Directory," has been finished, with complete sets of dietary intake data for the past 40 years obtained from 10 developing countries and arrangements made with 20 more. The US National Cancer Institute has so far provided more than \$2 million in funding through Massachusetts Institute of Technology, USA. Such counterpart funding is anticipated for an additional three years to complete the work, which will facilitate comparative epidemiological studies of the relationship of diet to acute and chronic diseases.

- **AAU/UNU food and nutrition project in Africa:** Work got underway in 1988 on the first phase of the joint regional food and nutrition project in Africa of the UNU and the Association of African Universities (AAU) with a six-week training workshop, from late August to early October, in Lagos, Nigeria, on improving the quality of root and tuber products such as yam, cassava, and plantain. A second workshop, held in Dakar, Senegal in late October, was concerned with the development of cereals as weaning foods. This five-year project, funded through the AAU with \$1.5 million support from the European Development Fund, aims at augmenting and improving co-ordination of Africa's scientific and technological resources in the fields of food and nutrition. Other project work during this biennium will focus on the development of protein-energy foods for vulnerable groups on the continent. An overall goal is to stimulate economically viable undertakings, especially small and medium-scale rural efforts, to improve Africa's food and nutrition situation.

Farmer in Senegal. "An important feature of many African countries is that the bulk of the food output is produced by small family-operated farms whose members form the largest group facing food insecurity." J-P Platteau, The Food Crisis in Africa: A Comparative Structural Analysis, WIDER Working Paper, 1988



United Nations

- **Development and food entitlements: WIDER:** An important part of the work of WIDER is also focused on the hunger problem. In a comparative study of alternative development strategies and their implications for food entitlements and living standards, the experiences of several Asian countries with varying levels of success in improving living standards are being contrasted; the countries under study are Bangladesh, India, the Republic of Korea, Malaysia, and Sri Lanka.
- **Food consumption in sub-Saharan:** Another WIDER study makes use of a simulation model to examine the effects on food consumption in sub-Saharan Africa of different economic development scenarios and policy changes. The investigation focuses particularly on why it is that so many African countries, in contrast both with Asian and Latin American as well as other African countries, have been unable to prevent famine and improve nutritional standards.
- **Biotechnology: Nitrogen fixation:** In the area of biotechnology the UNU is attempting to strengthen the capacity of scientists in developing countries to employ both traditional and emerging techniques. The former embrace, for example, various processes for fermenting foods; the latter include such areas as the genetic manipulation of plants and animals along with new hybrid areas of science such as bioelectronics. In the project on nitrogen fixation in rice root systems, reports have been received from China, Sri Lanka and Thailand, and a final workshop of network researchers was held. The research of this project was carried out, using standard assay procedures and reference experiments, in eight developing nations in Asia and Africa; laboratories in Australia, Canada, France, Japan, the Netherlands, USA and USSR also co-operated in the project. Among the publications anticipated from this work in 1989 is a manual of recommended practices in nitrogen fixation research.
- **Biotechnology: Combatting brucellosis:** A concluding workshop of the brucellosis research network in Latin America took place this year. The project had focused on the development through biotechnology of vaccines and diagnostics to combat brucellosis, a disease affecting both animals and humans which is particularly devastating in Latin America. Network participants will continue to exchange information through the computerized linkages that were established with \$96,200 in support from IDRC of Canada.
- **Improving food fermentation:** The project on improving traditional food fermentation builds on earlier UNU efforts to improve traditional fermentation through enhanced scientific understanding of the causative organisms and biochemical changes involved in the process. It seeks to optimize fermentation processes through application of modern tools of biotechnology like mutation,

recombination and gene manipulation. One of the indigenous fermentations investigated was the production of tempe in Indonesia, where educational videotapes on tempe production are now being prepared. The third issue of the *Tempe Newsletter* was published in January 1988.

Two small-scale African projects on food fermentation were initiated in 1988 as preparation for larger-scale research activities in 1989 which will be linked closely with ongoing activities in the AAU/UNU African food and nutrition project. Research collaborators exhibiting superior achievement will be given priority consideration for UNU fellowships to increase their capabilities in biotechnology.

Publications

Food, nutrition and biotechnology

A total of 256 scholars from 38 countries contributed to the actual publications in the field of food, nutrition and biotechnology in 1988.

Effective Communications for Nutrition in Primary Health Care, edited by J. E. Andersen and A. Valyasevi

Food as a Human Right, edited by A. Eide, W. B. Eide, S. Goonatilake, J. Gussow, and Omawale [2nd printing]

Methods for the Evaluation of the Impact of Food and Nutrition Programmes, edited by D. E. Sahn, R. Lockwood, and N. S. Scrimshaw [2nd printing]

Nutrition and Development, edited by M. R. Biswas and P. Pinstrup-Andersen, published with Oxford University Press, Oxford, UK [paperback edition]

Procedimientos de asesoría rápida para programas de nutrición y atención primaria de salud [Rapid Assessment Procedures for Nutrition and Primary Health Care], by S.C.M. Scrimshaw and E. Hurtado, published with UCLA Latin American Center, Los Angeles, USA

Food and Nutrition Bulletin (issued quarterly)

Journal of Food Composition and Analysis (issued quarterly)

