With commodity prices at record lows in 1987 and demand for traditional exports still weak, the resilient economies of Asia and the Pacific proved again that their strength lies chiefly in their flexibility. That flexibility reveals itself in the achievements of UNDP-supported projects in the region. These achievements indicate even greater efforts by countries to open their economies to new investment and more emphatic measures to diversify exports. At the same time, emulating policies which help to explain Asia's most notable success stories, other countries of the region are building on existing investments in agriculture, industry and infrastructure by directing resources towards maintenance, operations and expansion. Newer priorities include closer attention to balancing human, economic and environmental considerations and greater stress on projects benefiting a wider section of society. Some examples of these project achievements are given below.

Joint ventures in development

Nearly 120 companies from 25 countries paid for their representatives to attend an Investors' Forum at Jakarta, Indonesia, in November 1987. Sixty-nine Indonesian firms also participated in the the Forum, which was organized by the United Nations Industrial Development Organization (UNIDO) with UNDP assistance. The result was more than 44 signed letters of understanding initiating $250 million in new industrial ventures. Projects ranging in value from $80,000 to $46 million
and covering subsectors from food and beverages to industrial chemicals and mining were presented at the week-long event. The Forum also gave the Indonesian authorities an opportunity to unveil their current strategy for attracting foreign investment. This strategy includes a series of deregulation packages aimed at streamlining customs operations, trimming bureaucratic procedures, simplifying licensing requirements and opening up most of the economy to private investment.

3. One hundred and ninety-three potential investors attended a similar UNDP/UNIDO Forum at Dhaka, Bangladesh, in January 1987. They looked at over 135 projects designed to attract foreign investment under different arrangements: equity participation, long-term loans, licensing agreements and managerial and technical assistance. Ninety-seven memoranda of understanding were signed at the Forum and, one year later, 35 investment projects worth about $165 million were at an advanced stage of negotiation. Another 20 proposals valued at $119 million are under discussion. From the same portfolio, some 20 projects with investment prospects of $321 million were subsequently presented to a meeting for the promotion of joint ventures among Islamic countries organized by UNIDO, the Islamic Chamber of Commerce and the Government of Turkey. As in the case of Indonesia, the Dhaka Forum has helped to focus attention on local business opportunities previously unknown to investors abroad and promoted useful company-to-company contacts. The Forum also publicized the Government's revised industrial policy which aims to ease operating conditions for foreign investors in areas such as export processing. In doing so, it may have helped to shape positive external perceptions of the Government's role in encouraging industrial development.

Responding to global markets

4. Since 1981, the Philippines has experienced acute balance-of-payments difficulties as a result of two contrasting trends: the rising costs of its growing volume of imports, mainly capital goods and fuel, and falling earnings from traditional exports. Faced with a widening trade gap, the authorities have encouraged manufacturers to inject more variety into the products they send to world markets and to raise standards of production. The potential for diversifying sources of export revenue is evidently there. Between 1978 and 1982, non-traditional manufactured exports grew at an average rate of 28 per cent a year. They now account for almost two thirds of Philippine export receipts. However, earnings have been affected by inadequate knowledge of overseas market requirements, product preferences and design trends as well as by variations in domestic quality control.

5. But after three years of UNDP/International Trade Centre (ITC) help, at least four Philippine export activities are now on a more promising growth path. Some 55 manufacturers of furniture, gifts and houseware, leather goods and food products have discovered how to adapt, diversify and target their goods for quality markets in the United States, Europe and Japan. One hundred fifty five new product lines have been piloted through project-financed market studies, trade missions and training. As a result, manufacturers have gained sharper insight into consumer preferences and sales opportunities abroad. Aiding this export drive is a new computer-based management information system in the Bureau of Product Standards which gives would-be exporters guidelines on current technical standards. In under three years, the project has netted local firms and businesses about $3.5 million
in sales and orders. But its most far-reaching result may be to have shown Philippine exporters how to interpret and adapt to feedback from the global marketplace and so identify the scope for more diversified production.

Finished goods and raw commodities

6. India has become the world's fifth largest producer of bicycles which represent about 4 per cent of its engineering industry's exports. Most sales are to Africa and South East Asia. Although some large Indian manufacturers have introduced modern technology for die-casting, forging, heat-treatment, electroplating and painting to produce better designs, quality standards and productivity still need to be improved. Furthermore, while in recent years Indian bicycle components have gained modest acceptance in the markets of Europe and the United States, they still do not meet the quality and design requirements of most importers.

7. The State government of Punjab decided to set up a research and development centre to modernize the bicycle industry and so meet domestic and export market demand more effectively. UNDP and UNIDO were asked to help to transfer and adapt the requisite technology. The Centre is now operational and is the only one of its kind in the Asia and the Pacific region. Its facilities are made available to other developing countries in the region such as Sri Lanka, Bangladesh, Pakistan and Nepal. New designs engineered at the Centre have been tested and are being used to manufacture children's bicycles, cycle rickshaws, training cycles and lightweight models. Designs for collapsible, shopping and children's high-riser bicycles are now under preparation.

8. Improved technologies are being brought to bear on production. A resistance brazing machine has been introduced to the industry and the Centre has picked up orders for three more machines. The project has developed an energy-efficient "cold-forging" technique for making bicycle components and helped several industries to adopt this process. A pollution-free heat treatment method has also been successfully piloted. In addition, the Centre has made and introduced testing and quality control equipment. A system for identifying the latest trends and styles in bicycle design which are suitable for Indian markets has been established.

