

The United Nations University

Annual Report **1997**



The United Nations University

Background

The United Nations University (UNU) functions as an international community of scholars engaged in research, postgraduate training and dissemination of knowledge in furtherance of the purposes and principles of the Charter of the United Nations. The idea for this type of international organization was originally proposed in 1969 by then United Nations Secretary-General U Thant, who suggested the creation of "a United Nations university, truly international in character and devoted to the Charter's objectives of peace and progress."

The University commenced operations in September 1975 as an autonomous organ of the United Nations General Assembly, under the joint sponsorship of the United Nations and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

As the UNU's Charter states, its aim is to foster intellectual cooperation among scholars and scientists in an effort to understand and solve the "pressing global problems of human survival, development and welfare." The University has a special mandate to alleviate the intellectual isolation of academics in developing countries by organizing worldwide networks of collaborating scholars and research institutions.

Organization

The University consists of an Academic Division at the UNU Centre in Tokyo, along with its own research and training centres and programmes (RTC/Ps), and a global network of associated and cooperating institutions and scholars worldwide.

The University Council sets the principles and policies for the University. It has 24 members who are appointed for six-year terms by the Secretary-General of the United Nations and the Director-General of UNESCO. Members serve in their individual capacities, not as representatives of their countries. There are three ex officio members: the Secretary-General of the United Nations, the Director-General of UNESCO and the Executive Director of the United Nations Institute for Training and Research (UNITAR). The Rector is also a Council member.

The Rector is the University's chief academic and administrative officer, with responsibility for the direction, organization and administration of its overall programme.

Research and training directions – towards the next century

The University studies the far-reaching effects of human activities, which can and have altered the world on an unprecedented scale. Particular importance is given to those that influence developing countries. The four areas of concentration articulated in the University's Third Medium-Term Perspective are:

- Environment,
- Science and Technology,
- Development, and
- Peace and Governance.

The University's academic activities are coordinated and carried out by its Academic Division and through its network of research and training centres:

UNU World Institute for Development Economics Research (UNU/WIDER), Helsinki, Finland (March 1985)

UNU/WIDER, the University's first research and training centre, studies global economic policies that will help improve human lives. Its studies are conducted by an in-house staff of research fellows, economists and scholars. Although there are many economic "think-tanks," UNU/WIDER is one of the few focusing on the problems of developing countries. Its ultimate purpose is to help such countries form economic policies that lead to robust, equitable and environmentally sustainable growth.

UNU Institute for New Technologies (UNU/INTECH), Maastricht, the Netherlands (October 1990)

UNU/INTECH conducts integrative policy-oriented research and training on the economic and social implications of new technologies for developing countries. It does this by setting up links to institutions in developing countries pursuing similar research. UNU/INTECH's programmes emphasize research on the economic and social impact of new technologies, policy studies on matters of urgent importance, and the training of Ph.D. fellows.

(Continued on the inside back cover.)



Contents

Preface: A Year of Transition	iv
The Focal Point of the United Nations University: Finding Solutions to Pressing Global Problems – An Overview	2
The University's Work: Issues and Challenges	3
Environment	3
Science and Technology	11
Development	18
Peace and Governance	23
Building Capacities: UNU Postgraduate Education	27
Dissemination of Research Results	30
Interface with the United Nations System	33
State of the University – 1997	36

Annexes

Annex 1: UNU Academic Activities in 1997	41
Annex 2: UNU Governing Bodies	46
Members of the University Council	46
Members of the Boards of UNU Research and Training Centres and UNU Advisory Committees	47
Annex 3: UNU Titles Published in 1997	49
Annex 4: UNU Depository Libraries around the World	53



Preface: A Year of Transition



The year 1997 was for the United Nations University (UNU) above all a year of transition. After 10 years of dedicated service, Heitor Gurgulino de Souza, the third Rector of the UNU, retired. In his two terms, he was particularly involved in the development of new research and training centres and programmes (RTC/Ps). At present, these give structure to the worldwide network that is the UNU. Together, the RTC/Ps from Helsinki to Accra and from Caracas to Macau have developed cost-effective and interesting programmes, focusing on pressing global problems as prescribed in our Charter.

On 1 September 1997, I assumed the challenging tasks and responsibilities of the Rector. At that time, I indicated that we were entering a period of profound change. Change is imperative, because our context is changing. I hesitate to use the word "unprecedented," but certainly the change is rapid and far-reaching. The United Nations itself is changing also. The 52nd General Assembly, by and large, approved the cautious, but well-designed, strategic reform proposals of Secretary-General Kofi Annan. These include an invitation for the UNU to take on a leading role as the United Nations' think-tank and producer of useful ideas. This means making sure that the University provides policy makers with a continuous supply of intelligent and suitable options from which to choose.

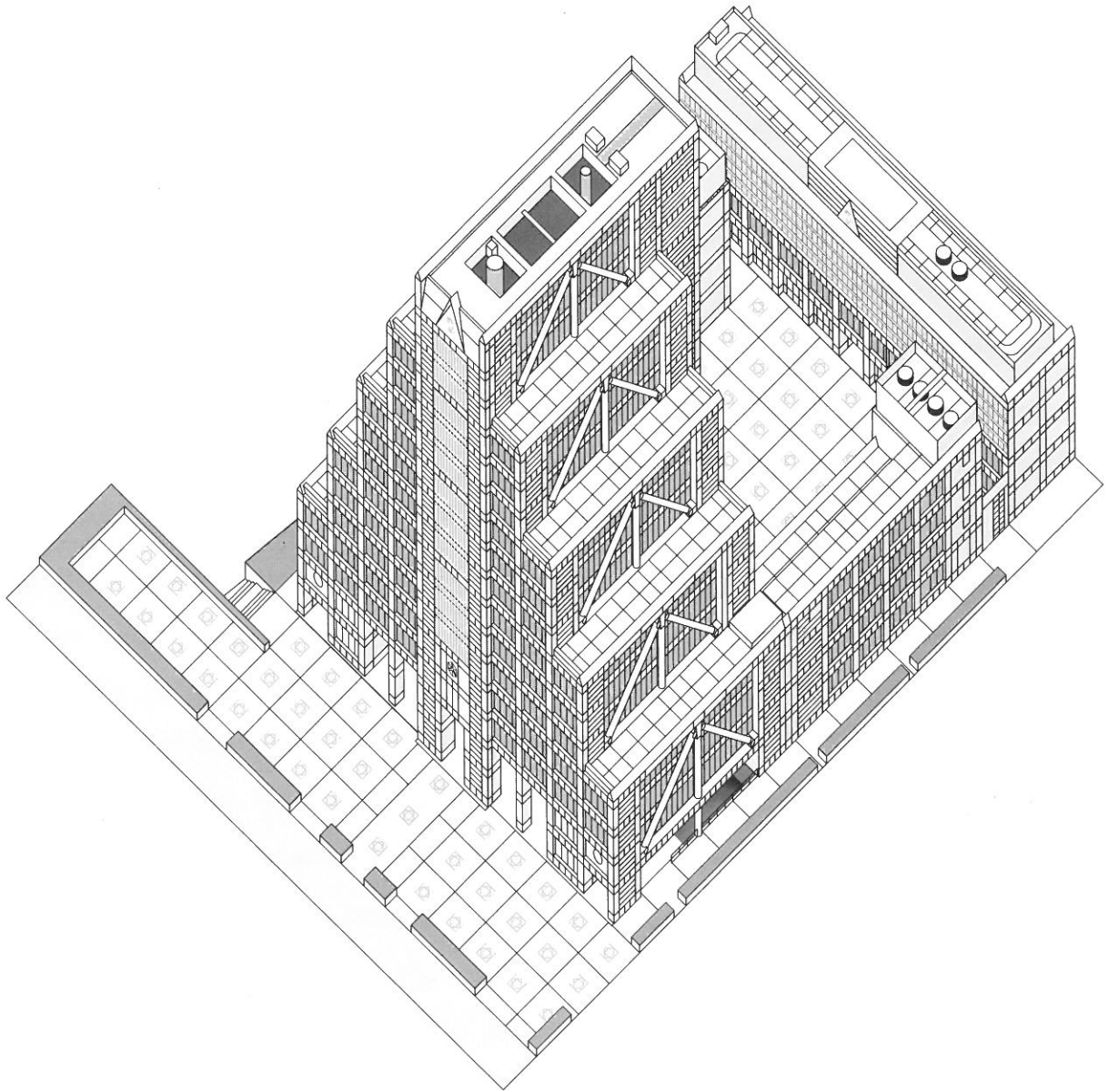
The UNU is prepared to take on this challenge: to strengthen its think-tank role, and to set up small task forces that will focus on the development of policy alternatives, with arguments and indicated consequences, for upcoming problems. But successful change asks for due regard for achievements in the past, and it asks also for continuity.

My predecessors each had a special talent. It was organizational expertise in the first, a deep sense of ethics and intellectualism in the second, and strong building skills in the third. I intend to bring all of their talents together and concentrate on quality. I want the UNU to focus on those things that only the UNU can do, or that the UNU can do better than others. In all its activities, the University must strive for a high level of quality that befits its unique position in both the UN and academia. Academic quality in its research is crucial, but so is high quality in its training and dissemination and in its think-tank activities.

To attain this aim, it is important to have the right people to do it. I have great confidence in our new team with Vice-Rectors Professor Ramesh Thakur (from Otago, New Zealand, and Canberra, Australia) and Professor Motoyuki Suzuki (from the University of Tokyo) and Senior Adviser Professor Hideo Sato (from Tsukuba University).

The year 1997 was a year of transition. It was an interesting year with many important ongoing and some new activities that are presented in this report. It also was a year in which many initiatives have been taken to reorient the UNU towards the future, to adapt to changing conditions and demands not in a reactive but in a proactive way. The results will gradually become visible in 1998.

Hans van Ginkel, Rector
The United Nations University



UNU headquarters building designed by Kenzo Tange Associates.
Axonometric drawing by Michiyoshi Design Laboratory Inc.



The Focal Point of the United Nations University: Finding Solutions to Pressing Global Problems – An Overview

The year 1997 marked the 22nd year of scholarly work for the United Nations University (UNU). For over two decades, the University has played an important role in stimulating international academic cooperation through innovative research initiatives and capacity-building programmes, and by disseminating the results of this work.

The University's Council, its governing body, held its 44th session at UNU Headquarters in Tokyo, Japan, from 1–5 December 1997. Their deliberations focused on three main topics: a review of the academic activities conducted during 1997; the University's proposed 1998–99 academic programme and budget; and an assessment report on the University prepared by the Rector.

The basic framework for the University's work during the year was its Third Medium-Term Perspective (MTP III). The MTP III is meant to guide the academic and institutional development of the University's activities from 1997 to 2001. It calls for the University to find solutions to pressing global problems within four programme areas:

- Environment;
- Science and technology;
- Development;
- Peace and governance.

This report has three objectives. First, it highlights some of the University's global activities within each of the above four programme areas. Second, it describes the UNU's 1997 efforts in postgraduate training, dissemination of research findings and institutional development.

And third, it shows how the UNU's work was conducted in cooperation with other United Nations organizations.

As in the past, this report does not provide an exhaustive account of all the UNU's academic work. Instead, it highlights for 1997 the University's main initiatives and work areas. It provides a brief look at the work being coordinated and done by a global network of scholars working at the UNU's Headquarters in Tokyo and at its eight research and training centres and programmes located around the world:

- The World Institute for Development Economics Research (UNU/WIDER) in Helsinki, Finland;
- The Institute for New Technologies (UNU/INTECH) in Maastricht, the Netherlands;
- The International Institute for Software Technology (UNU/IIST) in Macau;
- The Institute for Natural Resources in Africa (UNU/INRA) in Accra, Ghana;
- The Institute of Advanced Studies (UNU/IAS) in Tokyo, Japan;
- The Programme for Biotechnology in Latin America and the Caribbean (UNU/BIOLAC) in Caracas, Venezuela;
- The International Network on Water, Environment and Health (UNU/INWEH) in Hamilton, Ontario, Canada;
- The International Leadership Academy (UNU/ILA) in Amman, Jordan.

Numerous cooperating institutions throughout the world collaborated with the UNU and are cited in the context of their specific roles within the University's programme areas.



The University's Work: Issues and Challenges

Environment

The UNU's environment programme focuses on interaction between human activities and the natural environment. Its work is divided into four areas:

■ Sustainable resource management

The key concepts in this programme are sustainable use of land and water resources, and the vulnerability of ecosystems to human-induced and natural environmental changes. The programme is also concerned with effective environmental monitoring and governance. This work is coordinated at the UNU Centre and implemented through extensive worldwide networks.

■ Eco-restructuring for sustainable development

Most of the world's environmental problems are caused by a failure or inadequacy of current development processes. Several of the UNU's research activities are finding better ways of managing these processes, ensuring that they are sustainable and that they revitalize growth. These activities are being carried out primarily by the UNU/IAS in Tokyo.

■ Natural resources in Africa

The UNU's Institute for Natural Resources in Africa (UNU/INRA) is addressing the continent's urgent needs for human resource development and institutional capacity building. Its main goals are to help African countries find sustainable ways of using their natural resources and to help Africans become self-sufficient in the production of food. UNU/INRA's headquarters is located at the University of Ghana's Legon campus, near Accra. The Institute also has a Mineral Resources Unit (MRU) in Lusaka, at the University of Zambia's School of Mines.

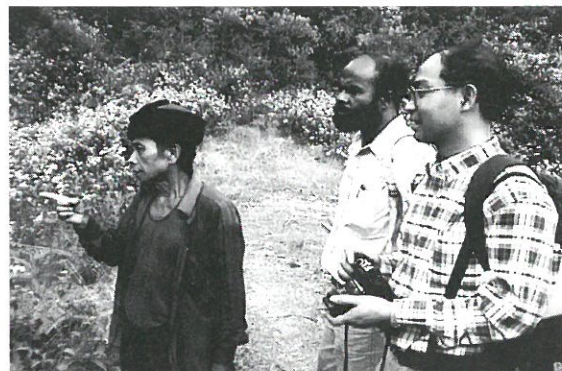
■ Water, environment and health

The UNU's Canadian-based International Network on Water, Environment and Health (UNU/INWEH) is integrating international expertise into a programme of education, training, research and technology transfer on water, environment and human health issues. Its work is project-based, with researchers proactively responding to global water problems with innovative solutions. UNU/INWEH's work is being carried out through networks and project teams around the world.

Sustainable resource management

"People, Land Management and Environmental Change" (UNU/PLEC) is a demonstration and capacity-building project concerned with conserving biological diversity in managed agricultural ecosystems. In 1997, the project attracted US\$6.17 million in funding from the Global Environment Facility (GEF).

It is recognized that most of the world's plant biodiversity lies in cultivated and semi-cultivated lands in the tropics and subtropics – an area many times larger than can be effectively protected through government controls. However,



In a South-South cooperation effort, participants of the UNU/PLEC project from China (Dao Zhiling) and Papua New Guinea (Thomas Nen) discuss land-use changes with a farmer in China's Yunnan Province.
Photo by J.I. Uitto, UNU



during the past 50 years significant numbers of cultivated plant varieties and landraces have disappeared because of the commercialization and mechanization of agriculture. In contrast, many of the areas where diverse plant species and genetic varieties still exist are managed by farmers and pastoralists whose systems share several common characteristics: diversity in cropping and cultivation, micro-level adaptations, successional vegetation, and small-scale farming. Even as populations grew and markets expanded, indigenous knowledge systems were applied in farms which combined commercial and intensive production with adaptive techniques, such as integrated pest management and organic methods for maintaining soil fertility and land quality.

There is a need to document these approaches systematically and to evaluate their viability in light of the pressing demand for increased food production. It is necessary to determine the range of conservation strategies to be used and provide appropriate support to communities in agroecosystems where biodiversity is at risk.

This is what UNU/PLEC aims to do: focus on agricultural lands located in priority ecosystems that are managed by farmers and pastoralists. These are lands that are at the margins of forests, semi-arid regions, mountains, wetlands and land corridors.

UNU/PLEC works through locally-based clusters in six areas: West Africa (Ghana and Guinea); East Africa (Kenya, Tanzania and Uganda); South-East Asia (the Yunnan province in China and northern Thailand); Papua New Guinea; Meso-America (Mexico and Jamaica); and Amazonia (Brazil and Peru). The UNU/PLEC network includes approximately 100 scholars – most of whom come from participating developing countries. This provides UNU/PLEC with an innovative cooperation network, enabling researchers in Africa, Asia, the Caribbean, and Latin America to communicate easily, exchange information, and learn from each other.

A South-East Asian regional meeting of UNU/PLEC was organized in China's Yunnan province in December. The meeting took place along with the workshop on "Multiple Resource and Land Use Planning in Biosphere Reserves and Similar Managed Areas as Subjects for Eco-development," which was hosted by the Chinese National Committee for Man and the Environment (MAB) and organized as part of the UNESCO-UNU-Third World Academy of Sciences' South-South Cooperation Programme on Environmentally Sound Socio-Economic Development in the Humid Tropics. Part of the meeting involved work at UNU/PLEC's Yunnan field site.

The UNU's "Mountain Ecology and Sustainable Development" project is active in the so-called Mountain Agenda – an informal group of academics and development professionals with a special interest in sustainable mountain development. Mountains occupy about one-fifth of the Earth's land surface and are home to one-tenth of the world's population. However, their resources – water, electricity, minerals, timber, tourist havens, recreation and religious inspiration – are used by more than half of the people on the planet.

Since the "Earth Summit" conference, UNU has participated in the UN inter-agency and NGO follow-up process to Agenda 21's chapter 13, and has become the lead agency for this research. As a result, the book *Mountains of the World – A Global Priority* and a related policy document were prepared as contributions to the UN General Assembly's special session "Earth Summit+5," which was held in June. These comprehensive works were carried out as a collaborative effort between the UNU, the Swiss Development Cooperation, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Food and Agriculture Organization of the United Nations (FAO), and the International Development Research Centre/International Potato Centre.

A study being done by this project titled "Floods in Bangladesh: Process Understanding and Development Strategies" is in its final phase and a synthesis paper was produced jointly with the University of Bern's Institute of Geography.



In May, the "Fourth International Symposium on African Mountains" was held in Madagascar. The symposium's theme focused on African mountain development in a changing economic context. This provided an opportunity for researchers from the UNU/PLEC Uganda cluster to interact with the networks created under the African Mountain Association, promoting further integration between various UNU initiatives.

The Mountain Project is moving into a new phase with reduced financial support from the UNU. Efforts were made during the year to strengthen partnerships with other organizations active in the field.

In April, UNU and the International Centre for Integrated Mountain Development co-sponsored a workshop in Kathmandu, Nepal, entitled "Dynamics of Land-Use/Land-Cover Change in the Hindu Kush Himalaya." The main purpose of the workshop was to draft a collaborative research proposal on the topic. Another meeting was held in Nepal in November to map out a long-term strategy for mountain research and institutional collaboration.

The project on "Environmental Monitoring and Analysis in the East Asian Region" monitors land-based sources of pollution in food, water and air. The project has two objectives: to produce calibrated scientific data for regional assessment, and to generate policy options for improved regional compliance with environmental accords. The project involves a substantial capacity-building element in its participating laboratories, which are located in China, Hong Kong, Indonesia, Japan, the Republic of Korea, Malaysia, Singapore, Thailand and Viet Nam. The project is also providing a basis for these countries to share for the first time information on toxic chemicals.

