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PROJECT RESULTS: GLOBAL AND INTERREGIONAL PROGRAMME
AND SPECIAL FUNDS

I. GLOBAL AND INTERREGIONAL PROGRAMME RESULTS: SOME EXAMPLES

1. The UNDP Division of Global and Interregional Projects (DGIP) works to mobilize and support international co-operation in selected fields of acknowledged importance to development. The global programme supports basic and applied research activities relevant to a wide range of developing countries and thus increases their access to the world-wide pool of advanced scientific and technical knowledge. The interregional programme disseminates and utilizes research results and helps countries address shared development problems which can be dealt with most effectively through multiregional approaches.
2. During 1986, DGIP continued to give close management and technical support to those activities in its portfolio which are essentially long-term. These include programmes in water supply and sanitation, tropical disease research, fisheries, agriculture, income and employment generation and energy. A new initiative in developing country trade promotion was also taken. In addition, the Division moved to achieve:
 - Closer links between its activities and those supported through UNDP regional and country IPFs and UNDP-administered Funds;
 - Greater participation in DGIP activities by developing country institutions, non-governmental organizations (NGOs) and the private sector, as well as by multilateral and bilateral agencies;
 - The accelerated application of recent scientific and technological results to developing country needs; and
 - The more systematic monitoring and evaluation of programme relevance and cost-effectiveness.

These trends are apparent in the following examples, which also illustrate the increasing country-level impact of global and interregional programming.

1. Water

3. Substantial progress has been made in realizing the goals of the International Drinking Water Supply and Sanitation Decade (IDWSSD). During the first three years of the Decade, more people gained access to clean water supplies than in the preceding 10 years. The World Bank alone is committing \$1 billion a year in water development loans, while hundreds of millions more have been generated from other sources, public and private. Nonetheless, 1,200 million people throughout the developing world still lack safe water and 1,900 million need adequate sanitation.

4. UNDP is deeply involved on all fronts of IDWSSD. In co-operation with the World Health Organization (WHO), the World Bank and other multilateral and bilateral agencies, the Programme now supports 5 interregional projects, 4 regional projects and 200 country projects, plus a project to strengthen national NGOs and a

project devoted to public information. Information, in fact, is now recognized as a priority tool for realizing the goals of the Decade.

5. A World Bank-implemented interregional project has been testing handpumps in the laboratory and under field conditions in 18 developing countries, and promoting research, development and local manufacture of pumps suitable for village use and upkeep. Some 3,000 units of 70 pump varieties were tested and two models found to meet criteria for ruggedness, lifespan, ease of maintenance and low cost. National teams supported by the project are monitoring pump performance, setting up repair systems involving the employment of women and fostering village handpump development and manufacture. With testing successfully completed, the project is broadening its scope to include improvement of borehole design and handpump utilization for small-scale irrigation as well as for drinking water. Project results are being widely disseminated with a view to attracting major investments.

6. Meanwhile, a World Bank-implemented global project is developing, demonstrating and disseminating appropriate technologies for converting urban waste into a useful resource. During its initial phase, the project carried out and published engineering and technical studies, one of which deals with the health effects of irrigation with wastewater and has led to recommendations for revising WHO standards for the re-use of effluents. Twelve country studies are now being prepared for publication covering such key topics as the management and recycling of urban waste and its anaerobic digestion to produce biogas and wastewater usage.

7. Bilaterally funded feasibility studies have identified the most promising waste recovery alternatives for Douala, Khartoum, Colombo and Mexico City and the necessary financing is now being mobilized for full-scale demonstration projects. Similar research is under way in Abidjan and Dakar and socio-economic investigations of wastewater aquaculture in Lima are scheduled for implementation in the near future. A Phase II project, approved in November, will build the foundations for cost-effective, environmentally sound waste recycling in developing nations worldwide. Benefits for the urban poor will be specifically targeted - among them, reduction of pollutants in their living environment, creation of employment opportunities, production of low-cost energy and generation of municipal revenues to underwrite expanded social services.

8. Another interregional project implemented by UNDP under cost-sharing arrangements with Norway and Canada is showing that greater participation of women in water supply and sanitation projects increases the effectiveness and impact of assistance. Activities are currently under way in 10 countries, with special emphasis on evaluating and disseminating the results of demonstration field work to provide guidance and advocacy for similar schemes elsewhere. Training for trainers, extension personnel and women community leaders in water supply, hygiene and sanitation are major project components.

9. The project is broadening its approach as community women identify related priorities such as food production, access to credit, income generation and primary health care. WHO, the United Nations Children's Fund (UNICEF), the World Bank, the Canadian Agency for International Development (CIDA) and the United States Agency for International Development (USAID) are collaborating in this effort, as are

local and international NGOs. In an expanded fund-raising drive, further proposals have been presented to the Australian and Norwegian Governments, as well as to Live Aid/Band Aid and USA for Africa.

2. Tropical and diarrhoeal diseases

10. DGIP is equally active on another health-related front: the struggle against tropical and diarrhoeal diseases that kill and cripple millions and debilitate economies throughout the developing world. During 1986, encouraging progress continued to be made by the Special Programme for Research and Training in Tropical Diseases (TDR) which UNDP co-sponsors with WHO and the World Bank. The Programme, which also receives support from over 40 multilateral and bilateral agencies, works to overcome six afflictions endemic in developing countries: malaria, schistosomiasis (bilharzia), filariasis (of which river blindness is one form), African trypanosomiasis, also known as Chagas' disease, leprosy and leishmaniasis, another skin disease. Operational in more than 100 countries, TDR has an annual budget of \$25 million, 72 per cent of which is spent on international research and development and the remainder on strengthening national research capabilities.

11. Clinical tests were carried out on the anti-malarial drug, halofantrine. Another promising anti-malarial agent was derived from artemisine, the active ingredient of a medicinal herb used for centuries in China, which has potential as a fast-acting and effective compound against severe, complicated varieties of the disease. A multi-faceted control strategy for schistosomiasis is emerging from vaccine and chemotherapy development, the use of molluscides to kill snails, follow-up care for patients at scheduled intervals, community education and the integration of control operations into overall health care systems.

12. Ivermectin, manufactured from a natural antibiotic, has been found capable of freeing river blindness sufferers from parasites with a single dose, while also blocking transmission of the disease. DFMO, the first agent effective against late-stage sleeping sickness to be developed since the 1940s, has been tested with such success that it has been labelled the "resurrection drug".

13. Major advances have been made against Chagas' disease with field testing of pesticidal paints that check the spread of the insects which carry the disease. One application of paint is effective for up to nine months. Hopes for a vaccine have been strengthened by the recent cloning of an antigen which appears to be involved in parasite penetration of host cells. Two new compounds for treating leishmaniasis have reached the clinical testing stage.

