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SUPPORT

ANNUAL REPORT OF THE ADMINISTRATOR FOR 1989

PROJECT RESULTS: GLOBAL AND INTERREGIONAL
PROGRAMME AND SPECIAL FUNDS

I. GLOBAL AND INTERREGIONAL PROGRAMME

1. The Division for Global and Interregional Programmes (DGIP) of the United Nations Development Programme (UNDP) has two complementary and interacting roles. The global programme supports research into development issues of world-wide importance, focusing mainly on sustainable agricultural production and health problems. The interregional programme disseminates and applies the results of research in a variety of sectors, such as fisheries, health, water supply and sanitation, urban management, human resources and energy. It also promotes co-operation among developing countries in sharing research and exchanging knowledge and skills. Both programmes receive support from bilateral donors and international organizations, as well as from UNDP core resources.

2. The mid-term review of DGIP activities in the fourth planning cycle was completed in January 1990. It concluded that, while most programmes are being implemented as foreseen, DGIP has also responded well to problems not clearly anticipated when fourth cycle plans were formulated. Such problems include the AIDS [acquired immunodeficiency syndrome] epidemic, debt management and environmental degradation.

A. Agriculture

3. Nearly three quarters of the global programme resources of DGIP are devoted to agricultural research, aimed primarily at increasing food production. This research is linked with national crop improvement programmes in developing countries and is conducted through a network of international agricultural research

centres, which DGIP helped establish. In 1989, UNDP supported 12 projects carried out by these centres. UNDP provided \$US 10.5 million for this purpose, and a further \$240 million was contributed by other donors.

4. To date, more than 6,000 scientists and technicians from developing countries have been trained through the global agricultural projects of DGIP. Through these experts, close links are maintained between the international research centres and corresponding institutions in developing countries.

5. Research supported by DGIP in the centres includes the testing of improved varieties of sorghum, millet, rice, maize and wheat in different ecosystems. One centre carrying out such research is the International Centre for Maize and Wheat Improvement (CIMMYT) in Mexico. UNDP sustained assistance to CIMMYT over the past 13 years has contributed to a major breakthrough in plant breeding and genetics with the development of quality protein maize containing two amino acids that are lacking in ordinary maize. This new maize variety has been tested in 38 locations around the world, and is ready for wide-scale dissemination. Its introduction in areas where maize is a staple diet will greatly enhance nutrition and reduce the incidence of certain malnutrition-related diseases.

6. With \$22 million in UNDP support, the International Centre of Insect Physiology and Ecology (ICIPE) at Nairobi, has developed an effective technique for controlling African trypanosomiasis. This disease, which each year kills thousands of livestock, is carried by the tsetse fly, found throughout one third of Africa. The centre has pioneered the use of fly traps of brightly coloured cloth with conical roofs. The flies are attracted to the colours and the chemically reproduced smell of cow urine which is placed in tins beside the traps. Since 1987, these traps have resulted in a 99 per cent reduction of the tsetse population in the test area, which covers 150 square kilometres in the Nguruman region of Kenya.

7. In a related project, the International Laboratory for Research on Animal Diseases (ILRAD) in Kenya is developing breeds of cattle resistant to trypanosomiasis. Breeding trials are being conducted in close collaboration with the International Livestock Centre for Africa (ILCA) in Ethiopia.

8. The UNDP is investing \$5 million in a new three-year global research project, launched in 1989, which aims to develop environmentally acceptable methods of desert locust control. This project was launched in response to concern about the harmful ecological effects of chemical pesticides traditionally used to control locusts. It is being co-ordinated from the headquarters of the Food and Agriculture Organization (FAO) in Rome.

B. Water, sanitation, health

9. Under the banner of the International Drinking Water Supply and Sanitation Decade (IDWSSD), 1981-1990, UNDP and partner United Nations organizations and agencies are engaged in a campaign to provide the developing world with clean drinking water and adequate sanitation. The joint UNDP/World Bank Water and

Sanitation Programme continues to play a key role in this effort. By the end of 1989, UNDP had committed a record \$375 million to water and sanitation activities and was playing a leading role in the Decade, due to end in 1990. The DGIP has been a major supporter of Decade projects, in collaboration with the International Children's Fund (UNICEF), the World Health Organization (WHO), the World Bank and bilateral donors. The DGIP is also devising strategies and mobilizing resources for improved services in the 1990s through the Collaborative Council, a group of more than 40 donors chaired by UNDP.

