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SUPPORT

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FOR 1985

PROJECT RESULTS: GLOBAL AND INTERREGIONAL  
PROGRAMME AND SPECIAL FUNDS

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## I. GLOBAL AND INTERREGIONAL PROGRAMME RESULTS: SOME EXAMPLES

1. Through its Division of Global and Interregional Programmes, UNDP helps to meet the growing demand for high-calibre world research in fields central to the welfare of developing countries, applying its benefits across all regions. Linked at all appropriate points with UNDP's core programmes, assistance through the Division is distinguished by relationships it increasingly creates between global, regional and national activities. While research and the spread of proven results through this interactive process are, by definition, long-term enterprises, this distinctive emphasis continues to account for the wide multiplier effects of activities supported by the Division and their impact at the country level, as several recent examples attest.

### A. GLOBAL RESEARCH

#### 1. Agriculture

2. During 1985, agricultural research retained its place as the first priority of UNDP's global programme and is expected to account for approximately 70 per cent of resources available in the 1982-1986 programming cycle. Much of this research has been conducted over several years through projects financed by UNDP and other donors at the 13 international centres of the Consultative Group on Agricultural Research (CGIAR). The scope of these and other UNDP-supported global agricultural projects was reviewed in some detail in the annual report of the Administrator for 1984 (DP/1985/5/Add.2) (Part II). In 1985, CGIAR reviewed an independent study of its affiliated centres to assess their impact on agricultural production and national research capacity in developing countries. The published results confirm the network's effectiveness.

3. Particularly significant achievements are being sustained in the improvement of food crops. While spectacular gains have been achieved with respect to rice and wheat in the last 15 to 20 years, the impact study noted, for example, the progress made through basic and applied research on:

(a) **Maize**, which has led to approximately 6 million hectares in Latin America, Asia and Africa being planted with high-yielding and hardier varieties;

(b) **Field beans**, an important source of protein in Latin America, where 20 countries have benefited from high-yielding disease-resistant varieties developed and released by the International Centre for Tropical Agriculture (CIAT). In 1985, the Centre won the King Baudoin award for its development of a bean variety unusually tolerant of mosaic virus disease;

(c) **Cassava**, a food crop increasingly in demand in Africa, where 63 enhanced varieties have been developed and released by the Nigeria-based International Institute of Tropical Agriculture (IITA) working in collaboration with the CIAT and national programmes;

(d) **Cowpea**, of which more than 20 food-rich varieties have been released by IITA in Burkina Faso, Cameroon, Nicaragua, Nigeria, the United Republic of Tanzania, Venezuela and Zimbabwe;

(e) **Potato**, several disease-resistant strains of which have now been established in 22 countries;

(f) **Sorghum**, of which 15 varieties, adapted to semi-arid conditions, have been released through the work of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Burkina Faso, Burma and Ethiopia. Other strains of sorghum are being used in crossing local varieties in Guatemala, Kenya, Malawi and Mexico. National programmes have been considerably strengthened by ICRISAT-based research and testing, as in the Sudan where a locally developed hybrid sorghum, tested under rainfed conditions, has produced yields of 810 kilogrammes per hectare - three times that of the local variety. With this development, sorghum, a staple crop in many drought-assailed countries, holds new promise as a food source in Africa. In 1985, ICRISAT supplied the hybrid variety for planting nearly 1 million hectares in the Sudan.

4. Through 1985, steady progress was also maintained in other agricultural research activities supported under UNDP's global programme. These cover the enhancement of biological nitrogen fixation in tropical soils; the development of pest management techniques through biological control methods as an alternative to toxic and environmentally unsafe pesticides; the development of an effective vaccine against African animal trypanosomiasis; research in fertilizer technology and utilization; and the transfer of technology on root and tubercrops. In all these areas, strong emphasis is being laid on the expansion of interinstitutional ties between national and international research centres and on the training of developing country personnel. Since the inception of UNDP's global agricultural programme in 1970, 120 countries have co-operated in expanding this research network while more than 4,500 developing country personnel have received different forms of training.

## 2. Tropical diseases

5. Under the joint sponsorship of UNDP, the World Bank and the World Health Organization (WHO), a special programme of research and training in tropical diseases prevention and control (TDR) continues to make good progress. Through the programme, over 3,000 scientists in 125 countries work in multinational and multi-disciplinary teams, planning and conducting research on six major diseases endemic in tropical countries. These are: malaria, schistosomiasis (bilharzia), filariasis (of which river blindness is one form), animal trypanosomiasis, Chagas' disease, leishmaniasis and leprosy.

6. Beyond supporting continuous work on these specific diseases, the TDR programme conducts research and development, training, information exchange and other activities in four areas common to the prevention and control of all tropical afflictions. These are: fundamental biomedical research on new diagnostic approaches, therapies and preventive measures, vector biology and control, epidemiology and social and economic research.

7. In parallel with these efforts, an international expert group works with developing country institutions and Governments to strengthen the foundations of national programmes for endemic disease research. Under this policy, 500 training grants, as well as financial and technical support, have been provided to more than 60 national institutions to help to meet individual developing country needs. The proportion of programme funding which goes directly to scientists and institutions in tropical countries has increased steadily from 29 per cent in 1977 to 53 per cent in 1985. Over one third of the programme's research publications come from these national scientific institutes. TDR is an outstanding example of North South co-operation among scientists.

### 3. Diarrhoeal disease control

8. Diarrhoeal diseases continue to be a leading cause of childhood morbidity and mortality in developing countries worldwide, accounting annually for some 4 million deaths and 1 billion episodes in children below age five. They are also a major contributor to malnutrition in children and frequently afflicted adults, resulting in loss of their productivity and economic potential. National diarrhoeal diseases control (CDD) programmes are being actively pursued today in more than 100 developing countries, many of which have begun to combat this problem successfully. However, continued research is needed to develop and improve control measures that can be applied in these programmes, especially those that can reduce diarrhoea morbidity.