9. Thailand is the third largest producer of rubber in the world after Malaysia and Indonesia. Production amounts to some 800,000 tons a year, about 12 per cent of world production, and rubber exports bring the country over $600 million annually. Over 500,000 farm families work on rubber in Thailand, and more than 5 million people are estimated to depend on the commodity for a living as planters, tappers, processors and traders. Most farms are smallholdings, averaging less than 3 hectares each. Thailand has achieved this level of production through an accelerated rubber replanting programme in which the country, the World Bank, the Commonwealth Development Corporation, UNDP and the Food and Agricultural Organization of the United Nations (FAO) have invested substantial capital and technical assistance.

10. This programme has been responsible for setting up Thailand's Rubber Research Centre. Its most important achievement, however, has been to replace low-yielding varieties across the country with trees capable of increasing rubber production
fivefold. By 1987, of the 1.5 million hectares under rubber cultivation, 77 per cent had been replanted with these new varieties. In addition, the programme has introduced new rubber planting and processing techniques, established Group Marketing Organizations and trained farmers in bud-grafting and tapping. It has also helped to raise non-rubber yields on small plots by encouraging farmers who traditionally grew only rice with rubber to plant vegetables and fruits. Such new patterns of intercropping have made rubber farms more profitable for small holders near urban markets. A new phase of activities is now being designed to improve the management and redistribution of seeds returned to the authorities by farmers as "taxes" to support future replanting.

Husbanding resources: livestock

11. The Lao People's Democratic Republic is trying to achieve food self-sufficiency and to improve standards of nutrition for its 4 million people. Raising domestic meat consumption is considered a key part of this objective. But livestock-raising is still largely a subsistence-level activity, and plans for increasing production depend on reducing the high incidence of animal disease in the country. Until recently, every year half the cattle and buffalo population one year old or less died from preventable diseases as did a quarter of animals above that age. Poultry were similarly plagued.

12. In order to help to bring down these devastating mortality rates, UNDP and FAO have been working to strengthen the National Institute of Vaccine Production and to improve other national veterinary services. By 1987, 6 veterinary graduates, 14 technicians and 72 field vaccinators had been trained and added to the Institute's staff. The Institute is now responsible for producing, controlling and dispensing seven major viral and five bacterial vaccines which are being used to counter the spread of killer afflictions such as swine fever, anthrax and rabies. Annual vaccine production comes to 2.1 million doses and is expanding to meet mounting demand in rural areas. Initial reports from two control areas show a clear decline in the incidence of animal diseases and mortality since the vaccine campaign was stepped up. In Vientiane Province, the number of buffalo killed by disease dropped by two thirds between 1986 and 1987. In Champassak Province, mortality rates fell by more than half.

13. Forty-five per cent of Pakistan's people obtain cash incomes from the livestock and poultry subsector which contributes 30 per cent of agricultural gross domestic product (GDP) and more than 25 per cent of all exports. However, conventional animal feed is expensive and accounts for between 50 and 80 per cent of the cost of milk, meat, eggs and other farm products. With UNDP support, Pakistan's Animal Sciences Institute has researched and developed alternative low-cost feedstuffs based on sources such as crop residues, agro-industrial by-products and animal wastes, all of which are available in abundance.

14. The Institute's R&D programme has had a significant impact on livestock production, nutrition and feeding practices. In the Northwest Frontier Province, smallholders now feed their animals on some 200,000 tons of sugarbeet pulp, a feed source once discarded as waste. Nutrients recovered from this source are estimated to be worth the equivalent of $1.2 million a year. In the province of Sind, banana plant residues have proved to offer high-grade nutrition for milk-giving animals.
In other parts of the country, depathogenized poultry litter is being successfully used as a protein supplement to fatten buffaloes, cows, sheep, goats and poultry. Savings achieved by using poultry litter as feed amount to as much as $1.7 million a year. A unique feeding mix based on a blend of alternative sources, which affords dairy animals a complete diet, has been produced at a large-scale cattle-feed mill. In one year, the mix enabled just one large farm to save $430,000 in feed costs. This success has led the Asian Development Bank (AsDB) to discuss financing 14 more cattle-feed mills. Four private mills have already decided to produce the mix. The project has also helped to commercialize a simple process for making food-rich molasses blocks and introduced integrated farming practices involving the recycling of animal wastes.

**Husbanding resources: land and forests**

15. China's Loess Plateau, located in the north-west of the country, has an area of 530,000 square kilometres, nearly half of which is subject to rampant soil erosion. About 15,000 tons of soil disappear each year, the result of generations of deforestation and intense competition for land to support crops, cattle and people. Yet because the plateau receives 2,500 hours of sunshine throughout the year and more than adequate rain, its agricultural yields could be high if erosion could be halted and more sustainable land use practices introduced.

16. A UNDP/FAO land use planning project has shown that the region's possibilities are considerable. The project has demonstrated that it is possible to reduce croplands to about 34 per cent of the region and to increase forest and livestock ranges to 66 per cent while significantly raising yields and incomes through more efficient and intensive farming. A master plan for recovering 20,000 square kilometres on this basis has been drawn up. It calls for croplands to be confined to terraced lands where a variety of soil-retention structures have been constructed and for more arable land to be set aside for forestry and livestock. This plan will essentially solve water and soil erosion problems and help to restore the region's environmental balance. Results obtained in the Ovanjia gully area have already attracted wide attention and model farms and settlements are being replicated in other areas. The World Food Programme (WFP) has stepped in with an $8.8 million grant to implement the plan throughout Mizhi County where it was first piloted.