14. In collaboration with WHO, UNICEF, the World Bank and bilateral organizations, UNDP supports the Global Diarrhoeal Diseases Control Programme which aims at vanquishing a devastating illness, which afflicts children under five with up to 1,000 million episodes a year. Diarrhoeal diseases also cause death, disability and malnutrition among adults on a massive scale, enervating economies and overstraining health budgets. In 1986, management controls on some 250 biomedical research projects in over 55 countries were reorganized to give new priority to epidemiological intervention and the development of improved vaccines and therapies.

15. Additional 1986 project achievements included a cluster of new vaccines against typhoid, cholera and cattle salmonellosis which proved 65 to 95 per cent effective during field trials in Latin America, Asia and Arab countries. A battery of diagnostic methods was evaluated to determine those best suited for developing country use. Oral rehydration salts (ORS) offering longer shelf-life with less expensive storage were formulated, as were ORS therapies that significantly decreased the volume, duration and damage of diarrhoeal attacks. Studies identified locally available foods well-accepted and adequately absorbed by children with diarrhoea.

3. Fisheries

16. An encouraging initiative for improving co-operation in fisheries assistance worldwide was taken in October 1986 when UNDP joined with the World Bank, the African Development Bank (AfDB) and the European Economic Community (EEC) to co-sponsor the First Fisheries Development Donor Consultation. Over 50 representatives of 29 agencies providing more than \$400 million a year in fisheries aid met for three days of problem-solving discussions which produced an action-oriented consensus. Since the ultimate beneficiaries of the consultation will be the developing countries, the need for donor-recipient interaction was recognized. In a number of key decisions, donors agreed on:

- Co-operation to ensure that fisheries programmes funded by different institutions within recipient countries are mutually coherent and supportive;
- Action to improve the quality of project identification, formulation and implementation with emphasis on the need for better training;
- Encouraging and facilitating the exchange and dissemination of information on fisheries development;
- Support for co-ordinated research on major problems, including marketing, involved in fisheries and aquaculture;
- Periodic regional and sub-regional donor/recipient consultations to increase the impact of fisheries assistance, and to reinforce South-South collaboration.

17. An inter-agency information exchange system is already in operation and a review of fisheries research needs is scheduled. These activities, combined with expanded use of World Bank consultative groups and UNDP round-table meetings, will go far towards improving the quality of projects in this key sector.

18. An example of the type of co-operation foreseen is the interregional project, Tuna Development and Management in the Indian Ocean and South-East Asia. In December 1986, a sub-committee of the Indian Ocean Fishery Commission gave final approval to cost-sharing arrangements under which, by 1989, this project will establish a tuna data centre funded by coastal and deep-sea fishing countries, the

EEC and the Food and Agriculture Organization of the United Nations (FAO). This project will provide participating Governments, and through them private sector fisheries, with continuously updated information on the valuable and highly migratory Indian Ocean tuna resources, enabling them to plan investments, licensing and fishing fleet deployment more effectively. Costs of this final phase of UNDP assistance will be shared between the Interregional Programme and the Regional Programmes for Asia and Africa.

4. Agriculture

19. Agricultural research continued to command the largest share of the global programme expenditures during 1986, approximately 65 per cent in all. Special emphasis was given to:

- Increasing food production in deficit areas by raising yields and countering the inroads of drought, disease and pests on crops and livestock;
- Enhancing soil fertility through research on biological nitrogen fixation and fertilizer technology.

20. As in past years, much of the assistance to agricultural research and training was channelled through the world-wide network of advanced facilities sponsored by the Consultative Group on Agricultural Research (CGIAR). The \$58 million UNDP contribution to CGIAR for 1982-1986 attracted nearly \$370 million in collateral support from other donors. One recent CGIAR achievement was a pioneering investigation of the maize streak virus by the International Institute of Tropical Agriculture, which won the 1986 King Baudoin award for international agricultural research. Another was the introduction of novel screening techniques for identifying disease-resistant maize strains which are now being tested for cultivation in Africa.

21. The availability of fertilizer is also crucial for expanding developing country food output. Indigenous fertilizer production has been steadily growing and newly available data indicate that rising demand may be met substantially from local production in the near future. The focus of the Programme will then shift to distribution, extension work and the provision of credit and crop-marketing incentives.

22. To help expand developing country capabilities in these areas, DGIP is supporting a project for research and training in fertilizer technology and utilization in collaboration with the International Fertilizer Development Centre (IFDC) in the United States. The project has focused intensively on training and, by the end of 1986, nearly 3,000 men and women had participated in a variety of courses. Advanced experimentation has resulted in development of the urea supergranule, which can increase rice production up to 50 per cent, significant improvements in the efficiency of nitrogen fertilizer application to upland and lowland crops, and the delineation of means to conserve energy in fertilizer production, distribution and use.

23. Scientists hope it may one day be possible to minimize the use of chemical nitrogen fertilizers through substituting natural processes of biological nitrogen fixation. In 1986, UNDP continued its efforts to bring that day nearer, with all its economic and environmental advantages, through support for work at the International Institute of Tropical Agriculture (IITA) in Nigeria, the International Centre for Tropical Agriculture in Colombia (CEAT), the International Rice Research Institute (IRRI) in the Philippines and the International Centre for Agricultural Research in the Dry Areas (ICARDA). The discovery that certain bacteria, blue-green algae and water ferns can convert atmospheric nitrogen into compounds readily absorbed by the root systems of food plants is moving appreciably closer to full-scale exploitation.

24. The global programme also features activities designed to increase food availability by cutting down the enormous losses caused by plant and animal diseases and pests. At the International Laboratory for Research on Animal Diseases (ILRAD) in Kenya, interlocking goals include development of a livestock trypanosomiasis vaccine suitable for mass immunization, improvement in the effectiveness of available drugs, integrating vector control programmes and breeding disease-resistant cattle. The International Centre of Insect Physiology and Ecology (ICIPE) in Kenya is in the forefront of efforts to develop economically feasible, biologically based pest control strategies for poor African farmers. Information generated by the largely African scientific staff of the Centre has led to the establishment of a pest management network which is conducting field trials in several countries. In 1986, ICIPE received the Brown University Alan Shawn Feinstein Award for the Prevention and Reduction of World Hunger.

5. Special Public Works Programme (SPWP)

25. In May 1986, an independent evaluation of the SPWP emphasized the comparative advantage of the Programme in activities related to training and evaluation. The report unequivocally affirmed the value of SPWP and called for a multi-year financial pledge to the new phase of this interregional project from the UNDP Special Measures Fund for Least Developed Countries (SMF/LDC).

26. By the end of 1986, the project had generated more than \$112 million in additional grants for SPWPs in the LDCs - \$10 for every dollar of SMF/LDC input. Negotiations are well advanced for a further \$13 million from several donors. Through encouraging the formulation and funding of viable SPWPs, this support system has been responsible for promoting much direct investment in the LDCs. In these countries, where the human cost of structural adjustment is highest, such investments often draw the poor into the adjustment process and increase their share of available resources through creating income-earning employment. Rural populations and local groups are also actively involved in selecting the public works to be launched under SPWP.