10. As part of the UNDP/World Bank Water and Sanitation Programme, a low-cost sanitation project was launched in 1987 in response to the difficulty of providing conventional sanitation services in poor areas, particularly in rapidly expanding urban slums. The project has concentrated on the design and application of alternative solutions, including improved pit and pour-flush latrines and shallow sewers. Countries where these systems are being applied include Botswana, Ghana, India, Lesotho, the Philippines and Zimbabwe.

11. The UNDP/World Bank International Training Network for Water and Waste Management opened three new centres in 1989, bringing the total number of centres to nine.

12. The UNDP programme Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWESS) has extended its operations to 20 developing countries in four regions. The programme aims to improve water and sanitation services by involving communities, especially women, in the design and implementation of systems. While demonstrations remain an important part of the work of PROWESS, in 1989 major emphasis was placed on institutionalizing the lessons that have been learned. For example, it was agreed to include training in community participation and women's involvement in the UNDP/World Bank International Training Network. Advisers in PROWESS methods are also to be placed with the regional groups operating under the UNDP/World Bank programme. Meanwhile, demonstration work continued to expand. In 1989, a demonstration project was begun in Nigeria, funded with \$3 million from UNDP and \$775,000 from the Netherlands Government.

13. The WHO Diarrhoeal Diseases Control (CDD) Programme of WHO, to which DGIP contributed \$3.5 million between 1987 and 1989, has continued to achieve significant breakthroughs. Research conducted in 1989 at centres connected with the programme included the testing of vaccines against rotavirus, a virus responsible for up to 20 per cent of the more than four million annual deaths from diarrhoea world wide. Field trials of these vaccines have so far shown promising results. Tests were also carried out on typhoid and cholera vaccines, and an improved formula was developed for oral rehydration salts as a treatment for diarrhoea. With DGIP support, the International Centre for Diarrhoeal Disease Research in Bangladesh is studying the complex interrelationships between diarrhoea, maternal and child health, nutrition, fertility, water supply, sanitation and domestic hygiene.

14. The DGIP and WHO also play leading roles in combating the spread of AIDS through the Global Programme on AIDS, begun in 1987. More than 130 countries now

receive support through the Programme, to which UNDP contributed over \$20 million for the period 1987 to 1990. There were an estimated 600,000 cases of AIDS at the end of 1989. By the year 2000, the toll is expected to exceed six million. In 1989, responding to sharp increases in the rate of infection, UNDP approved \$2.4 million to be applied to three regional projects, in Africa, the Arab States and Asia and the Pacific. The projects will help Governments develop national anti-AIDS strategies and assist in training and education.

C. Fisheries

15. Taking advantage of recent advances in fish culture technology, DGIP launched a new project in 1989 on genetic improvement of tilapia fish. The project will release its first findings in 1990. The research is being carried out in the Philippines by the Centre for Living Aquatic Resource Management, in collaboration with the Government of the Philippines and the Agricultural University of Norway (NORAGRIC).

16. In 1989, DGIP worked with a steering committee composed of representatives of UNDP, the European Economic Community (EEC), FAO and the World Bank to produce a multi-donor diagnosis and strategy for international co-operation and fisheries research. The study, to be published in April 1990, outlines a strategy for international initiatives aimed at improving the quality of research in fisheries management and development. The estimated total cost of the study (\$800,000) will be shared among donors, who will jointly review the strategy at the Second Fisheries Development Donor Consultation, to be held in Paris in July 1990.

D. Human resources

17. Human resources development is an integral component of all programmes supported by DGIP. The Division is strengthening its efforts to enhance the capacity of institutions and individuals to plan and manage more effectively the application of research findings in key sectors such as health, agriculture and education.