Programme Area 7: Human and Social Development

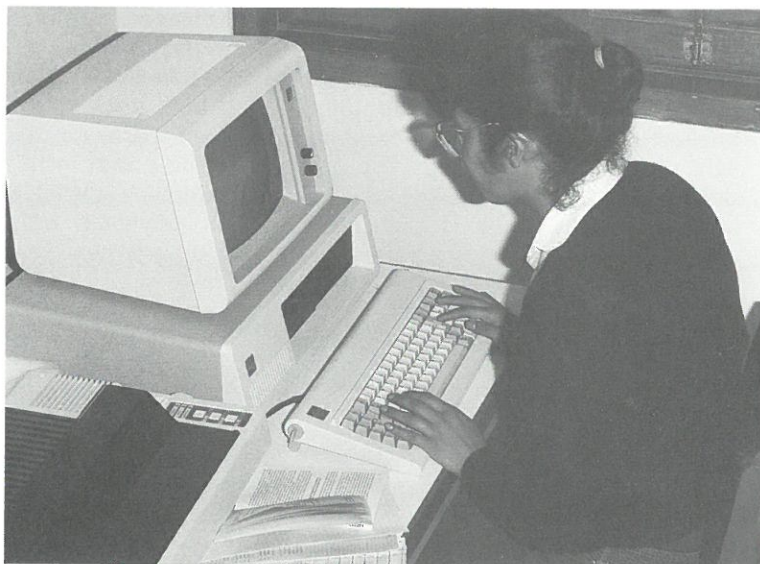
The UNU activities in the area of human and social development – the “non-economic face of development” – continue to focus on the positive and negative aspects of new economic patterns. Projects address questions like: inequitable resource allocations, poverty of marginal populations, and survival strategies of households in changing societies. The potential policy relevance of the work ranges from family planning, nutrition and health concerns to employment, household production systems and education. In addition to work co-ordinated in Tokyo, several of the current research activities at WIDER are also embraced under the umbrella of human and social development.

- **Quality of life and living standards: WIDER:** The project on quality of life and living standards at WIDER is investigating a number of fundamental social and ethical issues that are not usually considered a part of economic debate – such as, for example, differing concepts of well-being in various societies or the relationship between medical ethics and the quality of life. The work of this project builds on questions raised by earlier WIDER studies on nutrition and poverty. Sixteen research papers have been commissioned for this project; some of these papers were discussed and reviewed at a research conference on the Quality of Life in Helsinki in July.



The human face of development. The problems of human and social development are manifested in myriad ways – at the individual, family, and village level, across all age groups. Children of a Javanese fishing village.

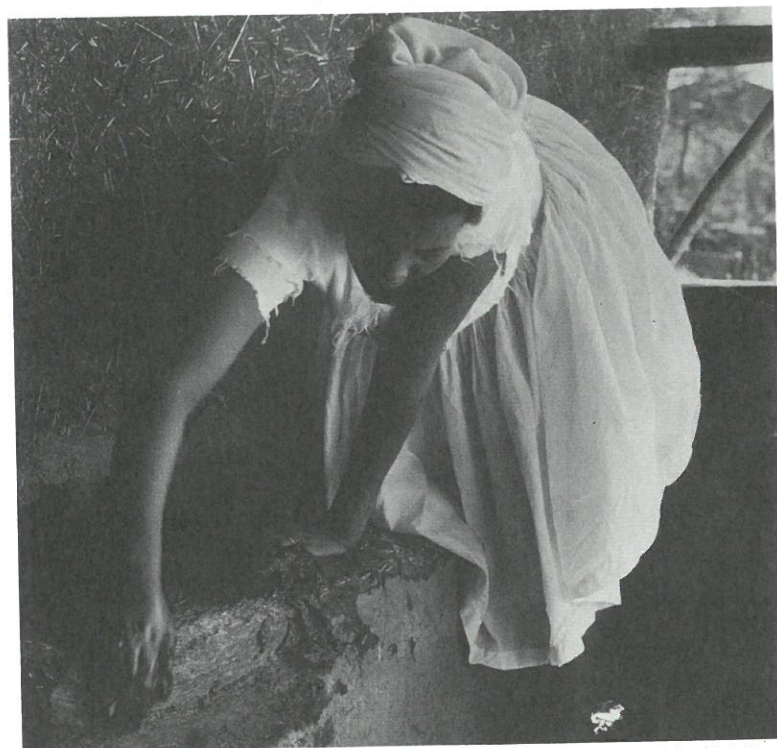
New roles for women. During her training at University of los Andes, Colombia, UNU Fellow Josefa Ramirez worked on improving geothermal energy policies in her native Mexico.



- **Social security in developing countries:** The role of government intervention in combatting poverty is being explored in a WIDER study of public action for social security in developing countries. It is focused on ways and means of designing interventions that are: (i) within resources available; (ii) cognizant of socio-political realities; and (iii) unlikely to trigger disincentives toward work or family solidarity. Detailed case studies are considering such areas as food security, health care, social insurance, poverty alleviation, and the provision of basic needs. Part of the costs of this research are being covered by a contribution of \$140,000 from the Swedish International Development Agency (SIDA).
- **Poverty and development in West Bengal:** A WIDER project with a tighter regional focus is concerned with problems of poverty and rural development in West Bengal, India. Field research, co-ordinated through Viswa Bharati University, Santiniketan, is collecting primary data from ten villages with five different agro-economic zones in West Bengal, a region currently characterized by both worsening poverty conditions and the presence of a government dedicated to social reform. Research include, for example, the extent to which land reform policy has dovetailed with anti-poverty programmes and with what impact.
- **Women vs. the family:** Another WIDER study which explores an aspect of daily life not normally dealt with by economists deals with the role of women versus the needs of the family. It is concerned essentially with the moral dilemma that can result in defending a society's ultimate right to determine its own values: in many parts of the world, such relativist ethics could doom women to their traditional roles of subservience and keep them from seeking independent careers. The United Nations Year of the

Family, for example, has recently been challenged by some feminists on precisely these grounds. The WIDER project on human capabilities: women, men and the values we live by aims at developing a non-relative approach that is both forceful and intellectually respected in understanding women's issues in the light of basic ethical values. The questions being posed in this debate were addressed at the Quality of Life conference at WIDER in July cited above. It is expected that four individuals from appropriate backgrounds will be commissioned early next year to produce a research volume for the project.