27. Nepal provides an instructive example of advantages to be reaped from the use of SPWP as a focus within IPF programming. The Government elected to organize several activities in the country programme around its SPWP because it advanced such key objectives as increased food production in hilly areas through small-scale

irrigation. A recent evaluation counts 40,000 people in a communal area of 1,427 hectares as having significantly benefitted. During 1986, new SPWPs were launched in four countries.

6. Trickle Up Programme

28. A similar emphasis on grass-roots involvement is demonstrated by the Trickle Up Programme (TUP). This modest but catalytic project, to which UNDP has contributed \$70,000 since 1983, is an NGO initiative that stimulates and supports small-scale income-producing activities in rural and urban areas. Specifically, TUP furnishes \$100 grants to groups of five or more people who together will commit at least 1,000 hours of their otherwise unemployed time to an enterprise they themselves have planned, for which they must secure the necessary resources and in which they will reinvest not less than 20 per cent of profits realized.

29. Businesses set up by TUP entrepreneurs include poultry raising, clothing manufacture, the operation of food shops and bakeries, palm oil production, bee-keeping and the fabrication of footwear, baskets, hats and mosquito nets. A recent survey of 199 TUP operations made possible by UNDP funding shows a highly successful record - costs of less than two cents for each hour of self-employment generated, \$4.63 of entrepreneur income for each dollar of grant outlay, first year sales revenues of \$6.57 per dollar of investment and an average reinvestment rate of 66 per cent which grows with each successive year of operations. As a result, UNDP is exploring the possibility of additional funding from other Programme sources in order to augment TUP activities in selected countries.

7. Energy

30. By early 1987, the UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP) was active in some 40 developing countries. In January 1986, UNDP and the World Bank convened a consultative meeting with high-level participation from both donors and developing countries in order to review past ESMAP activities and consider the future scope and content of the Programme. The meeting observed that, notwithstanding the precipitous decline in crude oil prices which began in 1985, it could hardly be said that the energy crisis had disappeared, particularly in regions such as sub-Saharan Africa where, with only a few exceptions, commercial energy use was limited. It went on to note that while lower energy prices might, in the short run, provide a measure of relief for oil-importing countries, there was reason to believe that energy prices would once again increase as a result of rising levels of demand and declining exploration. Depletion of the biomass through continuing deforestation was noted with deep concern, and it was strongly recommended that ESMAP should pay particular attention to the formulation of household energy strategies in both urban and rural areas.

31. Consequently, ESMAP is currently examining the issue of household energy use in Ethiopia, Niger and Morocco. Depending on the availability of financing, similar work is envisaged for Senegal, Burkina Faso and the countries of the Southern Africa Development Co-ordination Conference (SADCC). In Liberia and

Mauritius, the Programme is investigating the possibility of enhancing the role of the private sector in the production of energy. In other countries such as Bolivia, ESMAP is working to improve co-ordination among different institutions involved in the energy sector. And, in still other countries such as Thailand, ESMAP is identifying measures to be taken by the Government in response to falling energy prices. On the supply side of the energy equation, ESMAP continued to carry out pre-investment studies in such areas as peri-urban fuelwood plantations, the identification of potential natural gas reserves and the introduction of new and renewable energy technologies where these can be competitive vis-à-vis more traditional forms of energy and where there are clear opportunities for local manufacture.

32. On the demand side, ESMAP is pioneering a number of innovative approaches to the dissemination of improved woodstoves within the context of an overall household energy strategy. For example, in Niger, ESMAP is collaborating with the United Nations Development Fund for Women (UNIFEM) and the United Nations Sudano-Sahelian Office (UNSO) on a woodstove programme. Additional funding is being provided by Norway, the Netherlands and the Federal Republic of Germany. This project, in which a number of NGOs are actively participating, had led by mid-1986 to the distribution of some 25,000 improved stoves in Niamey and several other urban areas. In encouraging the more widespread dissemination of these stoves, the ESMAP project in Niger has relied heavily on local artisans and existing marketing channels. Similar projects are either under way or are being contemplated in other countries based on the success achieved to date in Niger.

33. The 1986 Consultative Meeting also encouraged ESMAP co-sponsors to make greater use of local personnel and consultants wherever feasible in implementing activities of the Programme in order to contribute to a greater transfer of know-how. For example, in Sudan, a major fuelwood/forestry feasibility study is under way with the support of the Netherlands, Finland, Denmark and Norway. A project preparation team consisting entirely of Sudanese nationals was established in early 1986 and charged with gathering essential data on the Sudanese forestry resources situation and carrying out preliminary work on project design.

34. Also during 1986, a major energy strategy study was conducted in Colombia with the support of Canada. Normally, such a study would have relied heavily upon ESMAP staff plus donor country consultants. However, given the new ESMAP emphasis on the enhancement of local human resources, the Colombia study was largely entrusted to Colombian consultants supervised, as and when appropriate, by ESMAP staff. Similarly, a Canadian-funded study in Ghana on the prospects for utilizing sawmill and forest plantation woodwastes for power generation and briquetting assigned practically all of the data gathering and related preparatory work to a team of Ghanaian consultants.

35. Virtually all the trends cited above are expected to intensify during 1987. This seems all the more appropriate given the concern of the international community over the depletion of the biomass, a matter to be discussed at the Global Meeting on Tropical Forests to be held in Bellagio in July 1987.

8. Trade

36. In the trade sector, the interregional programme continued to provide core support to the interregional, multi-product Market News Service (MNS) which, since its initiation as a Kenya country project in 1978, has helped subscribing developing countries to maximize their foreign exchange earnings from exports of so-called "non-traditional" products. These include fresh fruits and vegetables, spices, processed fruit juices, hides and skins and semi-tanned leather. Through the end of 1985, the Service had been providing the exporting community in the developing countries with frequent information on market conditions in Europe for these products.

37. An external evaluation of the Market News Service strongly recommended that it expand its coverage of importing markets to include the United States and Canada. This advice was based on the fact that the greatest potential for an increased demand for products covered by the MNS is to be found in North America.

38. Accordingly, and in co-operation with the Department of Food and Agriculture of the State of Massachusetts and the Port Authority of Boston, MNS opened its first North American office in Boston in October 1986. In a short time, the Boston office has already identified and established working relationships with many of the major United States and Canadian importers of the products covered by MNS. This is the first time a UNDP-assisted project designed to stimulate "South-North" trade has successfully established itself as an "impartial broker" between developing country exporters and developed country importers. Plans are now in hand to include the Japanese market in the Service.

39. Also in 1986, UNDP and the World Bank joined forces to initiate a Trade Expansion Programme. This activity is being launched at a time when many developing countries are restructuring their economies through adjustment programmes.