**Sound and light: maintaining modern services**

17. Burma was one of the first developing countries in the world to have a national telephone system. But 25 years after the installation of the first manual exchanges in 1950, these old-fashioned systems were still in use along with other obsolete equipment. Connections between Rangoon and other towns took hours to complete and international calls were virtually inaudible. A $21 million credit from the World Bank in 1975 made it possible to begin modernizing Burma's telephone system using microwave and satellite relays. UNDP was called on to provide technical assistance for establishing the first national Telecommunications and Postal Training Centre.

18. Six years later, the Centre was fully operational and a new phase of modernization began, again with World Bank and UNDP support. This time, the
objective was to install state-of-the-art digital telephone systems. This required training telecommunications instructors in such fields as pulse code modulation transmission systems, digital switching techniques and network planning. At the end of this phase in 1987, the Centre had 60 teaching staff and 40 support technicians who between them could offer operators and engineers 76 different training programmes in advanced telecommunications technology. Thanks to efficient installation, maintenance and operations services, today a sophisticated telephone system links Rangoon with most of the country, domestic connections are virtually instantaneous and international calls equal local ones in clarity.

19. In Bhutan, electricity is generated almost entirely by diesel engines and a sprinkling of micro-hydropower stations. The first large hydropower plant came on line only in 1987. Demand for electricity is rising rapidly and Bhutan's power distribution network is being enlarged to supply new areas. But until recently there were only skeletal repair and maintenance facilities to service this expanding network. Most power system repairs, including major overhauls, had to be carried out abroad. Faults would be diagnosed on site and equipment needing repair would then be transported out of the land-locked country, usually to India, at considerable cost.

20. Happily, this situation is now changing with the creation of a central repair and maintenance facility for the country's power-generating and distribution system. Despite initial setbacks when some workshop equipment was damaged while being transported up Bhutan's rough-hewn mountain roads, the new facility went into service within two years. Since 1985, practically no repair work has been carried out abroad, with Bhutan saving time and money as a result.

II. AFRICA

21. Domestic policy changes and improved economic management were the overriding preoccupations of African Governments throughout 1987. Countries such as Côte d'Ivoire, Ghana, Senegal and Togo, which had previously embarked on policy changes, made some progress in carrying out reforms. Many more countries found themselves with little room to manoeuvre as their primary commodity earnings fell sharply, their terms of trade worsened and their debt levels rose to finance basic imports. In the majority of cases, the pace of reform was affected as much by these external set-backs as by deeply rooted institutional problems.

22. Where Governments undertook institutional change, UNDP was there to help. In Ghana, for example, a UNDP/World Bank-financed study examined State-owned enterprises and recommended which should be sold and which could be diversified as part of the restructuring of the economy. Under its Special Action Programme on Administration and Management, UNDP continued to help Botswana, Burkina Faso, Guinea-Bissau, the Niger, Swaziland, the United Republic of Tanzania and Zambia to deal with fundamental management and human resources issues in their public sectors. UNDP also approved a 16-nation regional project, co-funded by the World Bank and the Africa Development Bank (AfDB), which is helping countries to monitor the effects of reform packages and evaluate their social consequences. However, these recent efforts will require time to produce clear results.
23. Meanwhile, this sampling of project results from Africa reflects the priority being given to agriculture, particularly improved food production centred on smallholders, co-operatives and women's groups. The development and marketing of export-grade produce, import-substitution measures, population and health matters and education are further areas now receiving additional UNDP assistance. In Ethiopia, the spectre of famine which has receded from so many African countries since 1986, still hovers over thousands of people subsisting on marginal lands. Vigilant monitoring of this prospect, short-term relief efforts and longer-term programmes of agricultural rehabilitation continued to require UNDP's sustained attention here as in other parts of the region still prone to disaster.

Up from the ground

24. In Benin, villagers with ideas for generating income and improving their living conditions are being helped to help themselves by a UNDP-financed fund for grass-roots initiatives. The fund channels seed money directly and quickly to communities able to decide on and undertake their own microprojects. In its first six months, the fund helped villagers in the province of Mono to build a bridge on an important access road; establish and equip a small mill for processing cassava; drill a new well to supply water for a reforestation scheme; construct a pottery and retail store; and expand a soap-making factory (which also gained a new warehouse and a motorcycle-and-sidecar combination to help with marketing).

25. Now fully operational, the fund has a management committee which includes members of local and international non-governmental groups active in Benin. To date, the fund has financed 26 microprojects, 23 of which have been completed with 10,000 direct beneficiaries, including 11 women's co-operatives, 8 farmers' co-operatives and several youth and artisans' groups. Its operators now want to expand their funding base to meet demand for another 125 small-scale projects and to award start-up grants of $100 for some 225 new income-generating schemes.

26. In the mean time, the UNDP-assisted "trickle-up programme", which helps village groups of five people or more to launch profit-making ventures, is expanding its activities in Benin. There are 32 project co-ordinators, 22 of them women, who have been identified in the country's six provinces. Seventy-three grants of $50 each have been issued to help to start up income-generating schemes involving such activities as flour milling, handicrafts and cassava processing.

Organized enterprise

27. Burundi is one of Africa's record instances of population density (almost 235 people per square kilometre of arable land). The Government has been working to boost production of both foodstuffs and cash crops to feed the country's 4.5 million people and pay for imports. A key part of this effort is the development of farmers' co-operatives. These associations help smallholders to farm more efficiently, obtain basic necessities at reasonable cost and receive fair prices for their produce. UNDP and the International Labour Organisation (ILO) have assisted the country to create individual co-operatives in pilot zones, establish a national office to provide co-operatives with technical, managerial and accounting support and train co-operative employees.
28. An initial phase of assistance helped to take the number of co-operatives up from 40 to 200. Members were supplied with provisions such as palm oil, salt, sugar, soap, sheet metal and fabrics at low cost. To stabilize prices, marketing arrangements were put in hand to ensure year-round sales of produce. Co-operatives also began to distribute vital inputs such as tools, seeds, fertilizer and pesticides. Some 130 farm managers and workers received more than 1,600 days of training and the co-operative concept was explained to over 3,000 members.

