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NOTE

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

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I. INTRODUCTION

1. The year 1987 was a major one for changes in the United Nations University. The second Rector, Mr. Soedjatmoko, completed his tenure in August and the newly appointed third Rector, Professor Heitor Gurculino de Souza, began his tenure at the beginning of September. In November, the Government of the Netherlands informed the University of its intent to make a contribution of f. 45 million (equivalent to \$US 23.1 million) to the University's Endowment Fund and to provide suitable premises for the establishment of a research and training centre on new technologies in Maastricht. The Council held its twenty-ninth session in July at the University's first research and training centre, the World Institute for Development Economics Research (WIDER), in Helsinki. At the session, the Council paid tribute to the outgoing Rector and welcomed the incoming Rector. The report of the Council-appointed Ten-Year Evaluation Committee on the activities and institutional structure of the University was also completed and presented to the Council. The year was also the final one for the first Medium-Term Perspective for 1982-1987 and the programme and budget for the biennium 1988-1989 was approved by the Council at its thirtieth session, held in December at Tokyo.
2. With the conclusion of the first medium-term perspective and the completion of most of the research projects, the results are being channelled into various forms of dissemination and, in particular, a large number of manuscripts reflecting the research results have been or are being produced.
3. Research, training and dissemination have been carried out within the following nine programme areas: peace and conflict resolution; the global economy; energy systems and policy; resource policy and management; the food-energy nexus; food, nutrition, biotechnology and poverty; human and social development; regional perspectives; and science, technology and the information society.
4. Preparations for the second medium-term perspective continued with revisions to the draft paper presented to the Council at its twenty-eighth session in December 1986. Since the beginning of 1987, a number of planning seminars were held at the Centre focusing primarily on the five programme areas of the draft second medium-term perspective. Following the completion of the revised draft, the Planning Committee, prepared project ideas for each of the five areas for review. These ideas were presented as a discussion paper, which was discussed at a Scientific Advisory Meeting held from 14 to 16 April at the Tokyo Centre. The discussions served as an input to the preparation of the draft programme and budget of the University for the biennium 1988-1989.
5. At its twenty-ninth session, in July 1987, the Council requested that a further revision of the medium-term perspective be undertaken by the incoming Rector. The new Rector asked that submission of the new revision be postponed until December 1988.
6. The adoption of austerity measures, which began in 1986 in order to compensate for the high value of the Japanese yen, continued as the financial situation grew worse. Most of the University's endowment investments are held in dollars, but roughly half of the expenditures of the University Centre are in yen. In addition to the selectively applied 20-per-cent cut in programme expenditures for the biennium that was implemented in 1986, posts were frozen to help cope with the crisis.

7. During the year, the Rector took financial and other necessary action to initiate the operations of the Institute for Natural Resources in Africa (INRA), including its initial programme of work, and to draw up a budget. Efforts also continued to mobilize the necessary additional financial resources required for INRA. Steps were also taken to identify potential candidates for members of the Board of INRA and the directorship.
8. Plans for the construction of a permanent headquarters building of the University made more progress in 1987 with the completion of the basic design of the building and the commissioning of the architectural design. Furthermore, the Government of Japan has made a provision in its draft budget for fiscal 1988 to start actual construction. Accordingly, subject to approval by the Diet, actual construction work will commence in the latter part of fiscal 1988. The University's Standing Committee on the Research and Training Centre, Japan, and the Permanent Headquarters Building met regularly throughout 1987 with all the parties involved to further the plans for construction and occupation of the headquarters building.
9. In 1987, there were 38 associated institutions of the University, which have significant roles in the implementation of its research and training programme. In addition, a large number of scholars and scientists at institutions in many countries throughout the world co-operated with the University during the year.
10. Among the McDonnell Distinguished Scholars at WIDER in 1987, Robert M. Solow of the Massachusetts Institute of Technology, who worked on a book on new approaches to macro-economics, was also awarded a Nobel Prize during the year.
11. In 1987, training courses were completed by 142 University Fellows; by 31 December 1987, 29 Fellows were in mid-course. The process of identification and selection of Fellows continued, and by the end of the year another 74 potential Fellows had been identified.
12. At at 31 December 1987, a total of \$US 192.2 million had been pledged to the Endowment and Operating Funds of the University by 44 Governments. Of this amount \$US 163.3 million had been received. During 1987, 11 Governments pledged and/or contributed \$US 9.1 million. The planned expenditures for the biennium 1986-1987 were set at \$US 46.3 million.

II. COUNCIL DEVELOPMENTS

13. The twenty-ninth session of the governing Council of the United Nations University was held from 6 to 10 July at the Dipoli Congress Centre in Espoo, a city near Helsinki. The thirtieth session was held at United Nations University headquarters in Tokyo, from 7 to 11 December.

14. The twenty-ninth session began with an opening ceremony, which was addressed by the Prime Minister of Finland, Mr. Harri Holkeri. During the session, the Council said farewell to the outgoing Rector, Mr. Soedjatmoko, whose term of office came to an end shortly after the session. A resolution was adopted in which the Council expressed its appreciation for "the outstanding and incalculable contribution he has made to the institution" and recognized his "outstanding leadership and untiring service". The Council also expressed its congratulations to the Rector-designate who was attending his last session as an appointed member.

15. Among the major items of business for the session were the report of the Ten-Year Evaluation Committee, which reviewed the University's first decade of work, and three external evaluations of specific projects. The Rector was requested by the Council to examine the report in detail and present concrete proposals which would be reviewed by the Committee on Statutes, Rules and Guidelines of the Council to produce recommendations for Council consideration. The incoming Rector was also asked to study the report and submit proposals based on his review to the thirtieth session. The Council resumed its discussion of the draft Medium-Term Perspective for 1988-1993, but deferred a decision on the document until the next session. The Committees on Programmatic and Institutional Development and Finance and Budget considered the preliminary outline of the 1988-1989 Programme and Budget of the University and reported to the Council as a whole. The Council received a progress report on the Institute for Natural Resources in Africa (INRA) and discussed a feasibility study on the establishment of a new research and training centre on new technologies. The Council authorized the Rector to proceed with preparations for the proposed new technology centre.

16. During the twenty-ninth session, a Colloquium on Hunger and Poverty was held at the premises of the World Institute for Development Economics Research (WIDER) in Helsinki. The speakers included some of the principal researchers in the WIDER study programme on this theme.

17. Throughout the twenty-ninth session, the members of the Council and staff of the University enjoyed the efficient co-operation and gracious hospitality of the Government of Finland.

18. At its thirtieth session, the Council welcomed the new Rector of the University, Professor Heitor Gurgulino de Souza, and heard his first policy statement regarding mainly his thinking on possible general directions for the University during his term of office and beyond. The Rector informed the Council that, given the short time that had elapsed since assuming the Rectorship, it had not been possible to prepare further revisions to the draft Medium-Term Perspective for 1988-1993. For that reason, he requested postponement of the discussion until the thirty-second session in December 1988.

19. The work of the thirtieth session concentrated mainly on the proposed programme and budget for the 1988-1989 biennium, the progress report on the establishment of a United Nations University research and training centre on new technologies in Maastricht, the Netherlands and the report of the Council of the

University for 1987 (January to December). The Council also took note of the progress reports on INRA, the permanent headquarters building in Tokyo, the proposed research and training centre in Japan, and the report on external evaluation in the United Nations University: selected topics on procedures and possible projects for future evaluation.

20. At its thirtieth session, the Council elected the following new Chairman and Vice-Chairmen of the Council for 1988:

Chairman: Professor Justin Thorens

Vice-Chairmen: Dr. Bashir Bakri
Professor Umberto Colombo
Professor Helge Gyllenberg
Professor M. G. K. Menon
Dr. Martha Mvungi
Professor Mihaly Simai

21. At the same session, the Council also elected the Chairmen and members of the committees of the Council for 1987:

Committee on Institutional and Programmatic Development

Professor Umberto Colombo (Chairman)
Dr. Marie-Thérèse Basse
Professor Joseph Ki-Zerbo
Professor M. G. K. Menon
Professor Yevgeniy M. Primakov

Committee on Finance and Budget

Dr. Bashir Bakri (Chairman)
Dr. Mary Berry
Mr. Kuniyoshi Date
Professor Keith Griffin
Professor Rehman Sobhan

Committee on Statutes, Rules and Guidelines

Father Alfonso Borrero (Chairman)
Professor Gerald Lalor
Dr. Martha Mvungi
Ms. Zhao Dihua

Committee on the Report of the Council

Professor Helge Gyllenberg (Chairman)
Professor Mihaly Simai

22. At its twenty-ninth and thirtieth sessions, the Council welcomed two new members who had been appointed in May and December 1987, respectively: Dr. Mihaly Simai and Mr. Kuniyoshi Date. Following the thirtieth session, Professor Candido Mendes de Almeida (Brazil) was appointed to the Council on 23 December 1987. (For a list of the members of the Council, see annex I to the present report.)

III. THE UNIVERSITY PROGRAMME (JANUARY-DECEMBER 1987)

23. Research, training and dissemination went forward in 1987 in nine programme areas. The programme areas, which evolved during the period of the University's first medium-term perspective (1982-1987), were the following: Peace and conflict resolution; The global economy; Energy systems and policy; Resource policy and management; The food-energy nexus; Food, nutrition, biotechnology and poverty; Human and social development; Regional perspectives; and Science, technology and the information society.

24. Within these programme areas, 75 research projects, as well as a number of exploratory activities, training programmes and dissemination projects, were carried out. Since 1987 was the last year of the first medium-term perspective, many of the research projects were brought to a conclusion during the year. Thus, the emphasis in the year under review, in much of the research programme, was placed on drawing conclusions, preparing publications, and planning the dissemination of results and follow-up activities.

Programme area 1: Peace and conflict resolution

25. This programme area explores the root causes of violence and insecurity at local, national and international levels, with a special emphasis on the dynamic interaction among the multiple factors that contribute to conflict.

