



**Governing Council
of the
United Nations
Development Programme**

Distr.
GENERAL

DP/1986/11/Add. 2 (Part I)
13 March 1986

ORIGINAL: ENGLISH

Thirty-third session
June 1986, Geneva
Item 4 (a) of the provisional agenda

SUPPORT

PROGRAMME IMPLEMENTATION

ANNUAL REPORT
OF THE ADMINISTRATOR
FOR 1985

COUNTRY PROJECT RESULTS: BY REGION

COUNTRY PROJECT RESULTS: SOME SAMPLES, BY REGION

Africa

1. Across much of Africa, the droughts of the 1980s have brought the state of local agricultural capacity, markedly in food production, into sharp relief. But even before the droughts, the region's imports of cereal were on the increase -- up nearly sixfold through the 1970s -- signalling that domestic food output, under prevailing investments and various countervailing forces, was proving unequal to growing population demand.
2. Between 1960 and 1980, the region's aggregate food production rose by 1.8 per cent a year while its population grew by 2.8 per cent thus clearly showing a decline in per capita production. These low production rates do not however reflect Africa's true food crop potential for, according to the Food and Agriculture Organization of the United Nations (FAO), less than 6 per cent of the continent's total land area is under cultivation. An estimated 621 million hectares more could be utilized if drought, desertification, soil erosion and animal disease are successfully combatted and if new price policies, marketing arrangements and farming practices are widely introduced to sustain incentive, raise efficiency and improve the use of land.
3. Today, Africa's food deficits are more often thought to be the result of these cumulative and mutually reinforcing human, economic and environmental factors. Abroad, the practice in some of the industrialized countries of providing their farmers subsidies stimulated over-production, with the result that African countries often found it cheaper to import cereals than encourage their own produce. At home, the continuing high importance attached to cash crops by many Governments even after independence meant much lower investments in local food production which therefore never fully asserted itself against the patterns of the colonial economy. Fertilizer, pesticides, irrigation and other agricultural reinforcements largely went to support foreign exchange earners like tea, coffee, tobacco, cocoa, cotton, sugar and groundnuts. Many farmers were left with little or no support to pursue rainfed agriculture on deteriorating soils.
4. But by the early 1980s, Africa's export revenues had dropped sharply, hit by adverse terms of trade and unprecedented collapses in world commodity prices. Mounting debt-servicing costs were consuming greater portions of declining national income, and once seemingly cheap food imports now appeared exorbitant. As drought and famine struck harder than ever before, local agricultural capacity and its sustaining infrastructure attained sudden prominence.
5. UNDP's activities in Africa reflect and respond to the adjustments being made by African nations under these critical changes. From crisis through rehabilitation and on to sustainable development, the fundamental connections to be made at different stages of this adjustment imply that progress will be gradual but, eventually, exponential. African Governments have shown their determination to make and sustain the new connections, and UNDP has renewed its support for such efforts wherever possible. Some examples of these efforts may serve to illustrate their significance.

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A bridge out of crisis

6. Ninety per cent of land-locked Chad's food, fuel and other key imports arrive at the Cameroonian port of Douala to begin an overland journey which can take up to 30 days. Not distance, but a natural obstacle, accounts for the long haul, for freight must traverse the river Logone at Chad's western border with Cameroon. For years, goods bound for Chad have had to make their way through by rail, by truck and finally aboard small ferries before proceeding on to the country's capital, N'Djamena.

7. But when drought struck Chad in 1984, domestic cereal production fell sharply. A third of the country's 4.5 million people turned to food aid for survival and food imports climbed to 280,000 tons a year, subjecting the final and crucial ferry lifeline to unprecedented strain. Early in 1985, seasonal rains failed and the Logone's level dropped, bringing all ferry services to a halt. By then, however, at the Government's request, UNDP and its Office for Projects Execution (OPE) were already moving fast to organize an international effort to build a bridge for the relief of Chad.

8. The UNDP-initiated bridge project began in March 1985 and was completed in just four months despite formidable logistical and natural odds. Testifying to the international co-operation that UNDP can mobilize, five countries contributed directly to its construction -- the Netherlands, the initial design; the Federal Republic of Germany, the materials and engineers; Switzerland, the on-site supervision; Chad, the building teams; and Cameroon, the transit facilities and approach roads. UNDP allocated \$1,070,000 from its Emergency Operations Trust Fund and, through OPE, oversaw project activities from the first day's drilling for the bridge's riverbed pillars to the final touches to its concrete deck. The 223-metre bridge, which can accommodate 20 to 30 trucks an hour carrying 5,000 to 7,000 tons of food every day, went into service on 30 July 1985. Within two months, 1,000 trucks carrying 30,000 tons of food had rolled across Chad's new connection. Besides speeding food into the country, the bridge opens up new long-term development prospects for trade with Cameroon and the outside world.

New seeds in time

9. Some of those first trucks undoubtedly carried new seeds. In much of Africa, missed planting cycles have rendered seeds as valuable as capital and given seed banks the status of treasuries. In Ghana, for example, local rice production in the country's north once fared reasonably well, going from 49,000 tons in 1970 to 64,000 tons in 1980 when some 65,000 hectares were under cultivation. In the early 1980s, successive droughts turned back the clock and in 1983 rice production fell to 40,000 tons. Hungry rice farmers were left confronting drastically curtailed surpluses for replanting. When the Ghana Seed Company, usually the source of 30 to 40 per cent of the nation's base rice seeds, found its own stocks would meet just 13 per cent of the 1984 season's extended requirements, the Government approached donors and UNDP for help.

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10. Working together, UNDP and the United States Agency for International Development (USAID) identified the Philippines as a suitable source of the appropriate seed variety (IR-42) and jointly arranged to airlift four planeloads from Manila to Tamale in northern Ghana. USAID purchased the seed rice and financed three planeloads. UNDP emergency funds financed the fourth planeload, and the UNDP office in Ghana co-operated with parties on the ground in managing local logistics. The airlifted consignments brought direct relief to farmers, reportedly yielding 33,000 bags of rice the following year; but of longer-term significance, portions also furnished the Ghana Seed Company with a fresh base for producing new foundation-seeds to regenerate damaged stocks. Aided by concerted cultivation measures and better rains in 1985, Ghana's rice output last harvest returned to about 64,000 tons.