- **Women's work and family strategies:** Some of the macro-economic implications of this whole question were examined by the comparative study of women's work and family strategies in South and South-East Asia co-ordinated through the University Centre. The study, which concluded this year, focused on the susceptibilities of women and families to the larger changes that affect national economies and social institutions. Results of this research are now being used by the current project analyzing the differential impact of development on women. This work, with a network of about 35 researchers in India, Indonesia, Nepal, the Philippines and Sri Lanka, is concerned with such questions as: division of labour within households; cultural basis of entitlements to resources; impact of social and religious norms on division of



Traditional roles for women. A housewife in rural Ethiopia plastering the walls of her home using a mixture of mud and cow dung.

United Nations

'Graying of society.' An elderly Mexican woman. As populations age everywhere in the world, new strains are placed on support systems, particularly in crowded urban areas.



United Nations

labour; and linkages between education and employment. The Ford Foundation has provided \$24,000 in support of this project. It expects to complete the field work in 1989, integrate and analyze the findings, and publish the results in a UNU monograph series, ILO working papers, and through local publishers.

- **Gender, society and change:** The changing role of women was also investigated by the project on household, gender and age; studies in eight developing nations have now been completed, and publications plans are in progress. Videotapes produced by the research teams in Colombia and Sri Lanka have been received in Tokyo and are being readied for further distribution. The research highlighted the immense changes now occurring in women's roles in the Third World with accompanying shifts in perceptions and aspirations of women themselves. In 1988, initial field research in the Côte d'Ivoire and Kenya was completed, while second-generation research in Colombia and Sri Lanka begun. A training course at the Centro de Estudios sobre Desarrollo Económico (CEDE), Universidad de los Andes, Colombia, is also being launched this year with support of \$151,982 from the Government of Italy.
- **Inter-generational dynamics of social change:** Further input in the area of family and household studies is being provided by the project on inter-generational dynamics of social change. Continuing the work begun by the First MTP project on social support systems in transition, the project deals particularly with support for the aged and its resource implications in developing countries.

The concern here centres on the notion that traditional social support efforts in the developing countries may no longer persist, while the forms of state interventions employed in the industrialized nations could be inappropriate. Preliminary findings from this study were presented at a meeting at the Tokyo Centre in April, which was attended by research teams in Japan for the Sixth World Conference of the International Society of Family Law.

- **The family in transition:** An overview of the UNU work in the areas of women, youth and the aged is being carried out by the project on problems of the family in transition. It is trying to formulate a set of well-integrated research activities on the problems of the family in contemporary society, with new roles for women emerging, a generation of "street children" adrift, and the "graying of society" putting new strain on urban support systems. A programme development meeting is planned in 1989 with concerned UN agencies such as INSTRAW and the International Institute on Aging, and academic institutions. The meeting is expected to discuss new directions for UNU research activities on the situation of the family.

Publications

Human and social development

A total of 16 scholars from 10 countries contributed to the actual publications in the field of human and social development in 1988.

Modernization and Development: The Search for Alternative Paradigms, by S.C. Dube [Studies on Socio-cultural Development Alternatives in a Changing World], published with Zed Books, London, UK

The Hidden Crisis in Development: Development Bureaucracies, edited by P.Q. van Ufford, D. Kruijt and T. Downing, published with Free University Press, Amsterdam, the Netherlands

The Transformation of the World Economy: New Directions and New Interests, by T. Szentes [Studies on Socio-cultural Development Alternatives in a Changing World], published with Zed Books, London, UK

Uso crítico de la teoría [The Critical Use of Theory], by H. Zemelman, published with El Colegio de México, Mexico

Programme Area 8:

Global Learning and Informatics

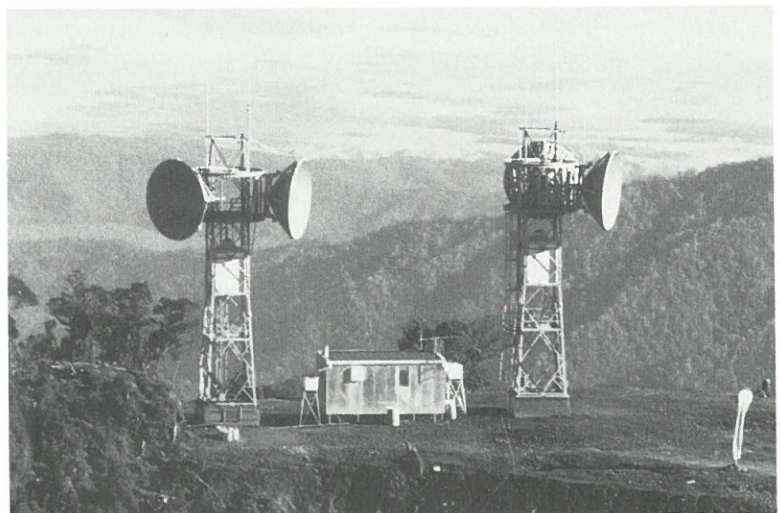
The idea of "global learning" – the notion, basically, of enhancing the learning capacity of total societies to cope with today's multifaceted, interdependent world – was introduced in the University's First Medium-Term Perspective and implemented through the establishment of the Global Learning Division in 1982. The Division has since been fused with others under one Programme Division, but a number of the UNU's current research activities in this area still reflect some of the basic concepts that undergirded the earlier work, and publications from that original research are still emerging.

Present activities are embedded in the complex of modern technological advances usually defined by the convenient catch-all – "The Information Revolution." An increasing concern in that area revolves around the growing demands on the already-stretched resources of higher education systems, particularly in the Third World. These have underlined the importance of non-conventional responses to society's educational needs, including distance learning systems, through the use of modern information and communications technologies.

In light of the above, the current work in this sector of the University programme has three main areas of interests: (i) new learning strategies and practices; (ii) informatics and communication, embracing particularly microprocessor technology; and (iii) the management of complexity.