(a) Peace and global transformation

26. Five workshops were held in 1987 to complete the research agenda of this major project. Papers on "The new technological challenge and its impact on the socialist societies of Eastern Europe" were presented at a meeting in Krakow, Poland, in March. In May, the plight of "Tribal peoples and development in East Asia" was the subject of a workshop in the Cameroon Highlands, Malaysia. A seminar on "Natural resources and world peace: the case of Latin America" was held at Maracaibo, Venezuela, in July. "Politicization of the military and the militarization of politics in Asia" was discussed at a meeting at Kathmandu, Nepal, in September. Finally, a conference on "Common security and the role of the State" met at Yokohama, Japan, in December. The papers presented at each workshop are being revised and edited for publication.

27. An Information Unit on Militarization and Demilitarization in Asia that has been set up in New Delhi has built up a data base on the countries of Asia and, at the same time, has trained young scholars to carry out research in that area. The work of the Unit continued during 1987, and was reported on in three issues of a newsletter published by the Unit. The newsletter also published commissioned articles and selections of work by trainee-researchers.

28. Work continued on a second composite document by the core group of project participants, synthesizing the conclusions of the project. The primary concern of the document is with the most deprived segments of humanity in the search for a more peaceful, just and humane world order.

29. Among different publications, a volume based on the background papers of the Expert Panel on Preparation for Societies of Life in Peace has been published with

a Foreword by the Secretary-General of the United Nations. It has been chosen as course material in Denmark and Canada.

(b) Maintaining outer space for peaceful purposes

30. From an initial focus on the demilitarization of outer space and the development of international law to support this end, the project has moved to a consideration of broader issues. Of particular concern is the impact of developments in outer space on nations that are unable individually to support a space-research establishment. After a series of consultations, an agreement was reached between the University and the Government of Austria to explore the rationale for a United Nations University Research and Training Centre on Outer Space Studies. The first stage is to consist of a detailed feasibility study. A four-member international working group for the study was established in May and met twice during 1987. It is reviewing the existing institutional framework for outer space studies, and will identify specific areas in which a new research and training centre could make a contribution. Its report will be submitted to the Council of the University in December 1988.

Programme area 2: The global economy

31. The locus of United Nations University studies in economics is the World Institute for Development Economics Research (WIDER), which was established in 1985 as a University research and training centre in Helsinki. In 1987, work continued on three major research themes: Hunger and poverty; Money, finance and trade; and Development and technological transformation. A number of the earliest, exploratory projects under these themes were completed in 1987, as work progressed in ongoing projects and new topics were identified for future attention.

32. As a result of the research completed, eight book-length manuscripts will be published. Two additional manuscripts have been submitted for publication and a number of others are in the late stages of preparation. Fourteen new titles were added to the Working Papers series in 1987. A second Study Group Report on the mobilization of international financial surpluses for development was published in April and was widely debated in the international press.

33. During 1987, a training programme for young African scholars was initiated in collaboration with the Bangladesh Institute of Development Studies in Dhaka. Six United Nations University-WIDER fellowships for a training course in economics and quantitative techniques were offered to selected candidates, of which three were taken. It is proposed to enlarge the training activities through co-operation with institutions in the developing countries as well as through programmes at WIDER itself.

34. Five outstanding economists, including one who later won a Nobel Prize, made extended visits to WIDER in 1987 as James S. McDonnell Distinguished Scholars and contributed greatly to the academic substance of the Institute's programme. Along with other visitors and staff members, they also contributed to the lively series of weekly seminars and lectures, which are open to the scientific community in Finland.

(a) Hunger and poverty: the poorest billion

35. The first project initiated under this theme has been completed, resulting in a four-volume series that has been accepted for publication under the overall title Hunger: Economics and Policy. A project on "Poverty, undernutrition and living standards" followed the earlier research and produced a collection of draft papers, which were discussed at a research conference at WIDER in July. A related group of country studies has looked specifically at the impact of the global recession on standards of living. A number of other research projects are examining, on a regional or comparative basis, the implications of differing development strategies and public policy programmes for nutrition and poverty.

36. One conclusion that emerged from the completed research in this area is that the attempt to grasp quality-of-life issues must go beyond the strictly economic problems to address questions that are usually thought of as lying in the realm of political philosophy and social evaluation. A project to integrate these concerns into the practical economic issues was planned in 1987, to be implemented in the following year.

(b) Money, finance and trade: reforms for world development

37. The major thrusts of research under this theme were global macro-economic policies and stabilization and adjustment policies for developing countries. The initial product of the research in the first area is a collection of papers that seek to explain the post-war success of international capitalism in generating high growth and employment in the immediate post-war period, and the forces that undermined the effectiveness of the system in the 1960s and 1970s. The purpose is to draw appropriate lessons for the 1990s. A related volume of papers compares the experience of Latin America and East Asia in handling debt and development policies. The emphasis here is on the efficacy of trade and financial liberalization, which has increasingly been presented as a virtual panacea for economic crisis.

38. A planning meeting in April launched a research project on new trade theories and the developing countries, in which the methodology of industrial organization theory is applied in the analysis of international investment and trade flows within particular industries in the developing world. Another new project is constructing an analytical history of how the developing countries have exercised influence on decision-making in the world economy. The roles of two economic super-Powers are being examined in two other projects; one project is studying Japan's trade surplus and its possible deployment through international capital markets as a source of development finance; the other is assessing the likely magnitude of the correction of the trade deficit of the United States of America and the impact of the correction on the world economy in general and the developing countries in particular.

39. Additional studies in macro-economic policy that were started in 1987 include a review of recent international efforts to reduce excessive commodity price fluctuations, and a simulation model of the impact of higher real wages on investment and employment levels. Individual researchers associated with WIDER are studying mineral-based industrialization strategies; household savings behaviour; and the interactions among unemployment, inflation and social corporatism at the national level.

40. Research on stabilization and adjustment policies began with a series of country studies, which are being circulated as discussion papers prior to possible publication. A volume containing an overview and synthesis was prepared and has been accepted for publication. An additional book on debt, stabilization and development was completed, using as a basis the papers presented at a 1986 conference in memory of Professor Carlos Dias-Alejandro; a companion volume of Professor Dias-Alejandro's collected essays has also been accepted for publication.

(c) Development and technological transformation: the management of change

41. Three lines of inquiry were pursued under this theme in 1987. One group of country studies analysed the experience since the 1950s with the acquisition, use, adaptation, diffusion and innovative development of technology in the third world. The aim was to identify those policies, plans and strategies that facilitated the absorption of modern technology on a self-sustaining basis.

42. An attempt to develop alternative, interdisciplinary approaches to technological transformation brought together a group of economists, cultural anthropologists and sociologists in a search for mechanisms that could separate the benefits of technological change from the social and cultural disruption that so often accompany it. Both substantive and methodological issues were addressed in the paper prepared for this project. A general volume dealing with knowledge, power and development was completed, along with a book dealing specifically with land use.

43. A new study on the relationship between the informal sector and State-directed development activities in the United Republic of Tanzania was started in 1987. Against a background of general economic crisis, the contribution of the various economic actors (including external agencies) to development are being examined.

Programme area 3: Energy systems and policy

44. United Nations University activities in this programme area are dedicated to research on integrated energy systems and the widespread diffusion of affordable, renewable sources of energy. Special attention is given to those systems which are appropriate for use in the rural areas of developing countries.

(a) Energy planning and management

45. The goal of this project is to devise and test methodological instruments that countries can use in energy planning within the overall framework of a national development plan. Research networks have supported the pilot applications of these instruments, in co-operation with governmental bodies. The preparation of training manuals and support for training courses is helping a number of countries to build their own teams to deal with energy planning and management. In 1987, work began on a new project to elaborate a rural energy planning framework for the various regions of Bolivia. Technical support is being provided by the Andean Pact Authority and the Institute of Energy Economics of the Fundación Bariloche in Argentina. A manual for rural energy planning was completed which, once revised, will make it possible to apply the methodologies developed in the Bolivian study to other Latin American countries.

46. An institute at the Universidade Federal do Rio de Janeiro in Brazil collaborated in producing a study on the relationship between energy consumption

and income distribution at the household level. It constructed a dynamic model which takes into account such factors as changes in population distribution between rural and urban areas, improvements of family income levels, and changes in end-uses of energy. The same group carried out a study of different methods of firewood consumption in rural areas.

47. Three monographs presenting the results of the above studies are in the process of being published. Three workshops were held in 1987, one in connection with the firewood study and a second on the relationship between farming methods and technology in Bolivia. The third workshop was held jointly with the Commission of the European Communities (CEC), to review the results of the network as a whole. The United Nations University network has benefited greatly from parallel research financed by CEC, with which there has been close collaboration on both methodology and application.

(b) Energy research and technology assessment

48. The report of the Energy Research Group, which was completed in 1986, was published in 1987 in English and French. It was discussed at the fourteenth session of the Committee on Natural Resources of the Economic and Social Commission for Asia and the Pacific in October. It also served as a background document for a colloquium on new and renewable sources of energy convened by the United Nations in October. Meanwhile, editorial work continued on 14 volumes of technical papers that support the recommendations of the Group's report. The Group has been a joint activity of the United Nations University and the International Development Research Centre of Canada.

(c) Research support for renewable energy research networks

49. The United Nations University has long been active in stimulating and strengthening a number of key centres for research on biofuels technology in developing countries, and in exploring and demonstrating effective ways of disseminating proven results. In 1987, a number of biofuels research projects were completed at the Guangzhou Institute of Energy Conversion in China, including studies on village energy systems, new anaerobic digestion techniques, solid biomass gasification and mono-fuel biogas engines or generators. The results were reported in 29 articles by the staff of the Institute. The Institute has developed into an international centre for biogas digester design and the management of biogas dissemination programmes.