40. Under these circumstances, the need for a more systematic and sustained effort to promote developing country trade seems clear. The Trade Expansion Programme is expected to assist those developing countries which, for one reason or another, have decided to reform their trade policies through liberalization and other measures. The Programme will assist countries to define and promulgate whatever legislative and institutional measures may be needed to implement reforms in their trade policies.

41. Special attention will be paid to the social and economic impact of trade liberalization, including possible short-term unemployment in affected and hitherto protected industries. Efforts will be made to determine the most appropriate timing and sequencing of trade policy reforms in order to help minimize the impact of such "transition costs".

II. ASSOCIATED FUNDS

42. Seven associated funds, administered by UNDP or its Administrator, enlarge and diversify the capacities of the organization. Specialized in scope and flexible in operating procedures, these Funds are an integral part of a versatile development support system centred on UNDP and its country office network. Through this support system, resources are mobilized and channelled to developing countries to assist special efforts in strengthening the productive sector and meeting basic needs through provision of small-scale investment assistance; drought and desertification control; the provision of volunteer services; energy management and development; natural resources exploration; science and technology; and the involvement of women in the economic and social mainstream.

43. As a number of the following examples indicate, projects assisted by these Funds build upon, complement, or sometimes actively combine with projects financed from central UNDP resources. Often, they help draw in important bilateral or multilateral support. This account of their activities 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 (UNCDF)

44. Working first and foremost with the least developed countries (LDCs), the United Nations Capital Development Fund provides small-scale capital investment assistance to promote socio-economic development with particular emphasis on bringing early and direct benefits to low-income groups. The special characteristics of the Fund - among them national execution, flexible financing options, short lead time and early visible results - make for easy and effective co-ordination with UNDP/IPF projects, as well as with those of other multilateral and bilateral programmes.

45. The Bilma region of Niger has a harsh desert climate with barely 25 millimetres of rainfall annually. Here, some 10,000 people are scattered among seven settlements completely isolated from the rest of the country. They struggle to eke out a living by date cultivation, garden cropping and producing salt for animal and human consumption. Since 1982, UNCDF has been working with the Government to make the area more accessible, raise rural incomes, increase the efficiency of an existing system of co-operatives, bring both settled and nomadic peoples into the national economic mainstream and enhance the role of women.

46. By the end of 1986, UNCDF had provided six all-purpose vehicles to transport project personnel who are training the villagers in community and co-operative development. Five heavy trucks are also now available to export the area's produce and bring in essential imports. A warehouse and garage workshops have been built, co-operative retail outlets opened and a revolving fund established. A substantial economic revival is under way. The equipment provided initially has been amortized and replaced and, of major importance, inhabitants now have incentives to remain in Bilma and participate in self-managed development. The project is being extended to construct an administrative facility, as well as a women's centre where training

will be offered in health care, literacy and income-generating skills. At the same time, ways to reduce women's workload while increasing their economic contribution will be investigated and introduced.

47. In Tonga, UNCDF is helping the Government develop artisanal fisheries by providing equipment and material to build and rehabilitate one main and two subsidiary boatyards, as well as assisting the Government in establishing a revolving fund with proceeds from the sale of boats to local fishermen. With backing from UNDP technical advisory services, these facilities have already constructed 40 fishing vessels which will permit exploitation of higher-yielding deep sea waters. A Japanese bilateral input is furnishing marine engines and cold storage capabilities for the boats, while on-shore fish marketing outlets have been built on three islands with assistance from Australia and New Zealand.

48. In Burkina Faso, UNCDF is helping the Government to construct a Regional Centre for borehole drilling as part of its campaign to bring drinking water to villages. The project benefits from UNDP/IPF inputs covering supplementary operational costs and technical expertise. Activities consist of drilling 530 boreholes equipped with manual pumps in the central, eastern and western regions and in the Sahel area. A regional branch of the Rural Hydraulics Department is also being constructed in the province of Sahel. The aim is to assist the Government to provide water at a volume of 10 litres per day per person and to ensure that at least minimum supplies are maintained year-round. So far 400 boreholes have been drilled, of which 254 yield significant amounts and the construction of the Regional Centre is near completion.

49. UNCDF grants have made possible construction of earth-filled dams in Mauritania - a continuation of earlier Fund help in promoting flood-recession farming. The project also provided equipment for mechanized work brigades rehabilitating dams and irrigation systems. This will allow agricultural development of 2,684 hectares of bottom-land for which UNDP is furnishing technical assistance. The local population will carry out the bulk of subsequent maintenance activities and some 16,000 people are expected to benefit from increased cereal and animal production. Other UNCDF projects are planned to provide additional support for agricultural growth and higher living standards through seed multiplication by farmers, provision of credit, cottage industry production of farm implements and increased women's development activities.

50. In Yemen Arab Republic, the Fund is underwriting construction of 280 low-cost housing units as part of a recovery effort from the 1982 earthquake. UNCDF aid is fostering the self-help activities of family groups living in remote villages, many of which have no access to roads and vehicles. With transport equipment, tools and building materials furnished by a UNCDF grant, and with complementary UNDP/IPF support for the Government Executing Office for Reconstruction, new techniques and technologies are being introduced and tested for replication over a much wider area. Another significant benefit will be countering migration from the countryside, already a serious problem before the effects of the earthquake gave it added impetus.

51. Although agriculture and animal husbandry are the staff of life for 95 per cent of the rural population of Bhutan, food grain production is insufficient to meet the country's needs and rural standards of living are low. Therefore in 1979, the Government called on UNCDF to help establish a nationwide agricultural credit scheme which would allow subsistence and landless farmers to buy crop and livestock-raising equipment, and finance small farm improvement through terracing and irrigation. The latest reports show that some 6,000 of the country's poorest farmers have benefitted from approximately 8,000 short-term loans averaging \$115. In Tashigang, the largest district covered by the system, 40 per cent of these loans went to landholders cultivating less than two acres. By mid-1986, over \$500,000 in principal and interest had been paid back to the project's revolving fund and the eventual recovery rate is likely to exceed 80 per cent. By demonstrating the fiscal soundness of small farmer lending and the cost-effectiveness of rural credit in the Bhutanese environment, the project has paved the way for a larger second phase capitalized at over \$1 million for providing medium-term loans.

52. The Tanzanian island of Zanzibar is another chronic food deficit area where per capita incomes are well below the \$260 national average. This led the Government to request UNCDF financing, backed by UNDP/FAO technical assistance, for a project to develop intensive irrigated rice production at two sites covering approximately 1,000 hectares. Here 2,000 farmers tilling one-fifth to two-fifths hectare plots have been able to raise their output so significantly that they now harvest about 4,500 tonnes of rice yearly or 15 per cent of the total consumption of Zanzibar. In addition to the irrigation works, the project constructed storage centres and installed solar-powered pumping equipment. Project outreach is also being expanded through the availability of audio-visual facilities for training extension service agents.