9. In collaboration with UNDP, a WHO-implemented CDD programme has developed a worldwide research programme which now involves investigators in more than 80 countries. This research has resulted in such important achievements as (a) firm knowledge that most diarrhoeal episodes in all developing countries are caused by only six enteropathogenic agents; (b) development of candidate oral vaccines against rotavirus diarrhoea, typhoid fever and cholera which are now undergoing field testing; (c) development of new and improved diagnostic tests which have permitted a clearer definition of the epidemiology of rotavirus and E. coli diarrhoea; (d) the realization of a more stable oral rehydration salt (ORS) formulation; and (e) the best evidence available to date that active feeding during diarrhoea can lessen the nutritional consequences of illness. The programme has also provided training in clinical, laboratory and epidemiological research to investigators from 30 developing countries to help them better to undertake this research. It has also played a key role in establishing a second centre for evaluation of candidate vaccine in volunteers, the first of its kind in a developing country.

## B. SECTORAL PERSPECTIVES

### 1. Energy

10. The energy sector assessment programme was introduced by UNDP and the World Bank in 1980 following the second "oil shock". While in several industrialized countries policy attention to energy matters has since been less acute, in developing countries such attention has grown urgently. To date, the assessment programme has assisted 70 developing countries, faced with the compound burden of higher fuel costs and heavier debt service

requirements, to develop their energy options. With substantial support from select donor countries, the programme has helped decision-makers to frame coherent overviews of the energy sector; to focus on key policy and investment decisions; and to rank priorities for action. Well advanced in execution by late 1985, all scheduled assessments are expected to be completed at the end of 1986. In 61 of the 70 countries receiving assistance, field work has been concluded and 50 final reports have been issued. Just over one half of the countries covered are in Sub-Saharan Africa.

11. Beyond stimulating fresh discussions on energy planning within countries, as well as more co-ordinated approaches among donors, these assessments have had substantial impact in three major areas:

(a) Energy policy and strategy

12. Alternative policy choices identified through energy assessments have promoted significant policy changes. Examples include the rationalization of petroleum and electricity prices in Sri Lanka; the creation of a more orderly financing mechanism for petroleum imports in the Sudan; the reduction of import duties on coal to encourage fuel oil substitution in Kenya; major increases in the price of kerosene to remove cross-subsidies in Indonesia; and in Thailand, the lowering of disproportionately high gasoline taxation to forestall an uneconomic shift to diesel in the transport sector.

13. These assessments have also aided Governments to reorient energy sector strategies by identifying new investment options such as the greater use of geothermal energy in St. Lucia and natural gas in the Syrian Arab Republic. Conversely, they have also discouraged potentially unsound investments such as ethanol projects in Kenya and Zambia, a multi-purpose hydroelectric scheme in Bolivia and a number of uneconomic refinery expansion proposals in sub-Saharan Africa. In other countries, new strategies have also helped to address the problem of declining woodfuel supplies and the need to develop renewable energy sources.

(b) Institutional improvements

14. Institutional, managerial, training and staffing arrangements in several countries have been strengthened in the light of energy assessment recommendations. At the management level, better co-ordinated decision-making has been achieved through support for more coherent energy planning, particularly where issues affecting more than one subsector arise. In Indonesia, an interministerial energy commission has been established, while in Malawi an energy planning unit has been organized in the Economic Planning Division. In Burundi and Rwanda, emphasis has been laid on individual subsectoral strategies as a basis for overall sectoral planning; and in Thailand, the country's energy assessment report featured as an important background document at an Energy Planning Conference held in October 1985.

(c) Key energy issues

15. In many countries, issues critical to the prevailing energy situation, such as the low efficiency of energy-producing and consuming facilities, have been identified and measures taken to resolve them. High economic returns and foreign exchange savings are possible through conservation measures and modest investments in the rehabilitation and maintenance of existing facilities. This has proven to be particularly true of electrical power generation where the benefits which accrue from reduced power system losses far outweigh the required investments. In Bangladesh, for example, a \$50 million investment in six projects to promote energy efficiency is expected to yield economic benefits of \$36 million a year.

16. Initiated by UNDP and the World Bank in 1983, the energy sector management assistance programme (ESMAP) helps developing countries and the international donor community to take up and implement strategic recommendations contained in individual energy assessment reports. In three years, ESMAP has established itself as a crucial follow-up vehicle for accelerating the preparation and implementation of priority technical assistance and investment projects.

17. By 1985, 54 such projects in 27 developing countries had been evaluated or were under preparation, the total cost of which is expected to be about \$500 million. For these projects, ESMAP has helped to identify \$250 million in financing which has either been committed or is under review by multilateral and bilateral agencies. Work already carried out through ESMAP has aided, for example, Sri Lanka to define steps for achieving more efficient and reliable electrical power generation; Uganda to initiate a feasibility study for an integrated fuelwood/forestry project; Mauritius to develop and launch a comprehensive, least-cost energy programme based on surplus bagasse; and the Sudan to prepare an action plan for the systematic development and application of solar water heating technology.

18. Most of ESMAP's pre-investment work has concentrated on taking project preparation to the prefeasibility stage but it is expected that, in future, a greater number of detailed feasibility studies will be supported. Other ESMAP activities cover institutional support, policy analyses and strategy development. Assistance is also provided to least developed countries in preparing energy-related documentation and proposals for their UNDP-sponsored round-table consultations and for World Bank-supported consultative group meetings.

19. It is expected that demand for ESMAP services will continue to outstrip current capacity. A sizeable portfolio of potential pre-investment and technical assistance activities exists and awaits funding. A major potentiality, insufficiently tapped so far, lies in packaging non-governmental, private and public sector resources to enhance the programme's already established flexibility in responding to wide needs.

20. In January 1986, a meeting was held in Paris under UNDP/World Bank auspices in order to discuss the future development of the energy assessment and management assistance programmes. The meeting was attended by senior representatives from various countries members of the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD) which support the programmes as well as by representatives from some 21 developing countries. The meeting strongly endorsed the programmes and expressed the view that they should be continued into the fourth UNDP programming cycle with increased emphasis being given to pre-investment work in the field of rural energy, especially fuelwood.