- **Distance learning resources:** As one response to the linked needs in today's world for fresh approaches to knowledge dissemination and more novel learning strategies, the project on distance learning is drawing on the resources of the International

Learning for all. In today's complex world, learning is a process that must involve a range of information and communications technologies. A telecommunications relay station in Papua New Guinea.



United Nations



Rapidly-changing computer and microelectronic technologies demand that the Third World learn how to make creative use of these new advances and participate in their development – to be full partners in the benefits of the Information Revolution.

Centre for Distance Learning, which was established by UNU in co-operation with the Open University in the UK and the International Council for Distance Education as part of the activities of the First Medium-Term Perspective. This Centre, the only one of its kind, has proven its usefulness through its responses to numerous inquiries from individuals and institutions throughout the world.

In 1988, research investigated the possible establishment of regional distance learning resource centres in selected areas of the world, particularly in the South. A comprehensive report on the feasibility of these centres is being prepared. One part of the report will be devoted to a consideration of a format appropriate to the distribution of UNU-generated knowledge through distance learning systems.

- **Knowledge for self-reliance:** In another approach to innovative learning techniques, the project on communicating scientific knowledge for self-reliance has focused on knowledge transfer to disfavoured groups in developing countries. It has made use of specially designed manuals, dealing with a range of daily problems (health, energy, food, etc.), for adaptation and use by Indian villagers in various local languages (e.g. Hindi, Gujarati and Tamil). The project, which is co-ordinated by the Indian Institute of Technology in Madras, was organized in co-operation with the International Council of Scientific Unions (ICSU) and UNESCO. Since the work was launched several years ago, the Indian Ministry of Education has taken over a number of the completed manuals for printing and distribution to millions of Indian villagers. In 1988, work continued on the series of prototype manuals foreseen within the

current cycle. There was also exploration this year of further simple techniques for knowledge transfer, especially the use of video for animated presentations of the materials.

- **Microprocessor technology:** In the area of informatics and communication, collaborative research and training on microprocessor technology continued at the International Centre for Theoretical Physics in Trieste, with support of the Italian Government (\$575,000 in 1988), and at Trinity College, Dublin, with support of the Irish Government (\$275,000 in 1988). There is also general co-operation in this field with the Third World Academy of Sciences. In Asia, work is going on at Tunku Abdul Rahman College in Kuala Lumpur, Malaysia, where an integrated learning system for tutorial tests has been developed, and at the Asian Institute of Technology in Bangkok, Thailand. In Latin America, research activities are being supported at Antioquia, Colombia, and at the University of Colima, Mexico.

A major focus of the work has been in Africa. The UNU continued to reinforce the microprocessor support unit which it has established at Addis Ababa University in Ethiopia. Research and training capacities are also being enhanced at the Computer Science Centre of the University of Yaounde in Cameroon where, in co-operation with the Institut national de recherche en informatique et automatique (INRIA) in France, a special master's degree programme on computer science has been set up. The University organized a ten-day seminar in Yaounde in November 1988 on data bases and expert systems which provided high-level training to teachers and students from: Benin, the Central African Republic, Chad, Congo, Côte d'Ivoire, Gabon, Niger, Nigeria, Senegal and Zaire.

- **Management of complexity:** Lastly in this area, the UNU is involved in the study of complex systems, which has been signalled out as a major change in the evolution of science. Possible applications of new insights from this field could lead to better ways of managing today's complex economic, social and political trends. The well-received UNU book, *The Science and Praxis of Complexity*, resulted from the 1984 symposium on that subject in Montpellier, France. A practical case study subsequently dealt with the management of fisheries in the North Atlantic. Other follow-up activities have included a study from the viewpoint of the cognitive sciences by a international, multidisciplinary group of researchers at the Centre de recherche épistémologie et autonomie, Ecole polytechnique, Paris, and a study related to the practice and theory of design carried out by Development Alternatives, New Delhi. During 1988, the complexity project completed virtually all of the research of the present cycle, proceeded with preparation of manuscripts for publication, and designed a training diskette.



United Nations

Our debt to future generations. The UNU is concerned with preserving the earth's biological and cultural diversities, and avoiding harmful consequences for the coming generations. It is seeking to introduce a long-term dimension into international law.

Publications

Global learning and informatics

A total of 12 scholars from 10 countries contributed to the actual publications in the field of global learning and informatics in 1988.

In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity, by E. Brown-Weiss, published with Transnational Publishers, Ardsley-on-Hudson, New York, USA

Perspectives on Contemporary Youth, edited by J. Kuczynski, S.N. Eisenstadt, B. Ly and L. Sarkar

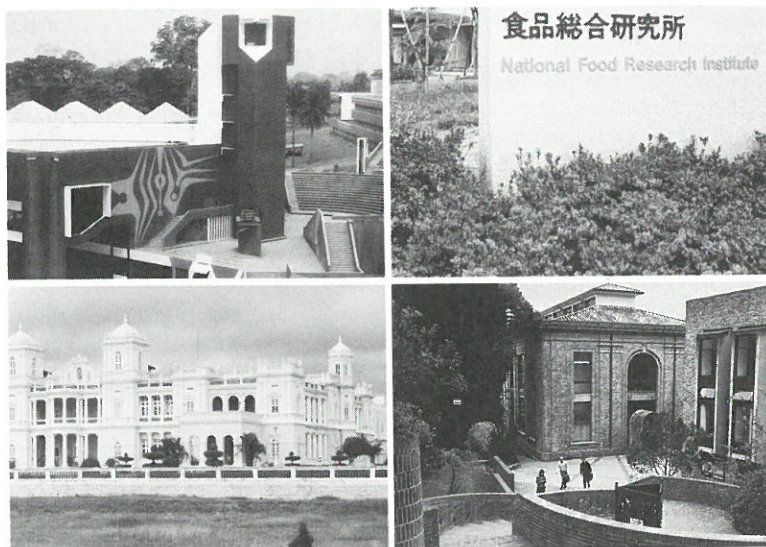
FELLOWSHIPS AND TRAINING

"The University ... shall endeavour to alleviate the intellectual isolation of persons in such communities in the developing countries which might otherwise become a reason for their moving to developed countries. In its post-graduate training the University shall assist scholars, especially young scholars, to participate in research, in order to increase their capability to contribute to the extension, application and diffusion of knowledge."