50. The dissemination of biogas technology to rural areas in Guyana and Jamaica continued as a University activity in 1987, in many aspects drawing on the experience of the Chinese Centre. For example, two University fellows from Jamaica were trained at the Guangzhou Institute of Energy Conversion during the year. The Institute for Applied Science and Technology of Guyana has also acquired the experience to serve as a training centre for biogas digester construction and maintenance; three additional specialists associated with the University project in Jamaica completed training there in May. The planned phases of the project were essentially completed in 1987, but further research and application studies on biogas technology in all three countries seem certain to continue with government support.

(d) Integrated rural energy systems association

51. The Integrated Rural Energy Systems Association (INRESA) promotes the use of renewable energy sources in integrated systems capable of meeting the energy needs and supporting the productivity of rural communities in developing countries. Traditional, upgraded and new technologies are combined in ways that take account of essential social, cultural and economic characteristics of the communities they are designed to serve. A network of research institutes in developing countries participate in INRESA through co-operative projects and the exchange of findings. A number of small-scale research and development projects were completed by network members in 1987, including those on solar stills in Peru, fuelwood conservation in Sri Lanka, minimum-maintenance solar pumps in Ghana, enhancement of fuelwood productivity in Nigeria, and fuel briquette production from agricultural wastes in Egypt. The most important of the INRESA projects sponsored by the United Nations University involves seven universities and research organizations working on a simple solar water-disinfection technique. The results of all projects are shared throughout the network through the INRESA Newsletter, which was upgraded and had its circulation extended during 1987.

(e) Abstracts of selected solar energy technology (ASSET)

52. The publication of ASSET is the main activity of an information service in the field of solar, wind, and bioconversion energy technologies. The emphasis is again on technologies applicable to rural areas in developing countries. ASSET contains abstracts of recent books, articles, reports and conference papers on these technologies, as well as about the socio-economic and environmental aspects of their utilization. Seven issues of ASSET, comprising volume 8, were published in 1987. In June, the United Nations University reached an agreement with the Tata Energy Research Institute (TERI) in India to transfer the publication of ASSET to TERI starting in 1988. ASSET will continue to be a publication of the United Nations University, but will share the costs of publication - at considerably lower budget levels - and editorial responsibility with TERI.

Programme area 4: Resource policy and management

53. Research in this programme area is dedicated to identifying and helping to unblock areas of scientific uncertainty that inhibit the formulation of sound resource management policies. The investigation of resource-use problems in specific environments is carried out against a background of concern for a better scientific understanding of resource systems under conditions of rapid change.

(a) Agro-forestry: an alternative to the destruction of tropical forests

54. Systems of cultivation that combine trees, crops and livestock can offer economically attractive and ecologically sustainable alternatives to monoculture in the humid tropics, helping to meet human needs for food, fuel and timber while reducing pressure on the remaining forests. This project experiments with new combinations and provides scientific assessments of both traditional and new agro-forestry practices. In 1987, a number of studies were completed at the main centre for United Nations University research in this area, the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) in Costa Rica. They included studies of the effects of tree thinning on the productivity of pine-pasture systems, and on the economic importance of cocoa trees. Models were devised to describe the effect of shading in agro-forestry systems and the interaction of economic and biological

factors in cattle grazing under tree plantations. A report on agro-forestry techniques in the central forest area of Ghana was completed. A research team working in Senegal conducted a study on the establishment and maintenance of specialized live plant collections for use in agro-forestry. Several manuscripts are being prepared for publication.

(b) Highland-lowland interactive systems

55. Research in this area is designed to improve understanding of the physical, social and economic effects of resource use in highland regions as manifested in the highlands themselves and in adjacent lowlands. Co-operation among African scientists working in this area was reinforced by the creation, following a workshop in 1986, of a new scientific association under the partial sponsorship of the United Nations University, the Association for African Highland and Mountain Research. The proceedings of another 1986 workshop, on the Himalayan/Ganqes system, were published in 1987, and a further workshop was held in October to discuss a new development strategy for the Himalayan region.

(c) Resource use of frontier areas and pioneer settlements

56. Different settlement patterns in newly opened areas have different ecological consequences. This project investigated the question of which settlement systems minimize environmental destruction and increase the chances for successful, sustainable human habitation of frontier areas. The report of the project's results was completed and edited in 1987. In addition, a monograph on land colonization in Central America was completed.

(d) Climatic, biotic and human interactions in the humid tropics

57. Natural scientists are increasingly inclined to see vegetation and climate as two major components of a single, mutually interactive natural system whose workings can be profoundly affected by human activity. This United Nations University project is contributing to the scientific understanding of tropical forest ecology through the development of this system approach. Three principal activities were carried forward in 1987.

58. A subproject on the effects of deforestation and land-use on soil, water, micro-climate and agricultural productivity monitored the harvests at a field site in south-eastern Nigeria for the third year. The third consecutive year of cultivation is normally disastrous; data collected from this site offered some surprising explanations for the expected decline in productivity. Rather than soil erosion or nutrient exhaustion, the most important factor was found to be the buildup of parasitic pests in the soil. Different patterns of cropping showed different levels of resistance; longer-term experiments are under way to reveal the potential or sustainability of the more promising systems. The work is being carried out in co-operation with the International Institute of Tropical Agriculture in Ibadan, Nigeria.

59. A second subproject is studying the effects of climatic variations on agriculture in the Central Sierra of Ecuador. This is a joint activity of the International Institute for Applied Systems Analysis in Vienna and the United Nations Environment Programme. The research was completed in 1987 and the report of findings has been published.

60. The third aspect of work in the project was the planning for a second international conference on geophysiology, following the groundbreaking conference on the geophysiology of Amazonia that was held in 1985. The second conference is scheduled to take place in Indonesia in 1988.

(e) Indigenous household gardens

61. The economic and nutritional potential of household gardens in the tropics has been relatively neglected in research. A workshop on the promotion of home gardens in Latin America was held in September in Costa Rica in co-operation with CATIE and the United Nations University for Peace. In planning this meeting, it became apparent that basic knowledge was insufficient to support sound decision-making in the region; as a result, a number of state-of-the-art surveys were commissioned and their results presented. Subsequent consultations in other regions made it clear that the dearth of scientific information on home gardens is widespread, and that many gaps remain to be filled.

(f) Human response to global change

62. This exploratory activity involves the United Nations University with a number of other scientific organizations in drawing up the outlines of a collaborative research programme in human responses to global change. Conceived as a parallel to the International Biosphere-Geosphere Programme organized by the International Council of Scientific Unions, it would assess the risks and vulnerabilities created by global and regional environmental change. The objective would be to identify possible policy alternatives to ensure sustainable development and habitability of the globe. An organizational meeting was held in June and in November, an interim steering committee met to develop plans for a symposium to be held in 1988 to define the intellectual and operational framework for such a programme.

Programme area 5: The food-energy nexus

63. Lack of food and lack of energy are two mutually reinforcing aspects of the general crisis of the poor and urban areas. The food-energy nexus programme addressed issues of access as well as production of food and energy, in searching for self-reliant development strategies. In 1987, the programme's final year, the two main areas of work were integrated food-energy systems and alternative urban development strategies.

(a) Integrated food-energy systems

64. A workshop on integrated food-energy systems in China took place in Beijing in October. It was organized jointly with the Chinese Association of Science and Technology. A graduate seminar on the work of this project was held at the Ecole des Hautes Etudes en Sciences Sociales in Paris during the 1986-1987 academic year. As a result of a request from the United Nations Environment Programme, teaching materials and background papers based on food-energy nexus research is being provided to a programme of ecodevelopment projects initiated by the African Ministers of the Environment. As a follow-up to food-energy nexus conferences held in earlier years, the decision was taken to establish an independent international network on biomass-based agro-industrial energy systems, to further advance South-South co-operation in this field. The network will be co-ordinated by the Global Energy Centre in New Delhi, with the support of the Government of India and the Government of Brazil.

(b) Alternative urban development strategies

65. A workshop was held in Paris in June on the theme of "Everyday structures and the working of the real economy in the city: going beyond the formal/informal dichotomy". Case studies of six major cities were presented and discussed. These papers are now being revised for publication. A team of researchers based at the University of Warsaw completed a subproject on the production of food in big urban agglomerations, using Poland as a case study. As part of the observance of the United Nations International Year of Shelter for the Homeless, a seminar on communication and urban strategies was organized with the Technological Research and Exchange Group in France. This activity also extended to sessions at regional workshops for non-governmental organizations in São Paulo and Nairobi, as well as a workshop at the Habitat Forum in Berlin in June.

66. A revised and expanded edition of the "Urban self-reliance directory" was published in January, as a joint product of the United Nations University and the International Foundation for Development Alternatives. The June issue of the Food and Nutrition Bulletin, published by the United Nations University, featured a selection of papers on urban agriculture from the food-energy nexus programme. Several manuscripts are also being prepared for publication.

Programme area 6: Food, nutrition, biotechnology and poverty

67. The work in this programme area seeks to strengthen the scientific data base for research on nutrition-related issues, to analyse the social and economic effects of inadequate nutrition and to develop tools for the evaluation of nutrition policies and programmes. Priority has also been given to research in biotechnology, designed to address specific needs in developing countries.

68. A continuing emphasis on strengthening the capacity of developing country institutions for research, training and policy formulation in food and nutrition has been pursued through training and an active publications programme. Volume 9 of the quarterly Food and Nutrition Bulletin was published in 1987.

(a) Social and economic consequences of chronic energy deficiency

69. This project investigates the social and economic costs of chronic undernutrition, which is estimated by the World Health Organization (WHO) to affect some 600-800 million people world wide. In 1987, the data collected in United Nations University research projects in China, Colombia, Ethiopia, Guatemala, Indonesia, the Philippines and Thailand documented the decrease in physical activity in undernourished populations, and analysed some of the consequences. A study of the effects of food supplementation in the Philippines was also carried out.

70. In August, the newly-formed International Dietary Energy Consultative Group met for the first time. The United Nations University is the joint sponsor of the group along with the Sub-Committee on Nutrition. Representatives of WHO and the Food and Agriculture Organization of the United Nations (FAO) participated in the meeting, along with leading researchers in the field from 16 countries. The commissioned review-papers, original research reports and discussions from the meeting are being edited for publication.