## 2. Fisheries

21. Published in 1985, a 15-year review of the fisheries technical assistance programme supported by UNDP through the Food and Agriculture Organization of the United Nations (FAO) indicates that a 2:1 ratio between demand and supply is likely to characterize future trends in the sector, leading to a deficit of 20 million tons in fish products by the year 2000. Two thirds of the shortfall will be in developing countries. Population growth by itself will account for only one third of this greater demand, the rest of which will arise through the wider adoption of fish as a dietary improvement. Closing this foreseeable gap will require regional and country initiatives, including the use of underexploited and non-conventional resources, more rational fisheries management, the reduction of waste and the development of aquaculture.

22. Over the period covered by the 15-year review, the UNDP/FAO fisheries programme has supported more than 300 projects in 105 countries at a total cost to UNDP in excess of \$205 million. This period has seen developing countries move up to account for more than 47 per cent of world fish production. None the less, the annual growth rate in world fish production has for some time now been appreciably lower than that maintained in the 1960s. This decline reflects the fact that any stock has a maximum sustainable yield and that over-fishing can considerably reduce the yields of particular species. Post-catch wastage and losses incurred through discarding by-catch products have further reduced world fish supplies.

23. According to the 1985 review, price increases resulting from such shortages have stimulated developing countries and their aid partners to take an increasing interest in aquaculture. These rising prices may also justify regarding improved fish-handling as an important long-range investment. The review sharply underscores the importance of long-term support for the development of the sector where individual projects frequently need as much as 10 years of assistance to build up the requisite critical mass. While many past gains have been made in the marine commercial subsector, the review strongly recommends that small-scale fisheries and aquaculture should receive more attention, particularly in least developed countries. Other findings suggest that, at the national level, a series of co-ordinated special purpose projects is often preferable to, and more effective than, large multi-purpose projects, and that costly resource surveys most often succeed when complemented by operational activities like test-fishing.

24. These conclusions are helping to shape the next generation of UNDP/FAO assistance to fisheries development. However, the importance of aquaculture as a growth area has been appreciated by both United Nations agencies for some time, as evidenced by their support since 1981 for an interregional aquaculture development and co-ordination programme (ADCP), now in its fourth phase. The programme has already assisted in expanding and improving practices in modern commercial and rural small-scale aquaculture throughout the world by providing countries with the services of a multi-disciplinary expert team. This team has helped to establish seven major training and research centres, four in Asia and one each in Latin America, Africa and the Mediterranean region. National aquaculture development centres have been established with state-of-the-art assistance from the programme which also manages a computer-based interregional aquaculture information system (AQUIS) and publishes investor-oriented profiles of current aquaculture development projects. The programme has also directly assisted Governments to design over 50 technical assistance projects, a number of which have subsequently attracted donor support for their implementation totalling \$15.4 million.

### 3. The Water Decade

25. Through 13 global and interregional projects covering five subprogramme areas, UNDP, the World Bank and other donors are assisting Governments to meet their basic objectives in the International Drinking Water Supply and Sanitation Decade (IDWSSD). A mid-decade progress report on these projects was included in the annual report of the Administrator for 1984, and the following account updates that review.

#### (a) Field testing and development of rural water supply handpumps.

26. Laboratory testing has been completed on 23 different handpumps and the findings published in four reports; tests on six other kinds of pumps are in progress. Handpump field tests, funded in part by host Governments and 10 donor agencies as well as UNDP, are under way in 17 countries. In total, the field tests involve more than 2,800 pumps of some 70 kinds. Project staff are collecting and analysing technical financial and economic data concerning pump performance in relation to the cost of other rural water supply systems. Project staff are also beginning to promote and assist indigenous manufacturing efforts in nine countries.

27. As a result of the project's systematic testing, almost all manufacturers whose pumps have been tested have improved them or withdrawn unsatisfactory models. Project staff are preparing recommended sample tender documents to ensure that pump specifications are considered when contracts are let.

#### (b) Low-cost sanitation

28. The project assists Governments to identify and implement sanitation investment projects, to promote appropriate low-cost sanitation technologies



and to train and support national sector personnel. By 1985, the project had achieved notable success in several important areas, including:

(a) Acceptance by donor agencies and Governments of on-site sanitation options as alternatives to costly conventional sewerage. National sanitation strategies are being redirected in India, Botswana and Zimbabwe, and there is growing interest in China;

(b) Refinements in the technologies of the ventilated improved pit latrine and pour-flush latrine;

(c) Demonstration and small-scale investment projects, utilizing ventilated improved pit technology implemented in six East African countries. Pour-flush latrines using improved components, are being installed in thousands of households throughout India;

(d) Increased awareness of on-site sanitation alternatives achieved through the preparation of technical documents, which have been distributed to donor agencies, Governments and educational institutions throughout the world.

(c) Information and training

29. This project has been introducing and promoting the use of low-cost alternative technologies, providing information and training to those involved in the planning and implementation of water/sanitation programmes. It is (a) producing a comprehensive set of information and training materials on the full range of appropriate technologies; (b) developing the means to disseminate the materials and promote their implementation. Three large information packages have been prepared for developing countries' use; a "Decision Package" for senior policy-makers, a "Technical Package" for students, engineers and professionals involved in the sector and a "Community Participation Package" for community workers and project staff. The three packages comprise four films, several slide-sound shows, written guidelines, case studies, training manuals and a three-volume Water Supply and Sanitation Project Preparation Handbook.

(d) Integrated resource recovery

30. The project gathers, analyses and disseminates information on basic technologies and institutional mechanisms available for integrated resource recovery through multipurpose recycling of household and commercial wastes. Generic reports on resource recovery practices have been produced, and studies of waste management and recycling in metropolitan areas in nine countries have been undertaken. These reports are now being disseminated and include the topics: solid waste recycling, biogas plants, remanufacturing of durable products from discarded parts, health aspects of effluent irrigation, co-composting of domestic and human wastes and the use of effluents in aquaculture.