Charter of the University, Article I, Sections 6 and 7

As a measure of the University's growing maturity, it is worth noting that in 1988 some of the first UNU Fellows celebrated their tenth anniversary of the completion of their training with the University – and the impact of that training continues to be felt in ever-widening circles throughout the globe.

- During the year, 39 more UNU Fellows completed their training courses, bringing to 947 the total trained by the fellowship programme since it began in 1976. Approximately one-fourth of the total fellowships to date have been awarded to women. Eighteen new fellows commenced training in 1988 (4 at the geothermal energy training programme in Iceland, 7 in a food and nutrition course in Costa Rica, 6 in informatics technology at Trinity College in Dublin, and 1 in genetic engineering at the National Food Research Institute in Japan).
- In addition to fellowships, the University is also carrying out training efforts for Third World scientific personnel in various other ways. The most notably successful has been the training activities in the field of microprocessor technology (cited above). More than 1,000 persons have now received some form of UNU training in this one field and are using this expertise in their home countries. Other training efforts involve the exchange of young scholars with common research interests in a UNU project between institutes in different countries.
- While the UNU training efforts naturally are designed to improve the scientific expertise of individual trainees, they have perhaps their most long-lasting impact in strengthening institutional capabilities in the developing countries to which the fellows return. In 1988, for example, the effectiveness of the computer unit serving Addis Ababa University was considerably strengthened by the return of Ethiopian fellows who had received microprocessor technology training at the UNU course at Trinity College in Dublin. UNU training institutions have also had considerable impact in their particular part of the world. The "graduates" of the UNU training course at the National Food Research Institute (NFRI) in Japan now bolster the scientific capacities of a number of national food research institutes in South-East Asia – as, for example, at the



UNU training is conducted at a number of institutions around the world, primarily in the developing countries. Among them are (clockwise from upper left): University of Ife, Nigeria; National Food Research Institute, Japan; Universidad de los Andes, Colombia; Central Food Technological Research Institute, India.

Department of Science Technology of the Vietnamese Ministry of Food or the Department of Food Technology in Sri Lanka. In addition to training, these institutes have been provided with scientific equipment and other forms of support.

- The University's financial problems have naturally been felt in the training programme. Encouraging progress has been made, however, in efforts to offset these financial strains. The University's fellowship programme has attracted attention among bilateral and multilateral donors, international agencies, foundations, and other private sources interested in providing support for efforts to strengthen the scientific and technological capabilities of developing countries.
- In addition, cost-sharing arrangements for increasing training efforts for UNU Fellows from other developing countries have been negotiated with two institutions in Brazil: the CNPq (National Council for Scientific and Technological Research) of the Ministry of Science and Technology and CAPES (the Commission for Professional Development in Higher Education) of the Ministry of Education. Under these arrangements, all local costs will be met by these two institutions while the UNU will be responsible basically for international travel and medical insurance. Similar arrangements are in the offing in China and India. A private individual in the United States has provided \$92,000 through the programme office at Massachusetts Institute of Technology for fellowships in the area of food and nutrition. The Japan Foundation for the United Nations University also made a grant of \$32,000 for fellowships in 1988.

DISSEMINATION

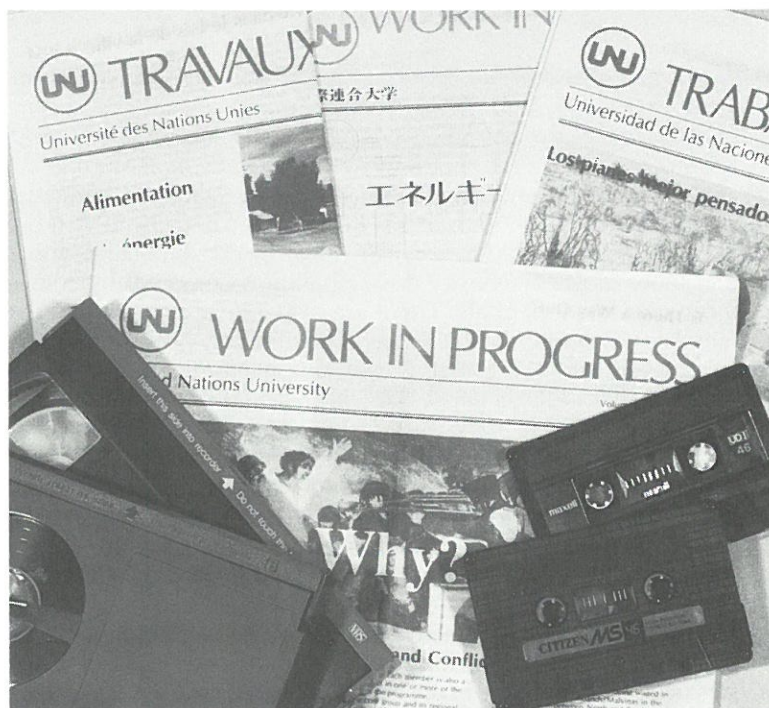
"The University shall disseminate the knowledge gained in its activities to the United Nations and its agencies, to scholars and to the public, in order to increase dynamic interaction in the world-wide community of learning and research."

Charter of the University, Article I, Section 4

As the University's dissemination activities grow and become more varied in relation to the research output, the University's participation in the international knowledge system is also expanding. In responding to this and in order to make the University's dissemination efforts more coherent, the various dissemination techniques used, including academic publishing, public information, audio-visual, library, as well as seminars, conferences and other types of meetings, have also moved toward a more integrative approach.