11. Rwanda's nearly six million people crowd into a small, mountainous nation 26,340 square kilometres in area, creating one of the world's highest instances of population density: 225 people per square kilometre. Rwandese and their scarce land work hard for each other, yet population pressures on limited croplands necessitate continued food imports.

12. Since end-1984, four communities in the country's Gikongoro prefecture have succeeded in raising their production of wheat and triticale with the help of new inputs and techniques introduced by UNDP and FAO. Guided by a team of agronomists and extension workers, the project has distributed locally purchased wheat and triticale grains to farmers already planting two crops a year to encourage more intensive and extensive cultivation. Whereas in 1984 individual farmers sowed on average 400 and 230 square metres of wheat twice a year, by 1986 they are expected to have expanded their planting to cover about 500 and 300 square metres each. First results in 1985 showed the locality's average wheat yields standing at a respectable 2.2 tons per hectare. With advice from project personnel, 4,000 farmers have also planted some 2,000 tons of triticale seeds in a bid to diversify their output. As early as 1985, an estimated 65 per cent of the farmers in one community were planting their next triticale crop with seeds from their own recent harvest.

13. Similar reports from several other UNDP offices confirm the renewed priority given by many African Governments to enhancing national seed production. With UNDP/FAO support and parallel financing from the Netherlands Government, Mauritania's new Seed Centre in the town of Kaedi became fully operational in 1985. Its output to date includes six tons of foundation rice stock, a further 80 tons of rice seed grown commercially under its supervision, and three tons of improved corn seeds. In Botswana, the construction of irrigation facilities to support work on sorghum, millet and maize cultures at the National Seed Multiplication Unit is under way following the completion in 1985 of engineering designs under a UNDP/FAO-assisted project. In the Côte d'Ivoire promising results were obtained from experiments to improve the production and storage of local onion seed when new storage techniques tested by UNDP/FAO in 1985 reduced post-harvest losses by over 50 per cent. Higher conservation rates led to a tripling of the surface area cultivated last season, with per hectare yields rising on average to 205 kilos.

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14. Through their Joint Consultative Group on Policy, UNDP, the World Food Programme (WFP), the United Nations Children's Fund (UNICEF) and the United Nations Fund for Population Activities (UNFPA) have surveyed local constraints hampering millet and sorghum cultivation in the United Republic of Tanzania's Shinyanga region, identifying work at the Ukenyenge Seed Multiplication farm as an important part of the solution. Assisted by a UNDP/FAO project, this experimental farm now aims to cultivate 120 hectares of land to generate locally available seeds, about 84 hectares of which had been sown by end-1985. In the Gambia, where only 451 out of 2,000 villages had adequate seed stores in 1984, the Government asked UNDP and WFP to help it to construct 25 new storage facilities in key growth centres by 1985 in order to safeguard new yields and promote seed reserves. By the end of 1985, 26 stores were ready for use. Significant community action mobilized through a related WFP food-for-work project has allowed UNDP to concentrate on acquiring building materials, thereby conserving sufficient funds for the construction of an additional 32 stores in 1986. And from Guinea-Bissau, it is reported that a combination of UNDP, FAO, United Nations Environmental Programme (UNEP) and bilateral support has helped this former rice importing country to return to self-sufficiency in seed rice production through successful laboratory research on hardier varieties.

Ground work

15. African soils are not robust, and traditional patterns of shifting cultivation, overcropping and overgrazing have often contributed to soil fragility and erosion. To make any long-term impact, new seeds require new soil protection measures, a complex and comprehensive undertaking, calling for greater efforts in national soil research, analysis and conservation techniques as well as better incentives and technical support for improved farming practices.

16. Not enough is known about Africa's soil, and UNDP encourages a number of institution-building initiatives in soil science, analysis and classification, as in the case of Burkina Faso. Here, by 1985, the classification and analysis of local soil types; the standardization of soil conservation practices, including fertilizer use; the development of modern soil survey methods and the scientific training of field workers had, for the first time in the country's history, been given a firm institutional base at the National Soils Institute. Under its guidance, 800,000 hectares of local soil are currently being prospected to determine their potential at different levels of intensive cultivation. Still, however, funds are needed to complete the "soil mapping" of the country for the first time.

17. In Ethiopia, a UNDP/FAO-supported project for strengthening the Soil and Water Conservation Department of the Ministry of Agriculture completed its second phase in 1985 after imparting substantial training in conservation methods and supporting successful soil protection works in seriously affected areas. Cultivation in Ethiopia takes place mainly on the rugged mountain slopes of the central highland plateau where an estimated 2,000 tons of fertile top soil per square kilometre are lost each year through natural and human-induced erosion. Through outreach efforts supported by the strengthened Soil and Water Conservation Department, terracing, bonding, watershed

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rehabilitation and reforestation schemes have proven effective in conserving precious topsoil. Independent surveys conducted by the University of Berne (Switzerland) have indicated that, in localities covered by the project, erosion has been significantly reduced, water retention increased and farm productivity raised. Through the project, 156 rural development agents and some 2,000 farmers' association leaders have been trained in soil conservation techniques.

18. The effectiveness of more "soil conscious" farming techniques is influenced by the quality and relevance of supporting extension services. In the Niger, soil conservation techniques are part of hands-on training provided by the UNDP/FAO-supported Practical Institute of Rural Development which by 1985 was enrolling 450 technical agents a year. The Institute upholds extension work, offering two- and four-year courses which emphasize working realities and turn out technical agents willing and equipped to back up new farming methods. The Institute has introduced "training by objectives" approaches to address operational needs in crop, forest and soil protection and to support the construction and maintenance of hydro-agricultural installations and general rural infrastructure. Refresher courses are held for in-service technicians, and the Institute continuously monitors local agricultural needs and conditions through an active Village Operations Programme.

19. Mozambique's rural extension services have for some time been affected by agricultural policies favouring large, mechanized State farms as producers of commercial surpluses and as sources of urban supply. External assistance and national efforts have in the past accordingly concentrated on commercial-grade crops such as hybrid corn and irrigated rice. However, sharp falls in local food production as a result of prolonged drought in the country's central and southern regions have brought home the hazards of not supplying traditional peasant farmers with modern agricultural inputs and irrigation works; and in 1983 the national authorities adopted deliberate policies for reversing these agricultural trends. A key ongoing agricultural research project assisted by UNDP/FAO was forthwith re-aligned, with new local-level priorities.

