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REPORT AND RECOMMENDATION
OF THE
PRESIDENT OF THE
INTERNATIONAL DEVELOPMENT ASSOCIATION
TO THE
EXECUTIVE DIRECTORS
ON A
PROPOSED DEVELOPMENT CREDIT
TO THE
PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN
FOR A
WADI BEIHAN AGRICULTURAL DEVELOPMENT PROJECT

April 29, 1981

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CURRENCY EQUIVALENTS

<u>Currency Unit</u>	<u>Calendar 1980</u> <u>Yemeni Dinars (YD)</u>	<u>April 1981</u> <u>YD</u>
US\$ 1	YD 0.345	0.345
YD 1	US\$2.90	2.90

<u>Fiscal Year</u>	
April 1 to March 31	(prior to 1975)
April 1 to December 31	(1975)
January 1 to December 31	(from 1976)

GLOSSARY OF ABBREVIATIONS

ADF	-	Agricultural Development Fund
BPU	-	Beihan Project Unit
FAO	-	Food and Agricultural Organization of the United Nations
FAO/CP	-	FAO/World Bank Cooperative Program
HYV	-	High Yielding Variety
ICB	-	International Competitive Bidding
IFAD	-	International Fund for Agricultural Development
MAAR	-	Ministry of Agriculture and Agrarian Reform
MRS	-	Machinery Rental Station
NBY	-	National Bank of Yemen
NDB	-	National Development Bank
PDRY	-	People's Democratic Republic of Yemen
PCMFV	-	Public Corporation for Marketing Fruits and Vegetables
UNDP	-	United Nations Development Program
YAR	-	Yemen Arab Republic

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

Wadi Beihan Agricultural Development Project

CREDIT AND PROJECT SUMMARY

Borrower: People's Democratic Republic of Yemen (PDRY)
Amount: SDRs 6.6 million (about US\$8.0 million equivalent)
Terms: Standard IDA

Project
Description:

The project would increase agricultural production and farm income on about 4,000 ha of mixed spate (flood) and well irrigated lands in the Beihan subgovernorate by rehabilitating the spate irrigation network and improving the groundwater irrigation system of Wadi Beihan and by providing technical assistance, farm inputs and agricultural equipment for Wadi Beihan and Wadi Ain. It would establish a program of hydrometeorological observations in Wadi Beihan for improving knowledge of its water resources and ensuring their optimal utilization. In addition, it would improve access between agricultural and population centers in Wadi Beihan by constructing feeder roads, and improve the nutrition of the local population by increasing production of fruits, vegetables and meat.

The project would benefit directly 5,000 families. In addition, 15,000 persons would benefit indirectly from the project through the increased availability of foodstuffs and easier access to markets and social and administrative services. The principal risks of not achieving the project's objectives are associated with an unsustainable rate of drawdown of groundwater in the project area and delays in realizing full production benefits. The project has been designed to minimize these risks. Greater use of spate water resulting from rehabilitation of spate irrigation works would reduce groundwater demands and increase aquifer recharge. The government would strictly control new well development in the project area. The project also has a strong management and technical assistance component to ensure successful project implementation. A well-trained team of local employees would then take over project management on completion. The government is conducting with the assistance of consultants a study on its pricing, taxation and subsidy policies in the agricultural sector under the Wadi Tuban Agricultural Development Project (768-YDR). The implementation of the recommendations of this study together with recent policy changes in marketing and pricing would provide further incentives to the farmers to adopt technological packages to improve farm production.

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<u>Estimated Cost:</u> 1/	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	----- US \$ Million -----		
Project Management	0.8	2.5	3.3
Agricultural Extension	1.0	1.1	2.1
Farm Inputs-Supply and Distribution	0.2	0.8	1.0
Spate Irrigation Improvements	0.3	1.1	1.4
Erosion Control and River Training	0.4	0.6	1.0
Wells Improvement and On-Farm Works	1.0	1.4	2.4
Equipment for Machinery Rental Station	-	0.5	0.5
Feeder Roads	0.4	0.7	1.1
Hydrometeorological Stations	-	0.03	0.03
Physical Contingencies	0.3	0.7	1.0
Price Contingencies	<u>1.5</u>	<u>2.8</u>	<u>4.3</u>
Total Project Cost	<u>5.9</u>	<u>12.2</u>	<u>18.1</u>

1/ Not including duties and taxes from which the project is exempt.

<u>Financing Plan:</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	----- US \$ Million -----		
Government	3.9		3.9
IDA		8.0	8.0
Project Beneficiaries	0.2		0.2
IFAD	<u>1.8</u>	<u>4.2</u>	<u>6.0</u>
Total	<u>5.9</u>	<u>12.2</u>	<u>18.1</u>

<u>Estimated IDA</u>						
<u>Disbursements:</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
	----- US \$ Million -----					
Annual	0.2	1.0	2.6	2.6	1.2	0.4
Cumulative	0.2	1.2	3.8	6.4	7.6	8.0

Estimated Completion Date: December 31, 1986

Rate of Return: About 24 percent

Staff Appraisal Report: No. 3352-YDR of April 24, 1981.

INTERNATIONAL DEVELOPMENT ASSOCIATION

REPORT AND RECOMMENDATION OF THE PRESIDENT OF THE IDA
TO THE EXECUTIVE DIRECTORS ON A PROPOSED DEVELOPMENT
CREDIT TO THE PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN
FOR A WADI BEIHAN AGRICULTURAL DEVELOPMENT PROJECT

1. I submit the following report and recommendation on a proposed development credit of SDRs 6.6 million (about \$8 million equivalent) on standard IDA terms to the People's Democratic Republic of Yemen (PDRY) to help finance a Wadi Beihan Agricultural Development Project. The Government has successfully concluded negotiations with the International Fund for Agricultural Development (IFAD) for a loan of \$6 million equivalent under joint and parallel financing arrangements to help finance the project.

PART I - THE ECONOMY ^{1/}

2. An economic mission to review the second Five-Year Plan ^{2/} visited PDRY in March-April 1979 and its report entitled "People's Democratic Republic of Yemen: Special Economic Report--The Second Five-Year Plan (1979-83)" (2683-YDR) dated January 25, 1980, was distributed to the Executive Directors on February 6, 1980. An updating economic mission is now in PDRY. Its preliminary findings will be incorporated into the President's Report for the Al Mukalla Water Supply Rehabilitation Project, scheduled for Board consideration in June, 1981. A country data sheet is attached as Annex I.

Development Objectives and Constraints

3. Over the past decade, the Government of PDRY has consistently pursued a strategy of developing the country within the context of a socialist society. The principal objectives of the Government have been: (a) to satisfy the basic needs of the population for food, essential consumer goods, shelter, employment, health care and other social services; (b) to develop the production capacity of the economy, especially in agriculture, fisheries, industry, construction and minerals; (c) to strengthen the infrastructure sectors, i.e., transport, power and telecommunications; (d) to raise education standards, emphasizing technical and higher education; and (e) to increase exports of domestic products.

4. In pursuing these objectives, the Government relied primarily on a strong public sector and on cooperatives. Major institutional reforms were initiated with the nationalization of foreign properties in 1969 which brought the bulk of the modern service activities in and around Aden (banking, insurance, shipping, trading) under Government control. Subsequent investment in manufacturing, power, construction and mineral exploration has given the

^{1/} Part I and Annex I of this report are identical to those in the President's Report for the proposed Third Highways Project, which is to be considered by the Executive Directors on the same date as the proposed project.

^{2/} This plan has recently been revised (see paras. 6 and 7).

public sector a dominant influence over industrial activities. Two agrarian reform laws enacted in 1968 and 1970 have fundamentally changed the land tenure conditions, breaking up large feudal holdings. Simultaneously, new farm organizations--state farms and production cooperatives--were created to facilitate the introduction of modern cultivation and marketing techniques. Fishing and consumer cooperatives were also established. More recently, two of the remaining foreign-owned installations--the Aden Refinery (British Petroleum) and an international communications facility (Cable and Wireless)--were transferred by mutual consent to the Government of PDRY.

5. Private enterprises have been allowed to exist mainly in trade, manufacturing and construction. But the private sector was given a subsidiary role and private entrepreneurs are expected to follow the lead of the public sector. Cooperation between public and private enterprises is encouraged in some areas, such as light industries, and a limited number of joint ventures are now active. Foreign private investors have been encouraged to participate in oil exploration.

6. Increasingly comprehensive economic and social planning is being used as the principal tool to implement PDRY's development objectives. In 1971 the Government launched its first development program, covering the three-year period 1971/72-1973/74. The program focussed largely on a number of public sector projects which were to be carried out with the help of foreign capital and technical assistance. It was followed by a more detailed Five-Year Plan (1974/75-1978), which in addition to the investment program, introduced specific targets for the major economic and social sectors. Work on the Second Five-Year Plan (SFYP) originally envisaged to cover the 1979-83 period had started in early 1979. However following a recommendation by the Council on Arab Economic Unity asking Arab countries to synchronize their five-year economic plans, the SFYP will now cover the 1981-85 period with 1979 and 1980 serving as transitional years. The revised SFYP is expected to be approved very shortly. It consists of a macro-economic framework, sector analyses and investment objectives. In addition to infrastructure and productive sectors the Plan covers such areas as foreign and domestic trade, manpower development, social sectors, and production planning. While still relying on technical assistance from foreign experts, the Government has substantially strengthened its own planning capability. Plan preparation and execution has thus become increasingly the responsibility of Yemeni staff in the Ministry of Planning, in technical ministries, and in public enterprises and cooperatives.

7. The latest available draft of the revised second Five-Year Plan which is to be finalized shortly shows that the Government continues to pursue the overall development objectives outlined in paragraph 3 above. It proposes a total investment of \$1,475 million (in 1980 prices) for 1981-85 of which 39 percent is allocated for infrastructure (including electric power), 19 percent for agriculture and fishing, 11 percent for industry including oil and mineral exploration, 4 percent for education, 17 percent for housing, and 10 percent for other services. The Plan assumes that about \$1,050 million (71 percent) will be financed through foreign capital, and the remaining \$425 million from domestic resources. The Plan calls for an overall growth target of 10 percent per annum with sectoral growth targets of 14 percent for industry, 9 percent each for agriculture and fisheries, and 11 percent for transport and communications.

8. In implementing the Plan the Government faces a number of constraints, the most important ones being limited natural resources, insufficient technical and managerial skills, low levels of productivity, and worsening labor shortages in the construction sector. A harsh climate severely limits the area available for cultivation, although substantial increases in agricultural output could be achieved through higher yields, and by substituting cash crops for subsistence agriculture. The narrow domestic market and few known raw materials limit the scope for industrial development. These constraints are compounded by the rugged topography which creates severe difficulties for internal transportation resulting in increased domestic transport cost.

9. Lack of adequately trained manpower is another major constraint. The Government has tried to fill the gap with bilateral and multilateral technical assistance, including UNDP which maintains a large program in PDRY. In addition, again with foreign assistance (including IDA), a large education and training program was launched and in recent years has become increasingly technically oriented. Supported by scholarships for higher education abroad and the establishment of technical training institutions in PDRY, the country is now generating a growing flow of technically trained people who could gradually reduce the shortage of skilled manpower.

10. Low productivity in the public and cooperative sectors, including the construction sector, is one of the principal problems faced by the Government. The reasons for this can be traced largely to inadequate incentive systems, weak management, shortage of trained manpower, lack of spare parts, and inadequate maintenance. The revised Plan recognizes these constraints and gives priority to measures aimed at increasing productivity. In this context, the Government has recently been engaged in the review of the structure of domestic prices aiming at selective price increases as incentives for agriculture producers and fishermen. Following this, farm gate prices of some agricultural products were raised by up to 50 percent in June 1979 and again in 1980 by a similar amount on a wider range of products; and producer and consumer prices for fish were increased in September 1979, and the consumer prices again in March 1980. These increases in prices for produce marketed through state channels have been accompanied by measures to permit farmers and fishermen, both as individuals and in cooperatives, to sell a portion of their output on the free market at prices substantially above state procurement prices.