53. In accordance with its priority objective of increasing rural productivity and employment, the Government of Togo has installed a manufacturing workshop with \$940,000 of UNCDF investment and over half a million dollars of UNDP/UNIDO technical support. The workshop, known as UPROMA, is producing plowing equipment, carts, manual pumps and oil presses, rice threshers, corn huskers, peanut shellers and a variety of seeding machines. This in turn is allowing farmers to increase their yields not only through better technical methods, but by easing the burden of physically debilitating hard labour. Local production has also lowered the need for costly imports and raised the level of employment and incomes. (For further details on UNCDF activities, please see DP/1987/47.)

B. United Nations Sudano-Sahelian Office (UNSO)

54. In 1986, normal rainfall returned to much of the Sudano-Sahelian region after drought that had persisted since 1968, though it can not yet be said with any assurance that this protracted disaster has ended. The record shows that, after the initial western Sahelian drought of 1968-1973, there was substantial rainfall in 1974 which again dwindled away in the following years.

55. With the return of the rains, the emphasis of international assistance to Africa shifted from famine and other emergency relief to recovery and rehabilitation. A major element in recovery will be combating the desertification which is encroaching upon the countries immediately south of the Sahara. The drought and desertification control programme of the United Nations Sudano-Sahelian Office has thus assumed increased importance in the arid, semi-arid and sub-humid zones of Africa, where drought is a recurrent, unpredictable phenomenon and desertification a continuing process due to the fragile nature of the region's ecosystem and the increasing use and misuse of the land. In these drylands, UNSO activities are complementing UNDP-supported programmes by concentrating on projects specifically aimed at the problems of sustained arid zone development. Deforestation control, sand dune stabilization, rangeland management, feeder road construction and maintenance and long-term planning and programming are key elements of UNSO work.

56. In Ethiopia, UNSO continued to expand its reforestation activities, which are urgently needed to reverse the alarming decline in the country's forest cover from 40 per cent of the total land area at the beginning of the century to 2.7 per cent at present. This deforestation was a major factor in recent crop failures and food and fuel shortages. Fuelwood plantations supported by UNDP in Debre Birhan, Nazret and Dese have exceeded planting targets and seen high survival rates of seedlings - between 70 and 80 per cent - due in large measure to the active participation of local communities. At the present rate of growth of the young trees, fuelwood needs, constituting over 95 per cent of the total energy requirements in these peri-urban areas, will probably be satisfied on an ecologically sound basis by 1990. The programme has also been testing various native and foreign species, planting techniques and integrated project designs. The Danish International Development Agency (DANIDA) has agreed to contribute \$5.2 million for a new project in the Blue Nile ecological zone. The project provides a wide range of economic benefits for the local inhabitants, principally cash income for their work at the nurseries, on road construction, and in establishing plantations. During its first phase, peasant households increased their annual income by 33 per cent.

57. To counteract sand dune encroachment, one of the severest manifestations of advanced desertification, UNSO continued to support several dune fixation projects. In Somalia, over 1,200 hectares of sand dunes were stabilized by the end of 1986 in the area of Shallambod, where there had been massive encroachment on town and village settlements. This invasion was successfully checked by planting Euphorbia, Cactus, Commiphora and various trees. The experiences learned in Shallambod are being applied to a new UNSO-supported project now under way to stabilize coastal dunes in the Brava area.

58. In Mauritania, moving sand dunes, both coastal and continental, are widespread. They threaten roads, towns, oases and agricultural lands. Here, UNSO has been supporting a nationwide sand dune fixation programme. During Phase I, completed in 1986, 850 hectares were stabilized at 15 sites. Local plant species were tested and the relationship of wind to sand movement was studied. Related programmes for training and for heightening awareness were conducted. Plans for sand dune fixation at 103 additional sites and integrated programmes for three zones were also prepared. An important artery being protected from moving sand

dunes is the Route d'Espoir, or Road of Hope which connects Nouakchott with Nema, running west-east across virtually the entire country. Following an in-depth evaluation mission, UNSO obtained the agreement of DANIDA to contribute \$5 million for Phase II starting in 1987. UNSO financing for the programme has been supplemented by funds from the Governments of Algeria and Mauritania, UNDP, the UNCDF and the World Food Programme (WFP).

59. To protect and enrich arid soils, UNSO has also been promoting the planting of leguminous trees. One of the most effective for the Sudano-Sahelian region is Acacia albida, which is drought-resistant and relatively fast-growing, fixes nitrogen in the soil and is also a source of fodder. The trees provide shade during the dry season and shed their leaves during the rainy months, making agricultural cultivation possible beneath their branches. Among the most effective UNSO Acacia albida projects is Operation Gao in the Department of Dosso in Niger. Activities are under way for planting 300,000 seedlings of Gao (the tree's local name) over an area of 600 hectares, along with applied research, extension services and pilot work on hedges, windbreaks and food crops. The synergistic effects of combining Acacia albida planting with the development of agro-pastoral systems under Operation Gao are expected to include the regeneration of 4,000 to 6,000 hectares of arable land and substantial increases in production.

60. Another species being planted extensively with UNSO assistance is Acacia senegal, which not only protects and improves the quality of the soil, but also exudes gum arabic, which has varied commercial, industrial and pharmaceutical uses and is a valuable source of cash income and foreign exchange. A major programme for restocking the gum belt in the Kordofan region of the Sudan entered its second phase, with support from the Netherlands. By mid-1986, Acacia senegal plantations had been established around 206 villages with over 7,000 farm workers participating. More than 900 women are playing a vital role in the project. Their participation is being supported by the assignment of female community development and extension officers and associate experts.

61. To ensure intra-regional co-operation and to mobilize external resources for drought- and desertification-related programmes, the Governments of eastern Africa established an Inter-Governmental Authority for Drought and Development (IGADD) in early 1986. The member Governments are Djibouti, Ethiopia, Kenya, Somalia, the Sudan and Uganda. The establishment of IGADD was several years in the making, and UNSO provided assistance to participating Governments drawing on its experience with the Permanent Inter-state Committee for Drought Control in the Sahel (CILSS) in western Africa. UNSO also worked closely with IGADD in the initial operation of the Authority, including setting up its secretariat and organizing a major donors' conference scheduled for March 1987.

62. Under its feeder roads programme, UNSO had ongoing construction projects in Burkina Faso, Cape Verde, the Gambia, Niger and Senegal in 1986. New programmes were also identified and/or formulated for Burkina Faso (338 kilometres), Cape Verde (46 kilometres plus an airport runways rehabilitation project), Mali (over 240 kilometres), Mauritania (350 kilometres), Niger (301 kilometres) and Senegal (extension of ongoing programme). New funds mobilized by UNSO through the Trust Fund amounted to \$3.7 million for construction projects in Burkina Faso, Cape

Verde, the Gambia, Niger and Senegal. UNSO also has been supporting national road maintenance programmes in the Gambia, Mali and Senegal. Feeder roads are essential infrastructure for opening up otherwise inaccessible rural areas to commerce and general development, as well as for the delivery of food and medical supplies during famines and other emergencies. (See also DP/1987/50 for detailed information on UNSO activities.)