20. Emphasizing results that will be relevant to village-level food producers, the project now concentrates on upgrading rainfed maize varieties which can be grown with locally available inputs, on developing and distributing better seeds nation-wide and on training rural technicians to support local maize production. In an equally radical shift in emphasis, the project is also gathering new data on traditional farm practices and studying different local soil conditions and farm systems to determine optimum crop patterns. A significant expansion of rural extension work is scheduled for early action once these studies have identified the most appropriate extension techniques and other technical priorities to be adopted.

Support systems

21. Sound local infrastructure is the backbone of agricultural productivity. In most rural areas of Africa, small dams, village water supplies, feeder roads and adequate housing are in short supply. Labour, however, is plentiful

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which is why UNDP supports labour-intensive Special Public Works Programmes (SPWPs) in 16 African countries as appropriate means of overcoming some of these scarcities. Results reported from the United Republic of Tanzania in 1985 illustrate these programmes' potential. With UNDP/International Labour Organisation (ILO) assistance, eight SPWPs are under way in four regions of that country, three in irrigation, two in rural road construction and one each for water supply, afforestation and housing construction.

22. Because of poor drainage, parts of a prime agricultural settlement near Arusha are susceptible to crop-damaging floods, while neighbouring areas receive insufficient water. Under the Tanzanian SPWP, inhabitants of the area have successfully reclaimed 400 hectares of land and irrigated a further 1,200 hectares by building small dams. In the country's Rukwa region, 395 kilometres of feeder roads have been widened and gravelled, drainage canals dug and several bridges and culverts constructed in a local campaign to improve farm-to-market routes. In the Ruvuma region, 800 kilometres of rural roads have been similarly upgraded, while an afforestation drive in 10 villages has led to the planting of 600 hectares. In the same region, plans for constructing 3,200 low-cost houses through self-help schemes are progressing, with 2,000 of them now ready. Beyond yielding these practical gains, it is estimated that the country's SPWP has so far created over 1.8 million work-days for unemployed and underemployed rural men and women.

23. Food producers often face acute housing shortages, a fact which stands behind Malawi's efforts to bring acceptable homes to the over 30,000 households formed each year in the country's food-growing rural areas. Traditional mud-and-wattle huts with their wood frame and grass-thatch roofs, while cheap, are highly susceptible to termites, other insects and unfavourable weather. They need frequent repairs, often burn down easily and, in many cases, are increasingly difficult to build anew because their constituent materials are becoming progressively more scarce.

24. Continuing with a second phase of assistance from UNDP and the United Nations Centre for Human Settlements (UNCHS), in 1984 Malawi launched a full-scale rural housing programme to provide rural dwellers inexpensive and durable alternatives and thereby establish more productive agricultural communities. To date, the programme has improved existing building materials and developed low-cost substitutes. It has introduced replicable housing designs suited to local cultural norms and living habits; trained builders and artisans in construction methods; set up demonstration projects at the village level; and established a national Rural Housing Department to oversee country-wide implementation activities. The programme secures important results by offering in-kind credit facilities to prospective home-builders.

Managing trade-offs

25. Crops, cattle and people compete for land, and the land can suffer as a result. One reason why this is more likely to happen in Africa is because the use of land has traditionally been unplanned. Information on the condition and potential of land resources is an indispensable support for the rational management of land and cattle. Like a number of other African countries, Ethiopia has taken steps to build up national land-use planning capabilities. UNDP and FAO have been helping to strengthen this initiative.

26. Since the early 1980s, project assistance has generated a draft master land-use plan, based on newly charted maps and technical profiles which document at a macro-level the characteristics, qualities and geographical distribution of land resources. Areas likely to deteriorate under particular types of land-use and productive lands lying idle have both been identified, with this knowledge in turn supporting decision-making on farming choices. Aerial photo and remote-sensing interpretation facilities and capabilities have been set up in the country, together with national guidelines for land evaluation. By 1985, field work had been completed in two important water-catchment areas, and extensive information gathered for preparing more detailed land-use maps on a scale of 1:50,000. Citizens trained under the project now work in some of its key activities; 15 further national personnel are on overseas fellowship schemes in land-use planning and rehabilitation; and technicians are now routinely given in-service training at national workshops.

27. Knowledge of the potential uses of different types of land is indispensable for scientifically based strategies that can be applied not only nationally but also at the sub-sectoral level. Kenya's cattle and dairy farmers face the prospect of their smallholdings becoming smaller as their high-potential pasture lands come under greater pressure from the expanded staple cultivation which will be required to feed a population increasing by 3.8 per cent a year. For meat and dairy products to be competitive in these circumstances, their production levels have to rise, a fact which is sometimes taken to mean that more land used for crops should be annexed for grazing.

28. After studying its grasslands, Kenya has responded instead by working for boosted productivity on existing pastures through improvements in the quality of forage crops. With UNDP and FAO, the Government has established eight forage multiplication centres which have supplied nearly 2,000 dairy and cattle farmers with high-grade grass and legume seeds tested through on-farm experiments. Milk production on the first dairy farms to plant the new fodder crops doubled on average, an increase even more significant for occurring during the dry season when milk output is generally low. In 1985, 25 acres were allocated for the production of these forage legume seeds and two further centres for seed multiplication were working at Kitale and Alupe. Extension efforts now focus on introducing the new fodder crops to more smallholders, and on improving animal husbandry and forage management practices. No encroachment on croplands has taken place. As with most agricultural investments, the project's dividends will be long-term, but it has already indicated one answer to the recurring competition for land.

Asia and the Pacific

29. Results reported for 1985 from UNDP-assisted projects in Asia and the Pacific show that countries in the region increasingly attach importance to the application of qualified human resources and technology to development. Agriculture remains the greatest single contributor to the gross national product (GNP), jobs and exports even in the larger economies of the region. But many countries are, or will soon be, food-sufficient and several can now increasingly deploy their human resources in vigorous pursuit of industrial

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and technical progress. Communications technology features in a number of reported achievements, not altogether surprisingly given its many social and economic applications in a region as populous and geographically diverse as this. Other reports indicate that a few countries are looking afresh at their natural endowments in order to harness all available resources for development while ensuring sustainability. As one report also suggests, the careful planning of urban habitats is perceived as another safeguard of rational development that is of increasing relevance to the region.