Recent Economic Developments

11. The Government's emphasis on the public sector has led to a rapid increase in public spending. Priority was given to public investment which increased from \$4 million in 1970 to \$173 million in 1978. The allocation of investment funds appears to have been well chosen: half of all public sector investments during the first Five-Year Plan (1974/75-78) went to the commodity producing sectors with agriculture and fishing receiving 35 percent, and industry and mineral exploration 15 percent. A large share (32 percent) was invested in infrastructure (including electric power) while the remaining 18 percent was spent for education and other social services. The sharp increase in public investment was accompanied by a major expansion of current government spending on education, health and other public services.

12. High levels of investment and other public spending have accelerated the rate of economic growth. GDP at constant prices grew at an annual average rate of about 7 percent during 1973-78, compared with only 2 percent per annum during 1970-73. The major growth sectors were fishing, industry, construction, trade, transport and government services. Agricultural output increased only slowly, reflecting the productivity problems mentioned above. More recently industrial production has picked up mainly as a result of increased oil refining. GNP rose at a faster rate than GDP (12 percent per annum during 1973-78) due to a rapid increase in workers' remittances.

13. Substantial progress has been made in achieving a balanced income distribution, and in the development of social services. State ownership of production facilities and egalitarian wage/salary structures have reduced income differentials in the growing public sector. Supplies of basic foodstuffs and other essential consumer goods are readily available to the urban population. School enrollment has risen sharply, and health services have been significantly improved. However, large differences still persist in the standard of living between urban and rural areas. Rural incomes are estimated to be only about one-third of average urban incomes, although in some regions rural incomes are supplemented by remittances from family members working abroad. The basic reasons for rural poverty appear to be low productivity of the agricultural and fisheries sectors and possibly adverse terms of trade between these sectors and the rest of the economy. Solutions to the problem can therefore only be found in tackling these basic issues.

14. To sustain the massive increase in public spending for development (para. 11), the Government had to make a major effort in mobilizing financial resources. With a low per capita income, there were severe limitations on raising domestic resources. The principal instrument used in mobilizing domestic funds was taxation and until recently containment of Government employee salaries. However, these were increased in September 1979. New taxes have been introduced and tax collection improved. As a result, total government receipts rose from a level of 12 percent of GNP in 1969/70 to 21 percent in 1978. Government revenue continued to increase in 1979, especially self-financing by public enterprises from their retained profits which increased from \$4.9 million in 1978 to \$12.5 million in 1979, and again in 1980.

15. To supplement the insufficient domestic resources, the Government turned for help to friendly nations and international agencies. Increasing amounts of foreign aid were provided, largely by socialist countries, and more recently by Arab nations. In addition, PDRY received support from regional and international organizations, including IDA and the IMF. The exact amount of all foreign resources put at the disposal of the country is not known since some of the commodity aid has not been recorded either in the budget or in the balance of payments. But, on the basis of identifiable aid, it is estimated that aggregate disbursements including transfers rose from an average level of some \$8 million per annum during 1969/70-1971/72 to about \$131 million in 1978.

16. The rapid expansion of the public sector, especially the growth in investment, has induced a considerable flow of additional imports. The value of imports has more than quadrupled since the beginning of the decade, from an average of \$89 million per annum during 1970/71 to an estimated \$387 million in 1978, with further increases in 1979 and 1980. Besides the devaluation of the US dollar, this mainly reflects price increases for foodstuffs and petroleum products and the growing capital goods imports necessitated by the country's ambitious development program. The growth in import value has placed a heavy burden on PDRY's foreign exchange budget, all the more so as the country exports relatively little and thus benefits only marginally from price rises in the world markets.

17. Indigenous exports, mainly fish and cotton, have been able to cover only a minor share of the import bill. In 1978, they were estimated to be about \$18 million or some 5 percent of commodity imports. Much more important than commodity exports are PDRY's invisible earnings which are dominated by worker's remittances. The latter rose rapidly since the mid-1970s, increasing from \$56 million in 1975 to an estimated \$320 million in 1979, and to still higher levels in 1980. This has been due to rising wage levels in the oil surplus countries, to some additional emigration, and to new incentives which liberalized "own exchange" imports, allowed the construction of private dwellings, and offered higher interest rates to non-resident bank depositors.

Foreign Aid and External Debt

18. Fast growing exchange earnings and increasing disbursements from foreign aid (para. 15) have enabled PDRY in recent years to cover its import requirements and to strengthen its foreign reserves. The latter rose from \$55 million at end 1975 to \$212 million at end 1979, equivalent to almost half of the imports of that year.

19. The large inflow of foreign loans led to a rapid accumulation of PDRY's external public debt even though part of the aid was provided in the form of grants. Total debt outstanding (including undisbursed) as of end 1979 amounted to \$915 million, of which \$372 million was disbursed. Bilateral sources accounted for \$665 million or 73 percent of total commitments with the USSR providing the bulk (\$369 million), followed by China (\$142 million), other Eastern European countries (\$104 million), Arab countries (\$48 million) and by Denmark (\$2 million). Multilateral aid amounted to \$250 million including \$175 million from Arab Funds, and \$63 million from IDA. The average terms of all loans are highly concessionary giving a grant element of about 58 percent. In addition, PDRY has received about \$180 million (until the end of 1979) in grant assistance, mostly from Arab countries.

20. The soft terms of PDRY's external debt has resulted in relatively small debt service obligations. Debt service payments in 1979 were \$5 million or 1.4 percent of total exchange earnings from exports of goods and services (including workers' remittances). However, PDRY's debt service

obligations are projected to increase steadily in future years, which will exert additional pressure on its balance of payments. Therefore, in view of the above and the limited resources of the country, the Bank's assistance to PDRY should continue to be on IDA terms. For the same reason, local cost financing by IDA is justified.

21. In 1969, under Nationalization Law No. 37, the Government nationalized most of the foreign-owned enterprises (para. 4). This law provided for compensation in the form of 20-year Government bonds bearing interest of 2 percent. Twenty-five percent of the net annual profits of all the nationalized companies were to be used for servicing the bonds. In response, some of the foreign banks which were nationalized froze substantial Yemeni deposits which they had transferred abroad. Immediately after the promulgation of Law No. 37, the Government appointed a British firm of accountants of international repute to audit the accounts of all the nationalized companies and evaluate their assets. The audit report was submitted to the Government in September 1971. Settlements were reached soon after with three of the foreign banks involved. Agreements were finalized with three additional banks in 1977, with the oil companies in late 1977, early 1978, and in 1979 and with a development finance company in mid-1978. Contacts with other former owners have been maintained with a view to reaching mutually acceptable settlements. Dialogue with debtors has, however, been very slow since they have only recently responded to the Government's efforts to settle claims. The Government professes its desire to reach a mutually satisfactory solution with all claimant companies, and has expressed its willingness to consider such settlement outside the terms of the 1969 Nationalization Law.

PART II - WORLD BANK OPERATIONS 1/

22. IDA's lending program in PDRY supports the Government's long-range economic objective of broadening the base of a service-oriented economy centered around Aden, by developing the productive capacity of the other sectors of the economy and promoting investments in the outlying regions. Efforts have been directed towards projects in the transport sector, which would not only help to integrate the disparate regions of PDRY, but, more importantly, link production areas with the main markets. This will be continued. IDA will also continue to assist in agriculture, including the key fisheries subsector, education, water supply and sewerage, petroleum exploration and power. In addition new sectors being examined are industry and health. Technical assistance and institution-building will continue to be an integral feature of IDA projects of PDRY.

23. PDRY joined the Bank in 1969 and IDA in 1970, but is not a member of IFC. Assistance to PDRY commenced in 1971 and, after a pause of about two years (February 1976 to February 1978) because IDA funds allocated to PDRY for this period had been committed more rapidly than envisaged, resumed again in 1978. To date, IDA has had 15 operations in PDRY, for a total commitment of \$84.2 million. Of this total, \$20.3 million has assisted the

1/ Part II is substantially the same as in the President's Report for the Third Highways Project, which is to be considered by the Executive Directors on the same date as the proposed project.

transport sector, \$27.3 million the agriculture and fisheries sector, \$14.0 million the power and energy sector, \$9.4 million the education sector, and \$13.2 million the water supply sub-sector. Project implementation in PDRY is characterized by delays and in some cases cost overruns. Common causes of delay have included the time required to arrange the required cofinancing, difficulties in recruiting and retaining foreign advisors and in attracting foreign contractors, inexperience in project mobilization, and in recent years shortages of both skilled and unskilled manpower. But projects are in almost all cases being properly implemented even if delayed, and the difficulties faced are mitigated to a considerable degree by the generally positive attitude of the officials responsible for project implementation. Lessons learned from experience in earlier projects are being taken into account in our follow-up projects. Annex II contains a summary statement of IDA credits as of March 31, 1981, and notes on the execution of ongoing projects.

24. Future operations are both in the preparation and study stages. A Third Highways project and a water supply project for the town of Al Mukalla will be presented to the Executive Directors in FY81. A second power project is under preparation, as is a third fisheries project, a third education project and a follow-up agricultural project in Wadi Hadramawt. Project possibilities in health, industry and a second petroleum exploration project are also under consideration. As in the recent past, the costs of future projects are expected to be substantially higher than the funds IDA can provide to PDRY. Therefore, efforts will be continued to encourage other development agencies to join IDA in the financing of suitable projects. From FY71 to the present, IDA has been successful in securing through its projects about \$78 million of cofinancing from other aid donors (UNDP \$0.7 million, Kuwait Fund \$15.3 million, Arab Fund \$34.2 million, Islamic Development Bank \$5.5 million, Abu Dhabi Fund \$16 million, OPEC Fund \$3 million, and EEC \$3 million), thus helping to increase the inflow of development aid to the country.

PART III - THE AGRICULTURAL SECTOR AND PROJECT AREA

General

25. From independence in 1967 to the present, agriculture in PDRY has been largely for subsistence, with a modest marketable surplus in some crops sufficient only to supply part of the needs of nearby villages and towns. PDRY is heavily dependent on imported foodstuffs. It is estimated that up to 1975, the agricultural sector, including fisheries, contributed only about 20 percent of GDP, 87 percent of exports, and employed about 50 percent of the economically active population. In 1979, the most recent year for which full information is available, the sector contributed 14 percent of GDP, 92 percent of exports and about 50 percent of total employment. About 65 percent of the PDRY population of 1.9 million live in rural areas.

26. PDRY's generally mountainous and desert topography, its arid climate with high temperatures and little precipitation, and the absence of perennial water streams limit agricultural production to some 12 scattered wadis

comprising the total arable area of about 110,000 ha or about 0.3 percent of the country's land surface. Of these 60,000 ha are under spate (flood) irrigation and about 16,000 ha are under well irrigation. The area actually irrigated by spate shows high seasonal variation due to the uncertain rainfall and limited control of spate waters and is generally about 40 percent of the total available area. In 1979 only 40,000 ha, of which 15,000 ha were double cropped, were cultivated. Forty-eight percent of the cropped area was in grains, 18 percent in fodder crops, 18 percent in fruit and vegetables, and 8 percent in sesame.

27. The performance of agriculture has been disappointing, partly because the Government has held down the controlled producer and consumer prices of most major commodities. Partly as a result of this, and as a result of rising wages and levels of remittances, food imports including UN commodity assistance, have increased steadily and in 1979 reached an estimated \$126 million. A particular disappointment has been the declining trend of production of wheat, sesame, livestock and vegetable oils, where increased domestic output could partially substitute for imports. With alternative sources of income farmers have had little incentive to cultivate certain crops sold at low controlled government prices; vegetable and cotton production declined dramatically while production of forage crops, whose price is uncontrolled increased commensurately.

28. Beginning in 1972, the Government has followed an active policy of establishing state farms and cooperatives. Between 1975 and 1979, the contribution of state farms and cooperatives to total agricultural production increased from 10 to 20 percent and from 35 to 45 percent respectively. The Government also controls producer and consumer prices of major agricultural commodities, transport costs, and margins permitted on processing, storage and handling.