The year's work was launched by the international symposium titled "Environmental Governance and Analytical Techniques: Water Pollution Monitoring in East Asia," which was held in Tokyo and Singapore in February. The Singapore symposium was followed by a training course for the staff of the participating

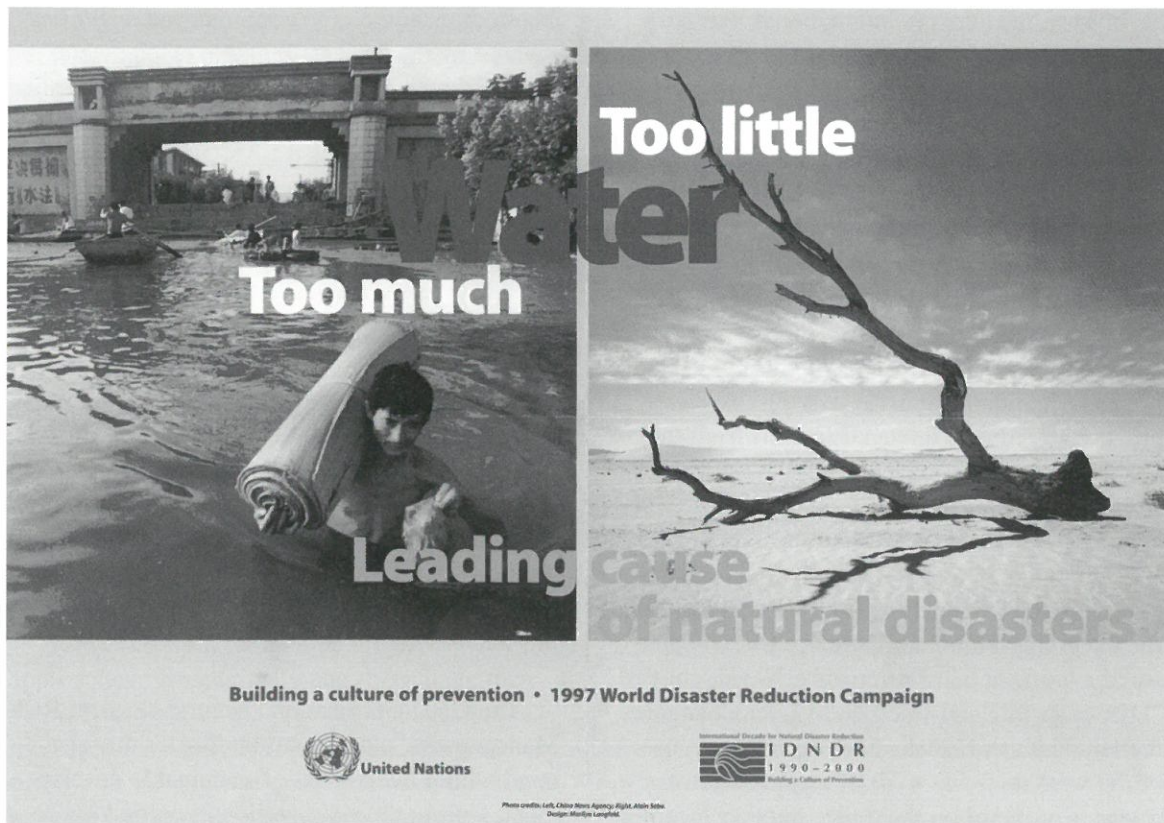
laboratories in the nine countries and territories covered by the project. Tangible results were produced with the receipt of data on toxins in food, soils and fish from all participating laboratories. A database called LANDBASE, containing research results and selected policy options that are available to the region for improving sustainable development, is being developed. Also, several scientific articles have been accepted for publication on the project's findings.

A related UNU activity, called the "Sassari Project on Coastal Area Management," organized several colloquia and workshops during the year. They also established a database on training facilities that pertain to coastal management. Several other UN agencies helped prepare this database.

The UNU's project on "Natural Disaster Risk Management" places natural disaster management within the context of sustainable development. During the year, work was carried out to finalize a theoretical framework for the analysis of social vulnerability and its inclusion into disaster management planning. This novel concept was tested in a pilot phase and presented to scientific audiences in workshops organized in China, Fiji and Germany. In the next phase, the project will begin applying the framework in several case studies. This work is intended to make an important contribution to the International Decade for Natural Disaster Reduction (IDNDR).

The Global Environment Information Centre (GEIC), a joint project between the UNU and the Environment Agency of Japan, marked its first year of operation in 1997. The GEIC is a centre for global projects, networking and information on environmental issues. It has promoted new levels of cooperation and understanding among nations, key sectors, and people to achieve environmentally sustainable development. More than 12,000 people visited the centre in 1997.

The GEIC was asked by the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) to prepare a study



titled “NGO Consultative Mechanisms and the UNFCCC.” The study was based on a review of workshop reports and submissions from and consultations with NGOs. The report had seven main recommendations. The UNFCCC Secretariat presented the report in July at a meeting it held with its 165 participating countries.

The GEIC was also involved in four other activities during the year:

- In March, it organized a symposium titled “NGOs and Climate Change.”
- It conducted a study on CO₂ emissions-causing electrical appliances sold in Japan.
- It released a report on the citizens’ role in managing the Nakhodka oil spill, which occurred in January on Japan’s west coast.
- The centre was involved with implementing the information systems that were used during the Third Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP-3).

The UNU Centre is cooperating with UNU/INWEH in the sustainable management of

water resources, especially for international basins. As part of the Centre’s programme, the sixth UNU Global Environmental Forum was held in Tokyo in June. It was titled “Water for Urban Areas in the Twenty-first Century.” It focused on the impending environmental crisis caused by rapid urbanization and increasing per-capita water demand (especially in developing countries), coupled with other changes in the global environment. These annual fora allow the UNU to present its latest research on global environmental problems, and give the general public an opportunity to learn more about them.

Eco-restructuring for sustainable development

The UNU’s eco-restructuring projects are helping to solve pressing environmental problems by generating alternate growth options. The UNU/IAS and UNU/INTECH are carrying out this work.

Researchers at UNU/IAS are working on a project titled “Sustainable Global Futures: Scenario Building for the 21st Century.” Building



Box 1: *Freshwater Resources in Arid Lands*

Solutions to water scarcity problems need to be found on many fronts. Appropriate technologies can either be traditional and low-tech – such as dew-irrigation and water-harvesting – or they can be modern, large-scale technologies, like underground dams. The important issue is not the level of technology but its feasibility and sustainability.

Apart from technological concerns, it is important that the solutions be economically, financially, socially and environmentally acceptable. An important issue is the correct pricing of water – for industrial, domestic and agriculture uses. This is, however, a politically charged issue and virtually no country has yet set water prices at an amount which reflects its real cost. The general feeling is often “How can mankind charge money for something that falls free from the heavens?”

Freshwater Resources in Arid Lands,
edited by Juha Uitto and Jutta Schneider, UNU Press, 1997

scenarios for future global development means using models to encourage debate about global trends. It also means figuring out how these trends will impact sustainable development. Scenarios are not meant to be prescriptions for the future, but are hypothetical sequences of events constructed for the purpose of focusing attention on how something might happen.

As part of this project, UNU/IAS hosted two back-to-back meetings in March to help improve the quality of Integrated Assessment Models (IAMs) and integrate developing-country perspectives into them.

The first meeting was the “Intergovernmental Panel on Climate Change’s Asia-Pacific Workshop on Integrated Assessment Models.” It had three main outcomes. First, 140 top scholars from around the world exchanged their latest IAM research results on climate change. Second, the meeting provided developing countries with the most up-to-date scientific and technical information on the subject. Third, it gave policy makers an in-depth analysis of climate change concerns as they prepared for COP-3, which was held in Kyoto in December.

The second was the “Tokyo Modelling Forum on Integrated Global Environmental Assessment.” This meeting also had three main outcomes: researchers were able to compare how different IAMs stabilize CO₂ emissions and

affect climate change; they made progress in expanding the use of IAMs in developing countries; and they were able to extend IAMs’ climate change framework to include more sustainable development-related issues.

The UNU and India’s Tata Energy Research Institute prepared a study titled “The UNU-TERI Protocol on Climate Change: A Blueprint for Kyoto.” This study outlined several important issues and suggested concrete actions that a protocol on climate change should include. The information it contained helped politicians attending COP-3 understand global warming and gave them more negotiating options from which to choose.

The UNU/IAS project titled “Environment, Trade and Industrialization” is trying to identify the environmental effects that the hollowing-out of Japanese industry has had on environmental conditions in Japan and in two other countries where Japanese manufacturers have relocated, China and Indonesia.

Researchers working on the project are constructing a system for integrated environmental and economic accounting. They are using this system to estimate the “green gross domestic products” of both China and Indonesia. The researchers are also constructing two operational models for Asia: an international input-output model and a general equilibrium model. These



models will assist them in analysing the impacts that changes in the structure of industry, trade and technology have had on energy consumption and the environment.

This first phase of the project was completed in 1997. It produced the following results:

- Statistics on macroeconomic data, industrial sectors, energy consumption, and foreign direct investment were compiled for the Asia-Pacific region. Also, the region's 1975 and 1985 bilateral and multilateral international input-output tables were prepared.
- Changes in the structure of the region's industry, trade and investment for the past 20 years were analysed.
- An analysis of energy consumption and pollution emission patterns was completed.
- The final results of the project's first phase are being compiled into three working papers. One of the papers, titled "Interdependence and Growth in the Pacific Region: An International Input-output Analysis," has been printed.

The "Zero Emissions Research Initiative" (UNU/ZERI) held its third World Congress on Zero Emissions in Jakarta in July. The congress was titled "Symbiosis between Global Environment and Industry Growth" and was opened by Indonesian President Soeharto. Its most important outcome was a declaration produced by the participants. This document, called the Jakarta Declaration, outlines 10 zero-emissions-related goals that the participants want to accomplish in the future and describes how they should go about reaching them. Such things as working towards increasing the productivity of natural resources and having scientists worldwide share their new zero-emissions innovations were agreed to. The declaration was signed by the heads of state from three countries: Fiji, Indonesia and Namibia.

UNU/ZERI held two additional conferences during 1997. The "Second Japanese Regional Zero Emissions Network Conference" was held at UNU Headquarters in October. Also held in October was a joint UNU/Nippon Telephone and Telegraph (NTT) forum-multimedia event titled "Multimedia in Symbiosis with Nature."

Zero-emissions initiatives aim to promote waste-free manufacturing processes. Also, when industries are clustered, the waste from one can become the input for another.

Work continued during the year on UNU/INTECH's project on "Environmental Regulation, Globalization of Production and Technological Change." The project's main objective is to examine changes in the competitive position of major pollution-intensive industries over the past 25 years, especially producers in newly industrializing countries. The project also examines factors which govern the development and diffusion of "clean technologies," and the potential for, and obstacles to, the transfer of these technologies to developing countries.

The project held three workshops in 1997. The first was held in August at the University of East Anglia in the United Kingdom; the second in March at UNU/INTECH in Maastricht, the Netherlands; and the third in September in Oslo, Norway. These workshops provided valuable opportunities to discuss ideas and to coordinate plans for the project's next phase. The project has so far produced seven reports that were discussed at the second and third workshops of the partners. Considerable progress will have been made on nine developing-country industry case-studies by mid-1998 focusing on leather, iron and steel, and fertilizer. Researchers working on the project are paying particular attention to the impact of environmental regulation and to the environmental strategies that firms use.

A number of important insights were uncovered. In policy terms, researchers have confirmed their initial hypothesis of the need for a desegregated approach. It appears that the links between environmental regulation and competitiveness differ considerably between industries, such that a blanket approach is likely to be inappropriate. This conclusion will be developed further through the case studies of specific branches. The research has also indicated the need to define carefully the concept of competitiveness and to distinguish between the different levels (such as firm, industry and country) at which it is applied. It is important to develop



rigorous analytical concepts to assist policy makers in dealing effectively with this issue.

Natural resources in Africa

UNU/INRA is devoted to helping African countries use their natural resources in a sustainable way. During the year, UNU/INRA focused its work on institutional development and capacity building.

One of the priorities of the Institute in 1997 was to determine whether UNU/INRA should set up a new tissue culture and germ-plasm conservation facility or if it should support upgrading the existing one at the University of Ghana. The team conducting the feasibility study on this question decided that a new facility was not necessary and opted instead for upgrading the University of Ghana's. The UNU has agreed to supply funding for this.

A team was also engaged to look into whether a new African plant-focused herbarium should be built. The report the team submitted recommended that a new one is necessary and that it should be built at UNU/INRA.

One of the Institute's capacity-building projects is entitled "Ad hoc Committee Meeting on Women in Natural Resource Conservation and Management for Sustainable Development." As part of this project, four African development experts were asked to draw up guidelines that

would direct UNU/INRA on how to incorporate the ideas of women into natural resource management. The final report of the four-woman team suggested that UNU/INRA do the following:

- Strengthen African institutions that are involved with gender research issues.
- Focus attention on policy-oriented research that incorporates gender perspectives.
- Monitor the resulting policies to ensure that gender concerns are integrated into them.
- Ensure that gender-sensitive researchers are involved in UNU/INRA projects.

All of these reports have helped define the priorities that UNU/INRA's research, training and information dissemination programmes will take.

UNU/INRA also held two workshops to help promote food security in Africa. One held in October in Ouagadougou, Burkina Faso, encouraged the participants to share what they have learned about developing national soil fertility action plans. The other workshop, held in Lusaka, Zambia, dealt with developing technologies that would make use of Africa's phosphate resources as a way of improving soil fertility. Both workshops successfully met their stated objectives.

A working group made up of the heads of several Ghanaian ministries (agriculture, environment, finance, foreign affairs, and science

Box 2: *The Environment and Emerging Development Issues*

A sample of tourists on safari in Kenya were asked if they would be willing to pay a US\$100 fee, added on to the price of their safari, if the money would be used to maintain elephant populations at their current levels. The maximum fee they would be willing to pay was also asked. The average response was US\$89 per tourist; the median value was US\$100. Using the median value and multiplying it by the number of tourists who go on safari each year would produce an income of US\$25–30 million annually for keeping elephants at their current levels. This amount of money is more than adequate for preserving them.

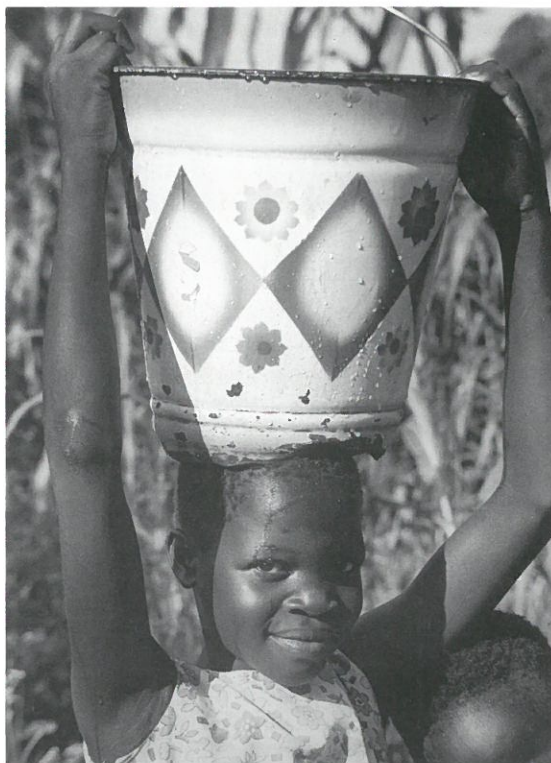
The Environment and Emerging Development Issues, Volume 2, edited by Partha Dasgupta and Karl-Göran Mäler (UNU/WIDER Studies in Development Economics), Clarendon Press, 1997



and technology) was established during the year to help oversee the development of UNU/INRA and to work towards the fulfilment of the Government of Ghana's pledge to the UNU for UNU/INRA.

Water, environment and health

UNU/INWEH completed its first year of operation in 1997. During the year, it worked towards establishing international collaborating offices (ICOs) in several regions around the world. These regional offices will facilitate project development and serve as regional focal points for training and information dissemination. The ICOs will be small units, with one to three staff members, located within government, university or NGO institutions in strategically located developing countries. The offices will be formal components of UNU/INWEH, not associated institutions. They will work closely with governments and organizations within their designated region. ICOs are expected to be located in Jordan, Mexico and Brazil. These ICOs will be a key element for UNU/INWEH in achieving financial self-sufficiency.



UNICEF Photo by Campbell

In addition to establishing ICOs, a central element of UNU/INWEH's work programme was the initiation of capacity-building projects. UNU/INWEH's approach has been to identify a potential opportunity and engage a project leader. Core funds are then invested incrementally to develop the concept, undertake planning missions, identify team members, explore funding opportunities, and prepare, submit, and negotiate project proposals with international funding institutions. At the same time, a systematic effort has been made to develop relationships with the water-related funding components of international development agencies, governments, the UN system, foundations, the private sector and the NGO community. The following are the most promising initiatives that have so far been identified:

- Certification and Training Programme for Mexican Water and Water-waste Utilities;
- Waste-water Biosolids Management in Mexico;
- Coastal Marine Ecosystem Management in the Caribbean;
- Groundwater Recharge in the Gaza Strip;
- Water Harvesting in Arid Regions of Jordan;
- Coastal Zone Management in Abu Dhabi;
- Sustainable Water Supply Development in the African Sahel;
- Sustainable Environmental Management of Lake Victoria, East Africa.

UNU/INWEH organized three capacity-building activities during the year. First, the Network sponsored and co-organized a workshop at Canada's National Water Research Institute. The topic of the workshop was the interplay between aquatic toxic substance pollution and climate change. Second, UNU/INWEH organized a special session titled "Global Water Networking" as part of the World Water Congress of the International Water Resources Association (IWRA), which was held in Montreal, Canada, in September. And third, the Network worked at supporting the development and operation of the Canadian chapter of the Inter-American Association for Sanitary and Environmental Engineering (AIDIS). AIDIS is a developing-country network that provides information exchange and technology diffusion in the water sector throughout the Americas. The AIDIS network



will support local partnering and delivery of UNU/INWEH projects as they develop.

UNU/INWEH began two communications activities during the year. One was the launching of its quarterly newsletter, *Network News*. The other was the opening of UNU/INWEH's Internet website. The site is located at: www.inweh.unu.edu. It will include project listings, calls for project proposals, discussion groups, searchable databases on selected aspects of watershed management, a watershed map library and a notice board. Canada's University of Waterloo provided three servers, several software programmes, Internet connections and the technical expertise to make the website possible. The University of Waterloo's in-kind contribution is worth US\$300,000. To provide additional support, a cooperative agreement has been reached with IBM International to provide expertise from their global research divisions, as well as software access and other in-kind resources.

Science and technology

The development of science and technology is vital in order for the world to sustain increasing populations and their activities. Science and technology hold answers to questions of how to make human actions more efficient, friendlier to the environment, and more conducive to quality of life. The UNU's work in this area has two facets: the study of the diffusion of scientific and technological innovations, and basic and applied scientific research.

This work falls under six programmes:

■ National systems of innovation, science and technology institutions

This programme focuses on the institutional framework of science and technology in developing countries and, in particular, on its relationship to innovation in production and service sectors. The programme's work is based at UNU/INTECH in Maastricht.

■ Software technology for developing countries

This programme concentrates on strengthening developing countries' knowledge of advanced software technology by organizing joint research and development projects and providing postgraduate software engineering and computer science education. This work is carried out by UNU/IIST in Macau – the first international science institute devoted to the software needs of developing countries.

■ Applications of biotechnology for development

This is a regionally focused programme aimed at building up capacities in developing countries that use biotechnology's potential for developing human and animal vaccines, and engineering the genetics of plants and industrial micro-organisms. This work is carried out by the UNU's Programme for Biotechnology in Latin America and the Caribbean (UNU/BIOAC).

■ Microprocessors and informatics

Rapidly changing technology threatens to "lock out" the developing world from the benefits of the micro-electronics revolution. The focus of this programme is on informatics – the way in which information is produced, processed and used. The UNU provides postgraduate training in microprocessor technology by conducting regional training workshops. This training is primarily coordinated at the Italian-based International Centre for Theoretical Physics.

■ Food and nutrition

The persistence of hunger casts an appalling moral shadow on our age. Work on this programme comprises a long-standing commitment by the UNU to address major nutrition concerns in developing countries and to confront national food, nutrition and health problems. The UNU's programmes are undertaken in collaboration with the World Health Organization (WHO), UNICEF and FAO.



■ Science and technology

The UNU is investigating scientific and technological applications of information technology for learning and communication that serves human needs. UNU/IAS is carrying out this work.

National systems of innovation, science and technology institutions

UNU/INTECH's project on "MERCOSUR Countries' Industrial Innovation Systems in a Rapidly Changing World" is analysing and assessing the industrial technology policies and institutions of four countries: Argentina, Brazil, Paraguay and Uruguay. This analysis is being done both in domestic and international contexts. Researchers working on the project are suggesting programmes or projects that may help these countries implement better industrial technology policies.

UNU/INTECH's project titled "The Evolution of High-Technology Research Institutions and New Enterprise Organizations in China" was completed in 1997. This project addressed some critical aspects of the transformation of a national innovation system in selected developing countries during market reforms. China was used as a special case.

The findings from this project are being documented in a book titled *Meeting the Market: The Transformation of China's Industrial Technology Institutions*. The manuscript for this book is currently being peer-reviewed prior to its publication. Results from this project will contribute to the formulation of further studies at UNU/INTECH on the national innovation systems approach for technology policy in developing countries. Some of the project's findings have been circulated and have formed a basis for academic links with numerous institutions, such as the US National Science Foundation and the OECD National Innovation Systems Project.

UNU/INTECH's project on "National Systems of Innovation in Less-Favoured European Regions" is examining the development of tech-

nological capabilities in less-favoured areas. The project has placed particular emphasis on the role of technology policy in industrialization. The first stage of this project was finalized in 1997 with the preparation of extensive background reviews of the research and technology capabilities that had been done on Greece, Portugal and Spain. UNU/INTECH's work focuses on the industrially less-developed regions of Europe to identify the similarities and differences in the appropriateness of technology policy and systems of innovation between these regions and the developing world.