New instruments for development

30. India's capabilities in electronics represent a significant resource for self-reliant development. The design of scientific instrumentation for the country's electronics sector took another step forward in 1985 when work on a new centre for the development, testing and calibration of electronic instruments and prototypes was formally completed. Started by the Government in 1981 in the city of Ambala, the traditional capital of India's precision instruments industry, the centre was established with the support of UNDP through the United Nations Industrial Development Organization (UNIDO).

31. The centre, which will design and test electronic instrument prototypes to be produced by local small and medium enterprises, began to serve the industry even before its completion. Forty designs for electronic instruments with various industrial and social applications have already been developed. The centre has also begun to conduct training programmes in electro-optics and instruments design technology and to transfer fresh know-how to local manufacturers, schools, hospitals and public utilities through consultancy services in the choice, maintenance and adaptation of electronic instruments in general use. It has well equipped electronics and optics design laboratories, calibration and testing facilities and several specialized production units. The centre's work, which also includes the design of electronic teaching aids and the provision of scientific information services to the production sector, is based on the view widely held in India and other countries that modern electronics is not a luxury but an indispensable support for greater productivity and human welfare.

32. Telecommunications technology, an application of electronics increasingly common in the region, is an evident pre-requisite for development in a land-locked and mountainous country like Nepal which, in the 1960s, had three manually operated telephone exchanges and the lowest recorded telephone density anywhere in the world. Through sizeable bilateral and multilateral assistance, Nepal has built up its domestic telephone services to include 27,780 installed lines, 82 receiving centres equipped with wireless services and an international exchange connected to other countries by Earth satellite. The number of domestic lines is expected to rise to 40,000 by 1990, and more sophisticated communications facilities are being installed.

33. Throughout this expansion, the training of local telecommunications operators, service personnel and maintenance technicians has been entrusted to UNDP through the International Telecommunication Union (ITU) which helped to establish and equip Nepal's principal telecommunications training centre over two phases of assistance. By 1985, the centre had turned out 670 qualified

technicians, had instituted training programmes targeted at country-specific needs and was working without the need for full-time expatriate advisers. Ongoing project assistance now focuses on building up a national repair and calibration centre and on developing computerized maintenance control systems. These encouraging results have prompted the Government to request and obtain further UNDP/ITU assistance to improve maintenance management and other organizational methods at the Nepal Telecommunications Corporation in preparation for the next phase of expansion in national telephone services.

34. Administering Mongolia's vast pastoral reaches where nearly half the country's productive population, mostly cattle-breeders, lead dispersed, nomadic existences poses sizeable difficulties for its leadership. A pilot rural telecommunications system introduced into three districts with UNDP/ITU assistance has now provided some quite original answers.

35. The new system gives cattlemen compact radio telephones connected to each other and central authorities via portable small-channel radio relay stations. Located in district centres, these relay stations are mains and battery operated, weather-resistant and can be picked up and put down under migrational conditions. Repeater stations in areas covered by the radio service are fed by solar batteries, and ancillary equipment is shielded from harsh weather in underground containers. By 1985, in all three districts, production units, State co-operatives, farmers and cattle-breeders were making full use of this efficient and instantaneous means of transmitting information on weather, prices, supplies, agricultural and livestock developments and other matters affecting their productivity. The project has been acclaimed a success and appears well placed to sustain and replicate its results through the training it has carried out at Mongolia's Telecommunications Centre. Eighteen telecommunications instructors have taken advanced courses, and 13 engineers and 19 operators have been taught how to service and maintain the pilot system.

36. Nation-wide educational radio, the most ambitious public media service ever to be implemented in Thailand, was, for the first time, available on the air in all 73 provinces of the country during 1985, thanks in part to assistance from the World Bank and UNDP through the United Nations Educational, Scientific and Cultural Organization (UNESCO).

37. While educational attainment levels in Thailand are high, opportunities are unequally spread throughout the country's rural areas and within the educational system itself. The idea of using educational broadcasting to supplement formal schooling in Thailand dates back to the late 1970s when studies showed that fewer than 30 per cent of primary school-leavers could obtain secondary school places, and less than 4 per cent of these stayed the entire course. Slightly under half of all secondary school pupils were from Bangkok, which at that time accounted for just 10 per cent of the population.

38. With \$29 million in World Bank capital inputs, the Thai Government set out in 1980 to extend educational radio to all parts of the country. Its three specific objectives were to transmit programmes for in-school use in order to compensate for teaching staff shortages; to provide over-the-air

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training courses for teachers; and to bring educational opportunities to the many out-of-school adults who had earlier missed them. UNDP and UNESCO were asked to help to improve the supply and quality of intended broadcast material, train technical personnel to operate and maintain equipment purchased with World Bank funding and upgrade professional capabilities in the three educational centres designated to provide the different types of radio service.

39. By the target date of 1985, the new services were available nation-wide. Altogether, educational broadcasting had increased from 61 to 108 hours a week and was being supported by some 465 trained professionals compared to about 150 in 1980. In-class programmes were being incorporated into the curricula of 25,842 schools, effectively covering about 86 per cent of the country's school population. First-year enrolment in radio-taught teacher-training programmes reached 55,000, while out-of-school courses for adults registered 23,238 initial subscribers. These latter numbers had begun to rise dramatically by the end of 1985 as the new service established itself in all localities. Back-up course materials had been prepared, reproduced and extensively distributed. An evaluation system based on user feedback was in place to aid improvements in programming; a computerized film and textual materials library had been set up; and exchange channels with educational broadcasting institutions in other countries had been established.