31. In June 1985, the UNDP Governing Council approved a second phase which will deal with the economic and institutional feasibility of the most promising technologies. Case studies and demonstration projects are being initiated in Colombo, Mexico City, Jakarta and Dakar to evaluate the potential for recycling. Twelve sites have been identified and bilateral funding has been secured or is under final negotiation for all.

(e) Promotion and support for women's participation in the decade

32. The project, executed by UNDP through a cost-sharing arrangement with the Government of Norway, successfully concluded its preparatory phase in June 1984 and began implementing country-specific activities. Global activities of key importance to providing technical backstopping at the country-level have resulted in three new publications: (a) an Annotated Bibliography and Literature Review, issued jointly with the International Reference Centre in The Hague; (b) a technical note on Planning Women's Aspects of Sanitation Projects, issued jointly with the World Bank Technical Assistance Group; and (c) a booklet about the project itself, intended for use in information dissemination and fund-raising activities. The Canadian International Development Agency (CIDA) and the United States Agency for International Development (USAID) have joined in providing project financing.

33. As of December 1985, a total of 10 agreements were in effect in support of country-level activities primarily in Africa and Asia and 6 more proposals were under review. Collaborating with other United Nations system agencies, including the World Bank, WHO and the United Nations Children's Fund (UNICEF), these activities provide support to non-governmental organizations (NGOs) and some government agencies working with village women, in order to associate them more fully and effectively in all stages of water and sanitation projects. Responding to these institutions' need for strengthening not only the substance of the training they provide, but also the techniques they use to bring out women's motivation and initiative, the project has participated in eight workshops for training of trainers and village workers. Materials developed in these workshops will serve as a valuable resource for future training activities.

C. HUMAN RESOURCES DEVELOPMENT

1. A maritime institution

34. Serious shortages of maritime expertise in developing countries have long hampered their efforts to participate in greater world trade. To help to address this operational constraint, UNDP, the International Maritime Organization (IMO) and the Government of Sweden supported the establishment of the World Maritime University which opened its doors to its first group of 70 developing country students on 4 July 1983 in Malmo, Sweden. The University produces trained shipping personnel and technical advisers, as well as qualified instructors to fill teaching gaps in developing country maritime institutes. Since 1983, 218 graduates, technical officials and shipping

company staff from 74 developing countries have undergone post-graduate training at the University, which has rapidly attained international recognition. In 1985, UNDP, IMO and representatives of the University's other major supporters, Sweden and Norway, conducted a review of current progress in implementing the provisions of the institution's charter.

35. Institutionally, the University was found to have made a strong start. Its Rector and a resident faculty of eight professors and three lecturers are in place, supplemented by a roster of over 150 distinguished visiting professors who serve on a voluntary basis. Modern teaching aids and equipment are in use and suitable library facilities are being built up. Qualifications awarded by the University to its students have been confirmed by outside institutions and the high standard of its programmes has been recognized by other universities. A full academic review of the University has been proposed by its Board of Governors to follow up on this recognition. A more balanced distribution of students between the various courses of study available is, however, judged to be important to the University's status as a seat of learning in its field.

36. The review team determined that, from an administrative and organizational standpoint, the University's charter had, by and large, proven adequate and it noted the benefit currently derived from having the Secretary-General of IMO serve as Chancellor. The team has proposed measures to support more effective functional ties between the University's Executive Council and its Board of Governors and has suggested procedures for student representation in the University's administrative and academic forums.

37. The team concluded its review by observing that the University's financial development had satisfied the short-term requirements of a growing institution, but did not guarantee its long-term viability. As a first step UNDP agreed in 1985 to increase its contribution to the University in 1987. However, as required by UNDP's technical assistance mandate, the Programme will gradually phase out its support. While calling for increased contributions from the University's major donors, the team has also recommended that, as a first step toward attracting sustained and broader support, the University should prepare a plan for the period 1987-1991, assuming a student body levelling off at 200. In-kind and other types of support, which have already helped to diversify the University's resource base, are also being encouraged.

## 2. Putting people to work

38. Continued funding from the Special Measures Fund for Least Developed Countries (SMF/LDCs) has been effectively utilized for the UNDP/ILO interregional support system for special labour-intensive public works programmes (SPWP). SPWPs provide immediate employment while creating irrigation systems, water supplies, roads and other works which directly or indirectly generate long-term employment. UNDP's interregional contribution from SMF/LDCs of approximately \$1 million a year has covered core support and direct intervention at the country level to launch new programmes or bridge

between programmes. This has been matched by support from the International Labour Organisation (ILO) for approximately seven posts in the Geneva-based support system. The project's delivery rate, which ranges between 85 per cent and 90 per cent, is one of the highest under the SMF/LDCs programme. During the 14 months between September 1984 and November 1985, the support system was able to increase the total level of multilateral and bilateral funds in support of the UNDP/ILO special public works programme from \$87 million to \$104.2 million. Most significantly, over \$17 million of national and regional IPF funding has gone into SPWP programmes which were drawn up, monitored, evaluated and received major bilateral capital inputs through the UNDP/ILO/SPWP support system. In addition, inputs from the United Nations Capital Development Fund (UNCDF) have been secured or are under consideration for activities in several least developed countries.

39. Twenty-six least developed countries have so far received direct or indirect support for strengthening or promoting SPWPs through these combined efforts. In 1986, it is anticipated that several new countries, including Angola, Maldives, Samoa and Sao Tome and Principe, will join SPWP and benefit from the interregional support system.

40. An extension of SMF/LDCs support through June 1987 has been approved and an independent evaluation of the SPWP interregional support system is in process. The results of this evaluation will be submitted to the June 1987 Governing Council.

## II. ASSOCIATED FUNDS

41. Seven associated funds, administered by UNDP or its Administrator, extend and diversify the Programme's capacities. Specialized in scope and flexible in operating procedures, these funds are an integral part of an increasingly versatile development support system centred on UNDP and its country office network. Through this support system, additional resources are mobilized and channelled to developing countries to meet the need for special efforts in small-scale capital development; drought and desertification control; the provision of volunteer services; energy management and development; natural resources prospection and development; science and technology; and the involvement of women in mainstream development.