29. A second phase in 1985 sought to widen donor participation and extend Burundi's co-operative movement into five more provinces. One hundred eight proposals were drawn up for developing community grain mills, rural credit schemes, inland fisheries and other activities. Seventy-eight of these proposals are being funded by such donors as Belgium, Canada, France, the Netherlands, the United Nations Capital Development Fund (UNCDF) and several non-governmental organizations (NGOs). Complementary funding mobilized by the UNDP/ILO project now amounts to more than $8 million. With about 50,000 members taking part in over 200 co-operatives covering most of the country, the movement now comprises a series of fully fledged agricultural enterprises responsible for activities worth over $9 million a year.

30. UNDP through ILO began in 1983 to assist Zimbabwe to build up a professionally staffed Department of Co-operatives Development to train farmers in co-operative management, accounting and retailing. Eighteen managerial staff complemented by 40 subject specialists were groomed for these various tasks. They have since helped to devise 65 training courses which have been attended by more than 1,250 participants. Training packages of materials on financial management and marketing have been tailored to local requirements and are delivered to co-operative members through a growing number of extension agents.

31. The project continues to gain momentum. By 1987 the country could boast 1,700 co-operatives with over 140,000 members. Behind this impressive expansion was a complete restructuring of government support and training services, which, at independence, amounted to little more than a small unit staffed mainly by junior officers and school-leavers. So far, it has drawn nearly $3 million in follow-up financing from Canada, Denmark, the Federal Republic of Germany, Italy and Sweden.

Market spaces: earnings abroad

32. Swaziland's economic stake in trading agricultural and forestry products is high. The processing of sugar, citrus, woodpulp and timber dominates local industry and accounts for nearly all the 22 per cent slice of GDP contributed by manufacturing. While export operations in these capital-intensive areas are efficiently organized, some processing industries rely heavily on imports which cut deep into their net foreign earnings. Moreover, the established export product base is relatively narrow and revenues fluctuate considerably under volatile world prices. In the absence of an explicit national export promotion strategy and up-to-date trade and information services, local firms have been slow to broaden product lines for new markets.

33. Today the country's trade prospects look brighter after a UNDP/United Nations Conference on Trade and Development (UNCTAD)-General Agreement on Tariffs and
Trade (GATT) project began helping to fill these needs. The project has charted new export possibilities and compiled an inventory of processed products based on fruits, vegetables, hides, skins and leather. It has defined a strategy to improve the processing and marketing of these products and secured government and private business backing for a new trade promotion unit which will carry out the plan. The Unit is now being established and personnel are being trained to help small businesses to acquire market information, manage product development, gain market exposure and attract export finance. A trade documentation service is being set up. Four workshops have also been held to familiarize local businessmen with sales opportunities and regulations in regional markets. The European Economic Community (EEC) has already come forward with a follow-on technical assistance package worth the equivalent of $924,000 to promote new products through trade fairs, publicity materials and training in marketing. In addition, the Commonwealth Secretariat is expected to field a trade promotion adviser to help launch Swaziland's exports abroad.

34. Zambia's fruits and vegetables may soon be entering wider markets as a result of assistance from UNDP through ITC. After analysing operations on selected farms, the project uncovered bottlenecks limiting the production of export-grade produce. Recommendations for improving cultivation techniques, transport infrastructure and storage facilities are being put into effect. A trade mission to Europe was organized to explore new contacts. Markets worth an estimated $4.5 million have been identified in Switzerland, France, the Netherlands and the United Kingdom. Exports to Europe have already begun. Three marketing missions to eight African countries have also been carried out and have indicated regional trade prospects worth the equivalent of nearly $4 million.

Market places: savings at home

35. A new light engineering workshop in Lesotho, set up with UNDP/UNIDO assistance, is manufacturing and selling animal-drawn ploughs, cultivators, planters and other agricultural implements which are competing effectively with imported machinery and tools. The planters, which can be used to sow a variety of crops, have been notably successful, capturing a 30 per cent share of the domestic market in their first seven months in production. Farmers who had come to rely almost entirely on imported equipment have enthusiastically accepted the new implements. Sales more than doubled over the workshop's first and second production runs.

36. The workshop is a project of Lesotho's Ministry of Trade and Industry which joined forces with a local private steel company to develop and market the implements. Thanks to effective training, the facility's technical personnel are now virtually self-reliant. Without help from outside experts, they are able to provide a range of light engineering, manufacturing and repair services previously unavailable in the country.

Mapping people's needs

37. Mali's first census was taken in 1976 and required a large number of international experts to work in district areas for several months. When the country counted its people again 10 years later, the new census was conducted in
one month by 1,300 trained nationals who also collected social, demographic and household data not available before. Through the Department of Technical Co-operation for Development of the United Nations Secretariat, UNDP provided regional advisers to support Mali's census-takers and statisticians. It also helped to solve transportation and other logistical difficulties and ensure the early publication of new data. One important discovery was that Mali's population had grown to 7.6 million and not the 8.4 million total which the first census had indicated it would reach by 1986. This information, obtained through the 1986 census project and confirmed by the United Nations Population Fund (UNFPA), enabled the Government to calculate the country's food needs and plan its food assistance strategy more accurately. The 1986 census also gathered new data on rural living conditions, sanitation, sources of energy and the availability of local building materials. The data are being used to tailor rural development programmes to local resources, needs and capabilities.