Resource management: forests, fuel and cities

40. The management and rational development of Sri Lanka's vital forest zones have been significantly furthered by a UNDP/FAO project which has prepared a complete and up-to-date inventory of the country's total forestry resources. Sri Lanka's last forest inventory was completed in 1960, when total forest cover stood at 2.87 million hectares. In the 1980s, the Government and the World Bank launched a forest resources development programme, a major component of which was to be an integrated national master plan covering the management of all wooded areas -- from natural forests and plantations down to home gardens and roadside stands. Comprehensive national data for this ambitious effort were needed, and the Government requested UNDP and FAO to extend and expand their assistance to an ongoing land-use planning project in this sector in order to conduct the required inventory. As a mark of the importance it attached to this effort, the Government entered into a cost-sharing arrangement with UNDP.

41. The project concluded its extensive and exhaustive survey in 1985. It has provided the Government/World Bank programme with entirely new statistics on total forest area and stocking, classified by types of natural forest cover for each of the country's varied forest ranges. These new figures confirm that, in mid-1983, Sri Lanka's total forest vegetation cover -- high forest land, secondary shrub forests and dry-zone scrublands all combined -- amounted to 2.45 million hectares, 42 per cent of national land area. The particular conclusions supported by the inventory are that forests have been reduced appreciably since Sri Lanka's last stock-taking; that of the areas still forested, several are now much degraded; and that once-productive areas have lost some of their former output.

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42. An important general conclusion drawn is that from an environmental standpoint, Sri Lanka has adequate natural forest cover, but that the issue facing the forestry sector is inadequate timber productivity. While substantial areas could support high-yielding forests, actual log out-turns are low relative to covered ground. The inventory also indicates that overexploited rainforests still retain their resource base which can be enriched and that, in fallow forest lands, greater replanting could double the present extent of plantations. A significant achievement in its own right, the new forest inventory is a substantial contribution to Sri Lanka's emerging forestry strategy and is expected to support subsequent efforts to mobilize investment in the sector.

43. Since the second "oil shock" of the 1980s, oil prices have stabilized and energy matters appear to have lost some of their urgency in parts of the industrialized world. Not so in most developing countries, including those of the Pacific, where a regional Energy Development Programme (PEDP) supported by UNDP through the Economic and Social Commission for Asia and the Pacific (ESCAP) continues to help countries to stretch costly petroleum imports and develop vital local energy sources. Many Pacific countries spend 20 per cent or more of their foreign exchange earnings on imported petroleum and petroleum products. Recent declines in income earned by their primary commodity exports have made these large foreign currency outlays even more difficult to sustain.

44. For the past three years, the programme has contributed to national energy policy-making and planning in the fields of petroleum supply and contracting, electricity-pricing, the expansion of power generation, energy management, and renewable energy systems evaluation. It has trained local planners and technicians in energy survey and auditing methods and in the application of refrigeration, photovoltaic and solar heating technologies. In 1984, the programme introduced microcomputers as tools for country energy planners and managers and, by 1985, computerized methodologies and information had been widely integrated into local project planning and economic analyses. Region-wide training in energy planning will be the programme's main focus in 1986. Through PEDP, individual Pacific countries have prepared comprehensive energy strategies which also offer frameworks for co-ordinating external assistance provided by bilateral and multilateral donors under arrangements like the Second Convention of Lome between the African, Caribbean and Pacific States and the European Economic Community (EEC).

45. Indonesia has developed a complete national urban development strategy, the first to spell out the links between the country's macro-sectoral economic policies and the specific development needs of key cities, including their investment requirements in urban infrastructure. The pathfinding strategy, which was prepared under the guidance of a government inter-agency committee, was supported financially and professionally by UNDP/UNCHS and published in 1985.

46. Urban areas in Indonesia now support populations totalling 32 million. The pace of urbanization has nearly doubled since the 1970s and, according to the new strategy's forecasts, up to the year 2000 as much as 70 per cent of all population growth will accrue to urban centres, raising their total numbers to about 75 million. The strategy emphasizes that macro-economic

decisions, and not direct spatial planning choices, will actually be most influential in Indonesia's response to this prospect. It indicates numerous trade-offs to be studied in designing infrastructure for cities and provides administrative and investment guidelines for particular urban development projects. To develop the strategy, the UNDP/UNCHS project also created a major urban data-base merging new information from different sources in Indonesian cities. Again for the first time, this data-base consistently defines and codes all the nation's functional urban areas, removing loose spatial definitions which in the past have caused several major errors, and also inconsistencies in estimating urban population for investment purposes. The Government is already working on several aspects of the strategy.

Appropriate expertise

47. For several years, China has drawn on the abundant supply of Chinese experts resident abroad through UNDP's Transfer of Knowledge through Expatriate Nationals programme (TOKTEN). Under that programme, overseas Chinese motivated by cultural and professional ties frequently return to their country of origin to take on short-term problem-solving assignments, without fee. Now, sparked by TOKTEN's success, a new venture in mobilizing untapped human resources for China's development is rising fast in the international community.

48. The venture, known as the Senior Technical Adviser Recruitment programme or STAR, began when two American professors expressed regret at being unable to accompany a Chinese-origin colleague on a stimulating TOKTEN assignment of professional interest to themselves. This signal that non-expatriates would be willing to work in China on development issues on similar terms, coincided with a Chinese Government request to UNDP for help in establishing contacts with experts in selected non-governmental organizations abroad. STAR was born of the union of these two developments. Since February 1985, the programme has filled 42 requests for particular forms of expertise, drawing on non-governmental organizations (NGOs) in Australia, France, the Federal Republic of Germany, Japan, Sweden, Switzerland and the United Kingdom. Eight assignments were carried out by world-class economic planners and managers, including a Nobel Laureate, who participated in an international seminar sponsored by China's State Commission for Economic Restructuring. Like the TOKTEN programme, STAR usually meets travel and subsistence costs while the individual experts waive their fees. One hundred consultancies are planned for 1986, and the programme has established operational links with UNDP's new Focal Point for Short-Term Advisory Services to widen its recruitment base.

49. As noted by the Administrator in his introduction (DP/1986/11) to this report, NGOs can make a unique contribution to solving problems which beset the rural poor. In Bangladesh, a local NGO, the Kumudini Welfare Trust of Bengal, has been doing just that by running a 750-bed general hospital which provides completely free medical services to rural dwellers in the district of Tangail. The hospital also houses a nursing school and has developed outreach medical services which conduct regular maternal and children's clinics.