18. The Special Public Works Programme (SPWP) of DGIP supports employment-generating rural development projects in least developed countries (LDCs). By the end of 1989, the programme involved 22 LDCs and more than 10 donors. There was active participation by three special funds administered by UNDP: the United Nations Capital Development Fund (UNCDF), the United Nations Volunteers (UNV) and the United Nations Sudano-Sahelian Office (UNSO). In the period 1987-1989, UNDP contributed \$1,420,000 to SPWP from the Special Measures Fund for the Least Developed Countries (SMF). In Nepal, SPWP is helping to manage more than \$100 million in credits for irrigation development from the Asian Development Bank (AsDB) and the World Bank. In 1989, SPWP drew up programme proposals for several countries, including a preliminary plan for reconstruction in Afghanistan. It also produced training materials on activities ranging from stone paving to the preparation of work plans. The project is now concentrating on building up the capacities of developing countries to manage their own public works programme and

on promoting greater participation by local institutions and local governments. Over the next two years the project will also work on the application of the SPWP approach in poor urban areas.

E. Trade, finance and investment

19. A UNDP/World Bank Trade Expansion Programme (TEP) was initiated in mid-1988 in the belief that many developing countries, having decided to reform their trade policies, might well require continuing advice on the implementation of the reforms. Demand for the programme's services continues to grow substantially. To date, country reports have been issued for Guatemala, Mali and Poland. The report on Poland has had a particularly important impact on recent reform efforts in that country. The TEP has also initiated work in Madagascar, Morocco, Uganda and Uruguay and the programme is to be extended to Kenya. Several other countries have expressed an interest.

20. An increasing number of projects supported by UNDP are designed to help Governments improve their external debt management and related policies. In 1988, DGIP appointed a team of independent experts to take a broad look at the needs of developing countries for assistance in this area. The team visited 14 developing countries and consulted United Nations organizations and agencies, donor governments, financial institutions and other public and private organizations concerned with the problem. Their report, entitled Debt Management and the Developing Countries, was published in July 1989. The report recommends that UNDP treat external debt management as a priority area and take the lead in arranging better co-ordination among technical assistance agencies active in support of external debt management.

21. As part of its activities in support of economic co-operation among developing countries, DGIP helped to establish the Association of State Trading Organizations (ASTRO). The group currently has a membership of more than 60 state-owned and private companies. A UNDP grant of \$255,000 for 1989 and 1990 led to further contributions totalling \$1.75 million from ASTRO members, the United Nations Conference on Trade and Development (UNCTAD) and the International Trade Centre (ITC).

F. Environment

22. In 1988, DGIP commissioned a major study on the financing of conservation in the developing world. The study was carried out by the World Resources Institute (WRI), based in Washington, D.C., with the support of UNDP, the Governments of Canada, Norway and the United States of America and several prominent foundations. The resulting report, entitled Natural Endowments: Financing Resource Conservation for Development, was issued in September 1989. It contains a number of proposals for consideration by the world community, including the creation of an international environmental facility to support natural resource conservation projects. Other proposals in the report include: a pilot investment programme, Ecovest, to promote sustainable use of resources; the linking of sector policy

reforms to resource conservation and debt reduction; and a global environmental trust fund financed by levies on greenhouse gas emissions. The report's findings and recommendations are currently being explored by the World Bank in close consultation with UNDP and the United Nations Environment Programme (UNEP). A pilot Ecovest scheme has already been established through the Overseas Private Investment Corporation (OPIC) of the United States.

23. The link between energy and the environment has increasingly come to preoccupy policy makers in both developed and developing countries. The energy sector is one of the largest contributors to environmental degradation, and therefore any improvement in the efficient use of energy benefits the environment. Furthermore, studies show that investment in energy efficiency tends to be more profitable than commensurate investment in increasing energy supply. The Energy Sector Management Programme (ESMAP), sponsored by UNDP and the World Bank and supported by some nine donors, is playing an important role in the global effort to increase energy efficiency. By the end of 1989 energy efficiency and conservation activities sponsored by ESMAP were under way or planned in some 40 developing countries. Moreover, ESMAP has recently launched a major initiative to promote the increased use of natural gas, which many developing countries possess in significant quantities. Wider use of this relatively clean fuel would bring positive environmental results.