C. Energy Office

63. The scope of the Energy Office activities and its development of new initiatives were limited because of reduced voluntary contributions to the Account in 1986. However, within available resources, several projects were successfully completed.

64. In April 1986, the Energy Office convened the first in a planned series of renewable energy information programmes which respond to the Nairobi Programme of Action. The inaugural events were two regional Photovoltaic Symposia and Information Workshops - one in Nairobi itself for participants from East African countries and the other in Chiang-Mai, Thailand for representatives from the countries of Asia. The Photovoltaic Symposia and Workshops provided information to small groups of decision-makers on the current cost and applicability of photovoltaics in sectors as diverse as health, water pumping and irrigation, education and rural development.

65. An important feature of the Symposia and Workshops was that they featured, for the first time, co-operation between UNDP and the private sector in creating awareness of renewable energy technology at decision-making levels in developing countries. Six major international companies from the United States, Federal Republic of Germany and the United Kingdom prominent in the photovoltaic field joined with the Energy Office in presenting these programmes. Their contribution covered financial inputs, technical information and resource personnel. Support was also provided by the UNDP Regional Bureau for Africa and its Regional Bureau for Asia and the Pacific. On the basis of these Symposia and Workshops, the Energy Office produced and distributed to developing countries a booklet which serves as a basic tool and guide to energy planners and the response has been very encouraging. In view of the success of these efforts, the Energy Office hopes to extend photovoltaic programmes to Latin America, West Africa and other regions.

66. Initiatives are also being pursued in other areas of renewable energy technology. For example, a coal technology training programme was initiated in 1986 in co-operation with the Government of Australia. The programme was based on a demand survey indicating that some 300 trainees from developing countries would potentially benefit. Through co-operation with the private coal sector and the Joint Coal Board, as well as with the Government, the Energy Office organized a nine-week training programme for 17 participants. Training was comprehensive, designed to build skills in all aspects of coal technology through lectures, laboratory work and on-site plant visits. The successful outcome of this first effort has led to the finalization of two courses to be held in 1987 with assistance from the Australian Development Assistance Bureau.

67. The Energy Office continued its support to ESMAP which is itself a follow-up to the 70-country Energy Sector Assessment Programme (ESAP) now completed. Second phase activities on the Global Gasifiers Monitoring Programme and the Global Wind Evaluation Programme have been initiated. (For further details on the activities of the Energy Office, please see DP/1987/49.)

D. United Nations Volunteers (UNV)

68. Important activities were carried out during 1986 by United Nations Volunteers working within both UNV-executed projects and those executed by United Nations system agencies.

69. As in the previous year, Africa remained the largest arena for UNVs, accounting for 52 per cent of the 1,125 in service at the end of 1986. The Volunteers were working in all but two countries in the region with their activities directed mainly to agriculture, rural development, education, health and sanitation and emergency/relief. For example, in Togo, Volunteers carried out a variety of tasks covering food distribution, forestry and co-operative movements. Long-term employment was created for some 250 young farmers and peasants settled on their own lands, which they cultivate using tools hand-made by themselves with the assistance of UNVs. In Zaire, Volunteers are helping to establish bureaux of agricultural statistics in the eight rural regions of the country and to design a national system for data gathering. In Tanzania, UNVs were participating in the implementation of an FAO-executed project which involved consolidating small-holder production on 450 hectares of irrigated rice land and the development of another 150 hectares.

70. In Comoros, several UNV doctors helped operate medical centres and health programmes, including the country's primary health care scheme. Volunteers were also engaged in on-the-job training of national counterparts, nurses and midwives in close collaboration with medical personnel from WHO, UNICEF and the United Nations Fund for Population Activities (UNFPA). In Botswana, Volunteers were taking part in a wide range of health-related activities, including primary health care services, training of Ministry of Health personnel for deployment in rural and urban areas, and the expansion and diversification of training facilities and programmes for medical and para-medical staff. They also worked as general medical practitioners, surgeons, laboratory technicians, nurses and health environmentalists in provincial hospitals in Mozambique. In the Central African Republic, Volunteers were serving as trainers of science teachers and, by the end of 1986, 40 teacher-trainees in the programme had successfully completed their first year. In Guinea-Bissau, Volunteers were involved in a variety of educational activities including formal and on-the-job science teacher training and preparation of basic texts and classroom materials for secondary schools.

71. Still the largest source of recruitment of UNVs, Asia also remained the second highest beneficiary of their services during 1986. By year-end, 316 Volunteers were on assignment in 26 countries. Assistance focused on furnishing middle- and upper-middle-level expertise to meet critical manpower requirements in many Asian countries and on posting highly specialized technical personnel to projects and programmes in the technologically advanced Asian countries.

72. In Bhutan, UNV continued to deploy Volunteers such major sectors as education, health and agriculture. In an effort to consolidate the contributions made by the Volunteers under this project, a new phase has been planned for implementation in 1987; its activities will concentrate on upgrading national institutional capabilities in science and mathematics, strengthening health services and delivery systems at central and regional levels, training veterinarians and building up the network of agricultural and animal husbandry extension services.

73. In Western Samoa, UNV assistance focuses mainly on health and education. A significant development in 1986 was the association of WHO and the United Nations Educational, Scientific and Cultural Organization (UNESCO) in project implementation, with Volunteers constituting the core expatriate personnel. In Laos, UNVs were working in some 20 projects aimed at self-sufficiency in food production, as well as in education and vocational training. In the People's Republic of China, Volunteers teaching English in various institutions contributed towards the high performance of Chinese students in language proficiency tests, enabling them to qualify for specialized training abroad.

74. By the end of 1986, 144 Volunteers were in service in the Arab States. Notable achievements were recorded in the Yemen Arab Republic, where Volunteers serving as engineers, architects and surveyors helped construct 74 housing units. Under this project's second and third phases, an additional 206 houses will be built. In a UNV multi-sectoral assistance project, one Volunteer, a mechanical engineer, helped the Ministry of Industry assess raw material requirements, plant and equipment as well as manpower needs in various industrial establishments in the country. Meanwhile, another Volunteer assisted the Confederation of Yemen Development Co-operative Associations in planning more than 3,000 kilometres of feeder roads. This Volunteer also supervised road construction and provided on-the-job training to national counterparts.

75. With only 68 United Nations Volunteers posted to Latin America, assistance was concentrated largely in Jamaica and Haiti, and small numbers were assigned to 13 other countries in the region. In Jamaica, Volunteers were providing health care services as medical officers and anaesthetists at hospitals in urban and rural areas. A UNV cartographer provided invaluable assistance in updating and finalizing the National Atlas, while a water resources engineer trained a national counterpart to develop a computerized preliminary model for managing river water resources.