- There is increasing evidence that information produced by the University Centre and the networks in various forms – print, film, computerized data bases, and others – is being acted upon, transformed, and used, not only in its usual academic forms, but also in more "user friendly forms". Recognizing the particular premium placed on knowledge in this form because it is more accessible and usable to a wider range of constituencies, more and more of the University dissemination is designed to achieve a broader range of goals. There are also indications, despite the fact that it is very difficult to determine precisely how information is received and used, that dissemination efforts are having an impact.
- For example, *Work in Progress*, the University's main public information vehicle, continues to be used as supplementary classroom reading material; one issue on UNU work on the world's rain forests was adapted as a teaching unit for high school students in Canada. Manuals designed by the UNU/ICSU project on communicating scientific information for self-reliance are being used by villagers in India. UNU videotapes on biogas systems produced in China are being used by communities in Guyana and Jamaica.
- In addition UNU books are being reviewed regularly in various periodicals, particularly scholarly journals, and are being used in other appropriate forums, including those in the academic community and in the UN system. Several titles were reprinted during the year to answer the increasing demand due to the sales. University publications have also appeared on reading lists for courses in major universities, and the University's 73 Depository Libraries continue to receive UNU publications to help make the work of the University known to audiences that otherwise might not have access to such material.
- As well as disseminating the results of UNU scientific research activities, the University also continued various general informa-

tional efforts during 1988. A new illustrated brochure explaining the goals and purposes of the University, with some of the major UNU achievements to date, was produced in English, French, Japanese and Spanish by Information Services, which also continued to distribute press releases and other material to the media in Japan and abroad. Efforts also continued in the dissemination of the 30-minute videotape, "The UNU Today," which was produced in 1987 and is now generally available in the three world video systems (NTSC, PAL and SECAM) in English, French, Japanese, Spanish. In connection with the July Council meeting in Brazil, both film and printed material on the University were also produced in Portuguese.



In addition to usual academic publications, the UNU disseminates information in various other ways – such as Work in Progress, videotapes, and other “user friendly” forms.

The University's library maintains a collection of books, serials, and documents which primarily serves the information needs of the University staff, but is also regularly consulted by local researchers. The catalogue of the Library's holdings forms part of the historical record of the fields and directions of research pursued by the University and is made available in this context to an increasing number of scholars and institutions. The University also maintains an audio-visual library, consisting both of tapes and films about its own work around the world as well as pertinent materials received from other organizations, which are available to appropriate borrowers.

FINANCE AND FUND-RAISING

"Capital costs and recurrent costs of the University shall be met from voluntary contributions for the University, or from the income derived therefrom, made: (a) By Governments, directly or through the United Nations, the specialized agencies or the International Atomic Energy Agency; (b) By non-governmental sources, including foundations, universities and individuals."

Charter of the University, Article IX, Section 1

Finance: While the continued growth in the University's institutional presence around the world is itself a process that is stimulating new funds, the seriousness of the University's present financial situation should not be underemphasized. The steep devaluation of the US dollar, the currency in which the major proportion of the University Endowment Fund is still invested, coupled with the decline in the interest rates on the investments of the fund, have generated considerably lower levels of income, particularly in terms of Japanese yen, the currency in which 50 per cent of expenditures are incurred.

In preparing the 1988–89 biennial budget, during the latter half of 1987, an exchange rate of 145 Japanese yen to the US dollar was used. Since that time, the dollar has depreciated further and the University has been forced to revise its budgetary estimates, based on expert advice, on the rate of 125 yen to the dollar.

Another implication of the University's present financial dilemma is its long-term impact: in 1985, at the exchange rate of 240 yen to the dollar, the non-earmarked interest income of \$15 million from the Endowment Fund was equal to ¥3.6 billion. In 1988, the declining rates of return will only provide an interest income of \$12.4 million which, at the exchange rate of 125 yen to the dollar, is equal to ¥1.6 billion only. Thus, between 1985 and 1988, the University's core income in yen terms has been reduced by 55 per cent.

The University has moved to meet this situation in various ways, including making further cuts in programme and administrative expenditures.

As another response to the financial situation, some 35 posts – out of the 136 established posts at the University Centre (including the offices in Europe and North America) – have been "frozen," representing a saving of \$3.7 million in the current year. In spite of this, however, the 1988 personnel costs at the Centre still stand at \$9.5 million because of the fact that salaries are paid effectively in yen – although in yen terms, the salaries have barely increased. As a result of various consultations and in-house studies, it now also seems unavoidable that a further reduction in staff, especially at the administrative level, may be unavoidable during 1989.

Meanwhile the University is doing everything possible, with advice and assistance from financial experts who are members of the Rector's Ad Hoc Investment Committee, to maximize the income

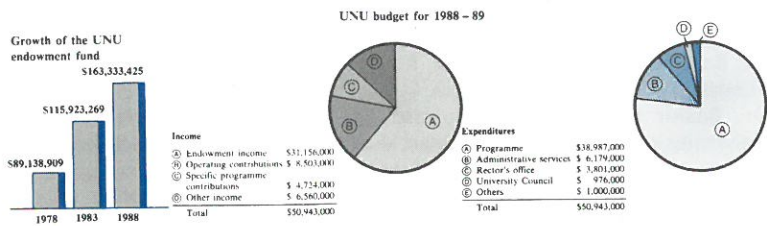
and the total return from the investments of the UNU Endowment Fund. In addition, following the advice and recommendations of the UN Investment Committee, the University's investments have already diversified in the currencies in which the major expenditures of the University are incurred such as the Japanese yen, Finnish markka, and the US dollar. It is also recommended that a part of the Endowment Fund be invested in a managed, marketable bond portfolio especially in these currencies, and action in this regard is being taken by the UN Controller.

Fund-raising: The University has also stepped up fund-raising efforts. Over the year, the Rector visited the government officials and others in 15 countries in Asia, Europe, and North and South America; visits to Africa and the Arab World are scheduled in the near future.