Women and children first

38. In the Central African Republic, the first national maternal and child health care system has been established with financing from UNDP and UNFPA and technical expertise supplied by the World Health Organization (WHO). The country's annual population growth rate of about 2.5 per cent is one of Africa's highest despite unacceptable mortality rates for mothers and children. The rate of infant mortality is estimated at about 142 per 1,000 live births. Primary health care centres have existed in rural districts for several years. But the absence of a national policy focused on the health needs of mothers and children has been a severe handicap, reflected in shortages of trained staff, medical and family planning services and integrated health programmes.

39. The new maternal and child health care system is based on a directorate for family planning, nutrition and statistics which has produced a complete national programme. Maternal and child health and family planning services have been introduced into over 60 district health centres and more than 100 midwives and 196 traditional birth attendants have been trained, together with another 40 statistical personnel. Health services are now provided to over 35,000 women and some 33,000 infants - almost half the country's children under one year of age. The project is being expanded to cover 60 per cent of the nation's children under one and to see that at least 40 per cent of births take place in facilities with trained staff. The United Nations Children's Fund (UNICEF) has been active in financing vaccination campaigns and the rehabilitation of maternity clinics.

Classes for today

40. Rwanda has been steadily changing its education system to bring it in line with local economic, social and cultural conditions. The reforms are transforming the curriculum, orientation and teaching methods of primary, secondary and higher educational institutions. The new focus is on making primary education more practical and more widely available in rural areas, emphasizing scientific and technical subjects at secondary levels and ensuring the relevance of university and college training to national economic goals.

41. UNDP, UNCDF and United Nations Educational, Scientific and Cultural Organization (UNESCO) have been helping the country in this endeavour for more than
nine years. In 1981, they were joined by a group of donors which includes AfDB, the World Bank and France in a $46 million programme of school construction, educational planning, teacher training and curriculum development. With the services of a new print shop set up under this programme, high-quality educational materials are now published locally and distributed widely. The scholastic abilities of students have been evaluated and an important library of tests has been developed to ensure a more rigorous professional orientation in their studies. In each of the country's 10 provinces, Rwandese officials have been trained in educational planning, curriculum development, statistical analysis and school administration and inspection. The programme has been instrumental in preparing the educational component of Rwanda's current five-year development plan.

42. The building of schools country-wide is being overseen by an architectural division set up with staff trained by the project in Rwanda's Department for Schools Services. Here plans for school buildings are drawn up and adapted to local requirements and then subsequently used in donor-financed construction programmes. Among these are a $6 million programme financed by France, a $10 million effort funded with an International Development Association (IDA) credit and a $1 million project supported by UNCDF.

**Food from the sky**

43. Careful monitoring throughout 1987 in Ethiopia by the United Nations Emergency Prevention and Preparedness Group under the leadership of the UNDP Resident Representative in co-operation with the Ethiopian Government's Relief and Rehabilitation Commission produced early-warning reports which indicated that once more the situation in the country was extremely precarious. Contingency plans to cope with a new emergency were drawn up. A study was made of the country's relief transport capacity, notably the ability of trucking fleets to meet the requirements of the large number of people likely to need help if the November-January harvest failed. This study was completed in October; it recommended the transfer of part of the trucking fleet from the southern to the northern regions, and emphasized the need for additional trucks.

44. Only a month later, after the almost total failure of the harvest in the north was confirmed, it became apparent that the pipeline by road to central Tigray was unable to deliver sufficient food because of security problems and a growing shortage of trucks. In the area around the capital Makelle, food stocks were being rapidly exhausted and in the four worst-affected districts of Tigray over half a million people were in need of food aid. The minimum monthly requirement to meet these needs was 8,500 tons. Under the circumstances, however, only around 2,500 tons a month could be carried by road.

45. It was then decided that an emergency transport fund should be established under the United Nations with a mandate to clear bottlenecks in future relief operations. This fund was established at Geneva in November 1987 under the auspices of the Office of the United Nations Disaster Relief Co-ordinator (UNDRO). Management, co-ordination and logistical support were provided by the Emergency Prevention and Preparedness Group and the UNDP field office. The Emergency Transport Fund was used to charter one Hercules plane from Southern Air Transport, United States, in December 1987 and a second Hercules from the Belgian Air Force in
January 1988. A variety of short take-off and landing (STOL) planes were also chartered to carry food and other relief supplies into remote areas of the north. Three more Hercules took part in airlift operations. EEC and Caritas jointly funded the cost of a Hercules for the Ethiopian Catholic Secretariat. EEC and the International Committee of the Red Cross (ICRC) also financed a Belgian Hercules and ICRC another one under its own markings. In addition, there were three Antonovs from the Soviet Union and two Ethiopian DC-3s.

46. From early December onwards, the airlift was thus operating successfully. People's emergency food needs were met and stocks of food were built up in some locations in central and northern Tigray. No mass movement of people leaving their homes to congregate around major food distribution sites was experienced. With the arrival of the second UNDRO Hercules, the monthly average of food and other relief supplies carried from Massawa and Asmara to Mekelle reached over 13,000 tons. The total capacity of all planes is around 15,000 tons per month. Thanks primarily to the airlift operation, stocks in Tigray by the end of 1987 stood at 15,000 tons. The most pressing problem remains the security of road transportation in central Tigray. The number of people in the north who need food supplies is expected to rise from 800,000 to 1.5 million as meagre stocks from the failed harvest dwindle. Without freer and speedier road transport, the situation will remain extremely difficult.