76. During 1986, UNV activities under its Domestic Development Services (DDS) mandate continued to expand and diversify. In Africa, the UNV-executed regional DDS project completed its first phase with training courses aimed at increasing the effectiveness of 50 leaders of community self-help groups. Held in Zambia for seven eastern and southern African countries and in Togo for six western African countries, this training consisted of both formal instruction and practical village-level work. An important recent development has been the start-up of a number of country IPF-funded grass-roots projects which focus on establishing revolving funds, implementing women's programmes and promoting youth participation in development.

77. The major DDS activity of UNV in Asia and the Pacific involved over 80 NGOs in 16 countries. One of the project's important components, the exchange of field workers among DDS organizations, was highlighted in 13 detailed case studies which made a practical contribution to the growing body of literature on participatory approaches to development. During 1986, the project secured the agreement of the authorities in Bangladesh, India, Indonesia and Nepal to co-operate with an expanded number of NGOs working at the community level, while the Government of the Republic of Korea made available \$400,000 for strengthening DDS activities in Asia and Africa.

78. UNV programmes in the youth field during 1986 were intensified as a follow-up to International Youth Year. UNV Youth Specialists were assigned to Papua New Guinea, Swaziland and Zaire and a Youth Advisor was recruited for Bangladesh to assist the Government in drawing up a large-scale project support skills-training centres for young people. One major new area of technical assistance has been the inclusion of a UNV-executed youth project for the Pacific region in the Fourth Inter-country Programme at the request of the region's Governments. UNV fielded a mission which has prepared a project aimed both at providing support to young men and women at the local community level and at fostering government and NGO initiatives for promoting the participation of young people in development. (See also DP/1987/46 for further details on UNV activities.)

E. United Nations Revolving Fund for Natural Resources
Exploration (UNRFNRE)

79. In 1986, the United Nations Revolving Fund for Natural Resources Exploration continued to assist governments to search for new sources of both solid minerals and geothermal energy and to bring the results of previous discoveries to the investment stage. In Argentina, where the Fund has discovered promising high-grade gold and silver prospects, the Government has requested further assistance to increase and detail information on the deposit. If adequate tonnages and grades are proven, an underground mine processing between 500 and 1,000 tons of ore per day is foreseen. The Argentinian Government has indicated its willingness to assume the major share of responsibility for funding a phased programme to cost from \$1.2 million to \$4 million. It has requested the Fund to provide \$375,000 for drilling and foreign currency expenditures during the first stage.

80. With field work completed in Benin, the Fund submitted a final report to the Government naming kaolin as a "reported mineral" - that is, one for which some reimbursement to the Revolving Fund will be required if commercial exploitation proves possible. Evaluation of the kaolin indicates suitability for tableware, sanitary fixtures and tiles and the Fund has offered its assistance to the Government to bring deposits into production. It is hoped that the kaolin may be utilized by a local ceramic factory to produce suitable items for domestic use and, possibly, for export.

81. On-site field evaluation of crushed shell/phosphorite for direct application as a soil supplement and fertilizer was completed in August 1986 as part of the Fund feasibility study project in the Congo. Impressive yield increases were

obtained for soybeans, peanuts and corn during two growth cycles through soil treatment with a crushed mixture of approximately 40 per cent phosphorite and 60 per cent shell. The mixture was prepared from a bulk sample collected offshore of Pointe Noire during a third sea campaign conducted in 1985. This demonstrates that the utilization of phosphorite/shell in Congolese agriculture could have a major impact on sustained and increased production. The feasibility study, supported by the Fund with joint financing from the Government of France, will continue in 1987 with additional French assistance anticipated.

82. A project for base and precious metals exploration in Côte d'Ivoire became fully operational in September 1986. Compilation of all the data previously collected has been completed and field operations were begun during the second half of October. Collection of geochemical samples in the three exploration areas is well under way with chemical and mineralogical results to be available early in 1987.

83. In Haiti, an intensive drilling programme continued at the Faille B site to outline the boundaries of the gold mineralization which was discovered earlier by the Fund. A total of 1,967 square metres in 16 holes was covered during 1986 indicating, so far, an estimated 70,000 tonnes of ore-bearing reserves, grading 9 grams of gold per tonne. Prospecting continues in efforts to uncover additional mineralization. Exploration in Morne Cabrit, an area 1 kilometre southwest from Faille B, established that limited drilling is justified to determine the economic viability of the discoveries made to date.

84. An exploration project for gold, silver and zinc in Honduras became operational in January 1986 with field work concentrated in the Yuscarán Exploration Area. Activities have included geological mapping, geophysical surveys, tunnel clearance and 2,210 metres of drilling for diamonds. As a result of these investigations, a gold/silver bearing vein structure of considerable dimensions and economic grades is being outlined in the Guayabillas sector. Preliminary evaluation of the collected data is expected in March 1987.

85. Field operations in the search for gold and base metals were completed for the Fund project in Kenya. The final report is now being prepared.

86. In Peru, the exploration area was reduced by more than 50 per cent into two target areas which were selected for subsequent work. Activities completed involved the sinking of 33 pits and percussion drilling of about 3,500 metres. Investigations have already outlined 86 million cubic metres of gravel with an average grade of 175 milligrams of gold per cubic metre, which may be economically viable. In 1987, the programme will evaluate further the reserves indicated geologically in one of the zones.

87. Field work for the Fund project in primary gold exploration in Rwanda commenced in June 1986 in the Nyungwe area and in August in the Miyove area. Both regional and detailed geological mapping has been carried out and soil and weathered rock sampling, as well as trenching, is proceeding at both locations. Initial analytical results are encouraging and a geophysical survey to better delineate potentials for exploitation was under way at year-end.

88. In St. Lucia, the first geothermal project of the Fund became fully operational with the arrival on site of the supervision/management contractor. The drilling contract was signed in June and by the end of 1986, the contractor was mobilizing equipment and personnel. All well-site geological services contracts (well logging, mud engineering, well testing, etc.) have been finalized and drilling operations are scheduled to begin in 1987. The overall programme calls for sinking two wells up to a total depth of 4,000 metres. The project is being jointly financed by USAID in the amount of \$3 million under a management services arrangement.

89. In Sierra Leone, field operations in the gold exploration project of the Fund concentrated on detailed follow-up investigations in two areas. (For details on UNRFNRE activities, please see DP/1987/48.)

F. United Nations Development Fund for Women (UNIFEM)

90. The mandate of UNIFEM calls for the use of its resources in two priority areas - first, as a catalyst for programmes promoting the involvement of women in mainstream development activities, as often as possible at the pre-investment stages; second, to support innovative and experimental activities benefitting women in accordance with national and regional priorities.

91. In 1986, UNIFEM, working in close co-operation with the UNDP regional bureaux and field offices, sought particularly to fulfil the catalytic mandate of the Fund. While the long-term objective of this aspect of UNIFEM work is mobilizing resources commensurate with women's responsibilities and needs, the more immediate goal is to create models and to systematize concerns for women within operational activities. The systems and models developed by UNIFEM at the field level are now being made available to United Nations operational organizations and co-operative mechanisms are already in place with ILO, the United Nations Industrial Development Organization (UNIDO), UNICEF and WFP.