II. ASSOCIATED FUNDS

A. United Nations Capital Development Fund

24. The UNCDF provides capital assistance to LDCs for small-scale projects designed to bring early and direct benefits to low-income groups. In 1989, UNCDF had 237 on-going projects totalling approximately \$445 million in value.

25. In Nicaragua, UNCDF is supporting a private concern which manufactures school furniture, door frames, floor-boards, ceiling beams and other wood products. The business is entirely managed and largely staffed by women. Sixty women have been trained as carpenters by the company. A day care centre is being set up for children of employees.

26. In Cape Verde, a project, being carried out by the government National Poultry Company, assisted by UNCDF, is stimulating private sector production of poultry by distributing one-day-old chicks to small poultry farmers. In addition, by providing a central storage facility, abattoir and mini-market, UNCDF has enabled the National Poultry Company to reduce its production costs and lower poultry and egg prices. This in turn is compelling private producers to improve their competitive efficiency.

27. In the mountainous parts of Bhutan, 138 suspension bridges were built as part of a project supported by UNCDF. Under the project, national construction teams received training in bridge-building. The new bridges have given farmers year-round access to distant markets and have improved access to health centres and schools.

28. In the Central African Republic, UNCDF has provided construction materials, tools and vehicles for a rural development project which is helping villagers to construct their own community facilities. To date, six pharmacies, five health centres, a poultry farm and an equipment storage facility have been built by villagers. The project has also established a revolving fund to promote small-scale, income-generating projects initiated by local women.
29. In many cases, UNCDF and UNDP projects complement each other, with capital assistance being provided by UNCDF and technical support by UNDP. One example is a project in Fouta-Djallon, southern Guinea. Under a prior government-assisted pilot project, farmers were trained in land preparation techniques and ways of marketing their produce more effectively. In 1987, to harness the experience gained by farmers, UNCDF initiated a project aimed at increasing agricultural production and at providing support to community development activities. UNDP is providing technical support to farmers to improve irrigation on 575 hectares. Construction work on irrigation canals, water supply points and three rural health centres is being carried out by personnel trained with UNDP assistance. The UNCDF is financing the purchase of the necessary agricultural equipment, and providing funds for seasonal credits to individual farmers and to farmers' and women's groups for food processing and other economic activities.
30. Sayaboury Province in Laos is one of the most isolated parts of the country because of bad roads and the lack of any nearby port on the Mekong River. With financial support from UNCDF and technical assistance from UNDP, 133 kilometres of road between Prabang and Sayaboury are being upgraded. In addition, a new port is being built by the Government of Australia. The UNCDF is providing a ferry and other equipment for the port. Local staff are being trained to repair and maintain equipment provided by UNCDF. These developments will improve access to the province and will allow better marketing of agricultural and forestry products.

B. United Nations Sudano-Sahelian Office

31. The mandate of the United Nations Sudano-Sahelian Office (UNSO) is to assist 22 countries of the Sudano-Sahelian region of Africa in combating drought and desertification. UNSO supports the rehabilitation and sound management of natural resources and the promotion of sustainable economic development. Over \$37 million was mobilized in 1989 to finance programmes and projects in the field of drought and desertification control. Projects initiated in 1989 include projects in deforestation control, rangeland and water resource management, soil protection and sand dune fixation.
32. Much of the work of UNSO in 1989 was concentrated on establishing governmental advisory and co-ordinating units to combat desertification. In the United Republic of Tanzania, UNSO supported the National Plan to Combat Desertification. Maps were drawn up and a data base was created. Following a Round Table consultation in Mali, UNSO is helping the Government to implement desertification control policies. Through consultations with donors, UNSO and UNDP have succeeded in forging an integrated approach to natural resource management, and have improved the co-ordination of financial resources for desertification control.