III. LATIN AMERICA AND THE CARIBBEAN

47. Faltering growth rates, net outflows of capital and critical social problems signalled that, for most countries of the region, the unfavourable climate for development had not improved in 1987. Project results show that UNDP is helping countries to adjust under these adverse conditions and to find both short- and medium-term solutions. Improvements in public sector policy, management and efficiency, including debt management; support for more diversified production in public and private industry; and a sharper focus on social equity are among the areas where UNDP continues to make a difference, as the following examples attest.

Large plans for small industries

48. In the late 1970s, oil accounted for 90 per cent of Venezuela's export income and paid for most of its imports. Yet the foreign earnings and savings potential of the country's small industries remained largely untapped. However, in the 1980s, plunging oil prices led the Government to look again at small local firms and companies as exporters and as suppliers of items previously bought abroad.

49. Working with UNDP, UNIDO and UNCTAD, Venezuela has set up a National Council for the Development of the Capital Goods Industry to help to modernize small manufacturing concerns and make them internationally competitive. More than 200 industries surveyed by the new organization were found to have adequate facilities and equipment but to be operating below capacity by as much as 40 per cent. A lack of modern managerial and technical know-how was the principal reason for this unsatisfactory performance. Studies of local supply and demand also showed that small firms could readily manufacture replacement parts required by national petroleum, electrical and processing industries. What these potential suppliers
needed most were organization, higher standards of quality control and more aggressive domestic marketing.

50. With UNDP financing, local manufacturers have joined hands in a national network to supply more than a dozen large-scale industries with mechanical parts. These small firms have received management and technical training to improve the quality of their products. They have also benefited from marketing support to assure buyers that high standards can be maintained by domestic suppliers. In 1987 one customer, the national electrical company, bought $1.1 million worth of items such as boiler pumps, valve seals and turbine boosters which had been made and tested entirely in Venezuela. These local purchases represented savings of over $2 million. The electrical company and other large industries are also enjoying the additional convenience of quick service and on-site product adaptation that efficient local suppliers can offer. Aided by UNDP, the National Council continues to give technical and managerial assistance to over 600 firms listed in its Contracts Exchange. The Exchange, a directory of local products, technical specifications and company personnel, offers domestic industries a much-needed information service. Trade and technology transfer missions to Asia, Europe and the United States are now regularly organized by the National Council as part of its export drive.

51. In Paraguay, a centre to train personnel for the production of charcoal for the steel industry, established in 1986 with UNDP/UNIDO support, is already helping to supply this energy source to ACEPAR, the country's largest steel company. The company is 50 per cent government-owned and 50 per cent owned by Brazilian private investors. Its goal of producing 150,000 tons of steel a year is considered critical to the future development of Paraguay. The immediate objective of the project was to train workers quickly to convert wood into charcoal using efficient carbonization techniques and technologies.

52. A pilot centre for charcoal production was quickly established, complete with housing, offices and workshops equipped with 87 brick ovens. Twenty-one students, mostly local workers, were enrolled and produced 870 tons of charcoal while being trained, thanks to a mix of practical and theoretical instruction. A technical course manual has been developed and printed and 75 apprentices are scheduled to undergo training each year. Productivity has already doubled, reaching 75 per cent of capacity, a high rate for this industry. To reduce the risk of deforestation, five company engineers went to neighbouring countries to study reforestation techniques under arrangements made through technical co-operation among developing countries (TCDC). A plot near the Centre has been cleared for planting new trees and more training and investment in reforestation are planned. Meanwhile, the Centre has delivered additional social and economic benefits by increasing rural employment and reducing charcoal imports.

3. In just three years, cash-strapped Honduras has achieved a twelvefold increase in export earnings from the spice cardamom - from 22 tons valued at $97,975 in 1984 to 324 tons in 1987 estimated to have earned between $1.2 million and 1.5 million - and a 50 per cent improvement in incomes for approximately 1,000 rowers whose average land-ownership is only 0.5 hectares. This feat is all the more remarkable for being managed in a period when world cardamom prices dropped by 40%. Behind the surge in sales was a UNDP/ITC project which had co-financing from
the Netherlands. It helped to organize the country's first Association of Cardamom Producers, transfer value-adding processing and packaging techniques and put growers in touch with new buyers in Jordan and Saudi Arabia and the Scandinavian countries. Orders waiting to be filled indicate that, in 1988, cardamom export earnings could rise by as much as 80 per cent again if world prices remain relatively stable. Encouraged by early results, Honduran producers attended a world spice seminar in India to investigate market openings for other spices. Plans to expand spice production are now being weighed.

Adjusting to adjustments: two studies of change

54. During 1985, Mexico's economy was hit by a 57 per cent reduction in the value of its petroleum sales. Despite a 30 per cent expansion of non-petroleum exports and a reduction in net interest payments on its debt, the country soon found itself facing a $550 million deficit. At the same time, standards of living fell sharply as domestic inflation soared. Over a 10-month period, fluctuations in consumer prices widened from 54 to 92 per cent. Real purchasing power dropped and economic activities in construction, mining, energy and industry slowed down.

55. The Government moved to cope with this downturn by reorienting its development strategy and renegotiating its existing debt. High on its new list of priorities are the redirection of the economy through structural changes in the production system and greater emphasis on programmes for minimizing the social impact of such adjustments. An important role in this restructuring effort has been played by an employment planning programme supported by UNDP through ILO.