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50. In its remote rural location, one difficulty the hospital faces is attracting and retaining suitably qualified specialists. Under the United Nations Volunteers (UNV) programme, UNDP has provided four doctors to help the hospital to maintain its high medical standards and its status as a non-profit service. The doctors currently practice paediatrics, ophthalmology, anaesthesiology and gynaecology. Three more are being recruited under the project to serve in pathology, obstetrics and general surgery. A further five specialists are expected to be recruited in 1986. But beyond their important hospital work, the UNDP/UNV doctors have not only provided training to their junior colleagues and to nursing staff, their greatest contribution has been to the hospital's outreach services.

51. With the new UNV specialists' help, village midwives and doctors now routinely receive training in new community health techniques and in the early detection of cases requiring hospitalization. Beyond these efforts again, the UNV doctors and their like-minded national colleagues at the Kumudini hospital have recently set up a programme to train nurses as anaesthetics technicians, so that modern surgery can be more extensively practised in this rural area of Bangladesh.

Latin America and the Caribbean

52. UNDP continued to support the revised development efforts of Latin American and Caribbean countries in 1985 as the region maintained its adjustments to sharply reduced prospects. The macro-level challenges confronting most countries remain severe amid widespread and heavy debt burdens, elusive growth opportunities and curtailed national investments and income. Reflecting wider social and economic difficulties, some reports from 1985 stress operational and other hurdles recently overcome in pursuit of project outputs. Yet these projects also speak of an intense resourcefulness and determination in the face of difficulties, qualities which may prove to be decisive assets in the adjusted socio-economic strategies of this region. Results reported indicate that UNDP assistance also remains an essential catalyst in efforts to cope with and go beyond recent austerities.

Winning options from constraints

53. Panama's dry season can last up to five months, with serious consequences for its moisture-dependent staple crops, notably rice. On the other hand torrential downpours in wet months usually over-saturate soils, frequently causing other food crops to fail. A proper mix of irrigation and drainage facilities is essential for greater agricultural productivity. Since 1981, UNDP has supported Panama's efforts to rehabilitate and build irrigation and drainage works serving croplands subject to these conditions. But this self-evidently vital effort has not been obstacle-free.

54. The project's budget originally envisaged co-financing from the Panamanian Agricultural Development Bank as a means of supporting farmers' co-operatives which had been chosen to conduct rehabilitation and construction work and to undertake new irrigated cultivation. Initial bank credits had to reach farmers in the dry season before planting began and while they could devote themselves to the task. Under public financing constraints in the

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project's first year, only a small portion of the credits materialized, and then only near the end of the season. Construction could only proceed on a reduced scale, and the project had to adjust its activities to focus on traditional farming methods. When the same situation occurred the following year, bringing the project's very viability into question, UNDP proposed the establishment of a revolving fund financed by the project itself.

55. The fund's purpose would be to finance seeds, labour, fertilizer and other inputs needed for sowing the few areas in which new irrigation work had gone forward, in order to prove to farmers that irrigated land could support more diversified and higher-yielding crops. With the approval of the Government and the executing agency, FAO, the revolving fund became operational in 1983 and immediately began financing work on two demonstration sites.

56. By the end of 1983, the first crops had been harvested, sold and their proceeds re-invested in a second crop which was itself ready for harvesting. Impressed by per-hectare yields, the country's agricultural bank indicated it would finance similar work on a 200-hectare site in 1984. Once again, financing from this source proved unobtainable, but by now the project's farmers had seen the potential of self-help. This time the project created an "Irrigation System Users' Association" around its sites, leasing tracts of newly irrigated land to independent producers on low-cost terms. By 1985, this enterprise was self-propelling. Producers were paying their monthly rates on time and, after finishing construction work on the system itself, had placed plots totalling 1,170 hectares under intensive irrigated cultivation. Rice yields of over 4.5 tons per hectare were achieved last year, and a further 127 hectares were sown with new vegetable crops. The Government has asked UNDP to extend the project to meet demand for similar initiatives from farmers' co-operatives in other districts, and has opened negotiations with the Inter-American Development Bank (IDB) for a 4,000 hectare national irrigation investment project.

57. Coffee is Haiti's chief source of foreign exchange, but production levels remain below the nation's export quota from the International Coffee Organization. For years, some 65 per cent of Haitian coffee was grown by traditional techniques on small plots of less than two hectares, a fact which largely accounted for its limited output. In 1981 Haiti set about reorganizing its coffee growers into co-operatives to raise efficiency and establish new cultivation methods. By 1983, working with the Co-operative Union of the Southern Region (UNICORS) and with other donors, UNDP/ILO had helped five co-operatives to establish new and more modern plantations which covered 305 hectares and provided 1,200 new coffee growers with additional income.

58. Between 1983 and 1985, continued support to Haiti's coffee co-operatives has seen their membership grow from 6,000 to 8,000, some 40 technical extension workers trained and a further 350 hectares of plantations established. Thanks to the introduction of plantation coffee varieties, some of these areas now support production as high as 800 kgs. a hectare compared to 200 kgs. per hectare yields from traditional crops and plots. But, mid-way, these positive developments also brought out new difficulties which

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UNDP was asked to help to address. Isolated growers were not being effectively integrated into co-operatives owing to the neglected condition of rural feeder roads. Enlarged harvests risked being spoiled because, under sizeable movements to market, these same roads were becoming impassable.

59. However, the newly revealed potential of coffee production in the 75,000-inhabitant area covered by the project had not been lost on other donors or the Haitian authorities. With the United Nations Capital Development Fund (UNCDF), WFP and the Government, UNDP was able to mobilize and co-ordinate over \$2 million of additional assistance for the construction of 100 kilometres of new rural roads. This radical and unforeseen expansion of project objectives has significantly improved the coffee marketing capacities of Haiti's co-operatives while creating new local infrastructure.

60. Demand for imported spare parts in Paraguay's agricultural and production sectors has long contributed to the outflow of hard currency from the country. While local foundries can and do produce domestic equivalents, low or uneven standards of quality control and testing in the metallurgical industry have meant that such components are not always reliable. UNDP/UNIDO assistance to the National Institute of Technology has set up a well equipped metal-testing laboratory and trained its staff to provide local spare parts manufacturers with a quality control service reflecting internationally required specifications.