29. The Government is well aware of the relatively low efficiency of agricultural production and the inadequate distribution and marketing system for both inputs and commodities. Storage and transport infrastructure are deficient and severely hamper the distribution of fertilizers, plant protection chemicals and seeds, as well as the marketing of agricultural products. In addition, the public agencies responsible for machinery services, extension, credit, transport and distribution, and for input and product price setting have neither reliable data required for planning, nor the administrative capacity and technical skills necessary to set and help achieve production and income targets for the sector. These factors, combined with labor scarcity in rural areas because of emigration, have resulted in a high cost food production and distribution system.

30. The Government is now taking a variety of steps to improve agricultural production and to provide better services to the sector. In recent years, the Government has raised purchase prices on most crops, and permitted farmers and fishermen to sell a portion of their output on the free market. It is also examining policies and programs covering research,

extension, marketing and credit. Efforts are being made to extend the scope of agricultural research at El Kod Agricultural Research Center, the only agricultural research institute in the country, to establish a more effective link between research and farmers and to expand the coverage of the extension service in phase with IDA assisted agricultural projects. The Government is also trying to streamline the credit mechanism for agriculture with the closing down of the Agricultural Development Fund (ADF) in 1980, which provided interest free loans, and the establishment of the new National Development Bank (NDB) in 1981 which would ultimately take over credit operations in the agricultural sector from the National Bank of Yemen (NBY). The Government under the proposed project is for the first time making credit available to individual farmers (see para. 57). IDA is assisting the Government on various issues concerning agriculture, and in particular the prices, taxation and subsidies issue through the study being carried out for the Government by consultants under the Wadi Tuban Agricultural Development Project (768-YDR) (see para. 58).

Prospects for Growth

31. The Second Five Year Plan, 1981-85, established a growth target of 9 percent a year for agriculture. The principal objective for agriculture is to establish self-sufficiency in vegetable production and to meet about 70 percent of domestic food grain consumption. Under the Plan, YD62 million (\$180 million) or 12 percent of total public investment is allocated to the agricultural sector, with 70 percent for 17 irrigation projects to improve 9,600 ha of spate-irrigated and 6,200 ha of well-irrigated lands, 9 percent for Machinery Rental Stations (MRS), 9 percent for state farms, 10 percent for veterinary services, and the balance for two marketing projects. These are ambitious objectives and implementation plans which imply overcoming the difficult institutional and other constraints that have hindered the performance of the agricultural sector in the past. As noted above some progress has been made, but continued efforts will be required particularly in the face of the growing manpower shortage.

Project Area - Wadi Beihan

32. The project area is located 560 kms. northeast of Aden in the north-western part of the Shabwah Governorate, where PDRY borders the Yemen Arab Republic (YAR) and Saudi Arabia. It covers the subgovernorate of Beihan, which includes three districts: Beihan, Nuqub and Ain with a total population of 44,000. The area with 15 percent of the well irrigated land in PDRY constitutes a sizeable proportion of the agricultural base. However, its physical remoteness and communication difficulties have delayed development efforts as Government has concentrated on more accessible areas first. The

area, characterized by an arid climate with low rainfall in two distinct flood seasons and permeable non-saline soils, is linked to the rest of the country by a 230 km non-engineered track which joins the main Aden-Mukalla paved road along the coast at Naqabah, 330 km east of Aden. The proposed IDA credit for a Third Highways project will help finance the construction of a two lane paved road on 92 kms of the existing track from Naqabah to Nisab.

33. The project area of about 21,000 ha is divided between two principal wadis: the Wadi Beihan with an area of about 17,000 ha and the Wadi Ain with an area of about 4,000 ha. In Wadi Beihan about 7,000 ha are classified as suitable for irrigation and the balance as unsuitable. At present 2,300 ha are equipped with well irrigation and 600 ha are cultivated annually under spate irrigation, but the suitable soils exceed the water resources available for irrigation. In Wadi Ain about 1,200 ha are cultivated annually under combined well and spate irrigation and 400 ha under spate irrigation alone.

Water Resources

34. The Wadi Beihan, its tributaries Wadis Nahr and Khirr, and Wadi Ain are the main sources of surface and groundwater in the project area. Most floods in these wadis are the result of rainfall in the plateau area of the Yemen Arab Republic. The spate water has very low salinity and high silt content, and in consequence is very suitable for irrigation. Aquifers exist under the project area and are recharged by percolation from spate waters and to a lesser extent by direct rainfall in the wadis.

35. The introduction of mechanically-pumped wells 15 years ago has made the extraction of groundwater much easier. There are now about 870 wells in the project area. At the same time the area under the traditional spate irrigation system has declined. This is because its maintenance is labor intensive in an area where there are now labor shortages, and also because of the uncertainties regarding rainfall and the performance of diversion dikes during spates. This shift has had two effects which give cause for concern. The first is that pumping of the aquifer, at a rate beyond its recharge capacity, has resulted in a considerable drop in the water table in some places, particularly those at the lower end of the Wadi Beihan. Water availability has thus become a major constraint to agricultural development. The second effect is that crop yields are declining in line with soil fertility because of reduced delivery of silt to the fields which were formerly spate irrigated. Water resources need to be conserved by controlling drilling of new wells, by increasing the use of spate irrigation to reduce groundwater withdrawals in the pump irrigated area and by increasing aquifer recharge. Measures to assist this process are included in the proposed project.

Farm Size and Land Tenure

36. The most distinctive feature of agriculture in the project area is the number of individual farmers, who appear to bring a special dynamism to agriculture in Wadi Beihan. The large individual farming sector appears responsive to price incentives. In addition, local flexibility under which small groups of farmers are permitted to own pumps and agricultural machinery

and to sell a portion of their crop on the free market stimulates agriculture.^{1/} There are about 3,300 individual farmers in the project area, compared to less than 900 members of the four cooperatives and about 100 persons employed by the two state farms. Individual private farmers irrigate about 2,700 ha mostly by well irrigation. Surveys undertaken during preparation of the proposed project indicate that most farms are 1-1.5 ha, with a very few as large as 3-4 ha. Family labor is used for farm operations, with casual labor occasionally used for land preparation and harvesting. Individual farmers pay a government tax of 10 percent equivalent on the gross value of production on grains and oil seeds. They also pay a 10 percent sales tax on other production if it is marketed through state channels. They are also free to produce whatever crops they wish.

37. There are two state farms which are located in Wadi Beihan. They have a total area of 630 ha and employ about 55 permanent and 45-65 temporary workers. There are three cooperatives in Wadi Beihan and one in Wadi Ain, farming a total area of 1,300 ha and with a total membership of about 825 persons. The cooperatives are broken down into small production units of 3-10 families who collectively own and operate a well. The cooperatives are responsible for the implementation of the Plan cropping pattern and provide services to their members covering maintenance of pumping equipment, collection, storage and distribution of inputs, marketing of surplus output, and arranging for equipment from the local Machinery Rental Station (MRS). Members pay a 10 percent service fee on the gross value of cereal and vegetable production to the cooperative, a government tax of 10 percent equivalent on the gross value of production on grains and oil seeds, and a 10 percent sales tax on other production if it is marketed through state channels.

Local Institutions and Infrastructure

38. The local offices of central government ministries are responsible to the subgovernor (Mamur) of Beihan subgovernorate. The local offices are thinly staffed. The agriculture department (the local branch of the Ministry of Agriculture and Agrarian Reform) has two employees, whose activities are necessarily restricted to plan implementation, the collection of agricultural statistics, and the processing of farmer's applications for procuring equipment. The other government agencies represented locally are: the Public Corporation for Marketing Fruits and Vegetables (PCMFV), which has a collecting unit to market and transport to Aden the onions and potatoes, which are usually the only crops surplus to local requirements; the Consumer's Cooperative which is responsible for the distribution of imported foodstuffs; the Machinery Rental Station (MRS) which is responsible for providing machinery for land preparation and cultivation; and the National Bank of Yemen (NBY) which provides commercial banking services and credit to institutions, although not yet to individual private farmers. The Department of Irrigation of the Ministry of Agriculture and Agrarian Reform (MAAR) also has a section in Beihan responsible for maintenance of the irrigation network. It is not efficient and will be merged with the Beihan Project Unit (BPU) under the proposed project.

^{1/} The Government recently extended this policy nationwide.

39. A 22 km rough hilly track links Wadi Beihan with Wadi Ain, and there are a few feeder tracks in Wadi Beihan which are in very poor condition. The town of Beihan is the only location with an electric distribution network, and an elementary water supply. The project area has a regional hospital in Beihan and seven community health units, 16 primary schools with an enrollment of 3,000, and one secondary school in Beihan. There is no industry apart from a few small repair shops and flour and sesame mills.

IDA Assistance to the Agricultural Sector

40. To date IDA has financed four projects in the agricultural sector, two for fisheries and two for development of irrigated agriculture in Wadis Hadramawt and Tuban. Under the First Fisheries Project (370-YDR) in 1973, a \$3.5 million IDA credit has helped finance the construction of a fish cold store and the building of 100 fishing vessels of traditional design. The project is very close to completion. The building of the fishing vessels is drawing to a successful conclusion, but the fish processing/storage plant, although physically complete, is operating sporadically and at low capacity for a number of reasons including improper installation of a submersible pump, inadequate training of local plant maintenance personnel, and weak management. IDA is working with Government to remedy these defects. Under the Second Fisheries Project (932-YDR) in 1979, a \$10 million IDA credit is assisting in the construction of a fishing port and related facilities at Nishtun, 1,500 kms to the west of Aden. The project was severely delayed first by the search for cofinanciers to fill a financing gap caused by the withdrawal from the project of the Libyan government, and then by difficulties in recruiting a Project Manager to work in what is a very remote area indeed. Implementation is now proceeding satisfactorily. Progress on both the Wadi Hadramawt Agricultural Development Project (615-YDR) of 1976 (IDA Credit of \$7 million) and on the Wadi Tuban Agricultural Development Project (768-YDR) of 1978 (IDA Credit of \$5.2 million) has been generally satisfactory, after initial delays in both projects resulting from difficulties in staff recruitment in the case of the Wadi Hadramawt project and cofinancing arrangements in the case of the Wadi Tuban project.

PART IV - THE PROJECT

Project History

41. The Government of the People's Democratic Republic of Yemen requested IDA assistance in 1978 to finance agricultural improvements in the Beihan sub-governorate of the Shabwah Governorate. A general plan of agriculture development in Wadi Beihan was prepared by consultants for the Government in December 1978 with bilateral assistance from the Government of Libya. An additional report on spate irrigation improvements was submitted by the consultants in July 1980. FAO/CP and IDA missions visited the project area in October 1979 and March 1980 to determine the scope of the project which was

ultimately prepared by FAO/CP in September 1980. The project was appraised in October/November 1980. Negotiations were held in Washington, D.C. in April 1981. The Yemeni delegation was led by Mr. Al-Attas, Minister of Construction, and included a representative of the Ministry of Agriculture and Agrarian Reform. A staff appraisal report entitled "Wadi Beihan Agricultural Development Project" (No. 3352-YDR of April 24, 1981) is being distributed separately to the Executive Directors. Special conditions in the Credit Agreement are summarized in Annex III. Maps of the project area are attached.

Project Objectives

42. The project aims to: (i) increase agricultural production and farm income on about 4,000 ha by rehabilitating the spate irrigation network and improving the groundwater irrigation system of Wadi Beihan and by providing technical assistance, farm inputs and agricultural machinery to both Wadis Beihan and Ain; (ii) assess the surface and groundwater potential and confirm the technical feasibility of attaining a stable groundwater level under the existing groundwater usage pattern in Wadi Beihan by setting up a program of hydrological observations; (iii) improve communications by constructing feeder roads in Wadi Beihan and providing maintenance equipment; (iv) improve nutrition of the rural population by producing a wider range and larger quantities of crops and fruit for local consumption. The reason that the project has more limited objectives in Wadi Ain than in Wadi Beihan is because of the riparian issues involved, the resolution of which would require extended negotiations between the governments of PDRY and Yemen Arab Republic (YAR), and which would therefore delay a full package of improvements in the Wadi Ain for a long time. Consequently, the project was designed with this constraint in mind.