(b) Nutrition and primary health care

71. In this joint project with the United Nations Children's Fund (UNICEF), the United Nations University has enlisted social scientists to study the effects of nutrition and primary health care programmes on the knowledge, attitudes and health-seeking behaviour of people in developing countries. In 1987, researchers working in 15 countries tested and refined an innovative set of methodologies for field assessments. A workshop in Sri Lanka brought all the researchers together to give their interim reports and finalized a publication on the project's methodology. This volume, entitled Rapid Assessment Procedures (RAP) for Nutrition and Primary Health Care: Anthropological Approaches to Improving Programme Effectiveness, was published in August.

72. A symposium of the Asian researchers in the project was held in conjunction with the fifth Asian Congress of Nutrition at Osaka in October. A biannual newsletter, entitled RAP News, was initiated in August, and is being distributed to all the project participants, the country offices of WHO and UNICEF, and to others interested in this new field and methodology. The RAP methodology is already being adapted for a multicountry study of nutrition of the elderly by the International Union of Nutrition Sciences, with which the University is co-operating.

(c) International network of food data systems (INFOODS)

73. The need to improve the quantity, quality and availability of food composition data is urgent. In agreement with the Sub-Committee on Nutrition, WHO and FAO, the University is implementing a comprehensive approach to this problem. It published the first issue of the new quarterly Journal of Food Composition and Analysis in December. In addition, four issues of the INFOODS Newsletter were published during the year to provide information on the activities of the INFOODS secretariat and networks. The project also continued work on an extensive series of manuals and directories to help researchers find, use, collect, compile and manage food composition data in a consistent and comparable format. The first of these volumes, Food Composition Data: A User's Perspective, was published in October. Progress was also made on the computer programming for a prototype regional data base that will make it possible to store data from a region and retrieve it for a variety of uses, and to exchange data with other regions.

74. Regional and subregional INFOODS groups are now operating in Eastern and Western Europe, North America, Latin America, Oceania, and Asia. Four of these groups held regional meetings in 1987. Four additional groups are planned.

75. As a complement to INFOODS, external funds have been obtained from the United States National Cancer Institute for the compilation of a directory of available food intake data. A copy of all these data will be kept by the INFOODS secretariat for use with the best available food composition data. The complementary project is known by the acronym INFID.

(d) Functional consequences of iron deficiency

76. A United Nations University-sponsored study of the effects of iron deficiency on the test performances of 2,000 school children in Thailand confirmed the highly significant correlation between iron deficiency and cognitive performance which had been indicated by earlier University projects. A symposium devoted chiefly to United Nations University studies on the effects of iron deficiency on behaviour, resistance to infection, work capacity and productivity was held at the fifth Asian

Nutrition Congress. A new research project to examine the effect of mild iron deficiency, including cognitive performance, on local populations was initiated in Zagreb, funded in part by the Ministry of Health of Yugoslavia.

(e) Nutritional guidelines for health in Latin America

77. The United Nations University organized a workshop on nutritional guidelines jointly with the Fundación Cavendes of Venezuela. It was held at Caracas in November, and involved most of the leading nutrition authorities in Latin America. Two sets of guidelines were produced based on commissioned papers; one is a qualitative guide for nutrition educators and the general public, while the other more quantitative guide is meant for nutrition scientists and for training. A book containing the papers and discussions of the workshop is being edited for publication.

(f) Consultative meeting on food and nutrition programme

78. In September, a consultative meeting was held at Cambridge. The group reviewed the activities of the programme, suggested new programme activities, and considered possible future forms of structure and financing.

(g) Biotechnology

79. A cluster of four projects comprised United Nations University activity in biotechnology in 1987. The longest established of these is the conducting of research on nitrogen fixation in the root system of rice. A workshop held in February at Bangkok reviewed the progress of the research to date, with the participation of 21 scientists from 14 countries. The participants agreed to produce a manual of research techniques, and made recommendations for future work in this area. The second phase of four studies being carried out in China, Malaysia, Thailand and Viet Nam proceeded during 1987 with the continued support of the University.

80. A series of studies on fermented foods, such as tempe (an Indonesian vegetable cheese made from soybeans) and fermented fish products, continued in 1987. In July, the first issue of the Tempe Newsletter was published by the Nutrition Research and Development Centre (NRDC) of Indonesia, with United Nations University support. The newsletter is meant to promote communication among researchers interested in tempe and similar fermented foods. The inaugural issue carried synopses of the research on tempe carried out by United Nations University Fellows during training at the Centre. Preparations are under way for the production of video films on the production and popularization of tempe.

81. A United Nations University network of eight scientific institutions in Latin America and Canada continued to collaborate on research for the diagnosis and prevention of the destructive ruminant disease brucellosis. Representatives of the eight institutions gathered for a consultative meeting in Valdivia, Chile, in October. They were particularly occupied with the implementation of a new computerized communication link among the participating institutions. All eight institutions are now on line, and researchers are exchanging information to assist with their projects to an increasing extent. The computer conference, a joint undertaking of the University and the International Development Research Centre of Canada, will be monitored until late 1988 and then evaluated for its potential as a method of facilitating international scientific collaboration.

82. The United Nations University is making a strenuous effort to identify and develop biotechnology projects in Africa. In 1987, three research projects were being supported, one of which submitted a report on integrated fermentation technology for indigenous fermented foods.

Programme area 7: Human and social development

83. Development is as much a social process as an economic one. The impact of development change on the welfare and rights of individuals, families, groups and communities is examined in this programme area.

(a) Household, gender and age

84. This project analyses the changing relationship among members of households through different stages of life, and places them in the context of major historical, socio-economic transitions taking place in the developing countries. Eight field studies have collected data in Argentina, Brazil, Chile, China, Colombia, Côte d'Ivoire, Kenya and Sri Lanka. Five of these studies were completed in 1987. An appraisal meeting to review their findings, along with the preliminary results of the remaining studies, took place in Italy in April. A videotape on the Colombia study, entitled "The impact of the demographic transition on the household in Bogotá", was released in both English and Spanish versions. At the Centro de Estudios sobre Desarrollo Económico at the Universidad de los Andes in Colombia, five United Nations University Fellows completed a training programme on the subject-matter and methodology of the project. Several manuscripts are also being prepared for publication.

(b) A comparative study of women's work and family strategies in South and South-East Asia

85. Using women's work as a distinguishing variable among types of families, this project examines the ways in which the development process affects women's employment opportunities and decisions about work, in the context of the general strategies of their families for survival and upward mobility. The research included eight field studies (in Bangladesh, India, Malaysia, Nepal, Pakistan, the Philippines, Sri Lanka and Thailand) as well as a comparative study based on existing data sets and research materials. The objective is to devise an analytical framework for the integration of findings about women and families into the larger body of development studies. The results of the studies were discussed at a workshop held at Kathmandu in December.

(c) Poverty and welfare resource allocation: social support systems in transition

86. Formal and informal social support systems in developing countries are changing rapidly under the pressures of modernization, demographic change and urbanization. The care and support available to the elderly are under study in seven selected communities in Brazil, Egypt, India, the Republic of Korea, Singapore, Thailand and Zimbabwe. A combination of quantitative and qualitative observations are being used to identify the changing nature of welfare resources available in relation to growing needs.

87. The research instruments for the field studies were tested in February, after which field-work in the seven communities began. Five surveys have been completed. The results are being checked for consistency and comparability in preparation for data analysis. An expert group consultation meeting was convened in August to plan the synthesis and publication of the findings.

(d) Comparative studies on social transformation

88. This project has been built around a series of conferences, each of which scrutinized a historical period of major social transformation. Previous conferences have focused on the events surrounding the Meiji restoration in Japan, the modernization process in Mexico, and the Russian revolution. The fourth and final conference in the series took place in 1987, and was devoted to research on the pre-conditions of the Chinese revolutions of 1911 and 1949. Using the results of the previous conferences, it adopted a comparative perspective.

(e) New rural-urban configurations in developing countries

89. A planning meeting was convened in November to develop a programme of research on the implications of shifts in population distribution between rural and urban areas among urban centres, and the growth of very large cities. The consultative group, which included representatives of United Nations agencies, other international organizations and academic institutions, reviewed current international research efforts and identified gaps in policy-relevant research. The group recommended avenues for future United Nations University study and discussed ways of creating links between the University and other United Nations bodies, and academic researchers.

(f) Perceptions of desirable societies in different religious and ethical systems

90. The view of religious thinkers on contemporary issues is increasingly influential, and often may provide insights on how development might proceed in harmony with the values deeply held in a society. Three sections of this project dealing with Christianity, Islam and Buddhism have been completed and the resulting collections of papers are being edited for publication. Participants in the study on Hinduism met in Delhi in March to discuss the specific approaches of Hinduism to social issues, including its critique of modernity and the practical idealism represented in such movements as Sarvodaya and Svadhyay. A number of papers were commissioned following the meeting.

91. Two conferences were held at Tokyo on subjects relating to the project in 1987. In April, a symposium on "The future of mankind and co-operation among religions" discussed the forms and possibilities of inter-religious co-operation. A seminar on "Science, technology and spiritual values: an Asian approach to modernization" took place in May. It provided a reflection on the contribution of religions to the critique of modern societies, from an Asian perspective.

(g) Economic aspects of human development

92. Research continued on five topics: alternative development experiences; development paradigms and the economy-culture interface; alternative epistemologies and methodologies; foundations of economics and alternative development; and obstacles to development: the case of Argentina (1945-1985). A meeting was held at Geneva in June, where papers on the first three topics were presented and

discussed. The project's main ideas and conclusions were presented at the North-South Round-table on "Managing human development" which was sponsored by the United Nations Development Programme (UNDP) at Bucharest in September.