61. Private companies, however, were initially disinclined to avail themselves of these new services; and a factor crucial to the project's success -- namely fee-paying industrial subscribers -- became an issue, leading in 1984 to the temporary suspension of activities for several months.

62. Persevering in its negotiations with foundries and the metals industry, the Institute's management, backed up by technical support from the project, eventually won an agreement establishing a joint working group to identify training and marketing needs in the private sector as a basis for improving production standards. Five hundred professionals and technicians were trained in modern foundry practices as a result. Ties between the Institute and Paraguay's Industrial Metallurgical Centre, the leading association of private firms in this field, were strengthened by demonstrating the industrial benefits of the sophisticated metal treatments and manufacturing processes which the new laboratory would introduce. By 1985, national quality control services were an accepted part of the industry's practice, actively supporting the domestic production of international-grade parts which have, in turn, reduced the operating capital requirements of end-users by eliminating their need for large inventories of expensive imported items.

Toward economic efficiency

63. Public sector efficiency measures, a growing emphasis in the region, can significantly improve relations between national and private entities. Such measures featured prominently in Venezuela's fourth national plan (1981-1985) and, among these, the reorganization of the country's Industrial

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Property Registry was a high priority. Companies are more likely to encourage the local development of new products and processes when they can depend on efficient systems for the protection of intellectual property. Recognizing this, the Government in 1983 asked UNDP and the World Intellectual Property Organization (WIPO) to assist its efforts. By 1985, the project had redefined the organizational structure of the Registry, retrained most of its core professional staff, instituted a new management system and introduced automated computer-based operations, a new data bank and a technical library. Before the project ended last year, the Office of Patents and Labels had finished processing its backlog of pending applications.

64. New data processing capabilities and equipment at Ecuador's Central Bank, which executes national monetary policy, regulates credits and foreign exchange and generally acts as financial agent to the State, are helping this national institution as well to discharge its responsibilities more efficiently. UNDP and the United Nations Department of Technical Co-operation for Development have assisted the Bank to specify and install its new computers, restructure its systems management and recruit and train personnel. The project has funded three long-term fellowships and provided 32 short-term courses for 605 nationals. Automated control systems have been designed and set up to service foreign currency transactions, current accounts, cash flows, general accounts, trust funds and economic research. The project has also contributed to the establishment of a Master's degree programme in information sciences at the country's Central University.

65. The greater economic integration of this region is often perceived as the ultimate efficiency it can attain. Certainly, for the 13 members of the Caribbean Community (CARICOM), shared economic systems offer evident benefits. Pooling the diverse, vulnerable and widely dispersed endowments of these island economies can enlarge their overall resource base, while common services can lead to increased efficiency and economies of scale. Recent economic pressures on Caribbean countries have, however, tended to encourage fragmentation, and the traditional catalytic role of the CARICOM secretariat in promoting unity through co-operative programmes has been affected by pervasive human and financial resource constraints.

66. UNDP is working with the CARICOM secretariat to revitalize regional co-operation by strengthening its initiatives in macro, industrial and agricultural planning and by helping to implement projects dealing with such issues as multilateral trade negotiations, patent laws and the operating principles of the community's common market. Frequent exchanges of expertise and co-operative training programmes have helped cement inter-economy ties. A major CARICOM initiative, the establishment of a regional pharmaceutical centre, is also being furthered. Member countries are being aided to achieve common capabilities in tax administration, health service management and information systems. The development of agricultural exports is being pursued through the formulation and implementation of policies supporting intraregional commodity agreements and by improving specific sub-sectoral conditions affecting production.

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67. Better integrated strategies within individual domestic economies are logical companions of regional efforts to stimulate new dynamism and efficiency. Several Latin American countries achieved rapid growth in the 1970s through large-scale industrial advances dependent on imported technologies and processes. In the case of Mexico, one consequence of this was that critically important small and medium industries (SMIs), dispersed through different sectors of the economy, received much less policy attention, frequently remaining without adequate linkages to each other, to the main production system and to larger markets.

68. Yet Mexico's SMIs employ about 55 per cent of the country's labour force, create 40 per cent of the added value of the manufacturing sector and generate more employment and added value per unit of capital invested than do larger industries. Moreover, SMIs are inherently flexible in their requirements for inputs, which are predominantly national, and in their production processes and geographical location. They can therefore readily link up with larger production chains or bring employment to needy areas. They also act as conduits through which private and family savings flow into the productive system. Reassessing these strong advantages, Mexico asked UNDP and UNIDO in 1983 to assist it in developing an integrated policy for the promotion and support of its SMIs.

69. The project has diagnosed the major operational and technical needs of Mexican SMIs, developed proposals for meeting their immediate institutional and legal requirements, and created a specialized documentation centre profiling these industries' different characteristics. It has advised individual enterprises on production methods, has outlined requirements for information-sharing between them and has helped develop marketing and export policies for the sub-sector. Particular emphasis has been laid on required technological improvements, prompting the National Council for Science and Technology (CONACYT) to allocate 1 billion pesos for a technology development programme benefiting SMIs. By organizing regional consultations and overseas study programmes, the project has brought the experience of similar industries in other countries to bear on its analyses. A Presidential Decree for SMI regulation was formulated taking the project's advice into account. The long-range impact of Mexico's new integrated SMI strategy will depend on many variables, but basic and long-standing omissions affecting the sub-sector's potential have been addressed.

The Arab States

70. Sharply contrasting development needs confront UNDP in this region which embraces the world's major oil-exporting and capital-surplus nations and some of its most vulnerable and impoverished desert countries as well. Weathering recent declines in world prices, oil-exporting countries now focus on diversifying their economic systems, often limiting their expenditures by concentrating on the economic possibilities of earlier, chiefly industrial, investments. In some of these countries, foreign investment appears increasingly more attractive and UNDP has been playing a part in aiding Governments to devise appropriate policies. For another, more vulnerable group of countries, stronger measures to protect and develop their

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predominantly agricultural resources have become imperative under drought-induced difficulties and rising food import bills. In these areas, UNDP assistance has proven essential. Both classes of need were reflected in project results reported for 1985 and some examples are given below.