Project Description

43. The project would consist of: (i) the establishment of a project implementation unit, with management, engineering and agricultural extension services; (ii) rehabilitating the spate irrigation system of Wadi Beihan and controlling its bank erosion at vulnerable points; (iii) carrying out a wells improvement program and on-farm works in Wadi Beihan; (iv) providing farm inputs and equipment for the Machinery Rental Station and orchard establishment in Wadi Beihan and Wadi Ain; (v) constructing feeder roads in Wadi Beihan; and (vi) conducting hydrometeorological studies in Wadi Beihan.

44. Project Management and Technical Assistance. There is no government organization capable of handling the Project implementation in Beihan at present. Therefore a project implementation unit, the Beihan Project Unit (BPU) assisted by five internationally recruited technical experts, would be established to implement the project, and subsequently become the technical and administrative arm of the agriculture department. The establishment of the BPU under terms of reference and with an organization acceptable to IDA would be a condition of effectiveness of the proposed credit (Development Credit Agreement, Section 7.01(a)). The technical experts would consist of a technical coordinator, as senior adviser to the Yemeni project manager (54 manmonths), an irrigation engineer (42 manmonths), an extension specialist

(46 manmonths), a hydrogeologist (48 manmonths), and a credit specialist (18 manmonths), who in addition to implementing the project, would train their counterparts to competently handle the project operations after their departure. The project would also provide for overseas practical training (200 manmonths) to the local technical staff in their job-related disciplines. The Government has agreed that the BPU would prepare a detailed training program satisfactory to IDA by June 30, 1983, and would then carry it out (Development Credit Agreement, Section 4.08).

45. Extension Services. Further dissemination work to improve farmers' knowledge on crop husbandry and on the productive effects of agricultural inputs at the field level is required in order to help develop agriculture in the project area. To carry this out, an effective extension service would be set up in the area, and the project would provide for construction of 15 extension centers and 3 stores, purchasing demonstration equipment and materials and establishing a pilot farm and a nursery.

46. Spate Irrigation and Erosion Control. Improved maintenance and repair of the existing irrigation network (including the diversion dikes), and using modern equipment to reduce the labor intensity of the work, is preferable to constructing more permanent structures which have not yet been found economically viable based on current limited knowledge of the Wadi Beihan's hydrology. The objective of this component is to keep operational, at a minimum expenditure, an irrigation technique which has the triple advantage of providing additional irrigation water for crops, recharging the aquifer and carrying beneficial silt to the fields. The project would provide equipment and materials for implementing the spate irrigation improvement and erosion control works in Wadi Beihan. The Government has agreed to finance replacement equipment for spate irrigation works for that provided under the project at intervals not exceeding six years starting from the date of initial procurement of the equipment, in order to ensure continued maintenance of the spate irrigation works (Development Credit Agreement, Section 5.04).

47. Wells Improvement and On-Farm Works. With the current rate of exploitation of the aquifer, the water surface level in the Nuqub Plain (where extraction is maximum) is dropping and may recede by about 2.5 meters by the year 1985, requiring deepening of about 88 dug wells by about 4 m each. The project would provide credit to farmers in Wadi Beihan for deepening these wells and purchasing 30 replacement pumping sets and pipes and pump shafts required for well improvement. Land improvement works in Wadi Beihan comprising 950 ha of land levelling and lining of water courses would also be carried out to increase irrigation efficiency.

48. Inputs Supply and Distribution. Use of fertilizer, plant protection chemicals and better seeds would be essential to improve productivity in the project area. The project would supply the full requirement of fertilizer and plant protection chemicals for the first year's use and incremental requirements for the years two through five of the project. The Government has agreed that following project implementation, it would ensure annual procurement and distribution of fertilizers and plant protection chemicals in

an amount equivalent to at least those levels at which such inputs were applied in the last year of project implementation (Development Credit Agreement, Section 5.03).

49. Orchard Establishment. There is an acute shortage of and strong demand for fruit in PDRY, and the climate in the project area is suitable for growing citrus. The project would provide for cultivation of about 130 ha of citrus to increase availability of fruit.

50. Equipment for Machinery Rental Station (MRS). In order to improve the machinery services in the project area, 15 tractors with implements and spare parts and a mobile workshop would be provided to the Machinery Rental station under the project.

51. Feeder Roads. About 16 km of gravel feeder roads would be constructed in Wadi Beihan to connect important centers of population and agriculture and to facilitate transport of inputs and agricultural produce within the project area. In addition, road maintenance equipment would be provided to the BPU to maintain the existing road between Nuqub and Beihan and the gravel roads constructed under the project. The Government has agreed to maintain the project roads (Development Credit Agreement, Section 5.04).

52. Hydrometeorological Stations. One weather, four rainfall-recording, and three river gauge recording stations would be established in Wadi Beihan for compiling hydrometeorological data. In addition, surface and groundwater monitoring staff would be provided to observe the wadi's flow data, monitor groundwater utilization and behaviour and compile data required to determine the technical feasibility of stabilizing the groundwater level within acceptable limits of aquifer drawdown.

Project Implementation

53. Under an arrangement similar to that adopted for the Wadi Hadramawt Project (Credit 615-YDR), the project would be implemented by the Ministry of Agriculture and Agrarian Reform through the BPU whose management would include internationally-recruited specialist staff (para. 44) and counterpart national technical and administrative staff. Any technical posts of the BPU which, due to shortage of trained personnel in PDRY could not be filled by Yemeni personnel, would be filled by internationally recruited staff with adequate qualifications. The Government has agreed to appoint the project manager, the technical coordinator, the extension expert, the irrigation expert, the hydrogeologist and their counterparts not later than March 31, 1982. The qualifications, experience and terms of reference of all these persons would be satisfactory to IDA. It would also fill intermediate level technical posts with staff whose qualifications and experience are satisfactory to IDA not later than September 30, 1982 (Development Credit Agreement, Sections 4.02(c) and 4.03). The project would be implemented over five years. Project implementation would commence in early 1982, and all civil works except for rehabilitation of spate irrigation work and improvement of on-farm work, would be completed by June 30, 1985. Rehabilitation of spate irrigation works and improvement of on-farm works would continue until project completion which is estimated to be December 31, 1986.

54. Regular monitoring of the aquifer and control of its further exploitation to guard against its irreversible depletion would be an important aspect of the project's implementation. Since government controls all well drilling in PDRY through import licensing of pump sets and through prohibition of drilling by any private party, the following procedures would be followed to monitor and control exploitation of the aquifer. BPU, through its hydrogeologist, would maintain a continuous record of the groundwater levels and report their behavior to the Government and IDA through quarterly and annual progress reports. The Government has agreed that the project hydrogeologist would examine each proposal to install a new irrigation well in Wadi Beihan and advise the Government on its likely effects on the aquifer. Each proposal together with the hydrogeologist's report would then be sent by the Government to IDA for its review and comments (Development Credit Agreement, Section 4.09).

Project Costs and Financing

55. The total project cost, exclusive of duties and taxes which are not applicable to development projects in PDRY but including contingencies, is estimated at \$18.1 million, with a foreign exchange cost of \$12.2 million or 67 percent of total project cost. It is based on December 1980 prices. Physical contingencies of 10 percent on equipment and all civil works are considered adequate due to the simple nature of the civil works involved. Price contingencies on foreign and local costs are compounded annually at a rate of 9.0 percent (1981), 8.5 percent (1982), 7.5 percent for 1983 through 1985, and 6 percent for 1986. Costs of all imported equipment and items reflect current international market prices, while costs of locally constructed buildings and feeder roads are estimated from costs of similar items being constructed under ongoing IDA-financed projects. Works on irrigation rehabilitation and erosion control have been costed as force account works. The experts to be hired by the Government have been costed at \$6,600 per manmonth, including their travel and residential facilities costs. This is an appropriate cost for individual experts in PDRY.

56. The proposed IDA credit of \$8.0 million would finance 44 percent of the total cost. The Government would finance \$3.9 million equivalent or 22 percent of the total cost, and project beneficiaries would contribute \$0.2 million equivalent or 1 percent of the total cost. The outstanding balance of \$6.0 million or 33 percent of the total cost would be provided by the International Fund for Agricultural Development (IFAD), with which the Government has successfully concluded negotiations for a loan of \$6 million equivalent. The effectiveness of the IFAD Loan Agreement and the appointment by IFAD of IDA as Cooperating Institution to administer the IFAD loan would be conditions of effectiveness of the proposed IDA credit (Development Credit Agreement, Section 7.01(c)). The project financing plan was discussed and agreed at negotiations.

On-Lending and Agricultural Credit

57. The state farms, cooperatives, and individual farmers of the project area would require short-term loans to finance farm inputs and medium-term loans to finance well improvement, on-farm works and orchard plantations. The Machinery Rental Stations (MRS) would require medium-term loans for purchasing farm equipment. The National Bank of Yemen (NBY) which, until the new National Development Bank (NDB) is fully operational, is the sole source of institutional credit in PDRY, would be responsible for handling credit operations under the project. It would be assisted by the credit specialist in the BPU financed under the IDA credit. For this purpose, the Government would on-lend \$1.0 million equivalent of the proceeds of the proposed credit and \$2.5 million equivalent of the proceeds of the proposed IFAD loan to NBY at an interest rate of 3 percent for a term of 12 years, including a two-year grace period for relending to the beneficiaries (Development Credit Agreement, Schedule 4). Execution of a subsidiary loan agreement between the Government and NBY, or its successor as the case may be, which is satisfactory to IDA, would be a condition of effectiveness of the proposed Credit (Development Credit Agreement Section 7.01(b)). The foreign exchange risk would be borne by the Government. NBY is successfully handling credit operations for the two previous IDA financed agricultural development projects where the loans are given to the state farms, the cooperatives and the MRS at interest rates of 6 percent for short-term credit and 5.5 percent for medium-term. The Government has agreed: (i) that NBY, when relending, would charge the same interest rates to these institutions in this project; (ii) that NBY would make credit available to individual farmers at interest rates not exceeding 2 percent above the rates charged to state farms, cooperatives and the MRS; and (iii) that any general increase in NBY's interest rates would apply to all subsequent project subloans (Development Credit Agreement, Schedule 4). The difference between the terms of subloans and NBY's loan from the Government would cover its administrative expenses.

58. These interest rates described above are low relative to inflation in PDRY which increased from 5 percent in 1979 to 12.5 percent (estimated) in 1980 and is projected at 8 to 9 percent for the next three years. But they are considered acceptable for the following reasons. Interest rates in PDRY are playing a small but increasing role in resource allocation within the economy, and this project would increase the geographic spread of the interest rate structure agreed on for the first IDA assisted agricultural project, the Wadi Hadramawt Agricultural Development Project (615-YDR), and also applied to the Wadi Tuban Agricultural Development Project (768-YDR). The project would also widen the range of institutions which finance their operations with interest bearing funds by changing the financing mechanism for the Machinery Rental Stations (MRS) and state farms in the project area. To date their operations have been mostly subsidized by the Government through budget allocations or interest free loans from the now defunct Agricultural Development Fund (ADF). Under the project they would be required to operate using interest bearing loans from NBY or its successor except for a 50 percent subsidy to state farms for land levelling and on-farm irrigation improvement works. Further opportunity to adjust the structure and level of interest

rates in PDRY would be available once the ongoing prices, taxation and subsidies study financed by IDA under Credit 768-YDR is completed towards the end of 1981. The Government has agreed that the recommendations of this study would be reviewed by the Government and IDA within six months of its completion, and that implementation of the agreed recommendations would begin within one year of the completion of the review (Development Credit Agreement, Section 4.10). The higher interest rate to be charged to individual farmers is considered acceptable as individual farms in the project area are small and numerous, the unit costs for processing loans to these clients would be higher than to the cooperatives, and NBY needs a reserve against default since in these cases there is no government guarantee of NBY, as there is in the case of NBY loans to state farms, the MRS and cooperatives. In addition, individual farmers do not pay cooperative service fees and are not obliged to follow Plan cropping patterns.