A major UNU/INTECH conference titled "Technological Policy in Less-Developed Research and Development Systems in Europe" was held in October in Seville, Spain. The conference marked the end of the first phase of the project. Eighteen papers that were prepared from this project were discussed in Seville. Sixty-five participants from government, international organizations and academia attended. Sessions were conducted on several theoretical and empirical issues related to technology policy and economic and technological development. A book titled *Technology Policy and Regional Integration* is being prepared for publication and should be available in 1998.

Software technology for developing countries

The UNU's software technology programme strengthens developing countries' knowledge of advanced software and helps them reduce their dependence on innovations from industrial countries. In 1997, UNU/IIST carried out 11 projects: two were research-focused and nine were on advanced development. These projects resulted in the publication of 27 reports and several prototypes.

Real-time hybrid systems play an important role in today's computer-controlled machinery. They are necessary components in such equipment as elevators, robots and assembly lines. The real-time hybrid systems respond to commands under specified real-time constraints, where the system's safety and its reliability are extremely important.



UNU/IIST's project titled "Design Techniques for Real-time, Reactive and Hybrid Systems" (DETFORS) is conducting research on how to best design these systems. Its research approach is based on Duration Calculus (DC). DC is a kind of logic that deals with time intervals – a field in which UNU/IIST has become an acknowledged leader.

During 1997, DETFORS had three main achievements:

- New specification and verification techniques were developed for designing real-time, reactive and hybrid systems. These techniques are based on more powerful real-time logics, such as infinite interval, fix-point operator and two-dimensional interval modalities.
- Computer tools were prototyped, including a DC proof checker and model checker. Both of these tools will assist software engineers in applying DC.
- Twelve technical reports on these topics were published.

During the year, UNU/IIST continued work on its project "Design Calculi and Research for Telecommunication Systems" (DESCARTES). This project is investigating rigorous approaches to software development in telecommunications. The main focus of the project is to find a way of formal verification for Specification and Design Language (SDL).

Four technical reports were produced that compile these achievements made in 1997. These reports address the following topics:

- A process algebraic underpinning of the time-related features in SDL.
- A model for operational semantics of SDL that will permit link-up with a logic that can express and analyse behavioural properties.
- A logic to express and analyse behavioural properties of systems described in SDL, including time-related ones.
- A model that abstractly represents the semantics and concepts of SDL.

UNU/IIST's "Ministry of Finance Information Technology" project is developing a financial information system for Viet Nam's Finance Ministry. The project involves synthesizing the

country's budget plans, managing their fund allocations, reviewing tax policies and setting up a system to exchange data among the country's various ministries. Work has so far concentrated on specifying a tax system by analysing the system's domain. Researchers working on the project have also looked into the most appropriate security and taxation policies. A simple prototype of the accounting system has been produced.

In the project's second phase, work was extended to treasury and budget systems, as well as to the systems required for external aid and debt. This work has led to an investigation on how to transform separate and independent specifications of hierarchical systems into loosely coupled, "flat" distributed systems with communication between them. The project is seeking funding from the World Bank.

The "Manufacturing Industry Information and Command System" project is studying issues of relevance to manufacturing industries. The project's goal is to investigate how information technology can be best applied to support the development of manufacturing enterprises in developing countries so they can respond quickly and intelligently to changing market demands. The project emphasizes the creation of mathematical models representing all aspects of a firm: marketing, administration, finance and production. The models also include supply chains and products. All of these are prerequisites for the systematic development of software for an information and command infrastructure.

During 1997, researchers working on the project concentrated on creating the model for marketing analysis. They have combined two models – one for integration and one for competition – and have found a formula for the optimization problem for choosing an enterprise's best marketing mix: product, price, place and promotion. Researchers also continued to work on the concept of a virtual enterprise.

UNU/IIST's project on the "Multilingual Script System" continued to work on the design and prototyping of a software system which supports the creation and editing of multilingual



Box 3: A Formal Model for Competing Enterprises Applied to Marketing Decision-Making

We present an experiment for modeling and analysing the application domain for competitive manufacturing. The result is a unique formal model which combines two previously separate marketing models. In particular, we capture a marketing mix that includes product, price, place, promotion and the effects of these on the enterprise's sales. The model is built in three stages: a market without marketing, marketing without limits and marketing under limited resources. Our analysis includes a justifying abstraction of two enterprises competing for a single market – one competing against and one cooperating with the firm.

This excerpt is taken from UNU/IIST Technical Report #92:
A Formal Model for Competing Enterprises Applied to Marketing Decision-Making,
by Tomasz Janowski and Rumel Atienza

documents. Researchers working on the project have placed particular emphasis on allowing each of the scripts in such a document to retain their natural reading and writing direction. For example, in a document containing both English text and traditional Mongolian script, the English would appear the same as you are reading now, whereas the Mongolian script would be written vertically in left-to-right columns. The project's main objective is to build a prototype of a software system which will allow libraries, universities and government offices to store, write and browse through multi-directional, multilingual documents.

The first phase of this project was finished during the year. A comprehensive study of numerous multilingual documents has now been completed. Also, the requirements for a software that will support multilingual documents has been formulated.

Work continued on the project's second phase. The previously created formal model was extended and modified to incorporate functions that will now define the creation, editing and printing of multi-directional, multilingual documents.

The Institute also submitted a paper to a meeting that the International Organization for Standardization held in Singapore in January. The paper pointed out a serious error in the coding scheme that the working group for the

standardization of the coding for traditional Mongolian script had been considering.

Applications of biotechnology for development

The UNU's biotechnology programme addresses pressing human, animal and plant health problems. Projects are coordinated by the Academic Division at UNU Centre and are administered through UNU/BIOLAC in Caracas, Venezuela.

The UNU's "Brucellosis Research Network" project has two objectives. One is developing a vaccine against brucellosis, a disease caught from farm animals and unpasteurized dairy products that causes a feverish illness. The other is promoting exchange and training for Latin American scientists studying the disease. Its research employs a multi-centred coordination approach, where research results are exchanged freely among network members. Workshops are held annually at rotating locations for additional information exchange. In 1997, the workshop was held in Peru. Twenty-four people from 10 countries participated in it.

A related two-week training course on "Theoretical and Practical Aspects of Epidemiology, Diagnosis and Vaccination on Brucellosis" was held in Chile in January. The course explored ways of detecting the brucella organism. Twenty people attended the course.



Tuberculosis, a disease that was once thought to have been conquered, has returned to many countries with a vengeance. To help solve this pressing problem, UNU's "Tuberculosis Research Network" is developing better diagnostic methods and more effective vaccines. Researchers organize a yearly research results and information exchange workshop for network participants. In 1997, this exchange was held in Cuba. Thirty-three people attended the event, which was held in conjunction with the "Latin American Symposium on Tuberculosis."

During 1997, UNU gave 18 young Latin American researchers three to eight months of fellowship training. Also, under a special agreement, three Latin American researchers received training in Europe and the United States. The specialized training they received focused on the latest techniques of brucellosis immunology.

Six two-week training courses were organized during the year in cooperation with Latin America's leading biotechnology institutions. These courses focused on molecular biology and were attended by 176 young researchers.

Microprocessors and informatics

During the year, the following microprocessors and informatics-related courses were given under the joint UNU/ICTP project titled "Microelectronics and Related Areas":

- The "Regional College on Microprocessor-based Real-time Systems in Physics for Central-Eastern European and Mediterranean Countries" was held in February in Italy. The course consisted of 60 hours of lectures and 75 hours of laboratory sessions. Thirty-five participants from 15 countries attended the course.
- The "Second Latin American Course on Data Acquisition and Data Filtering" was given in Argentina in June and July. It was attended by 22 people from four countries.
- The workshop on "Academic Computer Networks for Developing Countries" was given in Italy from August to December, with participants from Ghana and lecturers from Venezuela.
- The Workshop on "Telecommunications: Sci-

ence, Technology and Applications" was held in Italy during September and October. It was attended by 66 people from 41 countries.

- The regional training workshop on "Networking" was held in Nigeria in October. Thirty participants attended.
- The "Second African Regional Workshop on Parallel Processing and Applications" was held in Gabon in November. Thirty participants attended.

The "Research and Advanced Teaching in Informatics" project held the following two-week courses at Cameroon's University of Yaoundé:

- "Computer Networks," in April and May;
- "Database and Geographic Information Systems," in May;
- "Parallel Computation on PRAM," in September;
- "Decision Support Systems for Natural Resource Management," in November;
- "Parallel Scientific Computation," in November;
- "Systolic Computation," in November.

Four other two-week courses in GIS, parallel operating systems, computer networks and operating systems were taught by senior members of the University of Yaoundé at other institutions in French-speaking African countries.

Food and nutrition

The UNU's Food and Nutrition programme has several projects working to solve human nutrition problems. During 1997, the programme maintained four major global projects and numerous smaller ones. It provided 15 fellowships for advanced training and also published quarterly issues of two journals: *Food and Nutrition Bulletin* and *The Journal of Food Composition and Analysis*. The programme's mission statement and goals were also reassessed during the year as part of a planned transition from a UNU Centre programme coordinated out of Boston to a permanent research and training coordinating centre (RTCC) at Cornell University in Ithaca, New York. The programme will soon be designated as the Centre for International Nutrition Action and Knowledge (CINAK).

Box 4: Child Malnutrition and Feeding Practices in Malawi

The 1992 Malawi and Demographic Health Survey data were used along with multi-level models to assess the association between breastfeeding practices, socio-economic and morbidity variables, and the nutritional status of children under the age of five. About 27 per cent of under-five children in Malawi are underweight, and nearly 50 per cent are stunted. The results of this study suggest that socio-economic factors, morbidity and inappropriate feeding practices are some of the factors associated with malnutrition in Malawi. High socio-economic status is associated with better nutritional status, whereas morbidity within two weeks before the survey is associated with low weight-for-age Z scores. Breastfeeding is almost universal and is carried on for about 21 months, but the introduction of complementary food starts much too early. Only three per cent of Malawian children under the age of four months are exclusively breastfed. Children 12 months or older, who were still breastfeeding at the time of this survey, were of lower nutritional status than those who had stopped breastfeeding. The analysis also showed a significant intra-family correlation of weight-for-age Z scores. These scores were at about 39 per cent.

This excerpt was taken from volume 18-2 of the UNU's *Food and Nutrition Bulletin*.



Heading a long line of women and children, a woman collects a ration of supplementary food in Nsanje, Malawi.
UNICEF/93-1211/Cindy Andrew



The project titled "International Network of Food Data Systems" (INFOODS) almost made its goal of involving every country in the world in its network of regional food composition databases. Through the use of a standard tag name system, data about the composition of food can now be exchanged electronically around the world. Food composition databases were completed during the year in the following areas: Central America and Panama, China, Mexico, Central Asia and South-East Asia, and the Western Pacific.

The UNU's "Overcoming Critical Micronutrient Deficiencies" project has achieved a major breakthrough in the control of iron deficiency. Ten studies on iron supplementation in test groups made up of women and children in Bolivia, China, Guatemala, Indonesia, Malaysia and the United States have now been completed. The results of these studies were reported by the UNU to the United Nations Administrative Committee on Coordination/Subcommittee on Nutrition in March. The results indicate that (at an appropriate dosage and within assured compliance) hemoglobin levels are the same after two or three months with either daily or weekly supplementation (unless there are complicating factors, such as malaria). This means that the more cost-effective weekly supplementation should be used. Supplementation projects with this new discovery have already been initiated in Central Asia, China, Indonesia and Ecuador.

In March, UNU, in cooperation with India's Central Food Technology Research Institute and the Indian Ministry of Food Processing Industries, organized the "International Conference on Traditional Foods." Fifty participants from Asia, Africa and Europe attended. The purpose of the conference was to promote scientific investigation into traditional foods that are consumed by the majority of people in developing countries. Also, the conference sought to form a network of scientists who will share their research results.

The International Dietary Energy Consultative Group (IDECG) is sponsored by UNU in collaboration with the International Union of Nutritional Sciences (IUNS). The report of a seminal 1996 workshop titled "Causes and Con-

sequences of Intrauterine Growth Retardation" is being published as a supplement to *The European Journal of Clinical Nutrition* and will be reprinted as an IDECG monograph. The 1997 IDECG workshop titled "Lower and Upper Limits of Adaptation to Energy Intake and Its Principal Substrates: Carbohydrates and Lipids" was held at FAO in Rome in December.

Science and technology

The UNU has two science and technology-related projects: the "Universal Networking Language" (UNL) and "Knowledge Systems for the Future: Advancing to the Virtual University of the 21st Century." Both projects are being carried out by UNU/IAS.

Researchers working on the UNL project are developing an Internet plug-in that, along with its companion software, enconverter and deconverter, will allow anyone with Internet access to "enconvert" text from a United Nations Member State language into UNL, or "deconvert" text from UNL into another language.

Developing this software is important because most of the Internet's key resources – not only software but things like directories and information libraries – are in English. And E-mail, newsgroups and other text areas are generally limited to roman characters, forcing more of the world's people to use complicated phonetic versions of their languages. While the Internet's reach might be global, in practice the bulk of its vast resources are limited to use by people who can read and write English. The Internet needs to become multilingual and capable of reconfiguring all of the world's alphabets if it is to be a true facilitator of worldwide communication.

Most software programmes now available on the market can only translate one language into another, such as Chinese into Russian. UNU/IAS' UNL project is taking this concept a step further by designing a truly multilingual software in which a person can include an Arabic quotation in a Japanese text that will be properly displayed on the reader's computer in Paris or Mexico City.



UNL is based on a two-step process called multilingual conversion. First, the device thoroughly analyses the sentence structure and word meanings in the text, clarifying them when possible by a dialogue with the writer. Second, the text is “enconverted” into an intermediate, abstract representation called UNL, which is composed of hundreds of thousands of Universal Words (UWs) and symbols. This abstract representation of the text is then made available on the Internet and used to generate translations into different languages.

UNU/IAS is creating the prototype software, while a network of 17 universities and research institutions are working on developing the specific components of 13 languages. Approximately 100 computer and linguistic researchers are involved in the project.

Researchers working on the “Knowledge Systems for the Future: Advancing to the Virtual University of the 21st Century” project had two major accomplishments in 1997. First, more than 500 Internet users joined in on a UNU/IAS brainstorming session on the future of Asian higher education. Contributions to the sessions were made on how to improve the following higher education topics: access, capacity building, international cooperation and lifelong learning. The results of this session were presented at a UNESCO meeting titled “National Strategies and Regional Cooperation for the 21st Century,” which was hosted by the UNU in July.

Second, UNU/IAS researchers contributed to the previously mentioned UNESCO conference. Among the main issues discussed were the roles of technology and virtual campuses. With this in mind, UNU/IAS and Japan’s Keio University demonstrated a video-conference to the audience. Panellists from Hong Kong, the Philippines and Thailand were linked via satellite and the Internet. The remote panellists, as well as those present in Tokyo, discussed technology-related topics during the video-conference.

Development

Increasing globalization and liberalization, and the countering forces of regionalism and protectionism, have a profound impact on a country’s prospects for economic and social development. UNU’s research sheds new light on these trends as well as on the economic, environmental and human aspects of development.

This work is organized into five programmes:

■ Globalization, liberalization and development

Globalization and liberalization are having immense impacts on both developing and developed countries. This programme analyses the opportunities and difficulties inherent in these trends. This work is carried out at UNU/WIDER in Helsinki.

■ Distribution, development and the economics of transition

This programme targets the academic community and policy makers in developing and former socialist countries. Researchers working on these projects are examining new models for providing public merit goods in developing economies. They also study the impact of land distribution and reform. Work on this programme is carried out by UNU/WIDER.

■ The role of technology policy in industrialization and industrial competitiveness

This programme explores the importance of technology in industrialization and technology’s effects on a country’s economic competitiveness. Activities in this area are conducted at UNU/INTECH in Maastricht.

■ Technological change and economic and social exclusion

The implications of technological change on income distribution are being studied in this programme. In particular, researchers focus on areas of economic and social exclusion. This work is coordinated by UNU/INTECH.



■ Mega-cities and urban development

This programme addresses major issues confronting mega-cities. It focuses on three topics: demographic trends, the sources and consequences of economic development and social transformation, and the kind of management that is needed to enhance urban living. UNU/IAS is conducting this work.

Globalization, liberalization and development

UNU/WIDER's "Short-term Capital Movements and Balance of Payments Crises" project has investigated the controversial issue of regulating short-term capital flows. These capital flows can upset a country's economy as they cause its exchange and interest rates to behave in a volatile way. The Mexican and Thai economic crises are illustrative examples of this volatility.

The project's first research dissemination seminar was held at Kuala Lumpur's SEACEN Training Centre in August. The seminar was timely, as the Thai baht had just been allowed to float freely and several South-East Asian countries were experiencing currency devaluations. During the seminar, participants from Indonesia, the Republic of Korea, Malaysia, Nepal, the Philippines, Singapore, Sri Lanka and Thailand actively debated the choices and dilemmas they have faced as capital flowed into their countries. By the end of the seminar, all of these countries had concluded that their central banks need to learn more about how to monitor and supervise a complex macro-economy.

UNU/WIDER has produced a book on this research titled *Short-Term Capital Flows and Balance of Payments Crises*. The book includes a chapter on the recent South-East Asian crisis, which identifies the policy mistakes made in financial liberalization that led to the crisis, and focuses on the role of contagion that had an impact on other countries. It also suggests measures that countries can implement to reduce the negative effects of financial globalization. Several of the studies contained in the book have been published in UNU/WIDER's *Research for*

Action Series. This project has brought together experts from the World Bank, IMF, and the central banks and universities of several countries.

The UNU Centre has a development-oriented project titled "Asia and Africa in the Global Economy," which got off the ground in 1997. The project's main goal is to provide recommendations to Sub-Saharan African governments on how to expand their links to the global economy. These recommendations will be based in part on the successful experiences that South-East Asian countries have had.

During the year, researchers working on the project collaborated with the African Economic Research Consortium (AERC) in organizing a conference on "Comparative African and East Asian Development Experiences," which was held in South Africa in November. This was a large, high-level academic meeting of Asian and African researchers. Twenty papers that examined the development experiences of East Asia and Sub-Saharan Africa were presented and discussed. The UNU received US\$95,000 from UNDP to continue implementing the project.

Distribution, development and the economics of transition

UNU/WIDER's project titled "Economic Theories and Strategies of the Transition" has compared the different transition models that have been observed in Eastern Europe, the former Soviet Union, China, Mongolia and Viet Nam. The project has focused on two issues: the strategies of transition, such as shock therapy versus gradual reforms, and the transition's outcome. Researchers are looking into what market stereotypes are emerging in post-socialist countries (income distribution, the role of the state, industrial structure, and international trade specialization) and what long-term development patterns will prevail in the future.

The project's findings are being compiled into a book titled *Transition Strategies: Alternatives and Outcomes* that will be available in 1998. Some of the results have already been published in UNU/WIDER's *Research for Action Series* and as working papers.



Another UNU/WIDER project titled "Economic Shocks, Social Stress and the Demographic Impact of Sudden Impoverishment" has investigated the reasons behind the recent unfavourable mortality changes that have been observed in economies hit by sudden economic shocks and mounting uncertainty. A shortage of credible analyses and explanations of the recent population crisis has not helped to mobilize suitable policy responses. By testing the concept of "psychological stress" and "economic stress," the project has tried to specify and test a mortality model using a multidisciplinary approach and benchmark country case studies. One of the main findings was the important role played by psychosocial stress (as a consequence of family instability and breakdown, job insecurity, unemployment, sudden impoverishment, high inflation and migration) as the main source of the mortality increase.

The research results from this project will be published in a book in 1998. Two papers have already been published in UNU/WIDER's *Research for Action Series*, and three working papers by the project's co-directors were published during 1997.

Land is the most important asset in an agrarian economy. But much of the land in developing countries is not accessible to poor farmers and that may either not be used to its full potential or may be used in an unsustainable

way. Better access to land for the rural poor is a necessary step towards reducing poverty.

UNU/WIDER's ongoing project titled "Land Distribution, Land Reform and Economic Growth" is developing case studies that explain ways that poor farmers can access land. The project is a collaborative effort among development experts from FAO, the World Bank, the International Food Policy Research Institute, the Overseas Development Institute and several universities from the United States, Europe and Asia. The researchers working on the project are preparing their results for a meeting that will be held in mid-1998. A book containing these findings will be published subsequently.

The role of technology policy in industrialization and industrial competitiveness

UNU/INTECH's project titled "Foreign Direct Investment, Technology Transfer and Export-Oriented in Developing Countries: Empirical Studies of their Determinants" is conducting a detailed analysis of factors that improve a country's attractiveness as a recipient of investment from American and Japanese multinational corporations in technology-intensive industries, as well as export-oriented and R&D investments.