The Rector has been in continuing touch with the Government of Japan about the financial situation of the University. Japan made an operating contribution of \$1.45 million for 1988, and additional Japanese contributions in 1989 and in the following years are now envisioned. The Government of Finland also made an additional operating contribution of \$2.26 million in 1988 for UNU/WIDER. The University is particularly grateful to the Governments of Japan and Finland, thus far the two largest contributors to the UNU Endowment Fund, for their continuing interest and support.

As of 31 December 1988 pledges to the University's Endowment and Operating Funds from 47 countries totalled \$199.08 million of which \$172.53 million had been received. During 1988, the following 17 Governments pledged and/or contributed a total of \$10.74 million to the University: Austria, Brazil, China, Finland, France, Ghana, Greece, India, Ireland, Italy, Japan, Macau, Nigeria, Spain, Sri Lanka, Sweden and Uruguay.

Local support groups: There was also in 1988 a most welcome contribution from the Japan Foundation for the United Nations University totalling 22.6 million yen (\$175,861). The success here stimulated the University to try to organize UNU support groups in other nations. An Indian Council for the UNU was established in the spring to promote and strengthen the concept of the work of the University among the government, academic and research communities of that country. The University is also presently exploring the establishment of local support groups in Argentina, Brazil and Canada. A US support group, the American Council for the UNU, has been in existence for some years.



ADMINISTRATION AND MANAGEMENT: Reorganization of the University Centre

A particularly challenging set of tasks for the University Administration in 1988 arose from the Rector's decision early in the year to reorganize the University Centre by merging the three previous programme divisions – Development Studies, Regional and Global Studies and Global Learning – into one Programme Division. With the University facing severe financial constraints, this step was taken in part as an effort to streamline the organization and activities to ensure the most efficient practical use of human, financial and other resources. At the same time, it is hoped that these reorganizational measures will enable the University Centre to work more closely and effectively with the institutional and research networks that are continuing to expand around the world.

A second phase of the reorganization is now examining comprehensively and in depth the most cost-effective administrative structure and functioning mechanism that the University should have at the Tokyo Centre that would assure the efficient delivery of the programme and substantive work as a whole. The objective is the restructuring of the administration of the University as a basis for the optimum level and most efficient redeployment of the administrative staff. It is expected that, by consolidating job descriptions, applying a team approach and contracting out functions where feasible, overlapping and duplication of effort can be avoided and objectives achieved by a leaner staffing structure without severe adverse impact on the operation.

The guiding administrative philosophy is that, while it may be necessary to undertake yet more stringent measures in order to ensure financial viability, it is essential to maintain a strong and effective University Centre as a core component of the UNU's overall programming and co-ordination function. This is even more acutely the case as the University looks ahead, in only a few years time, to the staffing and general organizational needs for a move into the new permanent headquarters.

LIST OF COUNCIL MEMBERS*

Appointed members:

Dr. Bakr Abdullah Bakr, Rector, King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia

Dr. Bashir Bakri, Visiting Professor in Economics and Social Studies, University of Khartoum; Chairman, National Bank of Sudan, Khartoum, Sudan

Dr. Marie-Thérèse Basse, former Technical Counsellor, Office of the President of the Republic of Senegal, Dakar, Senegal

Dr. Mary F. Berry, Geraldine R. Segal Professor of American Social Thought, University of Pennsylvania, Philadelphia, Pennsylvania, United States

Professor André Blanc-Lapierre, Laboratoire des signaux et systèmes, Ecole supérieure d'électricité (Signals and Systems Laboratory, Advanced School of Electricity), University of Paris XI, Gif-sur-Yvette, France

Father Alfonso Borrero, Executive Director, Association of Colombian Universities, Bogotá, Colombia

Dr. Umberto Colombo, Chairman, Italian National Agency for Atomic and Alternative Energy Sources (ENEA), Rome, Italy

Dr. Mercedes Concepcion, Professor of Demography, Population Institute, University of the Philippines, Quezon City, Philippines

Ambassador Kuniyoshi Date, former Ambassador of Japan to Brazil and Iraq; former Managing Director, The Japan Foundation, Tokyo, Japan

Dr. Keith B. Griffin, Department of Economics, University of California, Riverside, California, United States

Dr. Helge Gyllenberg, Professor of Microbiology, Department of Microbiology, University of Helsinki, Helsinki, Finland

Professor Walter Joseph Kamba, Vice-Chancellor, Professor of Law and former Vice-Principal, University of Zimbabwe, Harare, Zimbabwe

Professor Joseph Ki-Zerbo, Professor, University of Dakar; Researcher, Cheik Anta Diop Institute, University of Dakar, Dakar, Senegal

Dr. Gerald C. Lalor, Pro-Vice-Chancellor, University of the West Indies, Kingston, Jamaica

Professor Candido Mendes de Almeida, President, International Social Science Council and Sociedade Brasileira de Instrução, Rio de Janeiro, Brazil

Professor M.G.K. Menon, Scientific Adviser to the Prime Minister of India; Member of the Planning Commission, Government of India, New Delhi, India

Dr. Martha V. Mvungi, Secretary-General, National Commission of UNESCO; Senior Lecturer, Department of Education, University of Dar es Salaam, Dar es Salaam, Tanzania

Dr. Maria de Lourdes Pintasilgo, former Ambassador of Portugal to UNESCO; former Minister of Social Affairs; former Secretary of State for Social Security; former Caretaker Prime Minister of Portugal, Lisbon, Portugal

Professor Yevgeniy M. Primakov, Director, Institute for World Economics and International Relations, USSR Academy of Sciences; Member, USSR Academy of Sciences, Moscow, USSR

Professor Mihály Simai, Director, Institute for World Economics, Hungarian Academy of Sciences; Professor and Director of Graduate Studies, Karl Marx University of Economic Sciences, Budapest, Hungary

Professor Rehman Sobhan, Director-General, Bangladesh Institute of Development Studies; former Member, Bangladesh Planning Commission, Dhaka, Bangladesh

* As of 31 December 1988.