(h) The global impact of human migration

93. Data gathered from 400-500 migrant workers from seven Asian countries to the Arab world form the empirical base for this study. The data base has been computerized at the Marqa Institute in Sri Lanka, where it is available for further research and retrieval. Country studies derived from this collection were edited and reviewed for publication in 1987. Further analytical and conceptual papers on the political and socio-cultural aspects of migration were completed, along with a case study of immigration to France. A survey of research on migration by the United Nations and other international agencies was also prepared, covering three topics: the formulation of international policies, conventions and regulations governing migration; technical assistance for problems of migration, including refugees; and other issues relating to migration.

94. The United Nations University also acted as an associate executing agency, in co-operation with the International Labour Organisation (ILO), of a research programme on the "Enhancement of household capacity in the post-migration phase". This is a subprogramme of the Asian Regional Programme on International Labour Migration, which is funded by UNDP. A workshop in Bangkok in December brought together researchers from Bangladesh, India, the Republic of Korea, Pakistan, the Philippines, Sri Lanka and Thailand to review final reports of data from each country on approximately 50 households of returned migrant workers. Several manuscripts are also being prepared for publication.

(i) Ethnic minorities and human and social development

95. The products of this project include a computerized World Guide to Ethnic Minorities, which is being centralized at El Colegio de México in Mexico City. Data have been collected thus far on more than 800 ethnic groups. Co-operating institutions around the world have provided inputs in return for access to the data bank. The Guide includes items on the principal social, economic and cultural characteristics of each minority, as well as information on major economic and political problems arising from relations with other ethnic groups or with the state. Reference is also included to international dimensions where they exist.

96. An international seminar on the "New faces of racism", held at Amsterdam in October, dealt with tensions among different ethnic groups in the industrialized countries of Western Europe. It was co-sponsored by the United Nations University, International Alert, the Swedish Ombudsman for Race Relations, and the Mayor of Amsterdam. A second seminar, held at Kampala in September, scrutinized "Ethnic conflicts and human rights in East Africa" and was co-sponsored by International Alert and the Makerere Institute of Social Research, with the participation of the United Nations University. Several manuscripts are also being prepared for publication.

(j) Human rights and scientific and technological development

97. In 1986, the United Nations Commission on Human Rights invited the United Nations University to conduct a study on the positive and negative effects of scientific and technological developments on human rights and fundamental freedoms. A proposal was drawn up, and research papers were commissioned.

Implementation proceeded in 1987 with a meeting of the project's steering committee in April. A second steering committee meeting took place in November and prepared a preliminary report on the subject. The research for the project was conducted in co-operation with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Centre for Human Rights, with the financial support of the Government of Japan.

Programme area 8: Regional perspectives

98. The projects in this programme area bring together scholars from each region to do research on those issues that they identify as the major social, political, economic and cultural forces shaping the development of the region in question.

(a) Asian perspectives: the state, people and culture

99. As this project drew to a close, a final regional meeting took place in December at Chiangmai, Thailand, to review its achievements and to discuss ways of following up the completed research. Work also continued on revising and editing the final research papers. The South Asian subgroup completed a manuscript entitled "The challenge in South Asia: development, democracy and regional co-operation". The country-team leaders of the South-East Asian subgroup met in Singapore in May to complete the group's work on "Transnationalization, the state and people". They also discussed plans to establish an information-sharing system among the network members in the region. The East Asian subgroup finalized some 20 research papers on "The state and cultural transformation". Several manuscripts are also being prepared for publication.

(b) Latin American perspectives: development within the global system

100. Since 1987 was the final year of this project, research on all of the component topics was brought to a conclusion. A workshop on one of the final topics, "Political processes and institutional change in Mexico", was held in April, at which case studies on the 32 federal states of Mexico were discussed. Some of the chief collaborators in the project will meet in January 1988 in Tepoztlan, Mexico, to integrate the major subprojects into a synthesis report to be called "Latin America: the present and future perspectives". The meeting will also discuss follow-up activities, including publication of results, preparation of training materials, organization of training courses and integration of their findings with those of other regional perspective projects.

101. As part of the research output of the project, 27 network publications were issued in 1987. Consisting primarily of collections of case studies and monographs, they form part of the growing "Biblioteca latinoamericana" being built up by the Latin American Council of Social Sciences. Four United Nations University publications came out of the project in 1987, three on social movements in Latin America and one on political systems and parties.

(c) Technological capacity and prospective in the third world: the case of Latin America

102. The major emphasis of this project in 1987 was the formulation of a long-term research and development strategy for Latin America. A network of major scientific institutions in Latin America, involving more than 50 scientists, worked together under the auspices of the project to study the long-term socio-economic and cultural impact of new technologies on the region.

103. Concurrently, research continued on the five major topics adopted for the project: (a) "environment and development", under which the major types of ecosystems in the region, including the marine environments, were analysed and work was carried out on an ecological simulation model; (b) "trends in science and technology", which focused on biotechnology, micro-electronics and new materials; (c) "socio-economic dynamics", under which a model of endogenous development was reformulated and its application experimented with; (d) "the political economy of science and technology", where interactions between the institutions and social actors involved in the generation, transfer and diffusion of technologies were studied; and (e) "research and development capacity", under which scientific and technological indicators for the region were dealt with. Four workshops were held during the year to review the research results achieved under these topics and to integrate them into the regional research and development strategy. Agreement was reached with the International Development Research Centre of Canada for financial support that will allow the project to continue in the coming year.

(d) Self-reliance in science and technology for national development

104. The final reports on research in six Asian countries (China, India, Japan, the Republic of Korea, the Philippines and Thailand) were completed and edited for publication, and comparative chapters integrating the major findings were prepared. The key researchers on the project were invited to join a national study on economic self-reliance in rural Thailand, organized by the Thailand Institute of Scientific and Technological Research, which is drawing out the policy implications of the previous research.

(e) European perspectives

105. This project continued to explore the position of Europe in the world crisis through a series of meetings in 1987. Two workshops were held at Warsaw in March, one on "Global challenges and East European responses", at the Institute for International Economic Relations, and the other on "The crisis in development", hosted by the Research Institute for Developing Countries at the Central School of Statistics and Planning. The researchers involved in the latter workshop met again for further discussion at the assembly of the European Association of Development Research and Training Institutions (EADI) in September. In June, a seminar on "Euro-South interactions" convened at Brussels; it made an input to a special session of the EADI meeting on European relations with the third world. Several manuscripts are also being prepared for publication.

106. The Centre for Peace and Conflict Resolution at the Irish School of Ecumenics hosted a United Nations University workshop of "The political and moral implications of neutrality in Europe" in April. At the meeting, a study group on the state and the future of neutrality was established. It met twice at Gothenburg, Sweden, in August and September, having received a grant from the Foreign Ministry of Sweden. The group took as its first topic the contributions of new social movements to the unity, autonomy and quality of life in Europe.

(f) Improvement of socio-economic conditions in Arab rural areas

107. This project was initiated in 1987 with funding from the Arab Gulf Programme for United Nations Development Organizations. A working group at the Middle East office of the Third World Forum in Cairo formulated the work plan and conducted a survey of existing literature. The project will examine the performance and effectiveness of technology and service-delivery programmes at the local level,

within the framework of general national development policies. Pilot studies were undertaken in a number of villages in Egypt, to collect data and test the methodology employed in the project. An expert meeting in December reviewed the preliminary field research and methods.

(g) The third world and world development

108. The regional perspectives projects of the United Nations University are collaborating in this project to produce several transregional syntheses of work on five overarching themes: the state, social movements, the crisis, culture and development, and conflict. The African network held a workshop in February at Geneva to prepare its input to the project. The regional syntheses of the Arab and Latin American networks also made substantial progress.

Programme area 9: Science, technology and the information society

109. Advances in science and technology pose new challenges to the learning capacities of individuals and societies. United Nations University projects in this programme area have addressed those challenges on both the practical and the theoretical levels. Special emphasis has been placed on the issues raised by new information technology and on new ways of sharing knowledge.

(a) The mastering of microprocessor technology

110. Rapid advances in the development of microprocessor-based technology pose a real risk that the developing countries may continue to be left further behind as research and application proceed. This project combines training, research and diffusion of technology in an attempt to strengthen the capacity of third-world scholars and institutions to use computers and design new applications appropriate to their specific needs. A Microprocessor Monitoring Group, consisting of experts in computer-related fields, serves as an advisory body. It meets once a year to review and assess project activities. It held its 1987 meeting in May, at Bangkok.

111. In the implementation of the project, the United Nations University has worked closely with a number of other institutions to open training opportunities to scholars from developing countries. In 1987, as in previous years, the United Nations University participated in a number of courses organized by the International Centre for Theoretical Physics of Trieste, such as a workshop on microcomputers in the teaching of physics and mathematics, a workshop in telematics, and a college on microprocessor technology and applications. The United Nations University advanced training in informatics continued at Trinity College in Dublin. Three Fellows completed training in 1987 and six more are currently enrolled.

112. In developing countries, the project is working to strengthen microprocessor units within universities and research institutes to serve as focal points for both research and training. It set up a microprocessor support unit at the Computer Science Centre at the University of Yaoundé in Cameroon, which it continues to assist. In 1987, a special programme at the Centre was launched to teach computer science to Master's degree students, with the co-operation of the Institut National de Recherche en Informatique et en Automatique of France. A similar microprocessor support unit was set up at Addis Ababa University in Ethiopia, with the assistance of the United Nations University. Priority is given to training in order to overcome the acute shortage of qualified computer staff in Ethiopia, for which

several candidates have undergone training at Trinity College in Dublin. An exploratory mission to Zambia in 1987 set in motion a plan for the United Nations University to initiate microprocessor support activities in that country.

113. Research continued at the University of Malaysia on microprocessor applications. Specific instrumentation for the processing of agricultural products, particularly rice, is being developed. Further, the University of Malaysia and the Asian Institute of Technology in Bangkok jointly co-operate within the framework of the project on the development of computerized expert systems for rural health services. A third area of research was software applications for a local area network for computer-aided learning, run on micro-computers. A mission to India in May included discussion with officials from a number of research institutes that showed interest in participating in the project. The United Nations University provided equipment for microprocessor training and research to the Indian Institute of Technology in Bombay.