Recovery of Costs

59. The existing direct taxation system on individual farmers and cooperatives has been described in paras. 36 and 37. There is a 10 percent sales tax on all products sold through state channels. No tax is levied on state farms. There is also a special sales tax on qat (a leaf narcotic), and registration fees for tractors and trucks. There is no charge on land or on net income and no charge for maintenance of the spate irrigation system by the Department of Irrigation. The service fee paid by cooperative members is not a tax nor is it a part of cost recovery.

60. At full development, it is anticipated that about 80 percent of a considerably larger volume of production that is subject to sales tax would be marketed through state channels. In the case of alfalfa, the tax would also be reflected through livestock sales. On the basis of these assumptions and application of current taxation procedures, taxes would reach about \$1 million equivalent annually at full production.

61. Twenty-three percent of total project costs, for technical assistance and investment for erosion control, the hydrometeorological station and feeder roads for which no benefits have been quantified, are not considered eligible for cost recovery. Of the remaining capital investment made in the first five years, 23 percent would be recovered from beneficiaries as credit repayments and through their direct contribution towards the project cost. Under the prevailing tax system, the remaining 54 percent together with the full operation and maintenance costs of the project would be recovered through taxes over a 20-year period without interest.

Marketing and Prices

62. Agricultural products produced in Wadi Beihan and Wadi Ain are either consumed on-farm or sold through village markets for local consumption. At full development the project area is expected to become self-sufficient in wheat, sesame, vegetables and meat, and to have surpluses of approximately 1,500 tons of onions and garlic, 3000 tons of potatoes, and 2,000 tons of

citrus. These items would be marketed without difficulty since in 1979/80 PDRY imported 6,000 tons of onions, 6,000 tons of potatoes and 4,000 tons of citrus. Moreover, domestic demand is projected to grow 3-5 percent annually. The major constraint on marketing over the next ten years will continue to be transport. Until good highway access to the principal markets on the coast is completed (92 km of the Nisab-Naqabah Road is being paved under the proposed Third Highways Project), the region will be at a disadvantage relative to other areas.

63. Prices are fixed for grains, fruit and vegetables, oils, oil seed and all imported basic commodities such as rice, sugar, tea and coffee, and are regulated for major imports such as fertilizer, seeds and petroleum products. Farmgate prices for products and input prices are uniform throughout the country, regardless of transport and distribution costs. A relatively high proportion of output from the project area produced by individual farmers and alfalfa in particular, is not subject to government price controls.

Procurement

64. Of the \$3 million civil works included in the IDA-financed components of the Project, the office buildings and staff houses at Beihan (\$1 million), which would be precast or prefabricated, would be suitable for procurement through quotations obtained from at least three suppliers in Bank member countries and Switzerland. The extension centers, stores and feeder roads (\$1.8 million) would be minor works at scattered locations and constructed at different times and would not be suitable for international competitive bidding. These works would be carried out under local negotiated contracts, because civil works contractors in PDRY for this type of construction are few and small. Spate irrigation and erosion control works (\$2.7 million) would essentially be of a maintenance nature and would be executed over the entire project period and are suitable only for implementation as force account works. The project organization assisted by the experts would have the competence to handle their proper execution. Equipment (\$3.0 million) would be procured through quotations obtained from at least three suppliers in Bank member countries and Switzerland, since the amount of equipment is small and it is desirable that it be compatible with equipment already in operation in the country, because spare parts and service facilities are very limited in PDRY. Procurement of farm inputs (\$1.0 million) would be done by the Government when making its annual bulk purchases of such items using its own procurement procedures, which are satisfactory to IDA. Tender documents and awards would be reviewed by IDA to ensure that they conform to these procedures and are satisfactory to IDA.

Disbursement

65. Disbursements under the IDA credit would be made on the basis of 45 percent of expenditure for office and staff housing, extension centers, stores and feeder roads; 35 percent of expenditures on all other civil works; 80 percent of foreign expenditures for directly imported equipment; 45 percent of local expenditures for imported equipment procured locally; 80 percent of local expenditures for the ex-factory cost of locally manufactured equipment;

100 percent of foreign expenditures for farm inputs; and 100 percent of foreign expenditures for experts, consultants and overseas training.

Economic Benefit and Rate of Return

66. The economic rate of return of the Project is estimated at 24 percent. However, this does not include the benefits from the feeder roads, erosion control and river training, animal health and hydrometeorological components which amount to 17 percent of the total project costs and for which no benefits have been attributed. The main quantified benefit is the incremental agricultural production estimated at \$6.5 million equivalent, which would result from the proposed project.

Beneficiaries

67. The project would improve the incomes of about 820 cooperative members and 3,300 individual farmers from \$900 equivalent to \$2,000 equivalent per year per family on the average. The approximately 100 permanent and temporary workers on the two state farms would benefit from the more than doubling of net income of the state farms. Several hundreds of these farmers who are dependent on spate irrigation and livestock production would benefit from the improved spate maintenance and animal health services. In summary, a total of about 5,000 families would benefit directly from the project. In addition, 15,000 persons would benefit indirectly from the project through the increased availability of vegetables, fruit and meat as well as through better access to markets and social and administrative services once the feeder roads are completed.

Risks

68. The principal risks of not achieving the expected project objectives are associated with potential drop of groundwater levels and delays in implementing on-farm development related to price incentives and possible shortfalls in the extension and credit programs.

69. The risks associated with potential drawdown of the aquifer which would result in higher cost of water and eventually in progressive reduction in area irrigated, are minimized by the initially conservative approach to any new well development in the project area (para. 54). Further, it is anticipated that more efficient use of spate water on a larger area of both spate and well irrigated lands would reduce pumping and increase aquifer recharge. Should the hydrogeological studies conclude that pumping cannot be sustained at current levels, steps would be taken to adjust areas and/or cropping intensity to adjust to the lowered water supply. In either case, none of the investment made under the project would be wasted though the project benefits would be reduced. The sensitivity analysis indicates that gross output could be reduced 25 percent before the economic rate of return would drop below 12 percent. The probability of such a drastic reduction in area is small. There is a probability that project implementation may be slower than projected, but as long as the delays in the benefit stream are not disproportionately larger there should be no significant effect on the economic return. More serious would be an expenditure pattern as projected without the expected on-farm production response. In order to deal with

unforeseen events of this nature, a strong management component has been built into the project over its first five years. At the end of that time, the MAAR would have a well trained team servicing the project area. The prices, taxation and subsidies studies (para. 58) would assist the Government in adopting realistic pricing policies in the agriculture sector which would provide incentives to farmers to adopt technology packages proposed by extension services.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

70. The draft Development Credit Agreement between the People's Democratic Republic of Yemen and the Association and the Recommendation of the Committee provided for in Article V, Section 1(d) of the Articles of Agreement of the Association are being distributed to the Executive Directors separately. Special conditions of the project are listed in Section III of Annex III. Additional conditions of effectiveness include the establishment of the Beihan Project Unit (BPU) by the Borrower in a manner satisfactory to IDA, the execution of a subsidiary loan agreement between the Borrower and NBY which is satisfactory to IDA, and the effectiveness of the IFAD Loan Agreement and the appointment by IFAD of IDA as Cooperating Institution to administer the IFAD Loan (Development Credit Agreement, Section 7.01(a), (b) and (c)).

71. I am satisfied that the proposed credit would comply with the Articles of Agreement of the Association.

PART VI - RECOMMENDATION

72. I recommend that the Executive Directors approve the proposed credit.

Robert S. McNamara
President

Attachments
April 29, 1981
Washington, D.C.

TABLE 3A
YEMEN PDR - SOCIAL INDICATORS DATA SHEET

LAND AREA (THOUSAND SQ. KM.)	YEMEN PDR			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE) ^a	
	1960	1970	MOST RECENT ESTIMATE	MIDDLE INCOME NORTH AFRICA & MIDDLE EAST	MIDDLE INCOME LATIN AMERICA & CARIBBEAN
TOTAL	333.0				
AGRICULTURAL	93.3				
GNP PER CAPITA (US\$)	..	..	500.0	818.5	1562.9
ENERGY CONSUMPTION PER CAPITA (KILOGRAMS OF COAL EQUIVALENT)	299.0	463.0	523.0	545.0	1053.9
POPULATION AND VITAL STATISTICS					
POPULATION, MID-YEAR (MILLIONS)	1.3	1.5	1.8	.	.
URBAN POPULATION (PERCENT OF TOTAL)	28.0	32.1	34.3	45.7	63.4
POPULATION PROJECTIONS					
POPULATION IN YEAR 2000 (MILLIONS)			3.0	.	.
STATIONARY POPULATION (MILLIONS)			6.0	.	.
YEAR STATIONARY POPULATION IS REACHED			2125	.	.
POPULATION DENSITY					
PER SQ. KM.	4.0	4.5	5.4	40.7	28.1
PER SQ. KM. AGRICULTURAL LAND	14.0	16.0	19.0	598.6	81.7
POPULATION AGE STRUCTURE (PERCENT)					
0-14 YRS.	45.3	44.1	46.7	44.0	41.4
15-64 YRS.	52.0	53.2	50.7	52.5	54.7
65 YRS. AND ABOVE	2.7	2.7	2.6	3.5	3.9
POPULATION GROWTH RATE (PERCENT)					
TOTAL	1.9	1.9/c	1.9/c	2.6	2.7
URBAN	6.0	3.2	3.4	4.5	4.1
CRUDE BIRTH RATE (PER THOUSAND)	54.0	54.0	48.0	41.6	34.8
CRUDE DEATH RATE (PER THOUSAND)	30.0	26.0	21.0	13.7	8.9
GROSS REPRODUCTION RATE	..	3.5	3.5	2.9	2.5
FAMILY PLANNING					
ACCEPTORS, ANNUAL (THOUSANDS)	..	..	..	.	.
USERS (PERCENT OF MARRIED WOMEN)	..	..	..	16.2	..
FOOD AND NUTRITION					
INDEX OF FOOD PRODUCTION PER CAPITA (1969-71=100)					
	100.0	92.0	103.0	93.5	106.9
PER CAPITA SUPPLY OF					
CALORIES (PERCENT OF REQUIREMENTS)					
	84.0	91.0	91.0	103.6	107.4
PROTEINS (GRAMS PER DAY)					
	51.0	53.0	55.0	69.8	65.6
OF WHICH ANIMAL AND PULSE					
	18.0	16.0	18.9	17.5	33.7
CHILD (AGES 1-4) MORTALITY RATE	54.0	38.0	31.0	17.5	8.4
HEALTH					
LIFE EXPECTANCY AT BIRTH (YEARS)	36.0	40.0	44.0	54.4	63.1
INFANT MORTALITY RATE (PER THOUSAND)	..	..	..	..	66.5
ACCESS TO SAFE WATER (PERCENT OF POPULATION)					
TOTAL	..	..	24.0	62.5	65.9
URBAN	..	..	30.0	82.9	80.4
RURAL	..	..	5.0	45.1	44.0
ACCESS TO EXCRETA DISPOSAL (PERCENT OF POPULATION)					
TOTAL	..	..	..	..	62.3
URBAN	..	..	..	..	79.4
RURAL	..	..	..	..	29.6
POPULATION PER PHYSICIAN	..	3280.0	7411.0	4688.7	1849.2
POPULATION PER NURSING PERSON	..	..	1565.0	1751.5	1227.5
POPULATION PER HOSPITAL BED	..	..	..	..	..
TOTAL	1154.0	978.0	660.0	635.5	480.3
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..
ADMISSIONS PER HOSPITAL BED	..	..	..	..	..
HOUSING					
AVERAGE SIZE OF HOUSEHOLD					
TOTAL	..	..	..	..	..
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..
AVERAGE NUMBER OF PERSONS PER ROOM					
TOTAL	..	..	..	..	..
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..
ACCESS TO ELECTRICITY (PERCENT OF DWELLINGS)					
TOTAL	..	..	22.0/d	..	..
URBAN	..	..	..	..	..
RURAL	..	..	1.6/d	..	..