42. As a number of the examples which follow suggest, projects assisted by these funds build upon, complement, or sometimes actively combine with, projects financed from UNDP central resources, often becoming mutually interdependent for the attainment of their results. The accounts which follow may be read in conjunction with the year-end reports of individual funds, submitted separately to the Governing Council, to which appropriate cross-references have been made.

### A. United Nations Capital Development Fund

43. Complementing UNDP-supported technical assistance, UNCDF helps Governments to carry out the Substantial New Programme of Action for the Least Developed Countries (SNPA) by providing small-scale capital grants and loans for activities among the poorest segments of society.

44. For example, since 1979 UNCDF has been supporting the efforts of the Government of Bhutan to increase the country's food production and reduce its food deficit through a project to provide agricultural credit to small farmers. These farmers, each cultivating less than three acres, represented about 40,000 of the poorest families in the country's farming community. The maximum for each individual credit was \$160 and interest was charged at the annual rate of 6 per cent. The credit fund started to revolve in 1982. Forty-six per cent of the loans was used to improve livestock, 15 per cent was devoted to the purchase of seeds and seedlings and 13 per cent to land development. The balance of the loans was made primarily for the purchase of fertilizers, small farm implements and fencing and terracing. By mid-1984, the bulk of these loans had been repaid and, in the same year, UNCDF approved a second phase of this project, for medium-term credit, which extends to 2,000 subsistence farmers each with less than four acres of irrigated land.

45. Assistance from UNDP to Malawi through the United Nations Department of Technical Co-operation for Development had, by 1984, helped the Government to identify its priority needs in village road-building and to elaborate construction standards and associated technical designs. The authorities subsequently launched a village access roads and bridges programme to give rural populations year-round access to schools, health centres and markets. UNCDF was asked to finance the equipment, materials and skilled labour needed to build bridges and culverts, while self-help labour was arranged to construct the roads. One year later, road construction was under way in three of five target districts, about 100 kilometres of roads had been completed and one third of the total number of bridges required had been built and put into service. Work in remaining districts starts in early 1986 and the Government has sought additional UNCDF assistance to replicate the project in other areas.

46. In Haiti, working partly with the assistance of construction engineers, architects and sociologists supported by UNDP, UNCDF has for several years made a substantial contribution to low-cost housing and slum rehabilitation projects in Port-au-Prince. Recently, under a project to renew the area of Cité Simone, over 28,000 square metres of roads have been constructed, including a major access road. A housing site and basic amenities have also been established at Drouillard, one of the slum localities where the new road passes. This project has constructed 980 metres of main drainage canals, 3,000 metres of secondary canals, 94 drinking water fountains, 24 community sanitary blocks, street lighting, roads and community centres.

47. Through a revolving fund, the project has also constructed 754 houses at Drouillard, which have accommodated families displaced by the new access road scheme. Another 30 houses are being completed. With resources accumulated in the revolving fund, it is now planned to develop a new 9.9 hectare site north of Drouillard for the resettlement of some 1,500 families expected to be affected by large-scale urban renewal efforts in the St. Martin and Cité Simone areas.

48. Co-ordinating its efforts with those of UNDP, UNCDF continues to help Governments obtain additional support for their strategic efforts in the Water Decade. Through a cost-sharing arrangement with the Arab Gulf Fund for United Nations Development Organizations (AGFUND), UNCDF has assisted the Government

of Rwanda to establish public water taps at 85 locations in the poorest sections of Kigali. This assistance has financed imported materials including 8,000 metres of pipe, all requisite connections and faucets and the cost of constructing 85 water kiosks housing four taps each. The Government, which executed the project itself, quickly came to see that, before private operators could be expected to lease these kiosks and sell water at low, fixed prices, incentives in the form of additional monthly income would be needed. It accordingly adjusted the country's commercial code to permit kiosk operators to sell small high-demand household items as well. By 1985, clean water and frequently used domestic items were both increasingly available at lower prices to some 65,000 Kigali residents, kiosk operators were earning extra income, and the national water authority was recovering its operating and maintenance costs. (See also DP/1986/50.)

#### B. United Nations Sudano-Sahelian Office

49. As the emphasis of assistance to Africa shifted from famine relief to medium- and long-term recovery and rehabilitation, the United Nations Sudano-Sahelian Office (UNSO) intensified its efforts to provide the linkage between emergency relief operations and ecologically sound recovery leading to sustainable development. Thus, complementing UNDP-supported efforts in Africa, the major thrust of UNSO's programme during 1985 was to restore the deteriorated resource base of the Sudano-Sahelian countries. Reforestation, rangeland management, the development of renewable energy resources, feeder road construction and maintenance and long-term planning and programming are among key emphases in current activities.

50. Major achievements were realized within the field of reforestation during 1985. In Ethiopia, an UNSO-supported fuelwood plantation project in Dese planted 312 hectares during the first year of implementation. This amount of hectarage exceeds the total amount envisaged for the entire project by 112 hectares. UNSO and the Government of Finland recently undertook a joint mission to formulate phase II of the Dese project, which would increase the total amount of area planted to 7,500 hectares. Notable results were also achieved by UNSO's fuelwood plantation project for the towns of Debre Birhan and Nazret. A total of 7,100 hectares has been planted and the Government of Denmark has contributed \$2.6 million to expand the planting programme to 11,200 hectares. It is estimated that, by 1990, the plantations established by this project will supply in full the fuelwood needs of the populations in these two areas.

51. Reforestation efforts in Burkina Faso have also produced significant results. The Government of Sweden is contributing \$800,000 to finance an UNSO-supported project that establishes family woodlots in the Koudougou region. The planting of 1,200 hectares has been completed thus far and the introduction of a programme to promote improved cooking stoves has received widespread support from the local population. In the Sapone region, a reforestation project financed by AGFUND has assisted 57 villages with the rehabilitation and establishment of fuelwood plantations.