114. The Scientific Instrumentation Laboratory at the Universidad de Antioquia in Medellín, Colombia, was the focal point for the project's activities in Latin America. Equipment and staff training were provided to strengthen the Laboratory's capabilities. The United Nations University also arranged a study tour for two professors from the Universidade Federal de Santa Catarina in Florianopolis, Brazil. They visited several institutions in India and Thailand, in a programme designed to promote South-South co-operation in this field.

(b) Information overload and information underuse

115. The sheer volume of information generated in modern communications systems has become an obstacle to the effective use of information, and may contribute to growing inequities in its availability. This project has conducted research on the following six topics within this problem area: (a) the production and distribution of information; (b) information use and information gaps; (c) participation in information processes; (d) socio-psychological learning issues; (e) impediments and risks in the application of information; and (f) coding and the socio-cultural context of information. During 1987, many of the component studies of the project were completed, and are now being assembled into three volumes for publication. One volume will deal with theoretical issues, the second will contain case studies, and the third will be a country-specific collection of papers on China. Several members of the project's research team from the Institute of Scientific and Technical Information of China visited the United Nations University and several institutions in Japan in March. They discussed their ongoing work in the project and met with specialists on information science and computerized data retrieval.

(c) The management of complexity

116. This project, which began in 1987 with a review of new concepts about complex systems, concluded a case study of fisheries which applied some of these concepts to an actual system. Dynamic models of fisheries were developed, based on non-linear feedback interactions and interplay of deterministic equations with the randomness inherent in the external and internal environments of fisheries. The case study came to an end in October with a final meeting of the researchers involved. Two volumes of findings are in progress: one technical volume will set out existing theories of fisheries management, the new concepts developed in the project, and the studies carried out in particular geographical zones. The second, a non-technical volume, will endeavour to show how new concepts such as dissipative structures, synergistic systems and self-organization, which have been developed in

the natural sciences in recent years, may also have important applications to the social sciences. A training diskette has been developed to introduce fisheries scientists and other natural resource managers to the methods developed in the project. The methodology is already being applied in an independent study of grasslands in Senegal.

117. Two further areas for application of the concepts developed within the framework of research on complexity were explored during 1987. A report will be submitted on the interrelationships between learning, autonomy and culture; and a study on urban design theory and development is in progress.

(d) The global commons and international law

118. International law usually deals with the spatial dimensions of relationships among States. This project seeks to extend it to the temporal dimensions, by examining the issue of common patrimony and intergenerational equity. The three focal points of the study are: (i) the conservation of the diversity of natural and cultural resources; (ii) the conservation of the quality of resources; and (iii) equitable rights of access to the legacy of the past. In 1987, the researchers concluded studies on nuclear wastes, genetic and biological resources, and cultural resources. Shorter case studies on forest and water resources are also completed. The findings are being prepared for publication.

(e) Advanced seminar on global problems/perspectives on youth

119. In 1985, the United Nations University carried out a project in response to the designation of the year by the United Nations as the International Year of Youth. In 1986, it was decided to continue this project in conjunction with a seminar on global problems that was to be aimed at mid-career people in leadership positions. A planning meeting to design a seminar programme and format was held at Geneva in March.

(f) Distance learning systems

120. Distance learning is an effective mechanism for extending the reach of educational systems beyond the limits of conventional educational infrastructure, especially in the developing countries. As a first step, the International Centre for Distance Learning was established in co-operation with the Open University of the United Kingdom and the International Council for Distance Education. The major product of this project has been the creation of a global data base on distance learning and of a documentation centre that provides a world-wide information service. The computerized data base contains information on more than 500 distance-teaching institutions and on over 800 taught programmes. Further, a documentation collection containing approximately 10,000 items provides a back-up to the data base in the form of regional and national directories and institutional prospectuses, books, journals, articles, conference papers and research reports on distance education. The card catalogue of the print collection was computerized in 1987 and a bibliographic system has been designed and developed in consultation with an international group of experts.

(g) Village networking

121. The United Nations University supports and participates in the work of the Village Video Network, a New York-based non-governmental organization whose purpose is to help ordinary, often uneducated people to use videotape as a development

tool. The main activity of the project in 1987 was a video workshop and field training session in Ahmedabad, India, in March. The United States Agency for International Development and UNDP collaborated in the organization of this event, and local support was provided by the National Institute of Design and the Indian Space Research Organization. A survey on the activities of the network was conducted by the project co-ordinators, and two new video programmes produced by a participating organization in Ahmedabad, the Self-Employed Women's Association, were added to the tape library of the Village Video Network.

(h) Transfer of scientific knowledge at the local level

122. Disadvantaged, illiterate people rarely have access to scientific knowledge that can be put to use in their daily lives. This project has supported the efforts of the Communications Centre for Scientific Knowledge established by the United Nations University in Madras, India, to produce simple, illustrated instructional manuals to convey scientific information through wall posters, cartoon strips and the like. In 1987, manuals on food, health and income-generation were produced and widely translated and distributed in India, through the co-operation of national and local government and voluntary organizations. In addition, a prototype Museum of Simple Technology was built on the campus of Anna University in Madras.

Training in the University programme

123. The training programme of the United Nations University was carried out in 1987 through four basic mechanisms: United Nations University fellowships awarded to individuals for study outside their home countries; short courses based on United Nations University research programmes; combined projects that have a strong training component built into the project design; and fellowships awarded by United Nations University research and training centres.

124. In 1987, no new United Nations University fellowships in the first category were awarded. The training budget, like the rest of the budget of the University, is drawn up for biennial periods; the fellowship funds for 1986-1987 were fully committed by the record number of fellowships that were awarded in 1986. During 1987, 142 of those Fellows completed their training and 29 were still in the midst of training at the end of the year. In looking forward to the next biennium, 74 candidates suitable for future United Nations University fellowships have been identified. In total, 972 United Nations University fellowships have been awarded since 1976.

125. Two short courses were organized by the University in 1987. The first of these took place in March and April on the theme of "Preparation for life in peace through socio-economic development". It was held in Budapest at the Institute for World Economics of the Hungarian Academy of Sciences, an associated institution of the United Nations University. The Ministry of Education of Hungary joined the United Nations University in sponsoring the course, in which nine young researchers from African universities and research institutes participated. Twenty-six lecturers from the United Nations University networks in 13 countries made presentations and led the discussions. A publication arising from an earlier United Nations University activity, entitled "The preparation of societies for life in peace", served as the basic text for the course.

126. The second course was the 1987 United Nations University Global Seminar, which in 1987 was devoted to the study of "Development and the United Nations". It took place in September in Hachioji, Japan, in co-operation with seven Japanese colleges and universities. Approximately 100 graduate and undergraduate students attended. The lecturers included experts from the World Bank and the staff of the Office of the United Nations High Commissioner for Refugees, as well as faculty from the participating institutions.

127. As was pointed out in the review of the University programme, many projects include training components that are budgeted from the project funds rather than the fellowship funds. This is true of most of the training that takes place in the project on Mastering Microprocessor Technology, for example (see Programme area 9). The same principle operates for the fellowships awarded by WIDER; they do not enter into the regular fellowship accounts (see Programme area 2).

128. By programme area, the distribution of United Nations University fellowships at the end of 1987 was as follows:

<u>Programme area</u>	<u>Number in training</u>	<u>Number completed since 1976</u>	<u>Percentage of total completed</u>
Peace and conflict resolution	0	19	2.0
The global economy		(administered separately through WIDER)	
Energy systems and policy	0	165	17.5
Resource policy and management	2	141	15.0
The food-energy nexus	0	8	0.8
Food, nutrition, biotechnology and poverty	13	508	53.9
Human and social development	4	55	5.8
Regional perspectives	1	22	2.3
Science, technology and the information society	9	25	2.7

Dissemination in the University programme

129. The dissemination activities of the University in 1987 are described below:

(a) Academic publications

130. During the period under review, some improvements in the University's publication policy implementation and approval procedures were made by the Rector: the Sub-Committee on Publications was reorganized as the Publications Committee and a new Publications Policy Committee was established.

131. During the same period, the University published, under its own imprint or jointly with other publishers, 28 books and four journals - ASSET, Food and Nutrition Bulletin, The Journal of Food Composition and Analysis and Mountain Research and Development. (For a complete list of titles published in 1987, see annex II of the present report.) Efforts increased to publish more United Nations University titles under the University's own imprint to help to promote the University's image and to improve income from sales. A number of books and booklets, more commonly known as network publications, were also produced by the University's research networks. The well-known economist, Professor Paul Streeten, in a review on the United Nations University publications catalogue for Interdisciplinary Science Reviews, commented that "one of the attractions of some [United Nations University] books is that they represent approaches to living together that are alternatives to those of mainstream thinking and existing practice". He added that, the books indicate that, although "the universe is not divided along the same lines as the university ... this [United Nations University] university does follow more the lines of division of the universe".

132. At present, the University has 73 depository libraries.

133. The University also continued joint activities with publishing units of other United Nations agencies, including participation in a number of international book fairs and library association meetings organized by the United Nations system and meetings and activities of the Inter-Agency Meeting of Language Arrangements, Documentation and Publications.

(b) Information activities

134. During 1987, the following developments took place: the monthly publication, Update, was reconceived and redesigned as Network Update, a quarterly publication designed to stimulate greater interchange and dialogue with members of the United Nations University networks; the Japanese version Kokuren Daigaku Tsuushin, continued as before, with an emphasis on articles specific to Japan; and a new monthly in-house publication, Looking Ahead, was inaugurated. It is based largely on responses to a monthly questionnaire to the staff about future activities.

135. Work in Progress (formerly, the United Nations University Newsletter) continued to draw a favourable reaction in its new format, with a number of requests for additional copies for use in teaching situations - seminars, supplementary reading, etc. The three 1987 issues dealt with the University's work in national development planning, peace and conflict resolution, and energy use and management.