33. UNSO continued to support the Ecological Monitoring Centre in Senegal. Using satellite, aircraft and field surveys, the Centre produces maps and data on the location and distribution of livestock and wildlife, vegetation cover, bush fires and water erosion. The results are used to aid natural resource management.

34. An important aspect of the work of UNSO is promoting more efficient use of fuel. In the Sudan, with UNSO support, more than 500 tons of fuel briquettes were produced for industrial and home use. In the Gambia, UNSO recently assisted a project to increase production of fuel-saving cooking stoves. More than 40,000 stoves were distributed in 1989.

35. In Senegal, UNSO is supporting a soil protection and sand dune fixation project. More than 950 hectares of dunes have been fixed, 125 kilometres of wind-breaks have been established and 600 hectares of soil have been treated to increase fertility.

36. In Mali, UNSO contributed \$1.8 million towards the second phase of a project to rehabilitate the Lake Faguibine system. The aim is to restore the viability of five lakes and surrounding catchment areas of the system for fishing, livestock-raising and food cultivation. The project includes the clearing of channels feeding into the system and the creation of a land-use plan based on studies of physical and economic conditions in the area.

37. The UNSO contributed \$1.5 million towards a project to restock the gum arabic belt in Darfur in the Sudan, an area which had been partially deforested by drought and fuel gathering. The project aims to enrich 1,000 hectares of existing gum arabic plantations and restock an additional 25,000 hectares.

38. In Burkina Faso, an UNSO project is enhancing rural energy supplies by promoting village wood lots and community forestry in the provinces of Boulkiemde and Sanguie. The project has established more than 100 kilometres of wind-breaks. Support has been extended to 100 nurseries to promote the planting of trees.

C. United Nations Volunteers

39. The United Nations Volunteers (UNV) increased their global reach in 1989, with 2,355 UNV specialists serving in 108 countries. The major emphasis was given to LDCs, where 83 per cent of the UNV specialists were assigned.

40. Africa received nearly 50 per cent of the volunteers with 881 UNV specialists assigned to 43 countries. Botswana was host to 82 volunteers, the largest contingent, with most serving in education, agriculture and primary health care.

41. In Sierra Leone, four UNV engineers assigned to a rural works programme executed by the International Labour Organisation (ILO) helped rural communities build health centres, primary schools, wells, feeder roads and a bridge. Three new rural markets were established.

42. In a national programme aimed at food self-sufficiency in Sierra Leone, four UNV specialists provided expertise for an inland swamp reclamation programme. The UNVs helped communities to use local materials to build drainage and irrigation systems. More than 6,000 farmers were trained in double and triple cropping practices.
43. A UNV in the Congo trained 38 beekeepers as part of a pilot ILO project supporting small and medium business enterprises. The project showed a 100 per cent return on the initial investment for the first year and won an award from the Congo Ministry of Commerce and Small Enterprises.
44. In Asia and the Pacific, 553 UNVs served in 28 countries during 1989.
45. In Bangladesh, seven UNV medical specialists, assigned to a local hospital serving 2.5 million rural residents, trained 22 junior doctors and more than 200 medical and paramedical workers.
46. In Pakistan, eight UNV specialists working with the Office of the United Nations High Commissioner for Refugees (UNHCR) and the World Food Programme (WFP), assisted in managing the distribution of food aid to Afghan refugees. They also helped monitor efforts to combat malnutrition in children.
47. In Papua New Guinea, a UNV foundry management specialist helped to increase the revenue of the Hanuacast foundry by two thirds. Workers supplying the scrap to the foundry increased their revenues by 75 per cent.
48. In Cyprus, two UNV architects are helping to carry out the Nicosia Master Plan to restore and revitalize the old city. The effort is helping to bring together the Turkish Cypriot and Greek Cypriot communities.
49. The UNV programme in the Arab States grew by two thirds in 1989, with 242 UNV specialists serving in the region.
50. A UNV agricultural specialist in Egypt has successfully designed and pioneered the use of plastic conduits for irrigation.
51. In Latin America and the Caribbean, 125 UNVs worked in 23 countries during 1989. More than 70 per cent served in the Caribbean.
52. A group of 24 UNVs, made up of doctors and paramedics, is working in Jamaica to help relieve a shortage of health workers. One of them is serving as Principal Medical Officer in the Ministry of Health. A UNV environmental engineer, working directly for the Prime Minister, has established a national environmental society, the first of its kind in the Caribbean.