A subsection of this project created the database called Global Technology and Economic

Box 5: *New Entrepreneurship in Post-Soviet Russia*

An important feature of post-Soviet entrepreneurship is that it is resource-driven, rather than opportunity-driven. Successful entrepreneurship in Russia means possessing vital social resources. Success or failure depends on the amount, type and combinations of various social resources that one can access, such as access to finance or political power. The popular image of a successful entrepreneur who builds a financial, commercial, or production empire from scratch, using only entrepreneurial abilities, is a myth in Russia. The vast majority of post-communist entrepreneurs are those who previously had or now possess better social resources, and those who combine various social resources for entrepreneurial action.

This excerpt was taken from UNU/IAS Working Paper No. 28,
by B. Batjargal



Development (GLOB-TED). GLOB-TED contains data on several indicators of technological and economic development for 74 countries. It includes data on foreign direct investment, stocks and the economic activities of the World Bank, the International Monetary Fund, UNCTAD, the US Department of Commerce, and Japan's Ministry of International Trade and Industry.

During the year, several academic papers and journal articles were written by the project's researchers. Three books were also produced. One of the books, *Technology, Market Structure and Internationalization*, was published in October. A second book, *Globalization, Foreign Direct Investment and Technology Transfer: Impact on and Prospects for Developing Countries*, is now undergoing review. And a third book, *Improving the Quality of Foreign Direct Investment Inflows in Developing Countries: Empirical Analysis of the Role of Multinationals in Industrialization, Export Expansion and Innovation*, is still in manuscript form and will soon be prepared for publication.

UNU/INTECH started a new project in 1997 titled "Investment and Technology Decisions of Firms." The project focuses on the nature of the private investment decision of Southern European manufacturing firms required to incorporate technological changes in the "transition" to sustained and competitive growth in the single European market. From this analytical approach, well-grounded proposals for policies to overcome failure can be derived. The project's output will have two main forms. One will be a book containing a methodology of evaluating bank loans by providing benchmarks for effective investment decisions and recommendations for enhanced policy initiatives in the future. The other will be a series of published studies of technological innovation and corporate finance in Southern Europe.

The first project workshop was organized in July at UNU/INTECH. The workshop discussed the analytical approach and the methodology that the project will take. An agreement was reached on a detailed work schedule for each of the members of the five research teams.

Technological change and social and economic exclusion

UNU/INTECH's project on "Teleworking: Implications for Employment and Trade in Developing Countries, Malaysia and India" is exploring how poorer countries (or disadvantaged groups within a country) can benefit from the so-called telematic revolution. The project will document the extent of telework in India and Malaysia and will assess teleworking's potential for creating employment and new career opportunities, especially for women. The research will look at telework within and across national boundaries and will examine its impact on key service sectors, such as software, finance and banking, media and publishing, and education. A major focus of the research is to assess the potential of telework for ecologically sound urban planning.

The project had three accomplishments in 1997. First, the fieldwork was launched in close cooperation with the major stakeholders. A planning meeting was held in India in July with senior industrialists, trade union members, women's groups, academics, government officials, and UNU/INTECH partners from the National Centre for Software Technology. Second, a planning meeting was held in Malaysia with active participation and collaboration by the major stakeholders. And third, preparations were made for the presentation of the research results at the international conference on "Electronic Commerce," which was held in New Delhi in December and organized by the South-East Asian Regional Conference on Computing.

UNU/INTECH's project on "Europe and the Developing World in the Global Information Society: The Implications for Employment, Education and Trade" is exploring the challenges and opportunities that the information revolution poses for poorer regions and disadvantaged groups located in the European Union and developing countries. The project places the issue in the context of globalization and the emerging world trading order. An international workshop was organized around this project in October 1996 and was funded in part by the European Commission. The workshop brought



participants from both the developing world and Europe together in the hope of initiating a dialogue between them. The main output of the project will be two volumes, both of which are now being prepared for publication.

Another project, "The Information Revolution and Economic and Social Exclusion in Developing Countries," identifies the factors that exclude groups or a country's access to information. It also highlights the ways in which the technology itself could be used for economic empowerment and inclusion. An international workshop – the focal point of the project – was funded by the Netherlands' Ministry of Foreign Affairs. Thirty participants attended.

Work on UNU/INTECH's project on "Monitoring the Impact of New Technologies on Women's Industrial Work in Asia" was completed in 1997. The project had been exploring the impact of information-intensive production modes on the quality and quantity of women's employment. The project focused on Asia's manufacturing and service sectors. The objective

of the researchers working on the project was to highlight factors that make it difficult for women to obtain relevant technical and business skills. In particular, the researchers assessed the impact of globalization and technological changes on the ability of women to organize around workplace rights. The project initiated a policy dialogue between NGOs and policy makers on the questions of human resource development and dignity at work. Eight countries were studied: Bangladesh, China, India, Indonesia, the Republic of Korea, Malaysia, Sri Lanka and Viet Nam.

A book entitled *Globalization, Technological Changes and Women's Work in Asia*, which synthesizes all of the project's research, is being prepared for publication. A summary of the research findings was disseminated to NGOs in the newsletter produced by the Committee for Asian Women. Two articles also were written on the project's findings. One was "Women's Demands and Strategies: Women Workers in the Context of Economic Globalization," published in *Looking at the World Through Women's Eyes*:

Box 6: *The Urban Challenge in Africa: Growth and Management of Its Large Cities*

Africa has lost more than it has gained from integration into the world economy and global politics. For much of the continent, dependency, marginalization and a lack of policy autonomy are the main outcomes of its integration. External forces – be they transnational corporations or international agencies – call the shots. They heavily influence patterns of investment, they prevent debt from being written off, and they dictate so much of the continent's internal policies that many countries grow dependent on outside help.

However, it is wrong to be so pessimistic about the impact of global forces on Africa. Egypt benefited from its role in Cold War politics and as a labour source for Middle Eastern countries. Libya has made a lot of money from high oil prices. And other North African countries have made good use of their proximity to Europe and their ties to the Arab world.

In southern Africa, the achievement of political freedom in the continent's industrial giant has dramatically changed the region's prospects for economic growth and development. And some of the smaller countries, such as Botswana, have made significant economic and social progress, while others like Uganda and Mozambique have achieved peace after periods of civil war.

The Urban Challenge in Africa: Growth and Management of Its Largest Cities,
edited by Carole Rakodi, UNU Press, 1997



Plenary Speeches from the NGO Forum on Women, Beijing, 1995. The other was a conference report, "Bridging the Gap: Formulating Industrial Policies and Women's Work for the Future."

Mega-cities and urban development

There are mounting environmental pressures on urban areas all over the world. However, these pressures are felt most strongly in Asia's rapidly changing cities. And while some of the problems resulting from rapid change may be related to unique local conditions, many of them are caused by globalization.

Past analysis of urban environmental problems has tended to focus on two things: management decisions made by local governments and the role of local markets. But many environmental problems are created by outside sources. Solutions to these problems must incorporate an understanding of what is happening at the international level.

During the year, a research agenda for the project was developed with the assistance of 11 experts from eight different Asian countries. Also, proposals to carry out case studies on 10 Asian cities were evaluated and set in motion. This research will give a clear indication of what is happening in these cities. A book based on this work is expected to come out in 1998.

Peace and governance

During the late 1980s and the early 1990s, the international community took an activist approach towards crises and conflicts. This approach was successful in a few cases, but for the most part it ended in disappointment. Failures occurred because the problem-solving tools available to the international community were not efficient, and firm commitment from the world's most powerful countries often was not forthcoming. By the mid-1990s, extreme caution had become the prevailing attitude in international politics.

The UNU's Peace and Governance Programme has three focuses: studying these past events, conceptualizing the present and planning for the future. Its work falls under three programmes:

■ **Security studies**

The UNU's Security Studies programme is examining major changes which are affecting the international distribution of power. The programme is also trying to find out the implications of such changes for the institutions and actors that handle international security issues. This work is being carried out by the Academic Division at the UNU Centre and at UNU/WIDER in Helsinki.

■ **Governance studies**

The Governance Studies programme is studying how evolving norms and values influence democracy, with special attention paid to the correlation between democracy and human rights. Activities are carried out within projects coordinated by the Academic Division and as a part of the UNU's Programme on Governance located in Barcelona.

■ **Leadership training**

The UNU's Jordan-based Leadership Academy is exploring the diplomatic challenges of the 21st century by determining what kinds of training are needed by international diplomats, managers and civil servants.



Improving the programme

During the year, a great deal of effort was spent on improving the Peace and Governance programme. The following improvements have been made to its structure:

- Coherence was increased. Three new research clusters were designed: security studies, governance studies and United Nations studies. Also, the links between the Peace and Governance programme and the research being done at the UNU's other RTC/Ps were strengthened.
- Research activities were rationalized. Two such measures were introduced. First, some projects were eliminated and the costs of several others were cut. Second, better project development and implementation measures have been put in place.
- The programme will reach out more to academics. Regular open-door project briefings will be held regularly at the UNU Centre.

Security studies

The "Foundations of Peace Project" is providing policy recommendations and guidelines for future international peace operations. Researchers working on the project examine the impact of development, humanitarian actions, and human rights on the peace processes in several areas. This project has been commissioned to researchers at King's College in the United Kingdom. Peace-related issues in Liberia and the former Soviet Union were investigated during the year.

The UNU revised its multi-year project on "The United Nations System in the 21st Century" (UN21 Project). The project has been simplified and the amount of money being spent on this year's research theme has been cut. More responsibility has also been placed on the project's research organizers to produce useful information.

The project's objective is to analyse the roles of international organizations and search for the next century's best UN model. The project is divided into five actor-specific research groups: states, non-governmental organizations, market forces, regional institutions and international

organizations. Each year the research groups focus on a specific theme; in 1997 the theme was the environment. A publication entitled *International Security Management and the United Nations* is being prepared for publication in 1998 by UNU Press.

Since the end of the Cold War, major social conflicts and civil wars in developing countries have increased in number and in the magnitude of their effects. They are the biggest source of human suffering in the world today. UNU/WIDER's project titled "The Wave of Emergencies of the Last Decade" has undertaken the first extensive analysis of the economic and political roots of humanitarian emergencies. As a result of this analysis, the project is able to identify early economic and political measures that will help to prevent such disasters. The study uses general economic and political analysis and case-studies such as Afghanistan, Bosnia, Burundi and Rwanda.

The project has several components which will result in the publication of three books in 1998. The components will provide an overview of the nature and causes of emergencies, present detailed case-studies of different types of conflicts, and explore preventative action of different kinds, as will be illustrated with two case-studies. Several studies done so far on the project have been published by UNU/WIDER.

Governance studies

The UNU's project on "The Changing Nature of Democracy" is looking into the different forms that democracy can take. It is also re-evaluating how democracy is achieved and is finding out how democratic institutions can promote peace, human rights and development. A manuscript titled *The Changing Nature of Democracy* was edited during the year and will be published by UNU Press in 1998. The project also held two regional workshops during the year in Kuala Lumpur, Malaysia, and in Budapest, Hungary. Books from both of these workshops are being prepared for publication in 1998 under the titles *Democracy in South-East Asia* and *Democratization in Eastern Europe*.



The UNU's Barcelona-based Governance Programme is oriented towards exploring the institutional implications of economic change. The programme's particular focus was on Latin America and the Mediterranean area. During the year, the programme organized several workshops and its staff played an active role in important colloquia with scholars and policy makers in Latin America by contributing several occasional papers and published monographs.

The UNU/IAS "Environment and Multilateral Diplomacy" project addresses sustainable development issues from the perspective of the collective responsibility of nations. Its initial focus has been on the dynamics of international fora and the role of the main actors participating in multilateral environmental negotiations. The project's intent is to bring scientific findings on development and sustainability concerns to policy makers involved with international negotiations.

In 1997, the project held two workshops. One was held in Tokyo on the interface of the Intergovernmental Panel on Climate Change (IPCC) and policy-making. The other was held in Brazil on trade and the environment in MERCOSUR countries. A manuscript from the workshop held in Brazil is being prepared for publication and will be available in 1998.

Leadership training

UNU/ILA launched its first leadership programme in June. The 32-day programme gathered 163 would-be leaders from 63 countries in Jordan to teach them about the art and science of leadership. The future leaders participating in the programme attended an average of three lectures each day given by high-level speakers. The programme also included a six-day study visit to Israel, Palestine and Egypt.

UNU/ILA also conducted or co-sponsored two additional leadership-related events during 1997. The first was the University of Maryland's "Global Leadership Week" in November; the second was the Initiative on Conflict Resolution and Ethnicity's (INCORE) "International Conference on Mediation and Conflict Resolution,"

which was held in Northern Ireland in November.

Public fora

The Peace and Governance Programme organized two public fora in New York during the year. The first was "The United Nations in the 21st Century" (UN21), which was held in January. The second was "The Reintegration of Transition Economies into the Global Market System," which was held in March.

The programme also held three events during the year in cities other than New York. A UNU Public Forum titled "European and ASEAN Integration: Similar Models?" was held at the UNU Headquarters in March and a publication with the same title has been published. A UNU Panel on "The United Nations and the United States: Toward a New Deal?" took place in Seoul, the Republic of Korea, in August. The papers presented at this event are being edited and will be published as a book in 1998. And a UNU Public Forum titled "The Basic Law of the Hong Kong Special Administrative Region and the Possible Consequences of the Integration of Hong Kong on the International Arena" was held at the UNU Headquarters in September.

These fora gave academics, policy makers and the general public an opportunity to learn about the University's latest research findings.



Box 7: *China in the Twenty-first Century: Politics, Economy, and Society*

China urgently needs to go through the experience of creating a new and stronger sense of nationalism, and this can only come about through an open dialogue by all the Chinese people. And what would such a process be but democracy at work? That is to say, the creation of a modern sense of Chinese nationalism must go hand in hand with the emergence of some form of democracy.

In fact, obstacles to democracy in China also turn out to be major obstacles for the realization of a true sense of Chinese nationalism. The leadership at times seems aware of this problem as it acknowledges the existence of a moral crisis and the need for a healthier sense of civilization, but it shies away from opening the society up so as to allow popular forces to define a new spirit of national identity. The process of redefining the soul of China cannot be indefinitely delayed because widespread scepticism has already given way to increasing cynicism that will in time become alienation and then nihilism – and the negative spirit of nihilism cannot give birth to the constructive values and ideals essential for a strong sense of nationalism.

The future of China as a great nation requires a transition to some form of democracy. Fortunately, the terrible turmoil China has gone through during the last four decades has largely exhausted both the leaders' and the people's tolerance for authoritarianism. Therefore, the time for democratic development may not be far off.

China in the Twenty-first Century: Politics, Economy, and Society,
edited by Fumio Itoh, UNU Press, 1997



Building Capacities: UNU Postgraduate Education

The UNU's postgraduate education programme has three purposes. First, it strengthens developing-country academic institutions, enabling them to conduct high-quality research and train future scholars. Second, it helps alleviate the intellectual isolation academics from developing countries often face. And third, it strengthens the UNU's global outreach.

About 1,600 fellows have completed UNU training and fellowship programmes since they began in 1976. In 1997, 70 UNU fellows finished their studies, while another 104 began training.

The following fellowships were awarded by the UNU during the year:

- Fifteen for studies in geothermal energy at Iceland's National Energy Authority;
- Eight for renewable energy systems at the Indian Institute of Technology;
- Seven in remote sensing at Brazil's Instituto Nacional de Pesquisas Espaciais;
- Six for science and technology policy at Brazil's Universidade Federal do Para;
- Two for science and technology at Brazil's Universidad Estadual de Campinas;
- Eighteen for biotechnology at various Latin American institutions;
- Five in food science and technology at Japan's National Food Research Institute;
- One for food and nutrition at India's Central Food Technology Research Institute;
- Three for the production and use of food composition databases at South Africa's University of the Western Cape;
- Three for applied human nutrition at Kenya's University of Nairobi;
- Three for community-based planning and management at the Nutrition Center of the Philippines.

The UNU held its annual Global Seminar series at two locations in Japan: Kanagawa Prefecture's Shonan Village in September and Kobe in October. These seminars are designed to

enhance international awareness among Japanese students through interaction with the UNU's global network of experts. Approximately 140 Japanese and foreign students participated. The seminars are supported by the Japan Foundation for the United Nations University and are sponsored by several corporations.

During the year, UNU/WIDER offered courses at the University of Helsinki and the Helsinki School of Economics and Business Administration on the Economics of Development (48 lecture hours with 70 people enrolled) and Transition Economics (24 lecture hours with 30 participants). Both courses were taught by UNU/WIDER staff and contributed to the students' knowledge about economic concepts and theories. The courses also make the UNU and UNU/WIDER better known among Finland's future policy makers and business people.

In March, UNU/WIDER began its Annual Lecture Series with a presentation by Douglass North, winner of the 1993 Nobel prize in economics. Dr. North's lecture was entitled "The Contribution of the New Institutional Economics to an Understanding of Transition Problems." The lecturer has the right to assign a research fellowship to a young scholar from a developing or transitional economy working on a topic related to the research programme of UNU/WIDER. The fellowship has been awarded to a young Chinese economist who is working under the supervision of Dr. North.

UNU/WIDER continued its Public Lecture Series. Six lectures were presented by UNU/WIDER staff members, public figures from Finland and international visiting scholars on topics related to the Institute's research.

UNU/WIDER also offered a nine-month internship programme for young Ph.D. students. Three students from Finland, one from France and one from Ghana participated. The interns work closely with the Research Fellows on



projects and are expected to prepare at least one research paper of their own.

The UNU/IAS postgraduate education programme offers Ph.D. fellowships and short training courses in three thematic areas: eco-restructuring for sustainable development, megacities and urban development, and multilateralism and governance. Fellows carry out their research in Tokyo under the supervision of a UNU/IAS faculty member or an affiliated UNU/IAS network scholar. Fellows are distributed into teams of six to eight members, with each team including several fellows, an adjunct Japanese professor, a visiting scholar and a UNU faculty member. Upon completion of their research, fellows write a paper on their dissertation – one which will make a distinctive contribution to the Institute. During 1997, 18 Ph.D. fellows from 14 different countries participated in the programme.

UNU/IAS also held the following short training courses:

- UNU/IAS-TERI training course on “Energy, Environment, Resources and Sustainability,” in March in New Delhi, India;
- UNU/IAS-AIT training course on “Planning for Environmentally Sustainable Development in the Asia-Pacific Region,” in September in Bangkok, Thailand;
- UNU/IAS training course on “Multilateral Diplomacy and Environmental Negotiation,” in March in Tokyo, Japan;
- UNU/IAS seminar and workshop on “Trade and Environment from a MERCOSUR Perspective,” in October in São Paulo, Brazil;
- UNU/IAS-UNDP-Indira Gandhi Institute of Development Research training course on “Environmentally Sustainable Development,” in April in Mumbai, India.

Two interns studied at UNU/INTECH in 1997 under the Institute’s Ph.D. Internship Scheme. An additional 11 students received training as part of the joint Ph.D. UNU/INTECH-MERIT programme. Under this programme, UNU/INTECH financially supports developing-country students with a monthly grant, a waiver of tuition fees and paid health insurance. The support the students receive is conditional on good academic performance.

During the year, 47 fellows from 17 different countries visited UNU/IIST. They participated in UNU/IIST projects and, in so doing, received three types of training.

The first is research training, where fellows conduct software technology research. During their fellowship period, fellows are expected to write scientific reports and are encouraged to submit these reports to journals and scientific conferences. The second is development training, where fellows undertake advanced software development. And the third is curriculum development, the aim of which is to assist universities in developing postgraduate and post-doctoral software technology courses. UNU/IIST brings professors and lecturers from developing countries to the Institute on three- to six-month fellowships, during which they prepare course curricula and materials for their courses. At the end of their fellowships, they take home these course materials along with the necessary software to teach them.

UNU/IIST offered numerous training courses during the year:

- The “Postgraduate Course on Formal Software Development Methods,” in Cameroon, China (2), Gabon and Japan;
- The “Postgraduate DESCARTES Course: Design Calculi and Research Tele-communication Systems,” in China, Brazil, Indonesia, Pakistan and South Africa;
- “Seminars on Duration Calculus,” in Bulgaria, Romania, Russia and Ukraine;
- The “Postgraduate Course on Formal Methods in Software Development and Duration Calculus,” in Argentina and India;
- “Formal Software Development Methods and the Duration Calculi: From Programmes on Large-Scale Systems and from Untimed Reactive Discrete Systems to Real-Time Hybrid Systems,” in Macau.

UNU/IIST’s training courses have three main objectives: to promote awareness and education, to identify potential fellows, and to identify project partners.

UNU/IIST has continued to cooperate with the University of Macau’s Software Engineering



Programme through lecturing and M.Sc. thesis supervision. In the first quarter of 1997, UNU/IIST organized a series of weekly Computer Science Seminars involving seven UNU/IIST staff and lasting for 13 weeks. In the first semester of 1997-98, UNU/IIST staff have taught three courses weekly to M.Sc. students on the Fundamentals of Software Engineering.