TABLE 3A
YEMEN PDR - SOCIAL INDICATORS DATA SHEET

	YEMEN PDR			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE) ^{/a}	
	1960 ^{/b}	1970 ^{/b}	MOST RECENT ESTIMATE ^{/b}	MIDDLE INCOME NORTH AFRICA & MIDDLE EAST	MIDDLE INCOME LATIN AMERICA & CARIBBEAN
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	13.0	61.0	77.0	76.4	99.7
MALE	20.0	96.0	99.0	92.2	101.0
FEMALE	5.0	24.0	54.0	59.9	99.4
SECONDARY: TOTAL	5.0	10.0	26.0	33.3	34.4
MALE	8.0	15.0	39.0	41.9	33.5
FEMALE	2.0	4.0	13.0	24.2	34.7
VOCATIONAL ENROL. (% OF SECONDARY)	5.0	3.0	2.0	9.8	38.2
PUPIL-TEACHER RATIO					
PRIMARY	29.0	31.0	30.0	39.2	30.5
SECONDARY	21.0	20.0	23.0	25.1	14.5
ADULT LITERACY RATE (PERCENT)	..	..	27.1 ^{/a}	39.7	76.3
CONSUMPTION					
PASSENGER CARS PER THOUSAND POPULATION	9.0	7.0	7.1	15.3	43.0
RADIO RECEIVERS PER THOUSAND POPULATION	54.0	54.0	59.0	139.6	245.3
TV RECEIVERS PER THOUSAND POPULATION	2.5	15.0	19.0	29.0	84.2
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION	..	1.0	..	22.2	63.3
CINEMA ANNUAL ATTENDANCE PER CAPITA	..	2.4	..	2.8	..
LABOR FORCE					
TOTAL LABOR FORCE (THOUSANDS)	342.2	395.1	433.1	..	..
FEMALE (PERCENT)	4.2	4.8	5.0	9.6	22.2
AGRICULTURE (PERCENT)	70.0	64.7	60.0	47.0	37.1
INDUSTRY (PERCENT)	14.6	17.6	21.0	23.8	23.5
PARTICIPATION RATE (PERCENT)					
TOTAL	28.2	27.4	26.6	26.1	31.5
MALE	33.4	51.3	49.8	47.4	48.9
FEMALE	2.3	2.7	2.7	4.7	14.0
ECONOMIC DEPENDENCY RATIO	1.7	1.8	2.0	1.9	1.4
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5 PERCENT OF HOUSEHOLDS	..	..	..	..	..
HIGHEST 20 PERCENT OF HOUSEHOLDS	..	..	..	..	..
LOWEST 20 PERCENT OF HOUSEHOLDS	..	..	..	..	..
LOWEST 40 PERCENT OF HOUSEHOLDS	..	..	..	..	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US\$ PER CAPITA)					
URBAN	..	..	..	262.5	..
RURAL	..	..	140.0	140.4	190.8
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US\$ PER CAPITA)					
URBAN	..	..	90.0	202.1	474.0
RURAL	..	..	87.0	122.2	332.5
ESTIMATED POPULATION BELOW ABSOLUTE POVERTY INCOME LEVEL (PERCENT)					
URBAN	..	..	..	22.1	..
RURAL	..	..	20.0	33.1	..

.. Not available
. Not applicable.

NOTES

^{/a} The group averages for each indicator are population-weighted arithmetic means. Coverage of countries among the indicators depends on availability of data and is not uniform.

^{/b} Unless otherwise noted, data for 1960 refer to any year between 1959 and 1961; for 1970, between 1969 and 1971; and for Most Recent Estimate, between 1974 and 1978.

^{/c} Birth and death rates are crude estimates. The natural rate of increase does not agree with observed population growth rate; ^{/d} percent of population; ^{/e} age 10 years and over.

Most recent estimate of GNP per capita is for 1979, all other data are as of April, 1980.

PDRY: ECONOMIC INDICATORS

NATIONAL ACCOUNTS

	1978 ^{1/}		Annual Rate of Growth (%) (constant prices)	
	US\$ mn	%		
GNP at market prices	792	100		
Gross Domestic Investment	240	30		
Gross National Savings	171	22		
Exports of goods & NFS	93	12		
Imports of goods & NFS	427	54		
			<u>1973-78</u>	<u>1978</u>
GDP at factor cost	497	100	7	14
of which:				
Agriculture & Fisheries	78	16	3	-1
Industry ^{2/}	62	12	10	27
Infrastructure ^{3/}	126	25	16	12
Trade, Real Estate, Finance	124	25	7	3
Other Services	107	22	4	14

GOVERNMENT FINANCE

(in millions Yemeni Dinars)	<u>1974/75</u> ^{4/}	<u>1975</u> ^{4/}	<u>1976</u>	<u>1977</u>	<u>1978</u>
Total receipts ^{5/}	23.1	17.0	32.1	43.4	56.0
Current expenditures	27.6	25.6	39.2	47.4	61.4
Current deficit	-4.5	-8.6	-7.1	-4.0	-5.4
Development expenditures	20.7	19.1	39.2	56.9	59.9
Overall deficit	-25.2	-27.7	-46.3	-60.9	-65.3
Borrowing from Banking System	11.4	10.1	15.6	18.5	17.4
Other Assets and Accounts ^{6/}	-15.0	12.5	-2.0	-1.4	-6.7
External Financing	28.8	5.1	32.7	43.8	54.6

MONEY AND CREDIT

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
	(million Y.D., Outstanding, end Period)					
Money and quasi-money	55	67	98	140	168	217
Bank credit to Government	24	37	62	72	87	110
Bank credit to non-Gov't. Sector ^{7/}	19	24	31	49	59	61

^{1/} Provisional.

^{2/} Includes petroleum refining and mining.

^{3/} Includes electricity and water, construction, transport and communications.

^{4/} The fiscal year was April 1-March 31 until March 31, 1975 when it became April 1-December 31, 1975 and thereafter is on a calendar year basis.

^{5/} Includes current & development revenues from domestic sources and self-financing of public enterprises.

^{6/} Includes the change in the Balance of the Development Fund (- = increase).

^{7/} Includes public sector agencies.

<u>BALANCE OF PAYMENTS (US\$ million)</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Exports /1	8	8	26	25	18
Imports /1	-190	-179	-268	-364	-387
<u>Trade Deficit</u>	<u>-182</u>	<u>-171</u>	<u>-242</u>	<u>-339</u>	<u>-369</u>
Non-factor Services, net	22	17	24	18	17
Factor Services, net	48	59	122	187	265
Workers' Remittances	(41)	(56)	(115)	(180)	(258)
Investment Income	(7)	(3)	(7)	(7)	(7)
<u>Current Account Deficit</u>	<u>-112</u>	<u>-95</u>	<u>-96</u>	<u>-134</u>	<u>-87</u>
Official Transfers	1	10	46	55	36
Official M & LT Capital, net	60	47	72	70	94
Gross Disbursements	(60)	(48)	(74)	(71)	(95)
Repayments	(-)	(-1)	(-2)	(-1)	(-1)
Miscellaneous Capital (incl. errors & omissions)	43	25	5	28	43
Change in Official Reserves (- = increase)	8	13	-27	-19	-86
Memo Item:					
Gross Official Reserves (end year)	68	55	82	101	187

MERCHANDISE EXPORTS

Average 1977-78
US\$ Million Percent

Fish & Fish Products	12	60
Agricultural	5	25
Industrial	1	5
Other	2	10
	<u>20</u>	<u>100</u>

EXTERNAL DEBT (DECEMBER 31, 1979)

US\$ Million

External Public Debt Outstanding	915
Of which: Disbursed	372
Debt Service Payments in 1979	5
Debt Service Ratio (Exports of Goods and Services, Including Remittances) ^{2/}	1.4 Percent

RATE OF EXCHANGE

<u>Prior to December 1971</u>	<u>As of December 1971</u>	<u>From February, 1973 to date</u>
US\$ 1.00 = YD 0.42	US\$ 1.00 = YD 0.38	US\$ 1.00 = 0.34
YD 1.00 = US\$ 2.40	YD 1.00 = US\$ 2.61	YD 1.00 = US\$ 2.90

/1 Net of re-exports.

/2 Based on preliminary estimates of exports of goods and services.

April 19, 1980

THE STATUS OF BANK GROUP OPERATIONS
IN THE PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

A. Statement of IDA Credits
(As of March 31, 1981)

<u>Credit</u> <u>No.</u>	<u>Year</u>	<u>Borrower</u>	<u>Purpose</u>	<u>---- \$ Million ----</u>	
				<u>IDA</u>	<u>Undisbursed</u>
Two credits fully disbursed				5.1	
370-1 YDR	1973	PDRY	Fisheries	1.6	.03
494- YDR	1975	PDRY	Education I	5.4	0.8
560- YDR	1975	PDRY	Highways II	15.5	1.4
584- YDR	1976	PDRY	Aden Port Rehabilitation	3.2	0.9
615- YDR	1976	PDRY	Wadi Hadramawt Agric. Proj	7.0	1.3
768- YDR	1978	PDRY	Wadi Tuban Agric. Proj	5.2	3.9
829- YDR	1978	PDRY	Power	5.0	3.5
865- YDR	1978	PDRY	Education II	4.0	4.0
932- YDR	1979	PDRY	Fisheries II	10.0	10.0
1038- YDR	1980	PDRY	Aden Water Supply	13.2	12.4
1050- YDR	1980	PDRY	Petroleum Dev. Assistance	9.0	8.9
Total				84.2	47.13
of which has been repaid					
Total now held by IDA				<u>84.2</u>	
Total undisbursed					<u>47.13</u>

NOTE: Exchange adjustment not included.

^{1/} This Annex II is identical to those in the President's Reports for the proposed Third Highways and Al Mukalla Water Supply Rehabilitation Projects.

C. Projects in Execution 1/

CR. No. 370-YDR Fisheries Project: \$3.5 million Credit of April 12, 1973; Effective Date: February 14, 1974; and \$1.6 million Supplementary Credit of February 6, 1975; Effectiveness Date: February 14, 1974; Closing Date: September 30, 1981

The project is now nearing completion. The major component, the fish cold store and freezing facility at Mukalla became operational, after a two-year delay, in June 1978. The delay was primarily due to the difficulties encountered in finding a suitable project manager and cost overruns requiring supplemental financing, which was approved by the Association in January 1975. The smaller receiving station at Shihr is now fully operational, and the 100 fishing vessels financed under the credit have all been delivered.

CR. No. 494-YDR Education I Project: \$5.4 million Credit Approved July 12, 1974; Effectiveness Date: February 5, 1975; Closing Date: December 31, 1981

This credit is assisting the Government in making qualitative improvements in the educational system and in meeting priority manpower needs. Implementation is proceeding satisfactorily but is about two years behind appraisal estimate due to (i) initial delays in declaring the credit effective and in the negotiations of contracts with UNESCO and the consultant architects; (ii) more recent delays arising from curricula revisions affecting design completion; and (iii) shortages of labor and materials which have delayed construction. Five of the ten institutions, including two previously completed extensions, were ready for the 1980-81 academic year. The remaining institutions are expected to be completed by mid 1981. About 95 percent of the equipment has been received, and together with furniture, is being delivered and installed in project institutions as they are completed. To permit final disbursements for construction and to allow the technical assistance program to operate using credit funds, the Closing Date has been extended to December 31, 1981.

CR. No. 560-YDR Second Highway Project: \$15.5 million Credit of June 20, 1975; Effectiveness Date: September 17, 1975; Closing Date: December 31, 1982.

This project is financed jointly with the Kuwait Fund for Arab Economic Development. Since international competitive bidding for the construction element of the project produced no responsible bids, arrangements were made

1/ These notes are designed to inform the Executive Directors regarding the progress of projects in execution, and in particular to report any problems which are being encountered, and the action being taken to remedy them. They should be read in this sense, and with the understanding that they do not purport to present a balanced evaluation of strengths and weaknesses in project execution.

for the works to be carried out by a government construction unit which is assisted by the UK Crown Agents. Because of the remoteness of the project area and the concomitant logistic problems, the severe shortage of domestic skilled manpower and the lower than expected output from construction equipment due to particularly harsh construction conditions, implementation of the civil works is about three years behind appraisal estimates. However, considering these difficulties, construction of the road (358 km) started in March 1976 is making satisfactory progress and is approximately 60 percent complete. Likewise, total project cost is now estimated to be about 25 percent over the appraisal estimate as a result of the extra quantities of rock that had to be excavated, the additional drainage and protective works needed because of floods and the general increase in the price of construction equipment and materials. Construction and road maintenance equipment have been procured. Consultants (Dorsch-Germany) have completed the economic studies and the final engineering of the Naqabah-Beihan roads. Consultants (Sotechni-Italy) have completed the technical assistance component and the overseas training program has been completed with six Yemeni engineers having completed 9-12 months training courses (4 in the UK and 2 in West Germany). The project is expected to be completed by December 1982.