52. Progress with reforestation has been also registered in the Niger. A project to establish a green belt around the city of Niamey has surpassed planting targets by 152 hectares. In northern Benin, an UNSO-assisted reforestation project to establish multipurpose plantations succeeded in producing 326,000 plants during 1985. Public education programmes emphasising the importance of tree planting were held in 128 villages.

53. UNSO has been active in promoting rangeland management in many of the Sudano-Sahelian countries. In Mali, a project that aims at the integrated, sylvopastoral development of the Niger river flood plains (Zone lacustre), managed to regenerate 1,270 hectares with a principal source of forage for livestock. In the Sudan, a scheme to manage grazing lands around permanent water supplies has also made significant progress. Three perimeters, protecting approximately 848 hectares of severely degraded rangelands, have been constructed in two villages. As with several UNSO-supported efforts, much of the construction was completed on a voluntary basis by the villagers.

54. UNSO has also initiated the establishment of a centre to monitor pastoral ecosystems in Senegal. The project, which is funded by Denmark, involves the use of aerial photography, remote sensing data and ground-truth surveys for ecological monitoring. It also includes extension and consciousness-raising activities for pastoral communities.

55. With regard to long-term planning and programming, UNSO maintained its assistance to the Sudano-Sahelian countries for the development of national strategies to combat desertification. Within this context, planning and programming missions were fielded to Togo and Ghana. UNSO also supported and participated in national seminars on desertification in Benin, Burkina Faso and Senegal.

56. During the year, UNSO continued its activities in, and pursued resource mobilization efforts associated with the construction and maintenance of feeder roads, centred on Burkina Faso, Cape Verde, the Gambia, the Niger and Senegal. A new programme was formulated for the Gambia (83 kilometres of roads) and negotiations started to utilize West African Development Bank (BOAD) funds for road construction in Senegal; an undertaking was obtained from the African Development Bank (AfDB) to provide about \$5 million for the construction of new feeder roads in the Niger.

57. Special attention was devoted to working out a regional system of feeder road maintenance in the Sahel, taking account of its national components. In that connection, an extensive survey was undertaken of the needs of the Sahelian countries for maintaining roads constructed to date with UNSO support. The envisaged programme would be supported through UNSO for an initial period of about two years and would help to reinforce the existing capabilities of the Governments concerned in the organizational, managerial, logistical and training aspects of road maintenance. (See also DP/1986/53.)

C. UNDP Energy Office

58. The Energy Office continues to play a catalytic role in mobilizing financial resources for high priority energy projects, while extending substantive support to other energy sector activities within UNDP.

59. The Office, in collaboration with UNDP's Division of Global and Interregional Programmes, continued its support to the joint UNDP/World Bank 70-country **energy sector assessment programme** and its follow up, ESMAP, with a total contribution to date of \$10 million from the Energy Account. In addition, it promoted the implementation of a number of other energy projects in the areas of technological assessment, resource assessment and development, training and information flows, in co-operation and co-ordination with other multilateral organizations, bilateral programmes and private sector.

60. In the area of technological assessment, reference may be made to the **Global Gasifier Monitoring Programme** and the **Global Wind Pumping Evaluation Programme** which were undertaken with the World Bank as executing agency. The first phase of the gasifier programme was launched with a contribution of \$450,000 from the Energy Account, and its second phase has now been initiated with a contribution of \$600,000 to the Energy Account, by several donors, including the European Economic Community (EEC). The wind programme has involved the convening of an expert workshop for the preparation of the programme, and this initiative has attracted support from several donors through the Energy Account in order to start the implementation of the programme.

61. In the field of resource assessment and development, in addition to a number of ongoing geothermal and small hydropower demonstration projects, a new mini-hydro project has been approved in the Dominican Republic, involving the final selection of the site, the preparation of engineering designs and the supervision of construction. Consultancy services and some specialized equipment are also being provided.

62. In the area of training, a number of seminars and training courses have been organized in partnership with the Economic Development Institute of the World Bank. In order better to structure the trained manpower requirements of developing countries, the Institute, in co-operation with the Energy Office, convened in January 1986 an informal meeting of the United Nations organizations which are responsible for various aspects of training. The meeting resulted in an agreement to organize joint agency missions to selected African countries for developing training plans and strategies for those countries. Another project in this area was the organization of an international training programme in coal technology at the University of New Castle in Australia with the co-operation of the Joint Coal Board of New South Wales.

63. The Office also supports the promotion of greater energy-related information flows to developing countries through the Centre on Small Energy Resources which has been established in Rome, in co-operation with the United Nations Institute for Training and Research (UNITAR) and with financial



support from the Governments of Belgium and Italy and UNDP. The purpose of the Centre is to improve the flow of information to developing countries on existing technologies related to small energy resources, particularly new and renewable sources. Two photovoltaic information workshops are under preparation by the Energy Office, with joint funding from six manufacturers of photovoltaic systems in Europe and the United States. These workshops, which cover Africa and South-East Asia, will take place in Kenya and Thailand respectively in April 1986 and are expected to provide information on small photovoltaic power systems to participants composed of decision makers and design engineers from those countries. (See also DP/1986/54.)

#### D. United Nations Volunteers

64. As the sample of activities provided below indicates, the United Nations Volunteers (UNV) programme continued to expand in 1985 in response to an increased demand for middle- and upper-middle level personnel, particularly in the least developed countries where the need for such expertise is currently more acutely felt than in other developing countries.

65. There were United Nations volunteers in all but two countries in the African region which remained the largest recipient of volunteer expertise, absorbing over 52 per cent of the 1,128 volunteers in service during 1985. A notable feature of the activities of the UNV programme in the region was the implementation of UNV Emergency Assistance to Drought-Affected Countries in Sub-Saharan Africa (project RAF/84/024). The project became fully operational in 1985 with 100 per cent of its budget for operational activities - \$1.5 million - committed and an implementation rate of 73 per cent achieved. Other priorities of the UNV programme were the provision of expertise to meet critical manpower needs, particularly in education, agriculture and health and support to regional institutions.