During the year, UNU/INWEH began work on its training curriculum in watershed management. Two monitoring-related activities were initiated. First, an agreement was reached with UNEP and WHO to transfer the training component of the global GEMS/WATER programme to UNU/INWEH for future implementation. GEMS/WATER is the water quality component of the UN Global Environmental Monitoring System.

Second, and linked to the GEMS/WATER initiative, UNU/INWEH has organized a consortium of universities, government laboratories, and private enterprises to develop and deliver a comprehensive training programme in analytical water chemistry. Tentative agreements have been reached with the Hewlett-Packard Corporation

and Varian International, major analytical equipment manufacturers, to join the consortium. Both companies will participate in curriculum development, assist partner institutions in acquiring instrumentation for training laboratories and support clients from developing countries to participate in the training programme. The first training model will be offered in 1998.

In April, the Rector and the President of Japan's Kirin Brewery Company presented five UNU Fellows with award certificates for completing one year of training at Japan's National Food Research Institute (NFRI) in Tsukuba. The main purpose of the training programme is to build up the capacity of developing-country food research institutions. The UNU Fellowships started in April 1993 with a five-year contribution of ¥34 million (US\$266,000) from Kirin. This commitment has now been extended for an additional five years. Kirin's contribution enables the UNU to provide five developing country fellows annually with one-year research and training opportunities in food science and technology at NFRI and support for their continued research efforts when they return home.



Dissemination of Research Results

The University's dissemination activities connect academics and policy makers with UNU research results. Dissemination also increases the UNU's international visibility and promotes its work. These efforts include publicizing conferences, promoting new publications and disseminating information electronically.

During the year, UNU Press sold some 13,000 books. These sales resulted in revenue of more than US\$200,000. The Press also gave about 1,000 free copies of books to libraries and other institutions located in developing countries.

UNU Press published nine new books in 1997. The new titles cover a broad topic range:

- *China in the Twenty-first Century: Politics, Economy, and Society*;
- *Environment, Energy, and Economy: Strategies for Sustainability*;
- *Freshwater Resources in Arid Lands*;
- *The Impact of Chaos on Science and Society*;
- *A New Europe in the Changing Global System*;
- *The New Globalism and Developing Countries*;
- *Regional Mechanisms and International Security in Latin America*;
- *The Urban Challenge in Africa: Growth and Management of Its Large Cities*;
- *Women and Kinship: Comparative Perspectives on Gender in South and South-East Asia*.

An additional 12 manuscripts are being readied for production and will be published in 1998. The UNU Press also produced nine smaller scholarly publications, such as University Lectures and miscellaneous reports, and a new catalogue of its academic publications.

Two recent UNU Press titles were licensed to publishers in countries where the national language is not English. One of these titles was *Amazonia: Resiliency and Dynamism of Its People*, which will be published in Portuguese by a Brazilian company. The other was *The*

Impact of Chaos on Science and Society, which will be published in Japanese. Negotiations for a Japanese edition of *Volunteers Against Conflict* are still ongoing.

In order to get UNU's research results disseminated better within developing countries, UNU Press has been promoting the reprinting of its books by Third World publishers. During 1997, less expensive reprint editions of three UNU Press titles were published for South Asian and ASEAN countries: *Emerging World Cities in Pacific Asia*, *Women and Kinship* and *Nepal: A Himalayan Kingdom in Transition*.

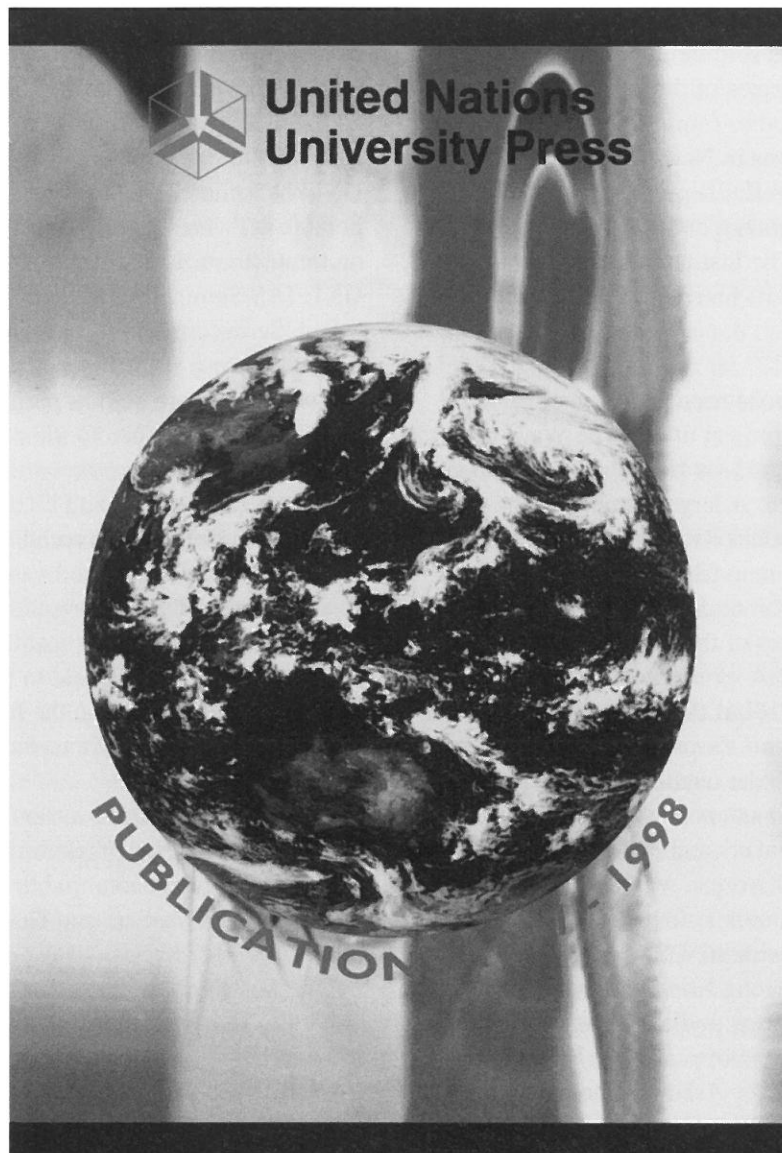
UNU Press sales and marketing efforts during the year included participation in three international book fairs: Tokyo, London and Frankfurt. UNU Press books were also promoted at book exhibitions in Denmark, Japan, Switzerland, the United States and Zimbabwe.

During 1997, the UNU became a member of the Humanity CD-ROM Project. The Belgium-based project is scanning books onto CD-ROMs and distributing the CD-ROMs either free or at low cost to developing countries. So far, all of UNU's food and nutrition publications have been scanned, and scanning of the University's books on sustainable development is almost complete.

Joining this project benefits the UNU in two important ways. First, more and more people will now have access to the UNU's work, without the University having to pay high shipping costs to get it to them. And second, the high-tech equipment used to copy the books can also provide the University with scanned versions of its own publications, which are being uploaded directly onto the UNU's homepage.

The UNU was involved with the publication of several journals during the year. The journals were:

- *Food and Nutrition Bulletin*;



- *The Journal of Food Composition and Analysis*;
- *Global Environmental Change – Human and Policy Dimensions*;
- *Mountain Research and Development*;
- *Global Governance: A Review of Multilateralism and International Organizations*.

The UNU Centre's Public Affairs Section produced the following information documents in 1997:

- *1996 Annual Report* in English and Japanese, of which 12,000 copies were distributed.
- Three issues of the University's newsletter *UNU Nexions* in English and Japanese, with a total distribution of 38,000 copies.
- A compilation of the University's environmental research entitled *Five Years after Rio: UNU's Responses to Agenda 21* was prepared as the UNU's contribution to the "Earth Summit+5" Conference held in June in New York. Nearly 4,000 copies were distributed.
- A new 30-page general leaflet on the UNU in Japanese, introducing the new Rector, was produced in September, and approximately 5,000 copies were distributed.

The UNU's RTC/Ps also produced a substantial amount of print material during 1997.



More than 1,000 copies of UNU/WIDER publications were sold through direct sale. Another 2,200 copies of the Institute's World Development Studies (numbers 1-11) were sold to UN Publications in New York. Almost 1,000 copies of UNU/WIDER publications were distributed free of charge to developing countries and the media. The Institute also distributed 14,000 copies of its biannual newsletter *Wider Angle*.

Two publications resulting from UNU/WIDER's project titled "The Wave of Emergencies of the Last Decade" have been especially popular. A large quantity of the publication it produced on Rwanda was purchased by the UN's Department for Humanitarian Affairs. And its publication on Zaire was distributed to all of the members of the UN Security Council.

UNU/INTECH has disseminated its research output through workshops, seminars, and lecture series, along with the circulation of its publications. The target audience is the academic community, policy makers and NGOs concerned with the rights of women workers. An example of such dissemination is found in the links that have developed with the US National Science Foundation, the Hong Kong University of Science and Technology, India's National Centre for Software Technology, and the Hong Kong-based Committee for Asian Women.

UNU/IAS has made dissemination a high priority, especially in new media forms that target specific audiences. The UNU/IAS Working Paper Series presents the preliminary

findings of the Institute's ongoing research – that being done by both senior researchers and Ph.D. Fellows. The Institute also uses electronic conferencing and workshops to reach out to Internet audiences. But the cornerstone of UNU/IAS dissemination continues to be its homepage, which keeps up-to-date information on the Institute's activities and research. The UNU/IAS Seminar Series and Brown Bag Lunch Series are also used to disseminate information. During 1997, more than 100 lectures and seminars were held as part of these series – all of which were open to the public.

UNU/IIST is providing 50 developing-country institutions with technical reports, information on international software literature and free software. These reports are produced by UNU/IIST and its partner institutions. Developing countries will be able to use this information to keep up-to-date on the latest developments in software technology.

The UNU held and contributed to five informative events in New York during 1997 that were open to the general public:

- "The New Globalism and Developing Countries," in May;
- "The Sustainable Management of Renewable Natural Resources," in June;
- "What Kind of Finance Conference Would the World Need?" in October;
- "Building Strategies for Public Policies in a Globalizing Environment," in October;
- "Financial and Development Issues in Emerging Markets," in November.



Interface with the United Nations System

The University continued to interact with other UN organizations during 1997. The following section highlights this collaboration.

Economic Commission for Latin America and the Caribbean (ECLAC)

- UNU/INTECH and ECLAC have been cooperating in the identification of new research areas and UNU/INTECH staff have been involved in collaborative work with ECLAC.
- ECLAC is providing a research contribution to UNU/WIDER's project "Short-term Capital Movements and Balance of Payments Crises."

Executive Committee on Economic and Social Affairs (ECESA)

- UNU/WIDER was asked to review ECESA's reports and determine a process that could be used to reduce reporting overlaps. The reports that UNU/WIDER is reviewing are: *The World Economic and Social Survey*; UNCTAD's *Trade and Development Report*; *World Investment Report*; *Least Developed Countries Report*; UNDP's *Human Development Report*; and *Regional Economic Surveys*.

Food and Agriculture Organization of the United Nations (FAO)

- UNU cooperates with FAO in the follow-up process for Agenda 21's chapter 13 on "Managing Fragile Ecosystems: Sustainable Mountain Development." In this context, a major contribution was made to the United Nations General Assembly's "Earth Summit+5" conference, which was held in June.
- FAO is providing a research contribution to UNU/WIDER's project "Land Distribution, Land Reform and Economic Growth."
- FAO is actively participating in UNU's INFOODS project.

International Labour Organization (ILO)

- A UNU/INTECH paper was included in one of the ILO's publications.
- ILO is providing a research contribution to UNU/WIDER's project on "Short-term Capital Movements and Balance of Payments Crises."

Intergovernmental Panel on Climate Change (IPCC)

- UNU/IAS and the IPCC held a joint conference on incorporating Integrated Assessment Models (IAMs) into climate change models.

International Atomic Energy Agency (IAEA)

- IAEA contributed funds towards UNU's Brucellosis Research Network for the development of better diagnostic methods and is involved with UNU's metabolic studies on nutrition and infection.

United Nations Administrative Committee on Coordination (ACC)/Subcommittee on Nutrition

- The UNU plays an active part in the UN ACC/Subcommittee on Nutrition.

United Nations ACC/Subcommittee on Water Resources

- UNU/INWEH plays an active role in this committee on behalf of the UNU.

United Nations Children's Fund (UNICEF)

- UNICEF is providing a research contribution to UNU/WIDER's project "New Models of Provision and Financing of Public Goods."
- UNICEF and WHO are active partners in UNU's project "Overcoming Critical Micronutrient Deficiencies."

United Nations Commission on Science and Technology for Development (UNCSTD)

- UNU/INTECH supported the activities of UNCSTD by participating in meetings and by making available all of the documentation and



information it had produced and commissioned for its information technology workplace.

- UNU/INTECH advised UNCSTD on gender issues in information technology and a staff member acted as the Chair of the Gender Advisory Board.

United Nations Conference on Trade and Development (UNCTAD)

- A UNU/INTECH staff member helped UNCTAD with its 1997 *World Investment Report*.
- UNU/WIDER held a press conference in September on the occasion of the launch of UNCTAD's *Least Developed Countries 1997 Report*.
- UNCTAD is providing three research contributions to UNU/WIDER's project "Growth, External Sector and the Role of Non-Traditional Exports in Sub-Saharan Africa."

United Nations Development Programme (UNDP)

- UNU/INTECH and UNDP are working together on a project dealing with teleworking.
- A UNU/IAS staff member has been asked to be an adviser to UNDP's *Human Development Report*.
- UNDP made a US\$5,000 contribution towards the UNU/IAS Multilateral Diplomacy workshop, which was held in Brazil.
- UNDP co-financed one of UNU/INRA's African minerals-related workshops.
- UNU/WIDER's Director has given several presentations on the Institute's work to those working at UNDP.
- UNU/WIDER received US\$56,000 from UNDP in support of the research of its project "Poverty and Well-being in Asia During the Transition."
- UNU/WIDER is contributing to UNDP's review paper on "Poverty and Distribution During the Transition."

- Several staff of UNDP are contributing to UNU/WIDER's project "The Wave of Emergencies of the Last Decade."

- Mr. Stephen Browne of UNDP delivered a Public Lecture on "Development Aid" at UNU/WIDER in April.

- UNU/WIDER helped UNDP launch the 1997 Human Development Report in Finland with a seminar organized jointly by the UNDP's Nordic Information Office and UNU/WIDER in June in Helsinki.

- UNU received US\$95,000 from UNDP to continue implementing its project titled "Asia and Africa in the Global Economy."

United Nations Department of Humanitarian Affairs (DHA)

- UNU and DHA's Secretariat on the International Decade for Natural Disaster Reduction are cooperating closely on UNU's project "Natural Disaster Risk Management."

United Nations Department of Peace-keeping Operations (DPKO)

- UNU and DPKO are developing jointly the UNU's project on "The Foundations of Peace."

United Nations Development Fund for Women (UNIFEM)

- UNIFEM invited UNU/INTECH to initiate collaborative research on globalization, technological change and women's work in Sub-Saharan Africa.
- UNIFEM is collaborating with UNU/INTECH on writing a policy paper on gender issues for the International Telecommunication Union for its 1998 World Telecommunications and Development Conference.

United Nations Environment Programme (UNEP)

- UNU and UNEP cooperation led to the successful bid for inclusion of the UNU project "People, Land Management and Environmental Change (UNU/PLEC) into the Global Environment Facility (GEF) portfolio. GEF pledged US\$6.17 million towards the project,



which will be executed with UNEP as the GEF partner.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

- UNU and UNESCO, together with the Association of Universities of Asia and the Pacific, organized the "National Strategies and Regional Cooperation for the 21st Century" conference (the Asia-Pacific regional conference leading to the 1998 World Congress on Higher Education), which was held at UNU Headquarters in July.
- UNESCO and UNU, together with the Third World Academy of Sciences, promoted the South-South Cooperation Programme on Environmentally Sound Socio-Economic Development in the Humid Tropics, within which a workshop was organized in December in Yunnan, China. The UNU's input into this workshop was primarily given through PLEC.
- The International Centre for Theoretical Physics (ICTP), under the auspices of UNESCO, is working with UNU on its project "Microprocessors and Informatics."
- UNU and UNESCO signed an agreement establishing a UNESCO-UNU/ILA chair in Leadership Studies.
- UNU/IAS and UNESCO signed an agreement establishing a UNESCO-UNU/IAS chair on the Global Economy.

- UNU and the Government of Namibia began work on the concept and practice of zero emissions in Africa under the UNU-UNESCO chair agreement that was signed in 1996.

- UNU and China's Beijing University continued work under the UNU-UNESCO chair in Plant Biotechnology.

World Bank

- UNU/INTECH's Director delivered a talk at the World Bank's INFODEV Group conference.
- UNU/INTECH's Deputy Director was invited to make a presentation at the Global Knowledge Conference, which was held in Ottawa in June.
- A UNU/INTECH staff member made a presentation of the findings of the Institute's research on foreign direct investment and technology transfer at the Bank's Development Prospects Group in October.
- The World Bank has requested a UNU/INTECH researcher to provide papers for the *1998 World Development Report*.
- The World Bank and the International Monetary Fund are providing research contributions to UNU/WIDER's project "Short-term Capital Movements and Balance of Payments Crises."



State of the University – 1997

New Rector appointed

UN Secretary-General Kofi Annan appointed Hans van Ginkel as the UNU's fourth Rector. The decision was announced in March following discussions between the Secretary-General and Federico Mayor, Director-General of UNESCO. Rector van Ginkel, who is a citizen of the Netherlands, had previously been Rector Magnificus at the University of Utrecht and had been a UNU Council Member since 1992. He took over from Rector Heitor Gurgulino de Souza on 1 September 1997.

Search launched for new Vice-Rectors

Takashi Inoguchi completed his term as UNU's Senior Vice-Rector in April. The search for two new Vice-Rectors was initiated in the summer. The positions were advertised in several international publications, such as *The Economist*, the *Chronicle of Higher Education* and *Le Monde Diplomatique*. Interviews with the short-listed candidates were held in November. The new Vice-Rectors are expected to take office in early 1998.

New Director at UNU/IIST appointed

Zhou Chaochen was appointed as the new Director of UNU/IIST in July. Professor Zhou took over in August from Dines Bjørner, who completed his term as Director shortly before. Professor Zhou had been the Institute's Principal Research Fellow for five years.

Forty-fourth session of the governing Council

The University's governing Council held its forty-fourth session in Tokyo from 1 to 5 December 1997. The major item of discussion at the session was Rector van Ginkel's assessment of the UNU's strengths and weaknesses. After presenting his views, the Rector suggested to Council Members that a University-wide strategic plan be formulated to determine the University's goals and to indicate ways to achieve its objectives.

Three other important items of business were discussed by the Council. One was the 20-year external peer evaluation of the UNU planned for 1998 to assess the extent to which the University



Members of the UNU Council at its forty-fourth session



has fulfilled the objectives set out in its Charter over the 11-year period from 1987–97. The second was the review being done by the UN Joint Inspection Unit, the results of which will be presented to the General Assembly in September 1998. Both evaluations are meant to strengthen the UNU's performance and help determine the best way for it to evolve. The third major item was the adoption of the University's biennial budget and academic programme for the period 1998–99.

Evaluation

A review and evaluation of UNU/IIST's first five years of operation was completed during the year. A report prepared by an international evaluation team discussed the Institute's progress in fulfilling its mandate and made suggestions on how the Institute can improve its future research, training and dissemination work. The report and the comments of the Rector, the Board and UNU/IIST's new Director were presented to the Council in December.

New agreements

The UNU entered into the following agreements during 1997:

- In January, a Memorandum of Understanding between the UNU and Japan's National Food Research Institute (NFRI) was extended for an additional three years. NFRI has been an associated institution since 1983. It trains UNU fellows from developing countries in food science and technology.
- In February, an agreement of cooperation was signed with the Government of Ghana's Council for Scientific and Industrial Research (CSIR) to expand collaboration between UNU/INRA and the CSIR on natural resource-related issues.
- In April, an agreement of cooperation was signed with Japan's Hitotsubashi University to collaborate on research on global issues.
- In June, an agreement between UNESCO and UNU/ILA was signed for the establishment of a UNESCO chair in Leadership Studies. The chair will promote leadership-focused research.

- Also in June, UNU and the Government of Iceland signed an agreement to open the UNU Fisheries Training Programme at Reykjavík's Marine Research Institute. This programme will run every year from April to October. The students, who will mostly come from developing countries, will be required to complete a three-part hands-on curriculum, which includes six weeks of core theory, 12 weeks of specialized training, and six weeks aboard either a research vessel or a trawler. The rigorous core programme will teach students about fish policy, monitoring, processing quality management, marketing and environmental protection.