CR. No. 584-YDR Aden Port Rehabilitation Project: \$3.2 million Credit of September 8, 1975; Effectiveness Date: February 3, 1976; Closing Date: March 31, 1982

The project which is being cofinanced by the Arab Fund for Economic and Social Development is assisting the PDRY Government in rehabilitating the port of Aden to reattract traffic passing through the reopened Suez Canal. The project provides for (a) the procurement of floating craft, cargo-handling, workshop and navigation equipment, spares and stocks; (b) rehabilitation of the slipway for the National Dockyard Company; and (c) technical assistance. All equipment except some navigational items have been received and most are already in use, although there has been a substantial delay in the rehabilitation of the slipway. A cost accountant and a marine engineer have been appointed. There was a savings of \$850,000 in the purchase of floating craft and IDA has agreed that this can be used to purchase containers handling equipment required for the port.

CR. No. 615-YDR Wadi Hadramawt Agricultural Project: \$7.0 million Credit of April 22, 1976; Effectiveness Date: September 16, 1976; Closing Date: June 30, 1982

The project aims at increasing agricultural production on about 8,100 ha of irrigated land in the Wadi through the adoption of improved cultural practices and the provision of agricultural equipment and supplies, construction of feeder roads and extension services. It also includes provision for a date packing plant and a rural water supply component, and funds for a hydrogeological survey and feasibility study for increased groundwater use.

ANNEX II

Page 4 of 6 pages

The date packing plant has been completed, the rural road component is progressing satisfactorily, but the pace of village water supply works has been slow. The hydrogeological survey and feasibility study have since been completed and form the basis for a second phase project aiming at intensification of irrigation on about 3,700 ha.

Initial problems, with staff recruitment and retention, delayed execution of the project by about two years. High cost of labor, inefficient tractor services, marketing restrictions, and pricing policy of the agricultural produce have been impediments to increased production. Government has recently taken steps to improve its agricultural pricing and subsidy policy, and has also contracted a consultant's study (financed under Credit No. 768-YDR/Wadi Tuban Agricultural Project) on agricultural prices, taxation and subsidy with a view to improving these policies. The increased availability of the agricultural machinery purchased under the project and improvement in pricing and marketing policy of the agricultural produce would assist in achieving the project's objectives.

CR. No. 768-YDR Wadi Tuban Agricultural Project: \$5.2 million Credit of March 22, 1978; Effectiveness Date: April 25, 1979; Closing Date: June 30, 1983

The project seeks to improve agricultural production on cooperatives and state farms through an increased use of inputs, improved practices and the construction of an improved groundwater irrigation network. Inputs and farm machinery are to be provided through credit. An expatriate project manager is under recruitment but all other technical assistance staff is now on post. A water management study is nearing completion and an agricultural prices, taxation and subsidy policy study is underway. Construction of a village water supply scheme is well advanced and survey work for feeder roads was started. The Arab Fund, which cofinances this project, approved its loan of \$6.1 million in February 1980. With a total area of 7,000 ha, the project has 36,000 principal beneficiaries, while the water supply scheme would benefit about 6,000 persons.

CR. No. 829-YDR Wadi Hadramawt Power Project: \$5.0 million Credit of July 14, 1978; Effectiveness Date: September 18, 1979; Closing Date: December 31, 1984

The project is providing an impetus to agricultural development in Wadi Hadramawt by electrifying all irrigation water pumping in the Wadi through the erection of a 16-MW diesel generating plant and the construction of about 1,000 km of related transmission and distribution networks. Institution-building objectives would be achieved through technical assistance comprising training of the power company's (PCEP) personnel, and consultants' services for a tariff study, and a power development study. Soil testing of the project site has been completed, the contract for equipment and materials has been awarded and erection of the plant, although one year behind schedule because of skilled manpower shortages, is underway. The tariff study is completed and discussions with Government on implementation of its recommendations as well as on the power company's manpower development program are at an advanced stage.

CR. No. 865-YDR Education II Project: \$4.0 million Credit Approved
December 14, 1978; Effectiveness Date: June 18, 1979;
Closing Date: June 30, 1982

The project will assist the Government in establishing three vocational training centers (VTCs) which would be the forerunner of VTCs to be constructed in other parts of the country to train urgently needed skilled and semi-skilled workers. The project consists of construction of an industrial, an agricultural and a commercial training center, and the procurement of furniture and equipment. Arrangements for fellowships to be financed from bilateral funds have been completed. Construction of the commercial VTC in Mukalla started in June 1980, about 11 months behind the appraisal estimate due to delays in designs and tender, and is now expected to be completed in Summer 1982. With IDA's approval, two existing schools are being converted into agricultural and industrial VTCs in lieu of constructing two new VTCs. These conversions should be completed by mid-1982. Furniture and equipment are under acquisition. Satisfactory curricula have been developed.

CR. No. 932-YDR Fisheries II Project: \$10.0 million Credit and \$3
million EEC Special Action Credit of August 10, 1979;
Effectiveness Date: April 3, 1981; Closing Date: June
30, 1987

The project seeks to increase income and economic well being in the Sixth Governorate, which is one of the poorest and most remote regions of PDRY, and consists of the construction of a fisheries-cum-general cargo port together with supporting infrastructure at Nishtun; the construction of fish receiving, processing and storage facilities together with the development of an efficient system for exploiting fish; and the construction of a 19 km road to provide a link between the new port and the nine fishing villages which would supply fish under the project. The project also includes technical assistance comprising consultants' services to assist with project implementation and operation; experts to assist the Ministry of Fish Wealth in fleet management, cold store operations and export marketing; and a national study to assess nutritional deficiencies for a possible future IDA-financed project. Bids were invited for the construction of the port and related shore facilities, were opened on April 7 and are now being evaluated. Construction is expected to get underway within the next 6 months. The Government has appointed the project manager, who is a well qualified individual.

ANNEX II

Page 6 of 6 pages

CR. No. 1038-YDR Aden Water Supply Project: \$13.2 million Credit of July 11, 1980; Effectiveness Date: March 27, 1981; Closing Date: December 31, 1985

The project, which constitutes the first construction stage of a long-term water supply master plan, seeks to increase the critically short supply of potable water, and meet the maximum demand up to 1987, in Aden, the capital and largest urban area in PDRY, and to rehabilitate the existing system which is fast deteriorating. It provides for the expansion of the distribution network into the poorer districts of Greater Aden to allow low-income residents to be directly connected to the public system. The project also provides for technical assistance aimed at improving PWC's management capability. Initial implementation proceeding satisfactorily.

CR. No. 1050-YDR Petroleum Development Assistance Project: \$9.0 million Credit of July 11, 1980; Effectiveness Date: November 19, 1980; Closing Date: September 30, 1983

The project is supporting the Government's efforts to intensify the search for indigenous oil/gas reserves and assist in improving its planning of the petroleum subsector by strengthening the Petroleum Exploration Department's (PED) capacity to carry out and supervise geophysical surveys and interpret their results. It includes (a) a 15-month seismic survey to provide a loose grid of key reconnaissance seismic profiles over a large portion of the onshore area prospective for petroleum and natural gas in PDRY; and (b) technical assistance to PED for project management services, data evaluation to promote exploration acreage to foreign investors, and training of PED's staff. The primary objective is to uncover prospects sufficiently attractive to oil companies to undertake exploration in PDRY. Initial implementation proceeding satisfactorily.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

WADI BEIHAN AGRICULTURAL DEVELOPMENT PROJECT

Supplementary Project Data Sheet

Section I. Timetable of Key Events

- | | |
|---|--|
| (a) Time taken by country to prepare project: | 3 years 6 months (May 1977 to November 1980) |
| (b) Agency responsible for preparation: | FAO/CP |
| (c) First Bank mission to consider project: | October 1979 |
| (d) Appraisal mission : | October/November 1980 |
| (e) Negotiations completed: | April 1981 |
| (f) Credit effectiveness: | By December, 1981 |

Section II. Special Bank Implementation Actions

None

Section III. Special Conditions in the Credit Agreement

1. Conditions of Effectiveness

- (i) establishment of the Beihan Project Unit (BPU) by the Government under terms of reference and with an organization acceptable to IDA (para. 44);
- (ii) execution of a subsidiary loan agreement between the Government and National Bank of Yemen (NBY) which is satisfactory to IDA (para. 57); and
- (iii) effectiveness of the IFAD Loan Agreement and the appointment by IFAD of IDA as Cooperating Institution to administer the IFAD Loan (para. 56).

2. The Borrower has agreed that:

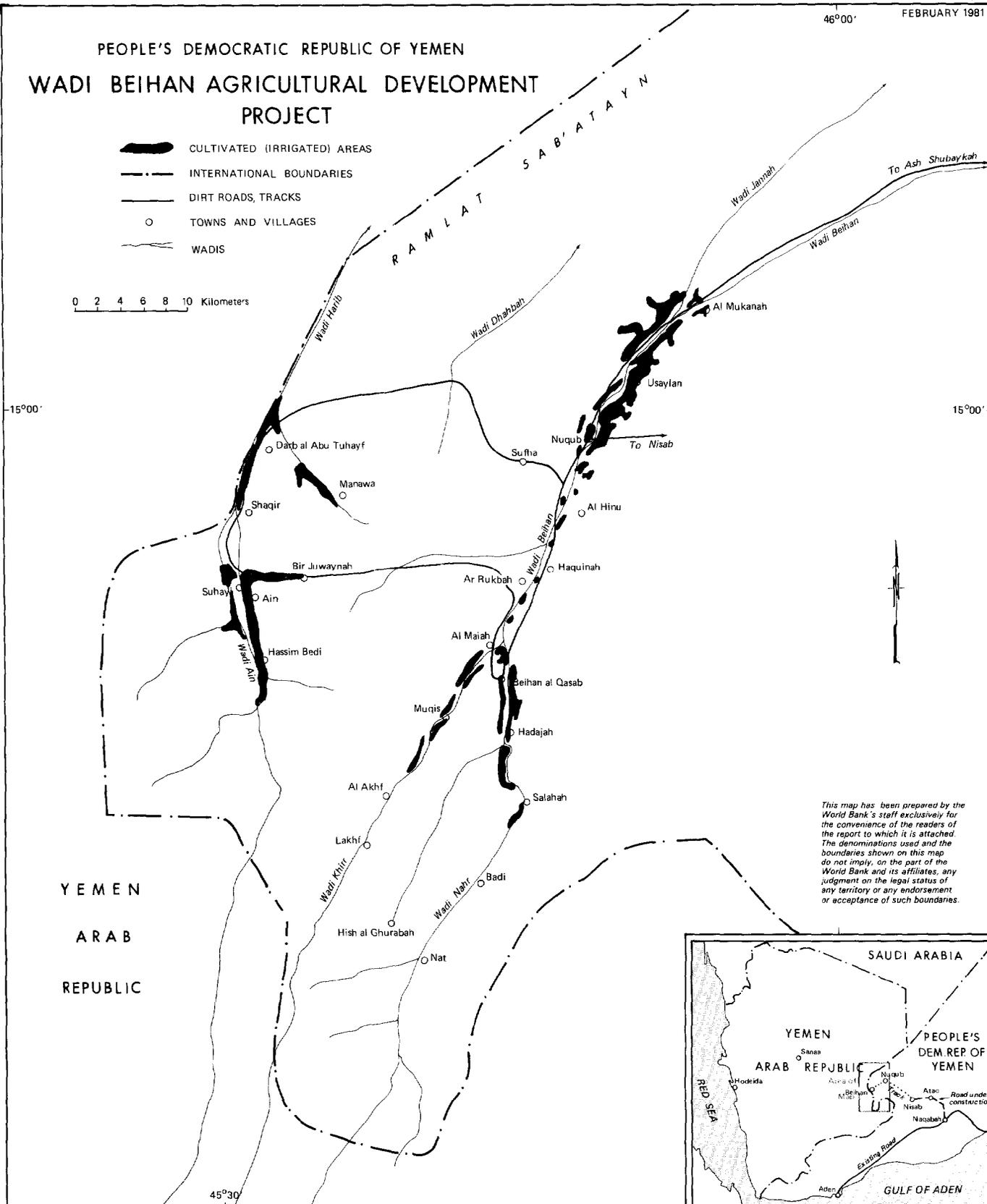
- (i) the project manager, the technical coordinator, the extension expert, the irrigation expert, the hydrogeologist and their counterparts would be appointed by March 31, 1982, and the intermediate level technical posts in the Beihan Project Unit (BPU) would be filled with staff whose qualifications and experience are satisfactory to IDA by September 30, 1982 (para. 53);