92. In accordance with the second aspect of its mandate, UNIFEM continues to respond to requests from Governments and NGOs for direct support to national and regional projects designed to realize fully women's potential for contributing to development. In 1986, the Fund focused on providing programming assistance that would ensure a sound basis for project implementation. Other initiatives included activities which augment the availability of food-cycle technologies and credit support systems.

93. Because both aspects of the UNIFEM mandate dictate careful planning before project implementation, in 1986 the Fund assisted 42 countries with programming, project design and evaluation. Most of the projects developed are now being reviewed by the Consultative Committee for UNIFEM. It is expected that some will be financed by IPF resources or other funds.

94. Typical of these programming exercises is a mission to Togo which resulted in a \$570,000 commitment by UNDP to develop a technical assistance project for women farmers, with UNIFEM adding a revolving credit fund component valued at \$270,000.

In Honduras, UNIFEM is co-financing with UNDP an advisor to ensure women's consideration in large-scale UNDP-supported projects and to monitor activities which have a significant impact on women. The results of a number of other pre-investment efforts have not yet been confirmed by Governments, but can be expected to follow similar patterns of attracting resources from other Funds.

95. In July 1986, UNIFEM took advantage of the triennial meeting of UNDP Resident Representatives in Niger to hold a "Brainstorming Seminar" on its involvement in round-table meetings, National Technical Co-operation Assessments and Programming (NATCAPS) and country programming. The Seminar's recommendations on modalities for bringing women into mainstream development activities were incorporated in the outputs from the Resident Representatives' meeting. As a result, UNIFEM has been involved in country programming, round-table and NATCAP exercises. Further, since UNDP country programming has been accorded an important role in the African Action Programme for Economic Recovery and Development, these exercises provide, among other things, an effective entry point for UNIFEM support of the Action Programme. As of January 1987, UNIFEM was participating in the country programming process in Ghana, Lesotho, Tanzania, Côte d'Ivoire, Chad, Angola, Gambia, Sierra Leone and Mozambique. The UNIFEM role in round-table preparations has resulted in the incorporation of strategies proposed for women in development in the national plan of Burkina Faso; and their adoption as working documents for follow-up sectoral meetings in Sierra Leone and Mozambique. The round-table activities are assisted by a special grant from the Government of the Netherlands and UNIFEM was represented at the April meeting of the round-table meetings for the Asia and the Pacific region.

96. Further examples of direct UNIFEM support for activities involving and benefitting women during 1986 include:

- Mexico, where a project to provide low-income women with training, technologies and credit is improving the lives of 400 families by promoting crops and livestock raising, while introducing new equipment and methods for water supply, grain processing and cooking that save women up to 10 hours of tedious labour each day.
- The Gambia, where mechanically-operated units for sorghum decortication and flour milling in 15 villages benefit a total of 30,000 persons. Five minutes of mill grinding is the equivalent of five hours of hand-grinding.
- Asia, where the programme is sponsoring a regional workshop on export marketing with the UNCTAD training centre and ESCAP. (See also DP/1987/52 for detailed information on UNIFEM activities.)

G. United Nations Fund for Science and Technology
for Development (UNFSSTD)

97. During 1986, projects supported by the UNFSSTD produced further evidence that science and technology provide some of the most significant answers to fundamental development needs.

98. Fund activities aimed at improving agriculture and fostering rural development include the project, Application of Technologies Appropriate in Rural Areas in Indonesia. In October 1986, a new Division of Appropriate Technology was inaugurated at the Indonesian Institute for Sciences in Subang. To the land and buildings provided by the Institute, the project added equipment for a wood and metal workshop, a pilot food processing plant, a laboratory and agricultural machinery. Division personnel are being trained concomitantly, particularly in the fields of energy and agro-industry. The project is expected to develop and adapt existing and new technologies through laboratory and pilot operations; and to disseminate the technologies already proven to satisfy immediate needs of the rural population. With external inputs totalling \$2 million, the project will continue to support the activities of the Division for Appropriate Technology for two more years.

99. A second project, Assistance to the Senegalese Institute for Agricultural Research, has created the central information bank for all agricultural research in the country. It is now introducing microfilm and micro-computers on a modest scale to facilitate access to a wealth of documentation which is probably unique in West Africa.

100. Yet another successful African project in the field of scientific research has been the assistance provided to the National Centre for Oceanographic Research in Madagascar. High-calibre work carried out in physical and chemical oceanography is already being used for standard-setting in the Indian Ocean; the results will be internationalized through a symposium involving neighbouring countries as well as other nations interested in the region. Close co-operation between national specialists and international experts, as well as the fact that the project was efficiently managed by local officials, were important factors in the results so far achieved.

101. The Second Beijing International Conference on the Strategic Orientation of Science and Technology for National Development was hosted by the State Science and Technology Commission of China from 7 to 11 April 1986. It was a sequel to the 1983 Conference, which initiated an international dialogue on issues of policy-making and the planning and management of development-related science and technology. The Conference focused on mechanisms to stimulate innovative and entrepreneurial approaches to technology development, particularly in the domain of frontier technologies. It also looked at the roles played by the state, universities, research institutions, industrial and production sectors and financial institutions. Of the 58 participants, 22 came from China, 15 from other developing countries, 12 from industrialized countries and 9 from the United Nations system organizations.

102. Also in Beijing, the construction of a new pilot plant for the National Food Technology and Quality Control Research and Development Centre was completed and the assembly of equipment has begun. The scientific research building will be ready for use by mid-1987 with considerably more national inputs than originally foreseen. During 1986, the Centre organized two short-term training courses for fruit and vegetable processing technology and one for food quality inspectors. Research and development on soybean derivatives has progressed to the point where

some products are close to pilot scale production. Fruit juices developed by the Centre are being produced and commercialized in Canton. The overseas training programme for food scientists and technologists has been defined in accordance with the priorities of the development plan for the food industry, and its implementation will start in 1987. This project provides \$2 million of support for the establishment of the Food Technology Centre as the nucleus of a national food technology programme.

103. Moving into a higher level of industrialization requires sophisticated new inspection methods known as non-destructive testing (NDT) to ensure quality control. In Latin America, a regional network has been established which links the national systems of the 17 participating countries. Courses and seminars, at both national and regional levels, have been attended by 2,873 participants during the last three years. Another 9,500 people have been trained in NDT techniques through national courses that used project syllabi drawn up by the Regional Working Group, and draft standards for the qualification and certification of NDT personnel have been prepared. The project has generated increased interest in NDT throughout Latin America and the Caribbean and it is highly probable that it will be used as a model for a similar undertaking in the Asia and Pacific region. (See DP/1987/49 for further details on UNFSSTD activities.)