56. The programme has analysed what effect the introduction of new technologies would have on employment in key sectors and provided a policy framework for increasing job opportunities in the economy. Specifically, it has identified ways of raising employment levels in agriculture and in the clothing and tool-making industries while also introducing new technologies and production methods. Statistics on employment, lay-offs and underemployment in these areas have been collected and are made available systematically to help industry and the Government to plan economic and occupational growth strategies. Among other results are closer functional ties between the Ministry of Employment, government institutions and academia and new studies on supply and demand which were undertaken with funding from the World Bank.

57. Brazil has also been examining how new technologies, introduced to promote economic growth and exports, have affected employment, income distribution and welfare conditions. The series of economic crises undergone by the country in recent years has reduced resources available for social programmes and made such analyses all the more important. A project to research the social impact of Brazil's development policies has been financed by UNDP and the Government with ILO as executing agency. This is also seen as particularly relevant to World Bank lending in Brazil.

58. International consultants have studied the effects on the social sectors of redistributing public funds to support cash-short industries. A computerized record of the impact of some 120 social projects has been established, together with a system for monitoring progress. Two nation-wide surveys of the quality of
nutrition available to low-income groups have been carried out. Experts have also studied Brazil's education system and concluded that policy-makers should place greater emphasis on primary education. In agriculture, project advisers have analysed how new technologies have influenced employment and labour migration patterns and corrected errors in official figures in these areas and their interpretation. Also in agriculture, the project has examined the effect of technology on social organization, land tenure, labour conditions, food production and rural-urban migrations. Other technological developments examined include automation and its social effects, especially the quantitative and qualitative prospects of employment in automobile assembly plants and the computer industry. This project-financed research has built up the largest and most authoritative body of literature in Brazil on technological change and its human consequences. Six volumes of findings are now being prepared for publication.

Public sector efficiency: tax codes and debt management

59. Bolivia's economic troubles came to a head in 1985 when the most pressing problem was how to increase government revenue which had dwindled to less than 1 per cent of GDP. A UNDP-funded team of 21 South Americans, working with the Government, rewrote and simplified the country's tangled tax code. Revenue collection was projected to triple in 1987 and to reach 10 per cent of GDP by 1990, a level which will make it possible for the Government to provide more basic services. UNDP now has a follow-up project to help to write the software programmes needed to computerize record-keeping in the Bolivian tax ministry, a task which in the past had been done completely manually.

60. UNDP, together with the World Bank and the Inter-American Development Bank (IDB), has also been helping Bolivia to restructure its Central Bank, privatize government corporations, and develop an industrial policy to promote exports. At the same time, the organization has been working with the public sector to alleviate the situation of the poorest members of Bolivian society who have been hardest hit by the restructuring process.

61. The petroleum sector accounts for the major part of Trinidad and Tobago's revenues and foreign exchange earnings. Because of declining international prices for petroleum products in recent years there has been a marked slowdown in domestic activities. Foreign exchange has become scarce and both external and internal debt are up.

62. External debt monitoring and analysis have been undertaken both by the Central Bank and the Ministry of Finance for separate categories of debt. Some of the information is centralized in files and registers are maintained by hand. Since the manual system lacks flexibility, information cannot conveniently be used to forecast external debt payment obligations when, for example, exchange rates and international interest rates vary. Similarly, the aggregation of external debt data, required for balance of payments analysis and foreign exchange budgeting, is time-consuming and error-prone when carried out manually.

63. UNDP and UNCTAD have been helping the Government to computerize the collection and analysis of debt data since late 1985. Microcomputers have been installed and officials of the Central Bank and Ministry of Finance have been trained in their
use. A complete debt monitoring software package is being run on these machines, and institutional arrangements have been made to ensure that data are systematically updated once project assistance ends. The next stage will be to develop ways of using the system to monitor agreements with budgetary or foreign exchange implications as well as debt.

IV. ARAB STATES AND EUROPE

64. Project accounts from the Arab States indicate that agriculture, social services and human resources development are the areas where UNDP assistance is now being concentrated. The special difficulties of oil-exporting countries (and their neighbours which rely on them for jobs and markets), have led them to focus on consolidating current investment in plant and infrastructure. Few UNDP-supported projects in industry show signs of being expanded significantly for the moment. Expenditure cuts have affected the social sectors in several Arab countries, placing a premium on UNDP assistance in this field, particularly for rural communities and other disadvantaged groups. Countries such as Somalia and the Sudan, grappling with problems exposed and aggravated by recent droughts, are also preoccupied with meeting essential human needs - food, water, sanitation and health. In Europe, the formation of new skills and services in traditional industries continues to receive emphasis as an effective way of raising productivity. These priorities in turn have assumed importance for UNDP, as the examples below indicate.

The aftermath of drought

65. In 1985, after successive droughts and other calamities, the Sudan's province of Darfur was a disaster area. Starving farmers had abandoned their parched holdings and had moved east to live in teeming camps around Khartoum. Food security was gravely threatened because seed stocks had dwindled. Existing seed and food storage facilities were sadly unequal to local needs. Wells had dried up for lack of maintenance and arable land was drying out for lack of small dams and proper irrigation systems. Rural communities in productive areas were cut off from essential supplies and market centres. Medical facilities and other essential infrastructure had crumbled.