D. United Nations Revolving Fund for Natural Resources
Exploration

53. The United Nations Revolving Fund for Natural Resources Exploration (UNRFNRE) continued its work of assisting mining and geothermal energy projects. The Fund

also continued its pursuit of two important long-term goals: more equitable geographic distribution of projects, and greater diversity in the type of minerals being sought.

54. The Fund signed its first replenishment agreement with the Government of the Philippines, covering deposits of metallurgical chromite ore on the island of Dinagat. Small-scale miners will be licensed by the Government to extract ore in the Fund's exploration area. The deposits are estimated at up to two million tons, with a potential ground value as high as \$200 million.

55. The Fund completed a gold exploration operation in Peru and began preparing a final report to be submitted to the Government in 1990. The project located 250 million cubic metres of gold-bearing gravel.

56. In Honduras, the Fund finished drilling in the Yuscarán area, confirming the existence of gold and silver deposits with an estimated value of \$150 million. The advanced stage of drilling in the Yuscarán area was co-financed by the Government of Italy. Preliminary drilling in Quita Gana will continue in 1990.

57. The Fund completed a drilling programme in Ghana, supported by the Government of Sweden, which investigated the feasibility of extensions to dormant gold mines. A report of the findings is due to be completed in 1990.

58. In China, field work began on the Fund's pyrophyllite project which received financial assistance from the Government of Italy. Geological mapping and sampling were carried out in Fujian Province.

59. In October 1989, the Fund's gold exploration project in Bolivia became operational. Mobilization of equipment is under way, and the construction of facilities and infrastructure has been initiated.

60. The final reports for the Fund's exploration projects in Côte d'Ivoire and Rwanda have been completed and will be submitted to the two Governments. The findings provide information on mineral potential in the exploration areas.

61. The Fund undertook negotiations for heavy mineral exploration in Sri Lanka, for gold drilling in the United Republic of Tanzania and Zimbabwe and for chromite exploration in Madagascar.

62. El Salvador, Guatemala and Honduras have agreed with the Fund to seek financing for mineral projects in the Trifinio region, which incorporates part of each of the three countries.

63. In the field of geothermal energy, the Fund assisted several countries during 1989. In St. Lucia, the Fund submitted the final report for its first geothermal project in the country and continued to assist the Government in attracting investment for the project. In China, the Fund continued to work on a geothermal exploration project in Yunnan Province. A similar project continued to be supported by the Fund in Nicaragua. At the request of the Government of Mexico, the Fund agreed to defer its geothermal exploration project near Guadalajara.

E. United Nations Development Fund for Women

64. The United Nations Development Fund for Women (UNIFEM) has strengthened its collaboration with UNDP in the areas of programme development and training, as part of UNIFEM efforts to increase its strategic impact.
65. One example of the efforts of UNIFEM to contribute to the increased efficiency and productivity of rural women's work is a \$328,371 project in Rwanda to provide training, access to credit and appropriate technology to women engaged in agriculture and other income-generating activities. Training programmes have been established in a variety of areas ranging from handicrafts production to livestock management and marketing.
66. UNIFEM has taken important initiatives to ensure the integration of women into the Critical Poverty Programme for Latin America and the Caribbean. The Fund hired a senior consultant who, in collaboration with other agencies, is developing a programme to be presented at the regional inter-governmental meeting scheduled for August 1990 in Guayaquil. UNIFEM chaired the Inter-agency Meeting concerning Women and Poverty in Latin America and the Caribbean, held at Santiago, Chile, on 4 and 5 December 1989.
67. In Honduras, UNIFEM is helping grass-roots organizations to improve the social conditions of lower-income families. It has helped the Honduran Government to plan and co-ordinate policies and programmes for integrating women into all national development efforts.
68. In Indonesia, UNIFEM is supporting a project for increasing the income of women in the fishery business. The project provides credit, managerial training and technical advice on fish processing and the reduction of post-harvest losses.
69. In Syria, UNDP and UNIFEM have helped set up two teaching centres for rural women. At present, 1,100 women are attending these centres, where the emphasis is on promoting literacy. In addition, the women receive vocational training in such activities as sewing, weaving and the processing of fruits, vegetables and dairy products. Another 1,100 women are scheduled to begin the same series of classes when the first group graduates in 1990. The General Union of Syrian Women has conducted a very successful campaign to make rural communities aware of the importance of literacy, and the classes are now over-subscribed.