136. Four new issues of UNU Focus were published covering the work of the University on ethnic minorities and human and social development, energy systems and policy, the food-energy nexus programme, and research on food and nutrition.

137. A new version of a basic brochure about the United Nations University, "The United Nations University, 1987", was produced in English. An illustrated brochure aimed at government and academic circles was produced in Japanese in co-operation with the Japan Foundation for the United Nations University. It will ultimately be published in English and other languages.

138. There was a substantial increase in press coverage in Japan during 1987. The WIDER Report No. 2, "Mobilizing International Surpluses for World Development: a WIDER Plan for a Japanese Initiative", was translated into Japanese and distributed among Japanese government offices and press media.

(c) Audio-visual activities

139. Five 16 mm films on deforestation and land-use in Nigeria have been prepared and will be ready for dissemination in 1988. Dealing with climatic, biotic and human interactions in the humid tropics, they will be used as teaching and training aids as well as for general information. With support and guidance from the United Nations University, the Centre for Economic Development Studies of the University of the Andes in Bogotá has produced a slide tape on urban research as part of the Household, Gender and Age Project.

140. A video workshop was held and field training was provided in Ahmedabad, India, with participants in and members of the Village Video Network from Mali, Sri Lanka and China.

141. A new 30-minute videotape, "UNU Today", was produced in English, French, Japanese and Spanish.

(d) Library

142. Efforts to maintain the level of book acquisitions, despite budget and staff cuts, succeeded, with 800 volumes added to the collection in 1987. The level of journal subscriptions, however, was reduced to 290 titles. Progress continued in the drafting and adoption of a full complement of library operations policies.

(e) Computer

143. As at 1 January 1987, the University's own mainframe computer (Fujitsu M340R) became operational, initially supporting the Library System, the Distribution and Referral System and an upgraded Accounting and Budget Control System.

(f) Management information system

144. The computerization of information to support decision-making in the University has concentrated mainly on the need for new systems. During the year, work began on a project information system for the monitoring of project progress. Computerization to improve communications and reduce their costs has included the establishment of electronic mail services among United Nations University offices in a number of locations and this has been extended to replace part of the telex and cable traffic to other destinations.

IV. INSTITUTIONAL DEVELOPMENT AND FUND-RAISING

A. Institutional development

Institute for Natural Resources in Africa (INRA)

145. In January 1987, following the decision of the Council on the establishment of the Institute for Natural Resources in Africa in December 1986, a Search Committee was appointed by the Rector to assist in the acquisition of a Director and members of the Board of INRA. The Rector, upon the recommendation of the Search Committee and after consultation with the Chairman of the Council, has identified a Director. The Council has agreed that the appointment of the Director will take effect at the time when the minimum funds are received by the University for INRA to enable the Institute to commence operations. The University has continued to consult closely with the Governments of Côte d'Ivoire and Zambia, as well as with the Government of France, regarding the payments of their pledges. The University has also undertaken additional consultations with other donor countries and agencies that have continued to show an interest in supporting the Institute. At its thirtieth session in December 1987, the Council, after careful consultation, reaffirmed that it accords the highest priority to INRA and to the urgency of ensuring that the Institute commences operations without further delay, and noted with appreciation the resolve of the host countries, Côte d'Ivoire and Zambia, to pay their pledges of \$US 5 million and \$US 2 million, respectively, to the United Nations University's Endowment Fund for INRA in the near future, and that the Government of France is firmly committed to its initial pledge of 20 million francs. When the necessary basic funds are assured, the University will make provision in the supplementary programme and budget for the biennium 1988-1989 to enable INRA to start functioning as early as possible in 1989.

Other institutional developments

146. The Council, at its twenty-ninth session in July 1987, considered the feasibility study report on the establishment of the proposed Research and Training Centre on New Technologies to be located in Maastricht, Netherlands. In late November, the Government of the Netherlands officially informed the University of its intent to make a contribution of f. 45 million (equivalent to \$US 23.1 million) to the University's Endowment Fund for the establishment and operation of the proposed Centre, and has offered to host, and provide suitable premises for the proposed Centre at Maastricht, Limburg Province, the Netherlands. At its thirtieth session in December 1987, the Council welcomed with the deepest appreciation the commitment of the Government of the Netherlands. The University will proceed with the formal negotiations with the Government, and with such other preparatory work as necessary towards an early establishment of the proposed Centre.

147. At its meeting in July 1987, the Council reiterated the need to proceed with the early establishment of a research and training centre in Japan as an institute for advanced studies. This process has continued, and the University has undertaken a number of activities towards the creation of such an institute in co-operation with the academic and scientific community in Japan, and the Japan Foundation for the United Nations University. The University has also continued its consultations with the Government of Japan regarding the proposed Institute.

148. The University is conducting a feasibility study on the establishment of a research and training centre on Peaceful Application of Science and Technology in Outer Space. The Government of Austria has expressed an interest in such an institute, and has provided a grant of \$US 70,000 to cover the initial cost of the feasibility study, which is being undertaken by an international group of experts and includes consultations with several national and regional space agencies, and relevant international organizations both within and outside the United Nations system. The study will be concluded in 1988.

149. In March, the University convened a meeting in Macau of experts in computer software to discuss a possible research and training centre for the development of software to meet the needs of developing countries. The Government of Macau has expressed an interest in hosting such a centre and the Government of the People's Republic of China has indicated full support for its establishment.

B. Fund-raising

150. As the United Nations University's experience has shown, its fund-raising possibilities are closely related to its programmatic and institutional development. As at 31 December 1987, pledges to the United Nations University's Endowment and Operating Funds (including WIDER and INRA) from 44 countries totalled \$US 192.2 million, of which \$US 163.3 million had been received. During 1987, 11 Governments pledged and/or contributed \$US 9.1 million.

151. In addition, over the years, specific programme contributions of \$US 4.3 million have been received from various sources. The work of the University has also benefited from external funds, so far totalling \$US 7.7 million, made available to its associated institutions and other co-operating institutions and organizations. Furthermore, a number of institutions and countries have covered the local costs of, and provided other support in kind for the University's programmatic and institutional development.

152. The University has reviewed and continued to implement the fund-raising strategy adopted by the Council in 1985. The first priority of the University's fund-raising strategy remains the raising of new contributions for the Endowment Fund. The second priority is to seek additional annual-type operating contributions from Governments and other sources where there are no possibilities of obtaining Endowment Fund contributions in the first instance. The third priority is to get specific programme and project support both in cash and in kind in order to take the burden off the Endowment Fund and to augment the overall resources of the University.

V. DIRECTION, MANAGEMENT AND ADMINISTRATION

A. Direction and management

153. Management functions, which are carried out by the Office of the Rector, apart from the Rector's overall responsibility as chief academic and administrative officer and his responsibility for the direction, organization, administration and programme of the University, include executive affairs, planning and evaluation, legal affairs, Council affairs, relations with the Government of Japan, and activities of the liaison offices. Some of the main activities carried out in co-operation with the appropriate divisions during the year were: further revisions to the second medium-term perspective document; formulation and preparation of the draft programme and budget for the 1988-1989 biennium; external evaluation of major activities in the area of food and nutrition, microprocessor technology, and technology transfer and development; and various fund-raising efforts, including an appeal to the Government of Japan for supplementary funds to help the University in its time of financial crisis.

B. Administration

154. Besides ensuring that a sound administrative framework is in existence for the efficient and effective planning and implementation of the global programme operations of the University, Administration provides necessary backstopping and support to all programmes, divisions and staff of the University Centre in Tokyo, research and training centres and programmes, associated institutions and other collaborators in the field. Some of the key functions under administration include effective management of the resources of the University, monitoring of its investments, planning and preparation of budgets for submission to the Advisory Committee for Administrative and Budgetary Questions and the University Council, necessary budgetary and financial controls, personnel management at the Tokyo Centre and in the field, staff-management relations, contractual arrangements with programme collaborators and institutions including periodic payments worldwide, provision of headquarters facilities, co-ordination with the host Government on the planning for the construction of the permanent headquarters building, a global telecommunications network, arrangements for conferences, travel and other vital services.

155. The year 1987 has been a particularly busy and challenging one, mainly because of the planning and actions required to cope with the adverse effects of the sharp and sudden devaluation of the United States dollar against the Japanese yen on the approved budget of the University for the current biennium 1986-1987. With the budget denominated in United States dollars and more than 50 per cent of the expenditures being in Japanese currency, the revaluation of the yen resulted in a substantial increase in the projected expenditures, in dollar terms, thereby making it necessary for the University to undertake immediate cost-saving measures to keep the expenditures within the approved budgetary appropriations for the biennium. A close watch has been kept on the developments and, in co-ordination with all the divisions, policy recommendations have been made, which led to decisions to reduce costs by strictly monitoring and controlling the expenditures on personnel, travel, communications, consultancies, and other general expenses without reducing the effectiveness and efficiency of the operations of the University.

156. The devaluation of the United States dollar against the Japanese yen, combined with a decline in the interest rates on the University's investments, also complicated the task of the preparation of the programme and budget proposals for the next biennium 1988-1989. Attention was paid to studying ways and means to maximize the income and total return from the University's investment, including diversification of the investments in different currencies. The proposed programme and budget for the biennium 1988-1989 was presented to the Advisory Committee on Administrative and Budgetary Questions in October 1987, prior to its review by the Council in December. Given the above financial situation, the University will continue to exercise extreme vigilance and control on the expenditures in the next biennium in order to avoid any adverse effects on the budget.

157. Other significant developments that took place during the reporting period included: the transfer to the United Nations University from United Nations Headquarters of the responsibility for the preparation of the financial statement of accounts for the University starting with the biennium 1986-1987; the co-ordination with other United Nations agencies in Japan on the cost-of-living and salary surveys, housing and security matters; and the planning for the construction of the permanent headquarters building of the University, for which necessary surveys and studies are being undertaken and close co-ordination is maintained with the concerned officials of the Government of Japan, the Tokyo Metropolitan Government and other authorities.