UNU/IIST became more involved with its host territory during the year. It signed agreements to take part in two projects that involve designing information centres in Macau.

The first agreement was signed in May among UNU/IIST, the Macau Foundation and the State Science and Technology Commission for China (SSTCC) for the "Information Network Centre of Macau" project. This project will set up an Internet information centre to deal with topics about Macau and China. The centre will operate on computer hardware donated by the SSTCC and will be based at the Macau Foundation. UNU/IIST is responsible for organizing the team that will create and supervise it.

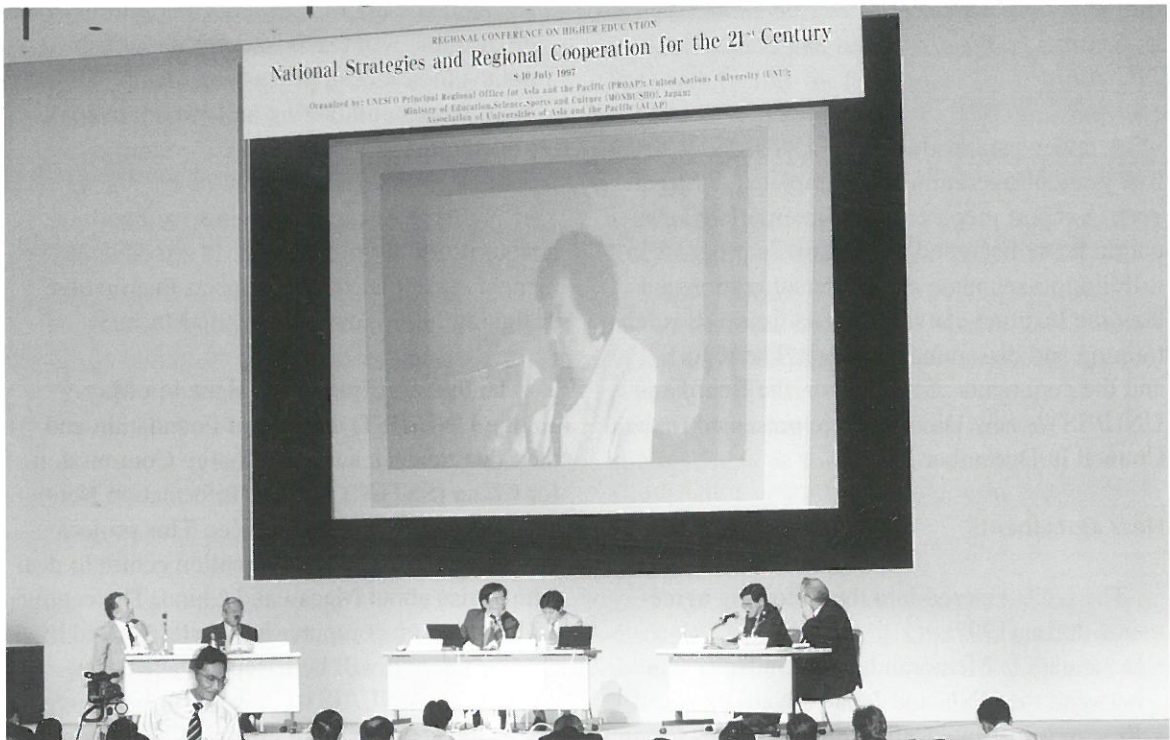
The second agreement was signed in June between UNU/IIST and the Macau Sino-Latin Foundation for the "Sino-Latin Project." In this project, UNU/IIST will provide expertise to the Macau Sino-Latin Foundation in designing and installing an Internet information server that will bring Chinese and Latin communities around the world together over the Web. The information available on the UNU/IIST-created server will have the following aims: to create interest in Macau's art and culture; to offer language training programmes in Chinese, Portuguese and Spanish; and to promote research on Macau-China relations. The server will be located at the Sino-Latin Foundation.



Participation in international conferences

In July, the UNU hosted a conference titled “National Strategies and Regional Cooperation for the 21st Century.” The conference was the joint effort of four parties: the UNU; UNESCO; Japan’s Ministry of Education, Science, Sports and Culture; and the Association of Universities of Asia and the Pacific. The conference’s main

aim was to strengthen academic cooperation and improve university education in the region. Similar events were held in Africa, the Middle East, Latin America and the Caribbean, and Europe. The recommendations that came out of these regional meetings are to be discussed in Paris at UNESCO’s 1998 “World Conference on Higher Education.”



Regional Conference on Higher Education: National Strategies and Regional Cooperation for the 21st Century, held at the UNU Headquarters from 8–10 July 1997.



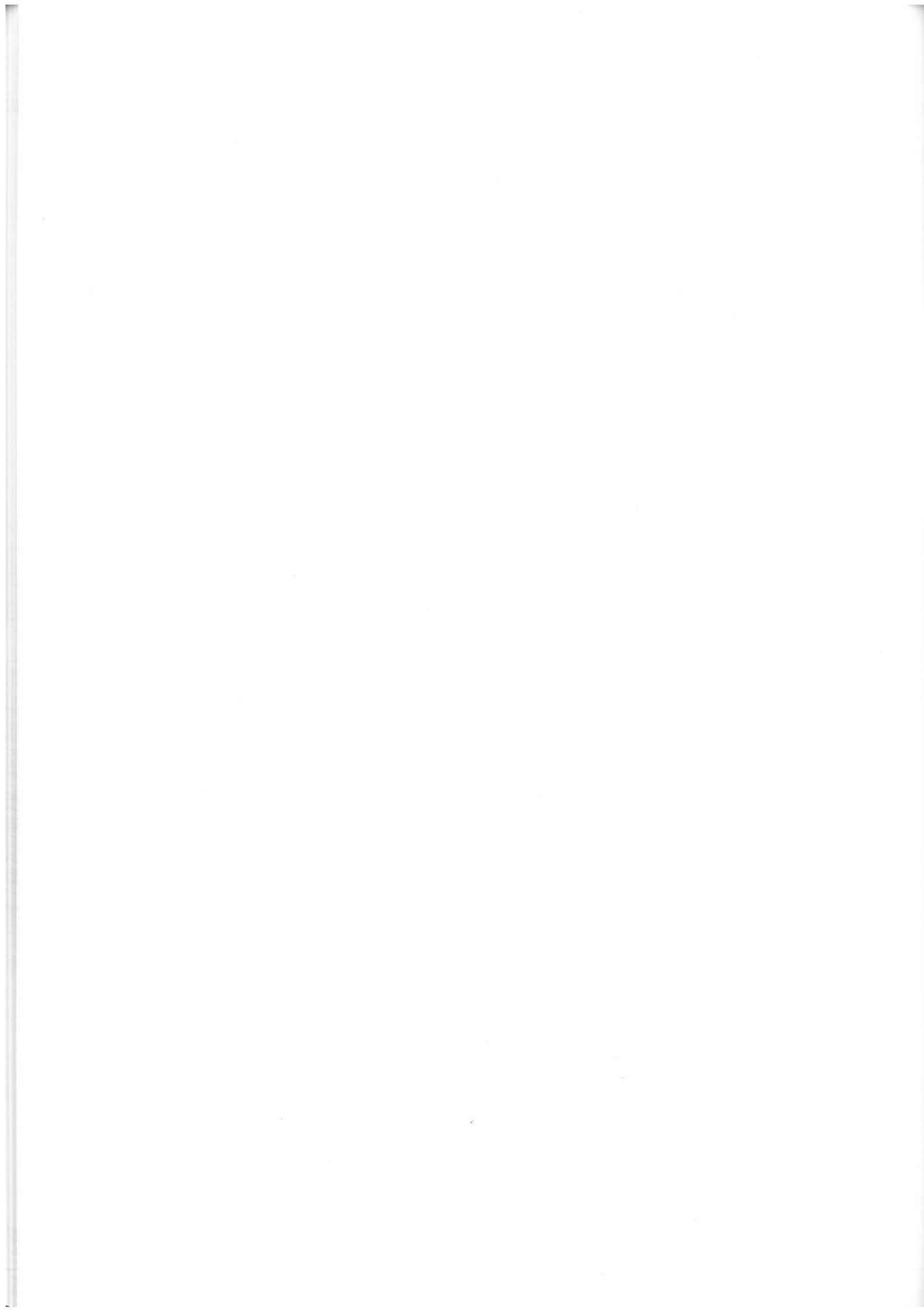
The most important outcome of the conference was a declaration produced and agreed to by the Asian-Pacific countries that are members of UNESCO. This declaration outlines what these countries want their universities to accomplish in the future and how they should go about achieving it. The declaration action plan is divided into four main areas: relevance, quality, management and finance, and cooperation.

Finance

As of 31 December 1997, pledges to the Endowment Fund, operations and specific programme contributions made by 54 governments and 136 other benefactors totalled some US\$346.1 million, of which US\$315.6 million had been received. The University also benefited during the year from counterpart and other support, including cost-sharing support for the fellowships and other activities. Table 1 below provides a summary of the contributions of US\$100,000 and higher received during 1997.

Table 1: Financial contributions received during 1997 (Over US\$100,000)

Source	Purpose	Amount (US\$)
Governments:		
Austria	Endowment Fund	119,304
Canada	Operating contribution for UNU/INWEH	510,928
Japan	Operating contribution for the UNU Centre and UNU/IAS, and specific programme contributions for UNU Centre	16,963,388
Jordan	Operating contribution for UNU/ILA	500,000
Netherlands	Operating and specific programme contributions for UNU/INTECH	1,001,875
Sweden	Specific programme contribution for UNU/WIDER	154,824
		Subtotal: 19,250,319
Non-governmental agencies and private sectors:		
ASCII Corporation (Japan)	Specific programme contribution for UNU/IAS	1,283,886
Ebara Corporation (Japan)	Specific programme contribution for UNU/IAS	101,207
European Commission	Specific programme contribution for UNU/INTECH	364,142
Ishikawa Foundation for International Exchange (Japan)	Specific programme contribution for UNU/IAS	144,263
Shimadzu Corporation (Japan)	Specific programme contribution for UNU Centre	238,780
UNDP Malaysia	Specific programme contribution for UNU/INTECH	118,300
		Subtotal: 2,250,578
		Total: 21,500,897



Annex 1: UNU Academic Activities in 1997

- UNU/IAS Planning Meeting for the project "Global Cities – The Impact of Transnationalism and Telematics," 6–7 January, Stanford, California, United States.
- UNU/BIOLAC Training Course on "Theoretical and Practical Aspects on Epidemiology, Diagnosis and Vaccination of Brucellosis," 6–20 January, Valdivia, Chile.
- UNU/IAS Seminar "Advanced Technologies and Transfer to Developing Countries" by UNU/IAS Adjunct Professor Takaya Kawabe, 8 January, Tokyo, Japan.
- UNU/IAS Seminar "Globalization and Economic Development of Newly Industrializing Areas in East Asia" by UNU/IAS Adjunct Professor Mitsuo Ezaki, 17 January, Tokyo.
- UNU/WIDER Course on "The Economics of Development," at the University of Helsinki, 17 January–11 April, Helsinki, Finland.
- UNU/BIOLAC Training Course on "Polymerase Chain Reaction (PCR), Differential Gene Expression and DNA Applications in Diagnosis," 19–31 January, Caracas, Venezuela.
- UNU/IAS Seminar "Why a New Renaissance of Chemistry in Alliance with the Plantation Industry Will Become a Driving Force for Sustainability in the 21st Century" by UNU/IAS Visiting Professor Janis Gravitis, 20 January, Tokyo.
- UNU/IAS Seminar "Internet for the New University Environment" by UNU/IAS Adjunct Professor Jun Murai, 21 January, Tokyo.
- UNU/IAS Seminar "Techno-Hegemony and Japan: Two Views of Technological Paradigm Change" by UNU/IAS Adjunct Professor Taizo Yakushiji, 23 January, Tokyo.
- UNU/WIDER Public Debate on "Poverty Eradication Is the Goal: Are the Strategies Correct?" 24 January, Helsinki.
- UNU/INRA Meeting of the Advisory Committee on Women in Natural Resources Conservation and Management for Development, 27 January–1 February, Accra, Ghana.
- UNU/INRA Feasibility Study for the Development of a UNU/INRA Reference Herbarium, 27 January–1 February, Accra.
- UNU/IAS Seminar "The Curse of SAP? – The Political Economy of SAP and its Environmental Implications in Ghana" by UNU/IAS Ph.D. Fellow Anthony Aubyn, 28 January, Tokyo.
- Feasibility Study for the Development of a UNU/INRA Tissue Culture Facility, 3–7 February, Accra.
- Meeting of the Project on "Democratization, Parties, Party System, and Economic Growth in East and South East Asia," 18–20 February, Kuala Lumpur, Malaysia.
- Second Workshop of UNU/INTECH's project on "Environmental Regulation, Globalization of Production and Technological Change," 21–22 February, Maastricht, the Netherlands.
- UNU International Symposium on "Environmental Governance and Analytical Techniques: Water Pollution Monitoring in East Asia," 21 February, UNU Headquarters, Tokyo, and 24 February–1 March, Singapore.
- Meeting of the Advisory Committee for the Food and Nutrition Programme, 27–28 February, New York, USA.
- UNU Public Forum on "Engaging Countries: Strengthening Compliance with International Environmental Accords," 5 March, UNU Headquarters.
- International Conference on "Traditional Foods," 6–8 March, Mysore, India.
- UNU/WIDER Annual Public Lecture on "The New Institutional Economics and Its Contribution to Improving Our Understanding of the Transition Problem," by Douglas North, 7 March, Helsinki, Finland.
- Intergovernmental Panel on Climate Change (IPCC) (Asia-Pacific) Workshop on Integrated Assessment Models, 10–12 March, UNU Headquarters and UNU/IAS, Tokyo.
- UNU/IIST Training Course on "Formal Software Development Methods," 10–14 March, Fukuoka City, Japan.
- UNU/IAS Multilateral Diplomacy Training Seminar, 10–15 March, Tokyo.
- UNU/BIOLAC Training Course on "Analysis and Manipulation of the Plant Genome," 10–21 March, Irapuato, Mexico.



- Thirteenth Conference of Directors of UNU Research and Training Centres and Programmes, 11–13 March, UNU Headquarters.
- First Meeting of the Internal Assessment Group 2 (IAG) of the UNU Council, 13 March, UNU Headquarters.
- UNU/IAS Tokyo Modelling Forum, 13–14 March, Tokyo.
- Opening Ceremony for the Ishikawa International Cooperation Research Centre, and International Symposium on “Prospects and Agenda for International Cooperation in Ishikawa,” 15 March, Kanazawa, Japan.
- Meeting of the Research Organizers of the Project on “The United Nations System in the Twenty-first Century,” 18 March, Ontario, Canada.
- UNU Public Forum on “The Reintegration of Transition Economies into the Global Market System,” 24 March, UN Headquarters, New York.
- UNU/IAS-APEC Conference on “Academic Cooperation in the Asia-Pacific,” 24–25 March, UNU Headquarters.
- UNU/GEIC International Symposium on “Networking for the Future: Strengthening the Role of NGOs,” 25–26 March, UNU Headquarters.
- Workshop on “Asian Values and Asian Democracy,” 26–28 March, Hamamatsu, Japan.
- UNU/IAS Seminar on “Internet Society – Perspectives for Developing Countries,” 3 April, Tokyo.
- Meeting of the Programme Committee for the International Conference on Research in Informatics in Africa (CARI), 3–8 April, Paris, France.
- UNU/WIDER Joint Meeting of the Projects on “Growth, External Sector and the Role of Non-traditional Exports in Sub-Saharan Africa” and “The Impact of Liberalization on Key Markets in Sub-Saharan Africa,” 7–11 April, Helsinki.
- Award Ceremony for UNU-Kirin Fellows, 8 April, UNU Headquarters.
- UNU/IAS Seminar on “A Sociological Analysis of the UN Secretariat – The Facts and Their Meaning,” by Jean-Marc Coicaud, 14 April, Tokyo.
- UNU/WIDER Public Lecture on “Post-Communist Malaise and the Polish Miracle,” by Grzegorz Kolodko, 14 April, Helsinki.
- UNU/IAS Seminar on “Assessing the Social Utility of Special Economic Zones in Underdeveloped Regions,” 14 April, Tokyo.
- UNU/IAS Seminar on “Modelling and Analysis of Climate Change Impacts on Indian Agriculture,” 17 April, Tokyo.
- UNU/IAS Seminar on “Political Economy of Asian Pacific Economic Cooperation in the World of Globalization and Regionalization,” 17 April, Tokyo.
- UNU/WIDER Meeting of the Project on “Economic Shocks, Social Stress and the Transition’s Mortality Crisis,” 17–19 April, Helsinki.
- Workshop on “The Dynamics of Land Use and Land Cover Change in the Hindu Kush Himalaya,” 20–28 April, Kathmandu, Nepal.
- First Meeting of the UNU/INWEH International Advisory Committee, 21–23 April, Ontario.
- UNU/IAS Seminar on “What Determines China’s Rapid Industrial Growth During Economic Reform,” 24 April, Tokyo.
- UNU/IIST Training Course on “Formal Software Development Methods,” 24–29 April, Beijing, China.
- Training Course on “Analysis and Management of Geological Risks” (CERG ’97), 28 April–18 June, Geneva, Switzerland.
- First Meeting of the UNU/INRA Board, 28–30 April, Accra.
- UNU/WIDER Public Lecture on “The Rise and Fall of Development Aid,” by Stephen Brown, 29 April, Helsinki.
- UNU Geothermal Training Programme, April–October (6 months), Reykjavík, Iceland.
- Training Programme on “Remote Sensing Technology,” April–December (8 months), São José dos Campos, Brazil.
- Training Programme on “Science and Technology Policy,” April 1997–March 1998 (12 months), Campinas, Brazil.
- Training Programme on “Food Science and Technology” (UNU-Kirin Fellows), April 1997–March 1998 (12 months), Tsukuba, Japan.
- UNU/WIDER Meeting of the Project on “Short-Term Capital Movements and the Balance of Payments Crisis,” 1–2 May, Sussex, UK.
- UNU/IAS Seminar on “Industrial Ecology and the Potential for Double Dividends,” 6 May, Tokyo.



- UNU Public Forum on "European Integration and Asian Integration: Comparison, Lessons and Agenda," 8 May, UNU Headquarters.
- UNU/IAS Seminar on "Multimedia in the European Union and Japan," 8 May, Tokyo.
- Conference on "Democracy, Economy and Civil Society in Transition in Russia and the Baltic States – Working Well Together?" 14–18 May, Imatra, Finland, and Svetogorsk, Russia.
- UNU/IAS Seminar on "Turning Point – The End of the Growth Paradigm," 15 May, Tokyo.
- UNU/WIDER Meeting of the Project on "Transition Strategies, Alternatives and Outcomes," 15–17 May, Helsinki.
- First Workshop on Education in Remote Sensing MERCOSUR-wide," 20–23 May, Santa Catarina, Brazil.
- UNU Public Forum on "Earthquake Disaster Management: A Global Priority," 22 May, UNU Headquarters.
- "Fourth International Workshop on African Mountains and Highlands: African Mountain Development in a Changing Economic World," 25 May–2 June, Antananarivo, Madagascar.
- Eighth Meeting of the UNU/INTECH Board, 26–27 May, Maastricht.
- Workshop on "Earthquakes and Mega-cities," 26–29 May, Frankfurt, Germany.
- GEIC Seminar on "The Role of NGOs and Citizens in Climate Change," 29 May, Tokyo.
- Macau: Sixth Meeting of UNU/IIST Board, 29–31 May.
- UNU/IAS Seminar on "The Evolution and Development of Environmental Technologies – A Case Study on the Environmental Technology Centre at Murdoch University in the Australian and International Context," 30 May, Tokyo.
- UNU/WIDER Meeting of the Project on "Land Distribution, Land Reform and Economic Growth," 30 May–2 June, Helsinki.
- UNU/ILA 1997 Leadership Programme, 1–24 June, Amman, Jordan.
- Research Team Meeting of the UNU Project on "Hydropolitics and Ecopolitical Decision-making," 2 June, Bratislava, Slovakia.
- UNU/IAS Seminar on "Biomass Materials Separation Technologies as a Component of the UNU/ZERI," 2 June, Tokyo.
- UNU/IAS Seminar on "Sustainable Development – How to Operationalize It," 3 June, Tokyo.
- GEIC Seminar on "Climate Change and the Challenge of Local Governments," 4 June, Tokyo.
- UNU/WIDER Seminar on "Poverty and Human Development," 5 June, Helsinki.
- Training Course on "Teaching Environmental Law at the University Level," 9 June–5 July, Singapore.
- GEIC Seminar on "Progress of Activities Abroad," 11 June, Tokyo.
- UNU/WIDER Public Lecture on "Latin America's Economic Reform – New Environment for Business," by Enrique Iglesias, President of the Inter-American Development Bank, 12 June, Helsinki.
- Planning Meeting of the UNU-wide Environment Area Programme, 16–17 June, New York.
- UNU/WIDER Project Meeting on "Growth, External Sector and the Role of Non-traditional Exports in Sub-Saharan Africa," 16–20 June, Helsinki.
- UNU Public Forum on "Sustainable Management of Renewable Natural Resources," 18 June, New York.
- GEIC Seminar on "New Business Opportunities," 19 June, Tokyo.
- First ECAFOODS Training Course on Production and Use of Food Composition Data in Nutrition, 23 June–11 July, Cape Town, South Africa.
- UNU/ICTP (International Centre for Theoretical Physics) Project's Second Latin American Course on "Data Acquisition and Filtering Techniques," 23 June–18 July, San Luis, Argentina.
- UNU/IAS Seminar on "Development and Human Rights," 24 June, Tokyo.
- UNU Global Environmental Forum VI on "Water for Urban Areas in the 21st Century," 25 June, UNU Headquarters.
- GEIC Seminar on "The Role of the Japanese Government and COP-3," 26 June, Tokyo.
- UNU/WIDER Public Lecture on "The Japanese Economy, Finland-Japanese Relationships with Less-Developed Countries," by Japan's Ambassador to Finland Sumiko Takahara, 30 June, Helsinki.
- Thirteenth Meeting of the UNU/WIDER Board, 30 June–2 July, Helsinki.