F. United Nations Fund for Science and Technology for Development

70. With developing countries seeking ways to make new technology available to small businesses, the United Nations Fund for Science and Technology for Development (UNFSTD) is responding to a growing demand for its services.
71. One of the ways in which the Fund gives support is through business incubators, usually established by Governments or universities. These provide many advantages for new technological ventures, including affordable space, shared office services, assistance in management and marketing and access to seed

capital. Business incubator projects supported by UNFSTD are under way in nine developing countries.

72. The technology incubation programme in China, initiated in 1988 by UNFSTD and the State Science and Technology Commission, has already established seven incubation centres. The aim is to create 2,000 enterprises in advanced technology.

73. A study carried out in India in October 1989 suggested that technology business programmes could be stimulated in a variety of ways. Industrial estates could promote small and medium enterprises, research institutions could encourage development of new marketable products and export processing zones could be used to attract capital for new industries.

74. In Thailand, a technology park is being planned with UNFSTD support. It will include a technology incubator and facilities for Thai joint technological ventures with Japan and the United States.

75. The first incubator in Trinidad and Tobago was inaugurated in February 1989 under the sponsorship of the Government and the Caribbean Industrial Research Institute. UNFSTD supported management training and financial analysis. In the Caribbean region, UNFSTD held workshops to explain the incubator concept in Barbados, Guyana and Jamaica.

76. The Technological Information Pilot System (TIPS), established with UNFSTD support, is a computer-linked information exchange dealing with business opportunities and technical products that have reached prototype or pilot stage. It also includes requests for technical assistance, trade opportunities and global procurement and consultancy tenders by the United Nations system of organizations. TIPS became a subscription service in April 1989, and its services are now widely marketed. Governments, professional organizations, private enterprises, research institutes and investors in nine developing countries participate in the exchange. Negotiations are under way with 15 additional countries intending to join the TIPS computer network.

77. At the Asian Institute of Technology at Bangkok, UNFSTD completed a four-year project to strengthen computer education, computing facilities and research. The highly selective master's programme has increased its enrolment from 25 to 40 pupils a year, drawn from 500 applicants. The Institute's computer curriculum has also been expanded to keep pace with changing technology.

78. The UNFSTD has been assessing the future demand for UNDP assistance in new and emerging technologies. In 1989, UNFSTD published two programme advisory notes (PANs) covering plant biotechnology, informatics and information technology. A third PAN on advanced materials is nearly completed. These PANs provide UNDP field offices with guidelines to review project proposals involving new technologies.

79. To assist UNDP field offices in obtaining prompt scientific and technological information, UNFSTD has begun to compile an information systems guide for UNDP field offices. Such a listing includes data banks and other resource services which are available within and outside the United Nations system of organizations.

80. The UNFSTD also manages a programme called the Transfer of Knowledge through Expatriate Nationals (TOKTEN). This programme maintains a roster of expatriates from developing countries, usually scientists and university researchers, who volunteer on a short-term basis to serve as specialists in their countries of origin. From the inception of TOKTEN in 1977 through the end of 1989, over 2,500 experts were fielded. In 1989, Malta and Viet Nam started TOKTEN projects. The programme was active in 27 countries during 1989.

81. Another UNFSTD programme, short-term advisory services (STAS), provides specialized advisers from the private and parastatal sectors of developed and developing countries to solve problems and provide technical advice in the commercial and service sectors of developing countries. The STAS advisers completed 70 assignments in 1989. The programme is currently active in 50 developing countries.