66. In Botswana, 13 volunteers were serving as teachers in several educational institutions in disciplines ranging from agricultural science and mathematics to numerous skilled trades. Following an external evaluation in June 1985 of a UNV-executed education project in the Central African Republic, the programme provided assistance in the training of some 80 secondary school teachers in the country. The three-year assistance for which 31 United Nations volunteers are required - 29 were already in service - is considered by the Government as a special and preliminary step towards the implementation of educational reform in the country. In Mauritania, some six volunteers were assigned to two projects involving the repair and maintenance of water wells and bore-holes.

67. In Lesotho, United Nations volunteers are providing on-the-job training to counterpart nationals in the areas of agricultural engineering, soil conservation, mechanical engineering, village water supply engineering and veterinary assistance. In the health sector, UNV has assigned volunteers who function as pharmacists, medical doctors and computer specialists in health information systems.

68. In Mozambique, UNV has supplied expertise in water resources development, disaster relief co-ordination, small-scale irrigation, agriculture and diesel power engineering. It has also provided laboratory technicians, construction material development trainers, water quality control analysts, hydrogeologists and a variety of other specialists in the health sector. United Nations volunteers also continued to work within intergovernmental institutions in efforts to promote more effective regional infrastructure through a programme sponsored by the Economic Commission for Africa (ECA) in Ethiopia and Zambia.

69. The Asia and the Pacific region was the second largest user of United Nations volunteers in 1985. In Bhutan alone, over 40 volunteers were engaged in projects in tourism, trade and commerce and urban planning. The region also provided the largest recruitment base for volunteers. As at 31 December 1985, there were 335 volunteers in Asia and the Pacific representing 30 per cent of the total number of volunteers in the field and they were serving in 26 countries in the region.

70. In China, some 10 volunteers were engaged mainly in specialized English teaching, while in Singapore volunteers continued to serve as lecturers in engineering, computer science and architecture in two national polytechnics. Elsewhere in the region, in the Lao People's Democratic Republic, Papua New Guinea, Samoa and the Trust Territory of the Pacific Islands, United Nations volunteers served in several multisectoral projects and programmes.

71. The programme consolidated its Domestic Development Services (DDS) and youth-related activities in the region through the introduction of new measures for the recruitment and training of DDS volunteers and the monitoring and evaluation of DDS and youth projects. DDS training workshops were organized at the national levels in India and the Philippines, and a course for national DDS field workers was conducted in Sri Lanka.

72. With only 54 volunteers in Latin America and the Caribbean during 1985, UNV's presence in the region was still modest although the number of recipient countries increased to 14. Nearly half of the volunteers were serving in Jamaica, mainly in the health sector. In Honduras, eight United Nations volunteers continued to participate in a refugee resettlement programme. UNV activities are expected to expand in Jamaica through a second health project, in Barbados where 15 volunteers are required for assignment to various Government institutions and in Haiti. DDS activities are expected to commence shortly in the Caribbean, with the approval of the Caribbean Community (CARICOM), following a workshop organized in 1985 in Jamaica in which government and non-governmental institutions from eight countries participated.

73. There were over 150 United Nations volunteers assigned to projects and programmes in the Arab States and the Middle East region, with Somalia and Yemen absorbing over half of them in 1985. A regional project - UNV Assistance to Least Developed Countries in the Arab States (RAB/84/027) - became operational in 1985. It is a multisectoral project with activities in agriculture, communication, engineering, small-scale industries, etc. In Yemen, 13 volunteers continued to work as engineers and surveyors within a self-help housing project based on appropriate technology to assist in the

reconstruction of some 15,000 homes devastated by earthquake. Additionally, 12 other volunteers were assigned to assist the Government in training middle-level employees in government departments in order to strengthen its plan implementation capabilities. In Somalia, United Nations volunteers are serving in a project of the United Nations High Commissioner for Refugees. (See also DP/1986/49.)

E. United Nations Revolving Fund for Natural Resources Exploration

74. In 1985, the Revolving Fund for Natural Resources Exploration (UNRFNRE) maintained its two principal objectives of assisting Governments to pursue new explorations and bring the results of previous discoveries to the investment stage. In Argentina, for example, a high-grade gold and silver discovery at Huemules is considered one of the most promising prospects in the country. Following the Fund's assistance in the preparation of bidding documentation, the Government called for international tenders on the Huemules prospect. If findings warrant a large-scale mining operation, this could lead to substantial capital investments, and if sufficient tonnage is proved, an underground mine processing between 500 and 1,000 tons per day is foreseen.

75. In Benin, during a final Fund-supported exploration campaign in 1985, initial reserves of 250,000 tons of white kaolin in the Adakplame area were increased to an indicated 1 million tons. Positive indications of additional white kaolin lenses at comparatively shallow depth were found over an area of at least 1 square kilometre. Evaluation of the kaolin showed the material to be suitable for tableware items, small washbasins and tiles. With an existing factory in Benin which previously imported high-price kaolin for its industrial ceramic wares, the Fund-supported kaolin discovery could quickly lead to a cost-efficient industrial enterprise for local and, possibly, export markets.

76. Subsequent to its offshore phosphate discovery in the Congo, the Fund's first small-scale feasibility study was approved which will provide the investment parameters for the phosphate/shell deposit in domestic fertilizer and cement industries.

77. In Peru, Fund-assisted work has yielded initial indications that a gold-bearing glacial till deposit might be of sufficient magnitude and grade to support a dredge-mining operation. An extended drilling programme, due to begin in 1986, will provide more specific results on the potential grade and tonnage of this mineralization. A series of pits are now being sunk and tested to assist in the statistical interpretation of drilling results.