66. Today, thanks to a UNDP-Government of Italy special rehabilitation programme, the outlook for Darfur is changing. A stock of at least 9,000 tons of food-grain has been built up by the special programme, enough to meet about 20 per cent of the entire province's food needs. This stock is now being stored in new prefabricated units. Fourteen new water-yards are being developed, another 39 are being restored to proper functioning and 71 new wells will be drilled as part of efforts to get water flowing again. Plans to construct five small dams and repair the province's traditional water storage systems (hafirs) are also moving ahead. In addition, a reforestation campaign for planting 250,000 seedlings has been initiated and the nursery in the district capital of El Fasher has been restocked. To deal with the problem of rural isolation, the Italy-UNDP programme is constructing a major road link between El Fasher and the westernmost town of El Geneina. The new artery will carry supplies, goods and services to farming communities and bring their produce to market. Work on a 55-kilometre stretch of gravel road between El Fasher and
Tawila is nearly complete. Contracts have now been signed to start another
97-kilometre extension. Health facilities have improved appreciably with the
restoration and modernization of two major hospitals in El Fasher and El Lait.
Four smaller district hospitals are also being brought back into service.

New lands from old

67. Land reclamation and soil improvement are high priorities for Egypt where a
mere 6 per cent of land resources are suitable for agriculture. The sector remains
extremely important to the economy, accounting for 20 per cent of GDP and employing
more than 42 per cent of the country's 49 million people. Although the Aswan High
Dam has helped to bring more areas under irrigated agriculture, these new lands
make only a modest contribution to agricultural output. Egypt has therefore set up
an executive authority for land improvement projects to oversee efforts to
rejuvenate old lands. UNDP and FAO have been assisting the Authority to conduct
large-scale experiments on deteriorated soils in order to obtain scientific
solutions to the problem.

68. Data have been gathered on such matters as the optimum depth and spacing of
drainage systems, the correct blending of various fertilizers, the best techniques
for protecting subsoil, the impact of different implements on soil conditions and
the restorative effects of biological agents and processes. Findings are being
tried out in demonstration projects and over 300 farmers in 5 governorates have
been trained to apply various soil improvement techniques. The project has
maintained close working ties with parallel efforts in this field, notably a
$176.6 million United States Agency for International Development (USAID)
programme for increasing agricultural productivity. A package of investment projects to
scale up experimental results has also been put together, with financing already
obtained from the AfDB ($9 million) and EEC ($8 million). Canada is providing a
$48 million grant for related programmes.

To lessen their suffering

69. More than 30 development projects representing almost $14 million in UNDP
financing are helping 1.5 million Palestinians to achieve more acceptable standards
of living in the West Bank and Gaza Strip. Eleven hospitals and health
institutions have been built with project support. Twenty fellowships have enabled
doctors to specialize in important medical fields such as cardiology,
gastro-enterology, neurosurgery, pathology, pediatrics and vascular surgery.
Twenty-five doctors have also taken courses in anesthesiology, and a hospital has
been equipped to administer various anesthetics. The programme also caters to
education. Twelve classrooms have been built for boys, another 4 to promote
college education and 44 for girls. In order to stimulate agricultural production, UNDP
has financed and equipped a laboratory to test, improve and certify olives grown by
a large grower's co-operative. It has also supported a new fisheries complex with
an ice-block factory, refrigerated stores and 15 modern fish marketing stalls.

70. A recent medical survey in Jordan showed that eye diseases afflicted thousands
of people in rural areas and often resulted in a form of blindness brought on by
deterioration of the cornea. In a drive to combat and prevent blindness, the
Government has established an ophthalmic centre at the Jordan University Hospital
with technical assistance supplied by UNDP. A computerized microscope system used in state-of-the-art eye surgery was provided by the project and several hundreds of cornea-blind patients have since undergone successful operations. Techniques practised at the new Centre include microsurgery and ultrasound diagnosis. These advanced techniques are being transferred to other Jordanian medical institutions. The project has also trained medical and paramedical personnel in early detection and prevention methods which are being used to catch cornea blindness in its initial stages.

Managing with microprocessors

71. Sharjah Municipality in the United Arab Emirates has entered the computer age with the help of a UNDP/United Nations Department of Technical Co-operation for Development project which has introduced local officials to computing technology through a centre for management information systems and documentation. The computer centre supports almost all managerial administrative functions carried out by the Municipality’s staff. Two mini-computers, a complete word processing subcentre, several microcomputers and related peripherals have so far been installed. More than 300 employees have been trained to use applications packages covering such functions as stock control, budgeting, purchasing, personnel management, land and house registration, business licensing and English-Arabic word processing. The Municipality’s newly acquired computing capabilities have attracted the attention of public servants in Abu Dhabi and Dubai who have asked for three similar projects to modernize their own activities. All three new projects are now under way.

Working with metal

72. Metallurgical industries are vital trades in Turkey. A pilot plant in the south-eastern town of Gaziantep was created with assistance from UNDP through UNIDO to serve some 1,200 foundrymen and metalworking entrepreneurs with workshops in the area. The plant helps them to obtain improved raw materials, upgrade their manufacturing processes and turn out finished products of higher quality.

73. The Ankara Regional Development Centre, which also receives assistance from UNDP and UNIDO, helps small foundries to identify their technical problems, and produce better products at lower costs. It offers engineering consultancies and metallurgical and testing services. New laboratory equipment is used to analyse more than 100 samples a day and a team of seven engineers makes regular visits to foundries. The Centre assists in the marketing of finished products by helping small producers to participate in national fairs and exhibitions. The Centre also advises entrepreneurs on the design of tools, jigs and fixtures.

74. Firms have most frequently requested assistance in refurbishing or purchasing new cupolas, the huge ovens in which metal is liquifed to be cast into finished products. The new designs have increased melting rates and productivity by up to 40 per cent. One foundry in Ankara which received assistance for purchasing a new cupola showed a 15 per cent increase in profits in 1987.