- (ii) NBY would charge cooperatives, state farms and the Machinery Rental Station (MRS) interest rates of not less than 6 percent for short-term loans, and 5.5 percent for medium-term loans; and would make credit available to individual farmers at interest rates not more than 2 percent above the rates charged to cooperatives, state farms and the MRS; and that any general increase in NBY's interest rates would apply to all subsequent project subloans to cooperatives, state farms, the MRS, and individual farmers (para. 57);
- (iii) it would review with IDA the recommendations of the study on agricultural prices, taxation and subsidy policy within six months of its completion and commence the implementation of the agreed recommendations within one year of the completion of the review (para. 58);
- (iv) it would finance replacement equipment for maintaining spate irrigation works at intervals not exceeding 6 years (para. 46);
- (v) following project implementation it would ensure annual procurement and distribution of fertilizers and plant protection chemicals in an amount equivalent to at least those levels at which such inputs were applied in the last year of project implementation (para. 48);
- (vi) the project hydrogeologist would examine each proposal to install a new irrigation well in the project area and advise the Government on its likely effects on the aquifer. Each proposal, together with the hydrogeologist's report, would then be sent by the Government to IDA for its review and comments (para. 54), and
- (vii) the Beihan Project Unit (BPU) would prepare a detailed training program satisfactory to IDA by June 30, 1983, and would then carry it out (para. 44).

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN WADI BEIHAN AGRICULTURAL DEVELOPMENT PROJECT

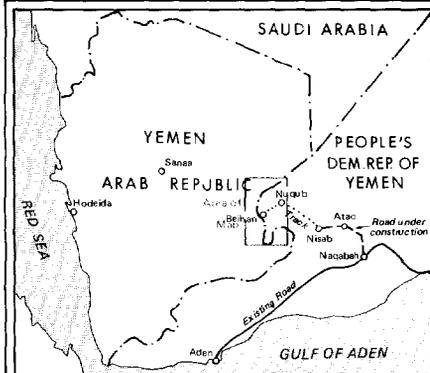
-  CULTIVATED (IRRIGATED) AREAS
-  INTERNATIONAL BOUNDARIES
-  DIRT ROADS, TRACKS
-  TOWNS AND VILLAGES
-  WADIS

0 2 4 6 8 10 Kilometers

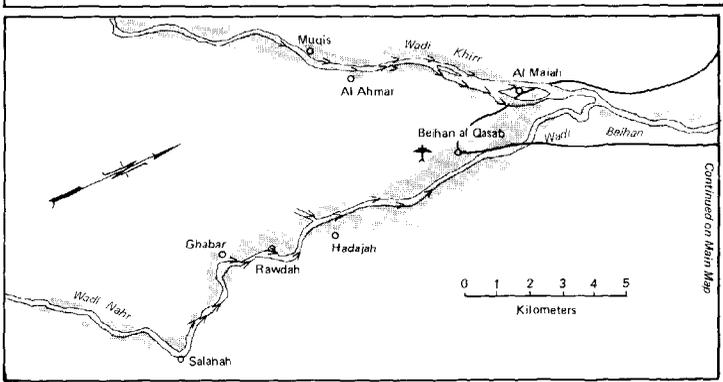
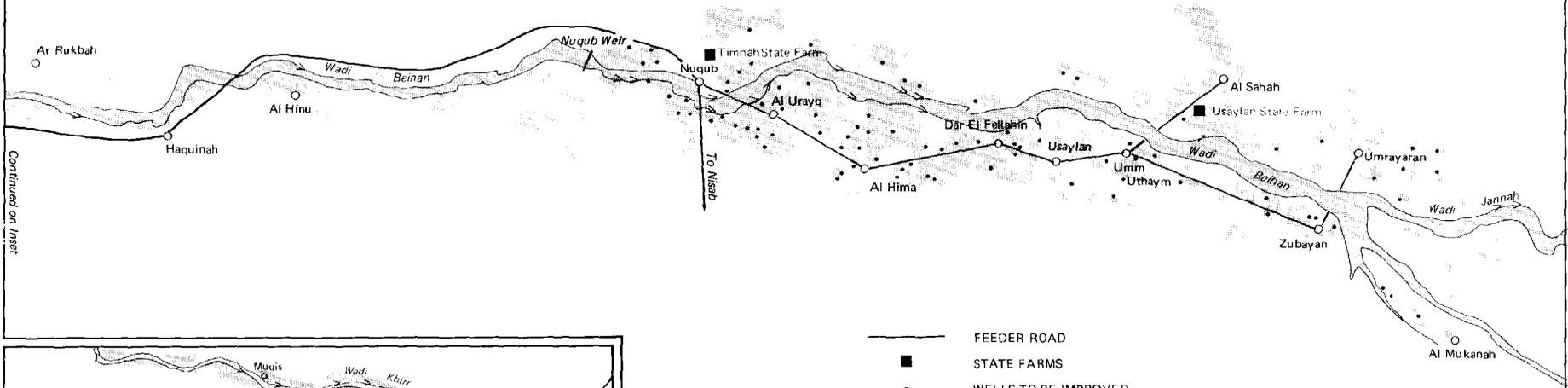
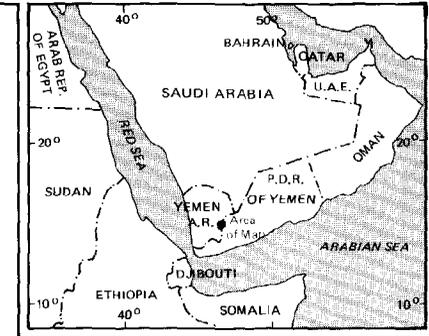


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YEMEN
ARAB
REPUBLIC



PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN
 WADI BEIHAN AGRICULTURAL DEVELOPMENT PROJECT
 Area of Project Works



- FEEDER ROAD
- STATE FARMS
- WELLS TO BE IMPROVED
- INLETS
- WEIR
- WADIS
- IRRIGATED AREAS
- TOWNS AND VILLAGES
- ✈ AIRFIELD
- TRACK
- - - INTERNATIONAL BOUNDARIES

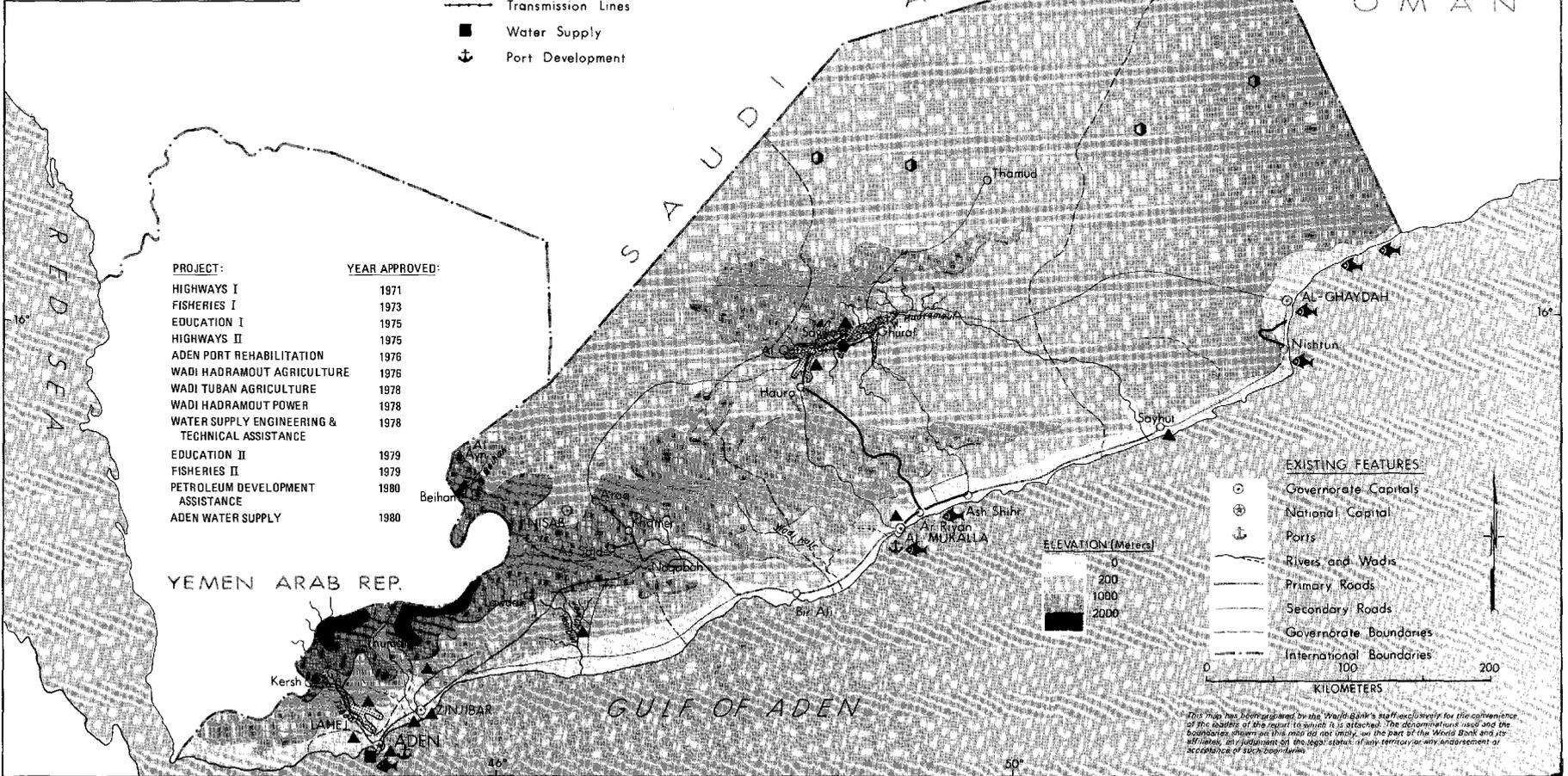
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PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN IDA-ASSISTED PROJECTS BY SECTOR

- PROJECTS:**
- Agriculture
 - Fisheries
 - Petroleum Exploration Assistance
 - Education
 - Highways
 - Power Stations
 - Transmission Lines
 - Water Supply
 - Port Development

PROJECT:	YEAR APPROVED:
HIGHWAYS I	1971
FISHERIES I	1973
EDUCATION I	1975
HIGHWAYS II	1975
ADEN PORT REHABILITATION	1976
WADI HADRAMOUT AGRICULTURE	1976
WADI TUBAN AGRICULTURE	1978
WADI HADRAMOUT POWER	1978
WATER SUPPLY ENGINEERING & TECHNICAL ASSISTANCE	1978
EDUCATION II	1979
FISHERIES II	1979
PETROLEUM DEVELOPMENT ASSISTANCE	1980
ADEN WATER SUPPLY	1980



- EXISTING FEATURES:**
- Governorate Capitals
 - National Capital
 - Ports
 - Rivers and Wadis
 - Primary Roads
 - Secondary Roads
 - Governorate Boundaries
 - International Boundaries

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