- UNU/BIOLAC Training Course on "Environmental Biotechnology," 30 June–11 July, Cuernavaca, Morelos, Mexico.
- GEIC Seminar on "Legal Structure of the Climate Change Convention," 3 July, Tokyo.
- UNU/WIDER Project Meeting on the "Wave of Emergencies of the Last Decade – Causes, Extent, Predictability and Response," 3–5 July, Helsinki.
- "Regional Conference on Higher Education – National Strategies and Regional Cooperation for the 21st Century," 8–10 July, UNU Headquarters.
- GEIC Seminar on the "Kyoto Protocol," 10 July, Tokyo.
- Press Briefing on the UNU Zero Emissions Initiative, 11 July, Tokyo.
- UNU/INTECH Workshop on "Investing in the South – Technological and Financial Investment Decisions by Manufacturing Firms in Southern Europe," 11–12 July, Maastricht.
- UNU Workshop on "Islands in the Pacific Century – Session on Disasters and Development," 13–19 July, Suva, Fiji.
- UNU Third World Congress on Zero Emissions, 31 July–2 August, Jakarta, Indonesia.
- UNU Panel on "The United Nations and the United States: Toward a New Deal," 20 August, Seoul, Republic of Korea.
- Mid-term Review Meeting and a Round Table of the UNU Project on "Comparative Foreign Policy and Human Rights," 29 and 31 August, Washington, DC, USA.
- Workshop on "Earthquakes and Mega-cities," 1–4 September, Seeheim, Germany.
- UNU/INTECH Third Workshop of the Project on "Environmental Regulation, Globalization of Production and Technological Change," 5–6 September, Oslo, Norway.
- UNU Global Seminar Shonan Session '97 on "Attitudes of Member States toward the United Nations," 8–11 September, Hayama, Kanagawa Prefecture, Japan.
- UNU/ICTP Project Workshop on "Telecommunications: Science, Technology and Applications," 15 September–3 October, Trieste, Italy.
- Training Course on "Renewable Energy Systems," 15 September–15 May 1998, New Delhi.
- UNU Public Forum on "The Basic Law of the Hong Kong Special Administrative Region and the Possible Consequences of the Integration of Hong Kong on the International Arena," 18 September, UNU Headquarters.
- UNU/ICTP Second African Regional Workshop on Parallel Process and Applications, 22 September–11 October, Libreville, Gabon.
- UNU Regional Workshop on the "Democratization Process and Economic Changes in the Former Socialist Countries in Central and Eastern Europe and in the Former Soviet Union," 26–27 September, Budapest, Hungary.
- UNU/IAS Conference on EU–Japan Cooperation in Education, Science and Technology, 29 September–1 October, UNU Headquarters.
- Training Programme on "Applied Human Nutrition," October 1997–September 1998, Nairobi, Kenya.
- UNU/IAS Seminar on "Biodiversity, Health and Sustainability," 2 October, Tokyo.
- UNU/IAS Seminar on "Environmental Technology and Trade – The Asian Newly Industrializing Economies' Pathway to Sustainable Development and Competitiveness in the International Economy," 2 October, Tokyo.
- UNU/BIOLAC Brucellosis Research Network Workshop, 6–10 October, Lima, Peru.
- UNU/ICTP Regional Training Workshop on "Academic Networking," 6–24 October, Ile-Ife, Nigeria.
- UNU Public Forum/INCEDE Open Lecture on "Water: Too Much ... Too Little ... Leading Cause of Natural Disasters," 7 October, Tokyo.
- International Workshop for the Control of Iron Deficiency, 8–10 October, Santiago, Chile.
- UNU/WIDER Public Lecture on "War, Hunger and Flight – The Sources of Humanitarian Emergencies," 16 October, Helsinki.
- UNU/IAS Press Briefing on the Second Japanese Regional Zero Emissions Network UNU Conference, 16 October, Tokyo.
- UNU/INTECH Conference on "Technology Policy and Less-Developed R&D Systems in Europe," 17–18 October, Seville, Spain.
- UNU/ICTP Second Regional Course on Advanced VLSI Design Techniques, 20 October–7 November, Medellín, Colombia.



- International Workshop on "Urban Earthquake Risk Assessment and Management," 21–24 October, Beijing, China.
- UNU/INRA Workshop on National Soil Fertility Action Plans – Lessons from the Burkina Faso Experience, 21–31 October, Ouagadougou, Burkina Faso.
- UNU/IAS–AIT Training Course on "Planning for Environmentally Sustainable Development in the Asia-Pacific Region," 22 October, Tokyo.
- The Second Japanese Regional Zero Emissions Network UNU Conference, 29 October, UNU Headquarters.
- UNU/WIDER Public Lecture on "Economics, Democracy and Entrepreneurship in the Post-Cold War World," 30 October, Helsinki.
- UNU/IAS–NTT Forum on "Multimedia and Global Environment," 30–31 October, Tokyo.
- UNU/IAS Multilateral Diplomacy Workshop – Trade and Environment from a MERCOSUR Perspective, 30 October–4 November, São Paulo and Florianopolis, Brazil.
- Training Course on "Solar Energy Utilization," November 1997–July 1998, Madras, India.
- UNU/BIOLAC Training Course on "Development in Agro-biotechnology," 2–21 November, Buenos Aires, Argentina.
- UNU-Africa Economic Research Consortium (AERC) Collaborative Conference on the Project "Asia and Africa in the Global Economy," 3–7 November, Johannesburg, South Africa.
- First Workshop on "Leadership for Latin American Young Professionals in Food and Nutrition," 4–8 November, Antigua, Guatemala.
- International Cooperation Symposium on "Traditional Industrial Arts and Environment: Exploring Opportunities for Local Promotion," 6–7 November, Kanazawa, Japan.
- UNU/IIST Seminar on "Design Calculi and Research for Telecommunications Systems," 10–28 November, Rio de Janeiro, Brazil.
- UNU Public Forum on "Usable Science: El Niño Forecast in the Service of Society," 12 November, UNU Headquarters.
- Annual Symposium of the UNU Project on "The United Nations System in the 21st Century," 14–15 November, New York.
- UNU/BIOLAC Training Course on "Expressions of Antibody Fragmentation in Bacteria and As Fusion Protein in Bacteriophage," 18–29 November, Havana, Cuba.
- UNU/BIOLAC Training Course on "Diagnosis of Tuberculosis," 24 November–5 December, Havana.
- UNU/INRA Feasibility Study for the Preparation of a Proposal for the Development of a Germ Plasm Conservation Facility, 1–5 December, Accra.
- Forty-fourth Session of the Council of the United Nations University, 1–6 December, UNU Headquarters.
- UNU/IIST Seminar on "Design Calculi and Research for Telecommunications Systems," 1–19 December, Johannesburg.
- Third Annual Workshop of the Tuberculosis Research Network, 3–7 December, Havana.
- Third Conference of South-South Cooperation on "Multiple Resources and Land Use Planning in Biosphere Reserves and Similar Managed Areas As a Subject for Eco-development," 8–13 December, Kunming, Yunnan, China.
- UNU/PLEC Asian Regional Meeting, 11–15 December, Xishuangbanna, Yunnan.
- Colloquium on "Ethics and International Affairs," 18–19 December, Geneva, Switzerland.



Annex 2: UNU Governing Bodies

Members of the University Council

Appointed members

- Professor José Joaquín BRUNNER Ried (Chile)
(Chairman of the Council)
Minister, Ministry of the Secretary-General, Government of Chile
- Professor Paolo COSTA (Italy)
Minister of Public Works, Ministry of Public Works, Government of Italy
- Dr. Donald EKONG (Nigeria)
Scholar-in-Residence, The Ford Foundation, Johannesburg, South Africa
- Dr. Salim EL-HOSS (Lebanon)
American University of Beirut, and former Prime Minister of Lebanon
- Professor Hans van GINKEL (Netherlands)
Rector Magnificus and Professor of Human Geography, Utrecht University (Rector of the United Nations University from 1 September 1997)
- Professor Genady Nikolaevich GOLUBEV (Russian Federation)
Head, Department of World Physical Geography and Geocology, Faculty of Geography, Moscow State University
- Professor Françoise HÉRITIER-AUGÉ (France)
Director, Laboratoire d'anthropologie sociale, Ecole des Hautes Etudes en Sciences Sociales, Collège de France
- Professor Risto IHAMUOTILA (Finland)
Chancellor, University of Helsinki
- Ambassador Hideo KAGAMI (Japan)
Former Permanent Representative of Japan to the United Nations
- Professor Hanaa KHEIR-EL-DIN (Egypt)
Professor of Economics and Chairperson of Economics Department, Faculty of Economics and Political Science, Cairo University
- Professor Sang Soo LEE (Republic of Korea)
Professor Emeritus, Korea Advanced Institute of Science and Technology
- Professor Madina LY-TALL (Mali)
Ambassador Extraordinary and Plenipotentiary of the Republic of Mali to France
- Dr. Edson MACHADO DE SOUSA (Brazil)
Head, Minister of Education's Cabinet, Ministry of Education and Sports, Government of Brazil
- Dr. Graça MACHEL (Mozambique)
President, Foundation for Community Development (FDC), Mozambique

- Dr. Valeria MERINO-DIRANI (Ecuador)
Executive Director, Corporacion Latinoamericana para el Desarrollo (CLD), Ecuador
- Dr. Lucien F. MICHAUD, SJ (Canada)
Professor, University of Sudbury, Canada
- Dr. A. P. MITRA (India)
President, National Academy of Sciences; Bhatnagar Fellow (Council of Scientific and Industrial Research); National Physical Laboratory, India
- Professor Ingrid MOSES (Australia)
Vice-Chancellor, University of New England, Armidale, Australia (elected Chair of the Council at the 44th session)
- Professor Jacob L. NGU (Cameroon)
Director, Immunology Biotechnology Laboratories, Cameroon
- Dr. Luis Manuel PEÑALVER (Venezuela)
Presidential Commission, Centenario del Natalicio de Andrés Bello, Fundacion La Casa de Bello, Venezuela
- Dr. Victor RABINOWITCH (United States)
Senior Vice-President, MacArthur Foundation, United States
- Professor Frances STEWART (United Kingdom)
Director, Queen Elizabeth House, University of Oxford
- Dr. WANG Shaoqi (China)
Director-General, International Cooperation Department, State Science and Technology Commission (SSTC), China

Rector

- Professor Heitor GURGULINO DE SOUZA (Brazil)
(until 31 August 1997)
- Professor Hans van GINKEL (Netherlands)
(from 1 September 1997)

Ex officio members

- Mr. Kofi ANNAN (Ghana)
Secretary-General, United Nations, New York, United States
- Dr. Federico MAYOR (Spain)
Director-General, United Nations Educational, Scientific and Cultural Organization, Paris, France
- Dr. Marcel BOISARD (Switzerland)
Executive Director, United Nations Institute for Training and Research, Geneva, Switzerland



Members of the Boards of UNU Research and Training Centres and UNU Advisory Committees

UNU/WIDER Board

Dr. Maria de Lourdes PINTASILGO (Portugal)
(Chairperson)
Deputy Chairperson, InterAction Council, United States

Mr. Harris MUTIO MULE (Kenya)
TIMS, Ltd., Kenya

Dr. Sylvia OSTRY (Canada)
Distinguished Research Fellow, Center for International Studies, University of Toronto, Canada

Professor Jukka PEKKARINEN (Finland)
Director, Labour Institute for Economic Research, Finland

Dr. George VASSILIOU (Cyprus)
Former President of Cyprus, Cyprus

Professor Ruben YEVSTIGNEYEV (Russian Federation)
Deputy Director, Institute of International Economic and Political Studies, Russian Academy of Sciences, Russian Federation

Dr. Masaru YOSHITOMI (Japan)
Vice Chairman, Research Institute, Inc., of the Long-Term Credit Bank of Japan, Ltd., Japan

UNU/INTECH Board

Dr. Nathan ROSENBERG (United States) (Chairman)
Professor, Department of Economics, Stanford University, United States

Professor Wil ALBEDA (Netherlands)
Chairman, Maastricht Economic Research Institute on Innovation and Technology (MERIT), University of Limburg, the Netherlands

Ms. Winnie K. BYANYIMA (Uganda)
Chairperson, Pan-African Women Engineers, Technicians and Scientists, International Conference Centre, Uganda

Dr. Wan-Kyoo CHO (Republic of Korea)
President, Bioindustry Association of Korea, Republic of Korea

Dr. Hebe Maria Cristina VESSURI (Argentina)
Instituto Venezolano de Investigaciones Científicas (IVIC), Venezuela

UNU/IIST Board

Professor Gilles KAHN (France) (Chairman)
Research Director, Institut national de recherche en informatique et en automatique (INRIA), France

Professor Ana Regina CAVALCANTI DA ROCHA (Brazil)
Programa de Engenharia de Sistemas e Computação (COPPE), Universidade Federal do Rio de Janeiro, Brazil

Mr. Ji Fusheng (China)
Director-General, Department of Fundamental Research and High Technology, State Science and Technology Commission, China

Professor Ivan M. HAVEL (Czech Republic)
Director, Centre for Theoretical Studies, Charles University, Czech Republic

Professor Kesav V. NORI (India)
Vice President, Tata Research Development and Design Centre, India

Dr. José SOROMENHO-RAMOS (Portugal)
Financial Controller, Organisation for Economic Co-operation and Development (OECD), France

Professor Maurice TCHUENTE (Cameroon)
Rector, University of Dschang, Cameroon

Professor ZHOU Ligao (China)
Vice-Rector, University of Macau, Macau

UNU/INRA Board

Professor W. S. ALHASSAN (Ghana)
Director-General, Council for Scientific and Industrial Research, Ghana

Professor Lameck K.H. GOMA (Zambia)
Former Minister of Higher Education, Science and Technology, Zambia

Dr. Björn LUNDGREN (Sweden)
Director, International Foundation for Science, Sweden

Dr. Thomas ODHIAMBO (Kenya)
Managing Trustee, Research and Development Forum for Science-Led Development in Africa (RANDFORUM), Kenya

Dr. Guy PAILLOTIN (France)
President, Institut national de la recherche agronomique (INRA), France

Dr. S. I. RASOOL (United States)
International Geosphere-Biosphere Programme – Data and Information System (IGBP-DIS), Université de Paris VI, France



UNU/IAS Board

Dr. Abdul-Latif Y. AL-HAMAD (Kuwait)
Director-General and Chairman, Arab Fund for
Economic and Social Development, Kuwait

Sir John KENDREW (United Kingdom) (Deceased
on 23 August 1997)
Former President, St. John's College, Oxford,
United Kingdom

Professor Lawrence R. KLEIN (United States)
Benjamin Franklin Professor of Economics (Emer-
itus), Department of Economics, University of
Pennsylvania, United States

Dr. M. G. K. MENON (India)
Former Minister of State for Science and Tech-
nology, Ministry of Science and Technology, India

Mrs. Gertrude MONGELLA (Tanzania)
Secretary-General, Fourth World Congress on
Women, Tanzania

Dr. Jose Israel VARGAS (Brazil)
Ministro de Estado da Ciencia e Tecnologia, Secre-
taria de Ciencia e Tecnologia, Brazil

Professor Hiroyuki YOSHIKAWA (Japan)
Former President of the University of Tokyo, Japan

UNU/ILA Advisory Committee

HM Queen NOOR of the Hashemite Kingdom of
Jordan (Chairperson)

HE Mr. Hisashi OWADA (Japan) (Vice-Chairperson)
Ambassador, Permanent Mission of Japan to the
United Nations

Dr. Boutros BOUTROS-GHALI (Egypt)
Secretary-General of la Francophonie, France

Hon. Mr. Jan EGELAND (Norway)
Secretary of State, Royal Norwegian Ministry of
Foreign Affairs, Norway

Mr. Bartolomé MITRE (Argentina)
Editor, La Nación, Argentina

UNU/INWEH International Advisory Committee

Dr. Nii Boi AYEBOTELE (Ghana)
Former Director, Water Resources Research
Institute, Ghana

Dr. James BRUCE (Canada)
Chairman, Canadian Climate Program Board,
Canada

Dr. Indira CHAKRAVARTY (Canada)
Director Professor and Dean, All India Institute of
Hygiene and Public Health, India

Dr. Peter GEORGE (Canada)
President and Vice Chancellor, McMaster Univer-
sity, Canada

Dr. Jose Galizia TUNDISI (Brazil)
President, National Council for Scientific and Tech-
nological Development of Brazil (CNPq), Ministry
of Science and Technology, Brazil

Dr. Deborah A. TUMBULL (Canada)
Director, International Business Development, the
Alliance of Manufacturers and Exporters Canada



Annex 3: UNU Titles Published in 1997

Books

- China in the Twenty-first Century: Politics, Economy and Society*
Edited by Fumio Itoh, UNU Press
- Environment, Energy and Economy: Strategies for Sustainability*
Edited by Yoichi Kaya and Keiichi Yokobori, UNU Press
- Freshwater Resources in Arid Lands*
Edited by Juha Uitto and Jutta Schneider, UNU Press
- The Impact of Chaos on Science and Society*
Edited by Celso Grebogi and James Yorke, UNU Press
- A New Europe in the Changing Global System*
Edited by Richard Falk and Tamás Szentes, UNU Press
- The New Globalism and Developing Countries*
Edited by John Dunning and Khalil Hamdani, UNU Press
- Regional Mechanisms and International Security in Latin America*
Edited by Olga Pellicer, UNU Press
- The Urban Challenge in Africa: Growth and Management of its Large Cities*
Edited by Carole Rakodi, UNU Press
- Women and Kinship: Comparative Perspectives on Gender in South and South-East Asia*
By Leela Dube, UNU Press
- The Determinants of Economic Performance in Transitional Economies: The Roles of Ownership, Incentives and Restructuring*
By Derek C. Jones
- Développement, aide, et conflit: Réflexions á partir du cas du Rwanda*
By Peter Uvin
- Emergence of Unorthodox Ownership and Governance Structures in East Asia: An Alternative Transition Path*
By Laixiang Sun
- Food Marketing Reconsidered: An Assessment of the Liberalization of Food Marketing in Sub-Saharan Africa*
By Pekka Seppälä
- The Liberalization of Foreign Exchange Markets and Economic Growth in Sub-Saharan Africa*
By Ngyuru H.I. Lipumba
- The Polish Alternative: Old Myths, Hard Facts and New Strategies in the Successful Transformation of the Polish Economy*
By Grzegorz Kolodko and D. Mario Nuti
- Political Sources of Humanitarian Emergencies*
By K.J. Holsti
- The Role of Civic Organizations in the Provision of Social Services: Towards Synergy*
By Mark Robinson and Gordon White
- Tree Plantations in the Philippines and Thailand: Economic, Social and Environmental Evaluation*
By Anssi Niskanen and Olli Saastamoinen
- Towards the Abyss? The Political Economy of Emergency in Haiti*
By Mats Lundahl
- The Transition's Mortality Crisis in East Germany*
By Regina T. Riphahn and Klaus F. Zimmermann
- Why Humanitarian Emergencies Occur: Insights from the Interface of State, Democracy and Civil Society*
By Claude Ake
- Zaire After Mobutu: A Case of Humanitarian Emergency*
By Kisangani N.F. Emizet

Other publications

UNU/WIDER

World Development Studies Series:

- Regionalization in East Asia-Pacific? An Elusive Process*
By Joakim Öjendal

Research for Action Series:

- Community and Village-based Provision of Key Social Services: A Case Study of Tanzania*
By Marja Liisa Swantz

Working papers:

- Causes and Lessons of the Mexican Peso Crisis*
By Stephany Griffith-Jones

Decentralizing and the Provision and Financing of Social Services: Concepts and Issues
By Cecilia Ugaz

Economic Shocks, Impoverishment and Poverty-Related Mortality During the Eastern European Transition
By Renato Paniccà

Evolution of the Women's Movement in Contemporary Algeria: Organization, Objectives and Prospects
By Cherifa Bouatta

Gender Aspects of Urban Economic Growth and Development
By Sylvia Chant

Health Status and Health Policy in Sub-Saharan Africa: A Long-term Perspective
By Giovanni Andrea Cornia and Germano Mwabu

Humanitarian Emergencies and Warlord Economies in Liberia and Sierra Leone
By William Reno

Income Distribution During the Transition in China
By Zhang Ping

Long-term Growth and Welfare in Transnational Economies: The Impact of Demographic, Investment and Social Policy Changes
By Giovanni Andrea Cornia, Juha Honkkila, Renato Paniccà and Vladimir Popov

The Political Economy of Complex Humanitarian Emergencies: Lessons from El Salvador
By Manuel Pastor and James K. Boyce

Privatization, Asset Distribution and Equity in Transitional Economies
By Juha Honkkila

The Process of Economic Change
By Douglass C. North

Promoting Education within the Context of a Neo-Patrimonial State: The Case of Nigeria
By Daniel Edevbaro

The Rise and Fall of Development Aid
By Stephen Browne

The Road to the Market in North Korea: Projects, Problems and Prospects
By Keun Lee

The Scale and Nature of International Donor Assistance to Housing, Basic Services and Other Human-Settlements Related Projects
By David Satterthwaite

Sustainable and Excessive Current Account Deficits
By Helmut Reisen

User Charges for Health Care: A Review of the Underlying Theory and Assumptions
By Germano Mwabu

User Fees, Expenditure Restructuring and Voucher Systems in Education
By Simon Appleton

Uzbekistan: Welfare Impact of Slow Transition
By Richard Pomfret and Kathryn H. Anderson

Viet Nam: Transition as a Socialist Project in East Asia
By Manuel F. Montes

War, Hunger and Displacement: An Econometric Investigation into the Sources of Humanitarian Emergencies
By E. Wayne Nafziger and Juha Auvinen

Annual Lectures:

The Contribution of the New Institutional Economics to an Understanding of the Transition Problem
By Douglass C. North

Books published by commercial publishers:

The Environment and Emerging Development Issues, Volumes 1-2
Edited by Partha Dasgupta and Karl-Göran Mäler, Clarendon Press Oxford

Commodity Supply Management by Producing Countries: A Case Study of Tropical Beverage Crops
By Alfred Maizels, Robert Bacon and George Mavrotas, Clarendon Press Oxford

Indian Development: Selected Regional Perspectives
Edited by Jean Drèze and Amartya Sen, Clarendon Press Oxford

National Environmental Policies: A Comparative Study of Capacity-Building With a Data Appendix: International Profiles of Changes Since 1970
Edited by Martin Jänicke, Helmut Weidner and Helge Jörgens, Springer-Verlag

The European Rupture: The Defense Sector in Transition
Edited by Mary Kaldor and Geneviève Schméder, Edward Elgar and UNU Press

Restructuring the Global Military Sector: New Wars
Edited by Mary Kaldor and Basker Vashee, Pinter



UNU/IAS

Working paper series:

Analysis of the International Response to the Gulf Crisis

By Marina Arlati

A Comparative Study on Environmental Policy Development Processes in Three East Asian Countries: Japan, Korea and China

By Yohei Harashima and Tsuneyuki Morita

Differential Productivity of Foreign and Domestic Capital, Foreign Capital Penetration, Socio-Political Environments and Economic Growth: A Reexamination of Capital Dependency

By Indra de Soysa

Energy and Environmental Conflict: The Case of the Ogoni Crisis, Nigeria

By Abubakar Nuhu-Koko

Environmentalism in Periods of Rapid Transformation: Legacy of the Industrial Revolution in the UK and the Meiji Restoration in Japan

By Brendan Barret

Informal Recycling and Collection of Solid Wastes in Developing Countries: Issues and Opportunities

By Martin Medina

The Morality Crisis in East Germany

T. Riphahn and Klaus Zimmermann

New Entrepreneurship in Post-Soviet Russia

By Baldandorj Batjargal

Regional Disparity in China 1985-1994: Effects of Globalization and Economic Liberalization

By Dapeng Hu and Masahisa Fujita

Regionalism in Post-Cambodian Conflict in South-East Asia: The ASEANization Process and Prospects for One South-East Asia

By A.K.P. Mochtan

Why Everybody Loves Flipper: A Political Economic Analysis of the US Dolphin Safe Legislation

By Achim Körber

Books published by outside publishers:

Caring and Sharing Environmental Resources

By Jyoti Parikh, Indira Gandhi Institute of Development Research

Household Lifestyles: The Social Dimension of Structural Economics

By Faye Duchin, Island Press

UNU/INTECH

Discussion papers:

#9701 "China's National Innovation System Approach to Participating in Information Technology: The Innovative Recombination of Technological Capability" by Shulin Gu and Edward Steinmueller, May 1997

#9702 "Technology Generation and Technology Transfers in the World Economy: Recent Trends and Implications for Developing Countries" by Nagesh Kumar, June 1997

#9703 "Technology Acquisition, De-regulation and Competitiveness: A Study of the Indian Automobile Industry" by Krishnan Narayanan, September 1997

#9704 "Multinational Enterprises and Export-Oriented Industrialization in the Host Countries: An Empirical Analysis for the US and Japanese Affiliates" by Nagesh Kumar, September 1997

#9705 "The World Market for Telematics Applications to Education: Challenges and Opportunities for Industrialized and Developing Countries" by Maria-Ines Bastos, November 1997

Books published by commercial publishers:

Technology, Market Structure and Internationalization: Issues and Policies for Developing Countries
By Nagesh Kumar and N.S. Siddharthan, Routledge and UNU Press

UNU/INRA

Indigenous African Food Crop Preparations as Compared to Those of Introduced Foods Produced in Africa and Imported Foods: Southwestern Nigeria
By S.H. Abiose and T.O. Omobuwajo

Field Survey of Mineral Resources in Zambia and Issues Associated with Their Management and Sustainable Development
By S. Simukanga, S.H. Mambwe and J.H. Phiri

Field Survey of Water Resources, Their Conservation, Management and Utilization for Sustainable Development in Anambra and Benue States of Nigeria
By F.O.R. Akamigbo

UNU/IIST

Technical reports and notes:

A Combination of Interval Logic and Linear Temporal Logic
By Qiu Zongyan and Zhou Chaochen

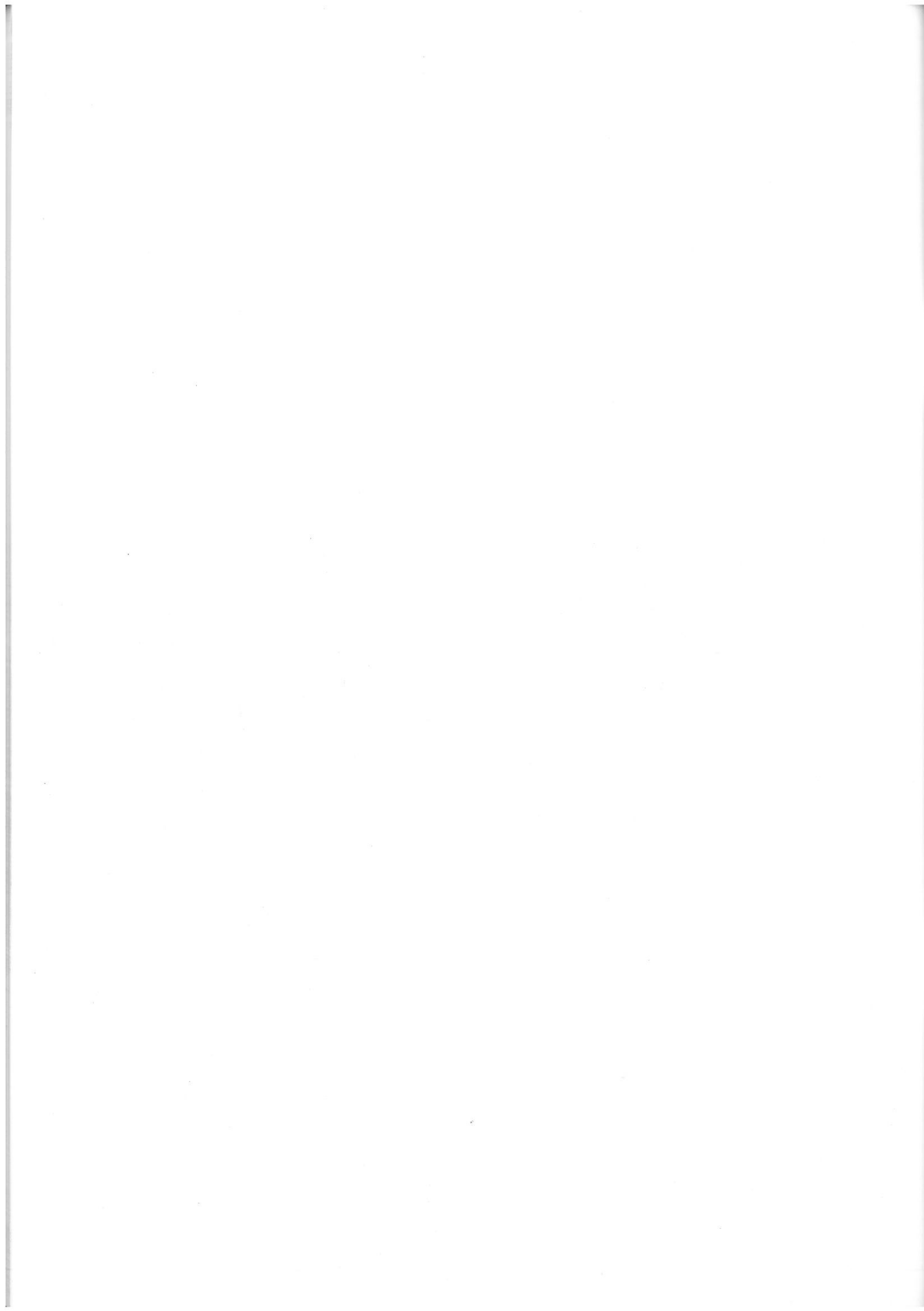


- A Computer-Aided Geometric Approach to Inverse Kinematics*
By Fu Hongguang, Yang Lu, and Zhou Chaochen
- A Course on Formal Methods Using RAISE*
By Aristides Dasso
- A Financial Information System*
By Do Tien Dung, Chris George, Hoang Xuan Huan, and Phung Phuong Nam
- An Efficient Construction of a Domain Theory for Resources Management: A Case Study*
By Roger Noussi
- Checking Hybrid Automata for Linear Duration Invariants*
By Li Xuan Dong, Dang Van Hung, and Zheng Tao
- Checking a Regular Class of Duration Calculus Models for Linear Duration Invariants*
By Pham Hong Thai and Dang Van Hung
- Combining and Distributing the Financial Information System*
By Do Tien Dung and Chris George
- Compositional Reasoning of Concurrency Using Assumption-Commitment Paradigm*
Xu Qiwen and Mohalik Swarup
- Discrete Time Network Algebra for a Semantic Foundation of SDL*
J. Bergstra, C.A. Middelburg, and R. Soricut
- Discrete-time Process Algebra and the Semantics of SDL*
J. Bergstra, C.A. Middelburg, and Y.S. Usenko
- Duration Calculus with Weakly Monotonic Time*
Paritosh K. Pandya and Dang Van Hung
- Formal Model For Competing Enterprises, Applied to Marketing Decision-Making*
By Tomasz Janowski and Rumel V. Atienza
- Knowledge-Based Systems: Formalisation and Applications to Insurance*
Souleymane Koussoubé
- Metropolitan In-street On-route Passenger Transport: Monitoring and Control*
By Gueorgui Satchok
- Modelling and Verification of Biphase Mark Protocols in Duration Calculus Using PVS/DC*
By Dang Van Hung
- MultiScript I: The Basic Model of Multilingual Documents*
Myatav Erdenechimeg, Richard Moore, and Yumbayar Namsrai
- MultiScript II: Displaying and Printing Multilingual Documents*
By Yumbayar Namsrai and Richard Moore
- MultiScript III: Creating and Editing Multilingual Documents*
By Myatav Erdenechimeg and Richard Moore
- Neighbourhood Logic & Interval Algebra*
By Arun K Pujari
- Notes on Neighbourhood Logic*
By Suman Roy and Zhou Chaochen
- Neighbourhood Logics: NL and NL2*
Rana Barua and Zhou Chaochen
- Orthogonal Formalisation of CORBA*
By Vladimir Zadorozhny
- On the Use of Control Symbols in the Mongolian Script Encoding*
By Yumbayar Namsrai, Richard Moore, and Myatav Erdenechimeg
- Rigorous Design of a Fault Diagnosis and Isolation Algorithm*
By Gao Jianping and Xu Qiwen
- Semantics and Logic for Provable Fault-Tolerance: A Tutorial*
By Tomasz Janowski
- Specification-based Testing*
By Marisa Sanchez
- Specification of a Switching Communications System*
By Hoang Thi Tung Lam and Richard Moore
- Timed Frame Models for Discrete Time Process Algebras*
J. Bergstra, C.A. Middelburg, and B. Warinschi
- Towards an Integrated CORBA/RAISE Semantic Interoperable Environment*
By Vladimir Zadorozhny
- Towards a Theory of Sequential Hybrid Programs*
By Paritosh K. Pandya, Wang Hanpin, and Xu Qiwen



Annex 4: UNU Depository Libraries around the World

Australia:	National Library of Australia, Canberra	Jordan:	The University of Jordan Library, Amman
Bahrain:	Bahrain University Library, Manama	Kenya:	University of Nairobi Library, Nairobi
Bangladesh:	Bangladesh Institute of Development Studies Library, Dhaka Dhaka University Library, Dhaka	Malaysia:	University of Malaya Library, Kuala Lumpur
Belgium:	Bibliothèque Royale Albert 1er, Brussels Commission of the European Communities Library, Brussels	Mexico:	Biblioteca Daniel Cosío Villegas, Mexico City
Botswana:	University of Botswana Library, Gaborone	Nepal:	Royal Nepal Academy of Science & Technology Library, Kathmandu
Canada:	McGill University Libraries, Quebec University of Toronto Library, Toronto	Netherlands:	Universiteitsbibliotheek (University Library), Amsterdam
China:	National Library of China, Beijing	Nigeria:	National Library of Nigeria, Lagos
Colombia:	Biblioteca General, Universidad de los Andes, Bogotá	Peru:	Biblioteca Central de la Pontificia, Universidad Católica del Perú, Lima
Denmark:	Det Kongelige Bibliotek (The Royal Library), Copenhagen Statsbiblioteket (State and University Library), Århus	Philippines:	University of the Philippines at Los Baños Library, Laguna University of the Philippines Law Complex Library, Quezon City
Ethiopia:	Addis Ababa University Libraries, Addis Ababa	Poland:	Biblioteka Szkoły Głównej Planowania i Statystyki (Library of the Central School of Planning and Statistics), Warsaw
Fiji:	The University of the South Pacific Library, Suva	Saudi Arabia:	Ministry of Planning Library, Riyadh
Finland:	Helsinki University Library, Helsinki	Senegal:	Bibliothèque de l'Université de Dakar, Dakar
France:	Bibliothèque nationale, Paris	Sierra Leone:	Fourah Bay College Library, Freetown
Germany:	Die Deutsche Bibliothek, Leipzig Universitätsbibliothek, Freiburg	Sri Lanka:	Marga Institute Library, Sri Lanka Centre for Development Studies, Colombo
Ghana:	The Balme Library, University of Ghana, Accra	Surinam:	United Nations Depository Library, Anton de Kom Universiteit, Paramaribo
Guatemala:	Biblioteca Central, Universidad de San Carlos de Guatemala, Guatemala City	Sweden:	University Library, Lund University of Uppsala Library, Uppsala
Guyana:	University of Guyana Library, Georgetown	Tanzania:	University of Dar es Salaam Library, Dar es Salaam
Hungary:	Library of the Hungarian Parliament, Budapest	Thailand:	Central Library, Chulalongkorn University, Bangkok
Iceland:	Landsbókasafn Islands (National Library of Iceland), Reykjavík	Trinidad & Tobago:	The Main Library, the University of the West Indies, Trinidad
India:	Bangalore University Library, Bangalore H. T. Parekh Library, Madras Jawaharlal Nehru University Library, New Delhi The National Science Library, New Delhi	Tunisia:	Arab League Educational, Cultural & Scientific Organization Library, Tunis
Indonesia:	National Library of Indonesia, Jakarta	Uganda:	Makerere University Library, Kampala
Israel:	Elias Sourasky Library, Tel-Aviv University, Tel-Aviv	United Kingdom:	The British Library, London
Jamaica:	University of the West Indies Library, Kingston	United States:	Joint Bank-Fund Library, Washington, D.C. The Library of Congress, Washington, D.C.
Japan:	National Diet Library, Tokyo University of Tokyo Library, Tokyo	Zambia:	The University Library, Lusaka
		Zimbabwe:	University of Zimbabwe Library, Harare



(Continued from the inside front cover.)

UNU International Institute for Software Technology (UNU/IIST), Macau (July 1992)

UNU/IIST helps developing countries strengthen capabilities and become self-reliant in three areas: the development of software, university-level software curriculum development, and participation in international software research. UNU/IIST also helps bridge gaps between theory and practice, university and industry, consumer and producer, and industrialized countries and developing ones. In its programme activities, UNU/IIST concentrates on advanced joint research and development, and on dissemination of public domain software and publications – all involving fellowships at UNU/IIST in Macau and with partners in developing countries.

UNU Institute for Natural Resources in Africa (UNU/INRA), Accra, Ghana, with a Mineral Resources Unit in Lusaka, Zambia (April 1990)

UNU/INRA is helping to rehabilitate Africa's natural resources. Its main objectives are to strengthen African research institutions, mobilize scientists and technologists throughout the continent, and empower them with knowledge so that they can formulate self-reliant policy options. UNU/INRA's activities focus on soil and water conservation and management, indigenous food crops and other useful plants, and mineral resource development.

UNU Institute of Advanced Studies (UNU/IAS), Tokyo, Japan (April 1996)

UNU/IAS is the University's newest research and training centre. It develops original, forward-looking solutions to problems at the interface of societal and natural systems. Its research programme investigates three interlinked themes of environmentally sustainable development: eco-restructuring for sustainable development, mega-cities and urban development, and multilateralism and governance. It also has a postgraduate education programme offering Ph.D. fellowships and short training courses in the above three themes.

The Academic Division at the UNU Centre in Tokyo also coordinates programmes and project networks involving institutions worldwide on subjects such as human rights, mountain ecology and African development.

The University has two specialized programmes. One is the **Programme for Biotechnology in Latin America and the Caribbean (UNU/BIOLAC)**, located in Caracas, Venezuela (July 1988), which develops and promotes biotechnology in the region. The other is the **UNU International Network on Water, Environment and Health (UNU/INWEH)**, located in Hamilton, Canada (October 1996), which integrates international expertise into a programme of education, training, research and technology transfer on major issues that relate to water, environment and human health. The UNU also has the **International Leadership Academy (UNU/ILA)**, located in Amman, Jordan (April 1995), to serve as a focal point for the exchange of information and experience among young future leaders of the world.

Postgraduate training activities

Between 1976 and 1997, approximately 1,600 UNU fellows received postgraduate training in UNU networks. The UNU's postgraduate training programme strengthens institutional capacities in developing countries by promoting self-reliant development and providing opportunities for scholars and scientists to be involved in UNU research networks. Fellows are selected on the basis of three criteria: their work must be in an area of concern to the University, they must be recommended by their home institution, and they must be committed to returning to work at their home institution when their training is completed.

Dissemination activities

The University has its own press that produces academic publications and cooperates in the production of five journals. *Work in Progress*, *Nexions* and various brochures issued by the UNU's Public Affairs Section are the main information vehicles used in reporting research and ongoing developments within the University's academic networks.

Financing

The UNU receives no funds from the regular UN budget. Its activities are supported entirely by voluntary contributions from governments, agencies, international organizations, private companies and foundations. The University's basic annual income for operating expenses comes from investment income derived from its Endowment Fund. The annual budget in 1997 was approximately US\$39 million.



The United Nations University

Public Affairs Section
The United Nations University
53-70, Jingumae 5-chome
Shibuya-ku, Tokyo 150-8925
Japan
Telephone: (03) 3499-2811
Fax: (03) 3499-2828
E-mail: mbox@hq.unu.edu
Internet: <http://www.unu.edu>