78. A drilling programme is also under way in Haiti to define further a potentially economic gold-bearing sulphide system (which includes minor copper lead and zinc) discovered by the Fund near Cap Haitian at an area known as Faille B in the northern sector of the country. Some eight drillholes have now intersected the mineralization and have provided gold values well above economic grade (up to more than 2 ounces per ton). In co-ordination with the Government, the Fund is actively seeking investment interest for property

development so that the Fund may phase out its costs and provide capital flows, thus avoiding the post-discovery/pre-development gap. Several international mining groups are showing considerable interest. At the same time the Government is actively promoting other gold properties which have been discovered as a result of a decade of UNDP technical assistance provided through United Nations Department of Technical Co-operation for Development. (See also DP/1986/51.)

#### F. The United Nations Development Fund for Women

79. By General Assembly resolution 39/125, the United Nations Development Fund for Women (UNIFEM), formerly the Voluntary Fund for the United Nations Decade for Women, was officially transferred from the United Nations Secretariat to autonomous association with UNDP on 1 July 1985. The close ties which have existed between UNIFEM and UNDP since the earliest operations of the Fund have thus been further reinforced and formalized.

80. UNIFEM assistance is intended to catalyze the greater involvement of women in mainstream development, as the following examples indicate. A Fund-supported project for promoting the diffusion of tested food technologies, used extensively and almost exclusively by women, became fully operational in 1985. Concentrating initially on needs in Africa, the project is preparing information packages on technically proven and socially accepted technologies to reduce the burdens on women of such labour-intensive activities as oil pressing, food processing, grinding and grain storage. The project will also equip women with efficient, small-scale agricultural implements, and provide training and credit facilities. Twenty-five Governments have expressed interest in participating in its activities. Eighteen of these Governments have requested UNIFEM to undertake programming or project design missions while another seven have asked for assistance in organizing training workshops and in extending ongoing UNIFEM-supported projects in this field. Five such programming missions were carried out in 1985. As a result of three of these, to Cameroon, Mozambique and Senegal, good prospects now exist for the development of new projects in the fourth programming cycle which will directly address the needs of women farmers and food producers.

81. Under its Africa Investment Plan, UNIFEM now actively participates in the UNDP-supported round-table process of consultations with the object of assisting Governments to take account of women's needs at the outset of proposals emerging from these meetings. The Fund participated as an observer at meetings in the Gambia and was involved in preparations for similar round-table meetings in Chad and Togo. As a result, in the case of Togo, a rural credit programme benefiting women is being developed under a joint financing arrangement with UNDP. Experience gained through this involvement has led UNIFEM to decide to recruit national consultants as resource persons who will collaborate in future round-table preparations with international consultants financed by the Fund and by UNDP.

82. In Indonesia, a UNIFEM-supported project to promote income-generating activities and family education among young rural women is making good progress. Targeted at a group of early school-leavers in West Java, the project seeks to stimulate fundamental improvements in their prospects by helping to create occupations for women otherwise destined for unemployment or early marriage. New entrepreneurial and co-operative activities introduced through the project include chicken-raising, horticulture, beekeeping, vegetable planting and cattle-breeding. Initial results show a growing consciousness among participants of their self-worth in new productive contexts and a developing interest in educational and other pursuits aimed at self-improvement.

83. Equally fundamental in approach is a UNIFEM-supported project in Argentina, which is training women in poverty-stricken areas to act as health agents. The project has started to yield returns after only six months of operations. By encouraging women to gain a better understanding of, for example, the nutritive value of different local foods, training courses have begun to widen the dietary choices open to village communities. It is reported that, among the families of 42 participants, the nutritive quality of food intake has increased while food costs have been reduced as a result of more judicious purchases. Attitudinal changes among project participants, bred of greater self-confidence, have improved their capacity to communicate with other women and thereby diffuse new knowledge on domestic hygiene and other health-related matters. (See also DP/1986/55.)

#### G. United Nations Financing System for Science and Technology

84. Despite the continuing uncertainty regarding the long-term financial and institutional arrangements of the United Nations Financing System for Science and Technology (UNFSSTD), this fund has been able to initiate a number of science and technology projects and activities for developing countries. For example, the main objective of a new \$3.4 million project for the Asian Institute of Technology (AIT) is to upgrade the computer utilization and computing capability of AIT by strengthening the professional standards of faculty and staff which will enable the Institute to play an important role in the transfer of computer technology to developing countries in Asia. The project will provide the required hardware and software as well as technical assistance and fellowships for faculty training in such areas as computer graphics and information and operating systems. The project will also help to create a project software library service as a first step toward an information technology centre to serve the region.

85. Another example of the Financing System's outreach is the creation of a technical consultancy consortium in Africa called AFROCONSULT. This new activity brings together selected African and non-African technical consulting firms with special expertise in food technologies, agro-industries and energy. Since the consortium will be profit-making, it is designed to be commercially competitive. At the same time, a major objective is the upgrading of African technical capabilities.

86. Another important initiative in the African region is the establishment, jointly with the African Regional Centre for Technology, the African Association of Universities and the City College of New York, of the African Chairs of Technology in existing African institutes. The objective is to provide the technical and financial resources for teaching and research in food processing, bio-technologies and nutrition. Linkages between these African Chairs and nationally established food and nutrition institutions are being established.

87. In terms of output of projects initiated earlier, benefits are now being realized from a large number of UNFSSTD-financed activities. For example, in Latin America, through a carbon-fibre project in Brazil, research development and pilot production activities on wet spinning of the precursor fibre and carbonization of the carbon fibre have been set up. This project illustrates the possibilities for rapid adaptation of new technologies transferred via the Financing System from industrial to developing countries. Results of this project are already being utilized in commercial production, among other things, in commercial aircraft that are now being offered in international markets. In this, as in all UNFSSTD-financed projects, an intercountry workshop was held to help developing countries to initiate their own programme in this technology. A related technical book published on this process is now in distribution.

88. In the same region, a UNFSSTD project in Uruguay which helped to develop a method to inactivate foot and mouth disease virus in meat products has also had successful commercial results. Most significantly, previously closed markets in the United States and the European Economic Community have been re-opened to meat products from Uruguay with important economic potentials for this major export product. (See also DP/1986/52.)

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