71. Saudi Arabia's bid to diversify its economy dates back several years. In 1977, the Kingdom instituted a Ministry of Industry and Electricity with the task of developing broader industrial policies. UNDP/UNIDO were asked in 1980 to provide the new Ministry advisory services identifying industrial development prospects, including the promotion of foreign investment and the establishment of new technical and engineering services and enterprises.

72. Under its first phase, the project assisted the Ministry to develop and promote its foreign investment policy, evaluate new industrial projects, formulate technology license agreements and start up additional technical services in the industrial estates of Riyadh, Dammam and Jeddah. Groundwork on a joint Arab engineering project for the manufacture of vehicle axles was carried out and several other local engineering possibilities were studied.

73. Since 1983, these services have helped the Ministry to co-ordinate the design, specification and implementation of the axle manufacturing scheme, evaluate fresh proposals for the domestic assembly of cars and pick-up trucks, prepare numerous policy studies on Saudi Arabian industries' export prospects and assist specific local industries to overcome basic operating difficulties. The project has also reviewed new industrial processes for improving plastic products and identified other downstream options for the petro-chemical industry. The review and initiation of joint ventures in other sub-sectors, including agro-industry, is the project's next priority. Investments in Saudi Arabian industry, both public and private, have been stimulated by its Government's more informed and active industrial policies which now afford greater incentives and opportunities. Annual industrial growth in the Kingdom has averaged nearly 14.1 per cent for the past five years.

74. Similar UNDP/UNIDO advisory services to Oman's Directorate-General of Industry have encouraged the emergence of numerous new industries which are helping this oil-exporting country to diversify its production base. Large-scale industries which have been promoted as a result of the Government's newly issued industrial and technical guidelines include a 20,000 ton per annum copper smelter and plants for the production of steel, cement, organic fertilizer, animal feed and synthetic detergents. Also recently established in line with Oman's new industrial strategy are a modern dairy, several plastic factories and a flour mill. Between 1982 and 1984 alone, 253 industrial licences were granted to new medium and large enterprises, representing investments of \$155,696 million. Three large public sector industrial programmes with a combined investment value of \$192.5 million have also been launched with planning assistance from the project.

75. The Syria Arab Republic's recent development plans include a revised industrial strategy aimed at raising managerial and technical skills and developing consistent manufacturing standards. In this country as well,

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UNDP/UNIDO have helped to carry out new industrial policies by supporting the redirection of work at the Industrial Testing, Research and Development Centre which was originally established with their assistance. This second-phase project has developed a new organizational structure for the Centre strongly oriented toward closer interaction with industries, including the extension of quality control services to State-owned enterprises. Revenue from these new services has increased fivefold since the Centre's inception. New initiatives pursued under the project range from the enlargement of testing services in metrology and instruments calibration, to the joint piloting with local industry of facilities in plastics and rubber production and food processing. The Centre now also offers strengthened instrument repair and maintenance services, assisting industries to cut down on unnecessary equipment purchases.

76. Reflecting an altogether different set of national circumstances, Somalia's most important natural resources are animal. Drought has severely affected this semi-arid and sparsely populated country where over 70 per cent of some 5 million people depend for their livelihoods upon an estimated 41.3 million goats, sheep, cattle and camels. Measures to protect the health of these animals have become even more crucial since Somalia's economic crisis, for livestock production provides over 40 per cent of its GDP and accounts for more than 80 per cent of export earnings. UNDP/FAO have stepped up their efforts to safeguard these prime economic resources by strengthening central veterinary laboratory facilities and field services for the control of local animal diseases through domestically produced vaccines.

77. Four endemic animal diseases have traditionally threatened Somalia's livestock: rinderpest, sheep-pox and two forms of contagious pleuro-pneumonia. Three other serious afflictions -- black quarter, haemorrhagic septicaemia and foot-and-mouth disease -- are reported sporadically. Thanks to continuous vaccinations carried out through these strengthened veterinary services, the country is now free of rinderpest, while the incidence of other diseases has been considerably reduced. The UNDP/FAO-supported project has established efficient but flexible operations for the routine production of seven vaccines. The rinderpest vaccine produced in the country was independently tested in 1985 by four international institutes of immunology and judged to be 1 of the 4 best vaccine products out of 11 submitted from Africa. For the past year, field-laboratory structures have been reinforced and streamlined to improve disease surveillance and accelerate preventive treatment.

78. In the Sudan, UNDP and FAO have aided the authorities over several years to improve agricultural productivity by helping to raise the efficiency of the national agency for seed production and distribution. This effort has taken on renewed significance in the context of the country's prolonged drought. Improvements have centred on: the re-organization of the agency's sorghum and wheat seed production programme; the establishment of a seed production programme for groundnut, sesame, kenaf and rice; the introduction of a seed certification system to maintain quality control; and the training of 119 Sudanese nationals in production and distribution methods. Ten seed-processing plants with a combined yearly output potential of 50,000 tons have also been set up. Project results have helped mobilize a \$20.6 million

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investment package financed in part by the African Development Bank (AfDB) and the African Development Fund (AfDF). This new deal for the country's seeds launches a large-scale production scheme aimed at taking the annual production of certified staple seeds from 2,550 to 7,000 tons a year, a vital target in Sudan's rehabilitation and renewed development.

79. As reported last year, technical extension services are playing a key role in the modernization and diversification of one of Yemen's largest agricultural regions, the Tihama, where the work force is preponderantly female. With support from UNDP, the Netherlands Government and FAO, Tihama farmers continue to receive assistance in responding to new markets, changing consumer tastes and relatively accessible capital financing. Sixteen extension centres have been established to transfer modern know-how to production areas in water management/agronomy, horticulture, plant protection, animal husbandry and marketing and home economics.

80. Two thousand crop trials involving sorghum, millet, maize, tobacco, cotton, vegetables and fruits have led to the introduction of new varieties, resulting in an average increase of 100 to 150 per cent in certain yields. Water savings of as much as 50 per cent have been achieved through the replacement of earthen canals with polyvinyl chloride (PVC) piping. Eighteen co-operative service societies have been formed, 290 skills-training courses conducted and 12,000 farmers and labourers have been introduced to improved production practices. With agriculture accounting for about 45 per cent of Yemen's Gross Domestic Product (GDP) and employing nearly 65 per cent of its labour force, the project responds to this least developed country's highest economic priority.

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