Dr. Justin Thorens, Professor, Faculty of Law, University of Geneva, Geneva, Switzerland; President, International Association of Universities, Paris, France

Dr. Alberto Wagner de Reyna, former Ambassador of Peru to UNESCO; former Secretary-General for Foreign Affairs, Lima, Peru

Ms. Zhao Dihua, Director, Division of Information Science and Methodology, Institute of Scientific and Technical Information of China, Beijing, China

Rector:

Professor Heitor Gurgulino de Souza

Ex officio members:

Mr. Javier Pérez de Cuéllar, Secretary-General, United Nations

Dr. Federico Mayor, Director-General, United Nations Educational, Scientific and Cultural Organization

Dr. Michel Doo Kingué, Executive Director, United Nations Institute for Training and Research

UNU SENIOR STAFF

Professor Heitor Gurgulino de Souza (Brazil), Rector

Dr. Michio Nagai (Japan), Senior Adviser to the Rector

Dr. Sogo Okamura (Japan), Senior Adviser to the Rector

Dr. Lal Jayawardena (Sri Lanka), Director, UNU World Institute for Development Economics Research (WIDER) (Helsinki)

Dr. Roland J. Fuchs (United States), Vice-Rector (Research and Training)

Dr. Kinhide Mushakoji (Japan), Vice-Rector (Dissemination)

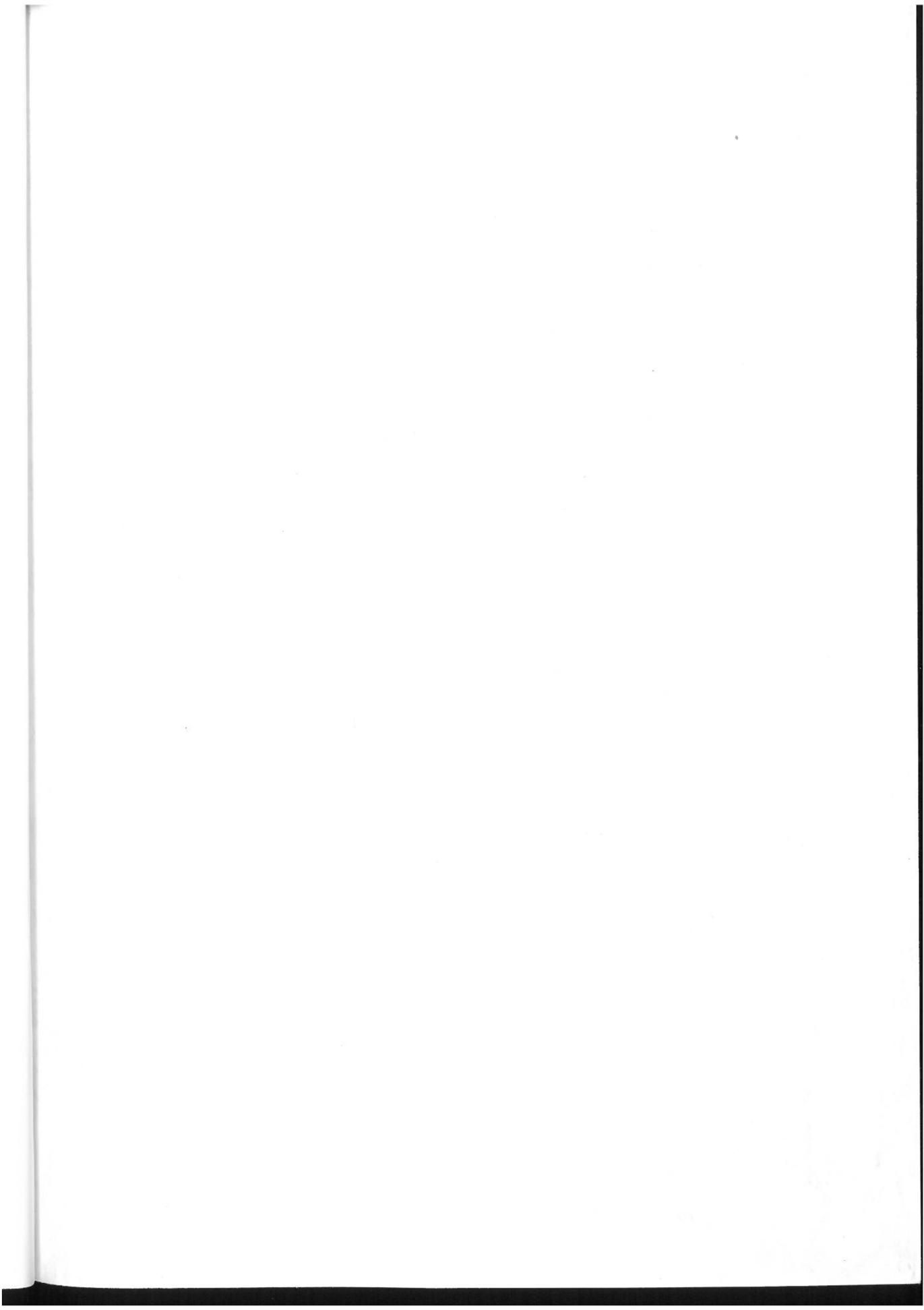
Ms. Momoyo Ise (Japan), Director of Administration

Mr. Amadio A. Arboleda (United States), Executive Officer, a.i.

Mr. Vishakan Krishnadasan (Sri Lanka), Legal Counsel/Secretary of the Council

Mr. S. Chidambaranathan (India), Director, UNU Office in North America (New York)

Mr. Peter Koenz (Switzerland), Representative, UNU Office in Europe (Paris)





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