ANNEX I

Members of the Council of the United Nations University

Note: The names of members appointed for 1983-1989 are shown without asterisk. One asterisk (*) indicates members appointed for the term 1986-1992.

Professor Walter Joseph Kamba, Vice-Chancellor, Professor of Law and former Vice-Principal, University of Zimbabwe, Harare, Zimbabwe; former Dean, Lecturer and Senior Lecturer in Comparative Law and Jurisprudence, Faculty of Law, University of Dundee, Scotland; former Research Fellow, London University, United Kingdom of Great Britain and Northern Ireland; Vice-President, International Association of Universities, Paris, France (Chairman of the Council)

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

Dr. Bashir Bakri, Visiting Professor in Economics and Social Studies, University of Khartoum; Chairman, National Bank of Sudan, Khartoum, Sudan; former Ambassador of the Sudan to France; former Alternate Member, Executive Board of UNESCO, Paris, France (Vice-Chairman and Chairman, Committee on Finance and Budget)

Dr. Marie-Thérèse Basse, Former Technical Counselor, Office of the President of the Republic of Senegal; former Director, Food Technology Institute, University of Dakar, Senegal; and former Permanent Representative of Senegal to FAO, Rome, Italy

*Dr. Mary F. Berry, Geraldine R. Segal Professor of American Social Thought, University of Pennsylvania; former Professor of History and Law, Howard University, Washington, D.C.; Member, United States Commission on Civil Rights; former United States Assistant Secretary for Education, Department of Health, Education, and Welfare; and former Chancellor, University of Colorado at Boulder, United States of America

Professor André Blanc-Lapierre, Professor, University of Paris (Signals and Systems Laboratory, Advanced School of Electricity, Gif-sur-Yvette, France); former Director-General, Advanced School of Electricity; Member, French Academy of Sciences; Member, Pontifical Academy of Sciences; former Director, Nuclear Studies Institute; former Director, Linear Accelerator Laboratory, Paris, France (Vice-Chairman and Chairman, Committee on Institutional and Programmatic Development)

*Father Alfonso Borrero, Executive Director, Association of Colombian Universities; former Rector, Universidad Javeriana; and former President, National Council of Rectors of the Colombian Association of Universities, Bogotá, Colombia

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

Dr. Mercedes B. Concepcion, Dean and Professor of Demography, Population Institute, University of the Philippines, Manila, Philippines (Chairman, Committee on Statutes, Rules and Guidelines)

- *Ambassador Kuniyoshi Date, former Ambassador Extraordinary and Plenipotentiary to the Republic of Iraq and to the Federative Republic of Brazil; and former Managing Director, Japan Foundation, Tokyo, Japan (appointed in December 1987 for 1986-1992)
- *Dr. Keith B. Griffin, President, Magdalen College, Oxford University, Oxford, United Kingdom of Great Britain and Northern Ireland
- *Professor Heitor Gurquino de Souza, President, Latin American University Group, Caracas, Venezuela and Brasilia, Brazil; President, Planning Committee, Federal Council of Education of Brazil; Professor, Physics Department, Universidade de Estadual Paulista; and former Rector, Federal University of San Carlos of São Paulo, Brasilia, Brazil (resigned in August 1987)
- Dr. Helge Gyllenberg, Professor of Microbiology, Department of Microbiology, University of Helsinki, Helsinki, Finland (Vice-Chairman) (appointed in May 1985 for 1983-1989)
- *Professor Joseph Ki-Zerbo, Professor, University of Dakar; Researcher, Cheik Anta Diop Institute, University of Dakar, Dakar, Senegal; and former Member, Executive Board of UNITAR
- Dr. Gerald Cecil Lalor, Pro-Vice-Chancellor, University of the West Indies, Jamaica, West Indies (Chairman, Committee on the Report of the Council) (appointed in May 1985 for 1983-1989)
- *Professor Candido Mendes de Almeida, President, International Council of Social Sciences, Rio de Janeiro, Brazil (appointed in December 1987 for 1986-1992)
- *Professor M. G. K. Menon, Scientific Adviser to the Prime Minister of India; Member, Planning Commission, Government of India, New Delhi, India
- *Dr. Martha V. Mvungi, Secretary-General, National Commission of UNESCO and Senior Lecturer, Department of Education, University of Dar-Es-Salaam, Dar-Es-Salaam, Tanzania
- Dr. Maria de Lourdes Pintasilgo, former Ambassador of Portugal to UNESCO, Paris, France; former Minister of Social Affairs; former Secretary of State for Social Security; and former Caretaker Prime Minister, Portugal
- Professor Yevgeniy M. Primakov, Director, Institute for World Economics and International Relations, Academy of Sciences of the Union of Soviet Socialist Republics, Moscow, USSR; Member, USSR Academy of Sciences (Vice-Chairman)
- *Professor Mihaly Simai, Deputy Director, Institute for World Economics, Hungarian Academy of Sciences; Professor and Director of Graduate Studies, Karl Marx University of Economics Sciences; Budapest, Hungary (appointed in May 1987 for 1986-1992)
- *Professor Rehman Sobhan, Director-General, Bangladesh Institute of Development Studies; Member, Bangladesh Planning Commission; and former Professor of Economics and of the United Nations Committee for Development Planning, Dhaka University, Dhaka, Bangladesh

*Professor Ryozo Sunobe, Professor, Kyorin University; Special Adviser to the Crown Prince's Household; member, Provisional Council on Education Reform, Tokyo, Japan; and former Ambassador Extraordinary and Plenipotentiary to the Netherlands (resigned in November 1987)

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

Dr. Alberto Wagner de Reyna, former Ambassador of Peru to UNESCO, Paris, France; former Ambassador to the Federal Republic of Germany, to Colombia, to Yugoslavia, and to France; and former Secretary-General for Foreign Affairs of Peru, Peru (Vice-Chairman)

Ms. Zhao Dihua, Director, Division of Information Science and Methodology, Institute of Scientific and Technical Information of China and former Information Expert, Institute of Scientific and Technical Information of China, Beijing, People's Republic of China (Vice-Chairman)

Rector

Professor Heitor Gurgulino de Souza

Ex officio Members

Mr. Javier Pérez de Cuéllar, Secretary-General, United Nations, New York, United States of America

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

Dr. Michel Doo Kingué, Executive Director, United Nations Institute for Training and Research, New York, United States of America

ANNEX II

List of publications of the United Nations University,
January-December 1987*

Books

L'adaptation des structures et méthodes des Nations Unies/The Adaptation of Structures and Methods at the United Nations (English/French), edited by Daniel Bardonnet; published with Martinus Nijhoff Publishers, Netherlands.

Africa: Perspectives on Peace and Development, edited by Emmanuel Hansen; published with Zed Books, United Kingdom.

Cloud Forests in the Humid Tropics: A Bibliographic Review (English and Spanish editions), by Thomas Stadtmüller.

The Crisis in African Agriculture, by Mohamed Lamine Gakou; published with Zed Books, United Kingdom.

Dealignment: A New Foreign Policy Perspective, edited by Mary Kaldor and Richard Falk; published with Basil Blackwell, United Kingdom.

Effective Communications for Nutrition in Primary Health Care, edited by J. E. Anderson.

Energy Research: Directions and Issues for Developing Countries (English, French and Spanish editions); English and French editions published with the International Development Research Centre (IDRC), Canada; Spanish edition published with IDRC and El Colegio de Mexico, Mexico.

Enjeux miniers en Afrique, by Fayçal Yachir; published with Karthala, France.

Europe: Dimensions of Peace, edited by Björn Hettne; published with Zed Books, United Kingdom.

The Geophysiology of Amazonia: Vegetation and Climate Interactions, edited by Robert E. Dickinson; published with John Wiley & Sons, United States of America.

Food Composition Data: A User's Perspective, edited by William M. Rand.

Forests, Climate, and Hydrology: Regional Impacts, edited by F. B. Thompson and E. R. C. Reynolds.

Los movimientos sociales ante la crisis, edited by Fernando Calderón Gutiérrez; published with Consejo Latinoamericano de Ciencias Sociales (CLACSO), Argentina.

* Bibliographic details are given in the 1987 United Nations University Publications Catalogue.

Natural Energy and Vernacular Architecture: Principles and Examples with Reference to Hot Arid Climates (Arabic edition), by Hassan Fathy; published with the Arab Institute for Research and Publishing, France.

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

Popular Struggles for Democracy in Africa (English and French editions), edited by Peter Anyang' Nyong'o; English edition published with Zed Books, United Kingdom, French edition published with Publisud, France.

Protein-Energy Requirements of Developing Countries: Evaluation of New Data (Indonesian edition), edited by Benjamin Torun, Vernon R. Young and William M. Rand; published with PT Pradnya Paramita, Indonesia.

Rapid Assessment Procedures for Nutrition and Primary Health Care: Anthropological Approaches to Improving Programme Effectiveness (English and Spanish editions), edited by Susan Scrimshaw and Elena Hurtado; published with the UCLA Latin America Center, United States of America.

Renewable Natural Resources and the Environment (Italian edition), by Kenneth Ruddle and Walther Manshard; published with Edizioni Unicopli, Italy.

SADCC: Prospects for Disengagement and Development in Southern Africa (English and French editions), edited by S. Amin, D. Chitala, and I. Mandaza; English edition published with Zed Books, United Kingdom; French edition published with Publisud, France.

Vocational Education in the Industrialization of Japan, edited by Toshio Toyoda.

The World Steel Industry: Dynamics of Decline, by Faygal Yachir; published with Zed Books, United Kingdom.

Journals

ASSET (Abstracts of Selected Solar Energy Technology), vol. 8, Nos. 6-10.

Food and Nutrition Bulletin, Vol. 9, Nos. 1-4.

Mountain Research and Development, Vol. 7, Nos. 1-4; published with the International Mountain Society, Colorado, United States of America.