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Development Project

NOTES ON WOMEN IN DEVELOPMENT NO. 34

A REVIEW OF
THE IMPACT ON WOMEN OF THE WADI HADRAMOUT
AGRICULTURAL DEVELOPMENT PROJECT (CREDIT 615)

Office of the Advisor on Women in Development
World Bank, 1984

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I. INTRODUCTION

This review is part of a four-country study on the impact of Bank-financed development projects on women undertaken by the Office of the Adviser on Women in Development of the World Bank. These case studies, will contribute to an inter-agency report designed to appraise the achievements of the United Nations Decade for Women.

This study attempts to elaborate, to the extent possible, changes in women's production roles related to the IDA-financed Wadi-Hadramout Agricultural Development Project (Credit No. 615) in the People's Democratic Republic of Yemen (PDRY). Among the reasons for selecting this project were that it was implemented within the Decade, that the Wadi Hadramout is an important development region, and that follow-on projects to which the findings could be applied were anticipated.

This report is divided into four main sections. Sections I and II, respectively, provide background information about the economy of PDRY and its development objectives, and on the agricultural sector and women's role in the project area. Section III examines some implications of the project for women, and Section IV suggests some lessons and related lines of action. The report is based on a review of existing project documents, relevant studies on PDRY and on the findings of a field survey which took place early in 1984. The survey comprised structured interviews using a questionnaire^{1/} prepared for this purpose. Women from 5 villages, 4 of

1/ The questionnaire is available in both Arabic (original) and English.

which from within the project area, were interviewed. There were discussions with several rural women (most of them workers in the project area), relevant officials including the project manager, village chiefs, political authorities and representatives of the Yemen's Women's Union were involved.

The study was done by Messrs. Jaffar Hamed Mohamad and Abdulrahman Mohamad Tarmoom, who prepared the original draft on which this report is based.

II. BACKGROUND INFORMATION

The People's Democratic Republic of Yemen (PDRY) encompasses about 334,000 square km. of territory located in the south of the Arabian Peninsula and the islands of Perim (300 square km) and Socotra (3,500 square km). Topographically, the mainland--where almost the entire population and economic activity is located--comprises the coastal zone, about 12-25 km wide, extending along the Arabian Sea for about 1,200 km, and the plateaus and high-lands of the interior. The coastal zone has one of the regions' finest natural harbors, Aden, and substantial fish resources. Inland, the country is generally dry and mountainous. A rugged topography creates severe difficulties for internal communications resulting in high domestic transport costs. The absence of permanent water streams limits agricultural production to about 80,000 ha., ___ percent of the country's land area. There are, however, several million acres of sparse grazing lands spread across the country.

The population is estimated to number about 2 million of whom between 600-700 thousand are living in urban areas. The remainder of the population are rural, largely agricultural, or engaged in fishing and other activities and including some 120-150 thousand bedouins.

The economy is strongly dualistic in nature. The "modern" sector is concentrated almost entirely around Aden with its position as the center of government (which included until the last days of British rule a substantial British military base) and activities associated with the Port of Aden, viz., import and transit trade, free zone activities largely catering to visiting ship passenger traffic, bunkering and refining activities. The rest of the country has been experiencing gradual changes in social and economic structures since attaining independence (1969). PDRY is classified by the United Nations among the least developed countries. Its GDP per capita was about 360 US dollars in 1980.

Socio-Economic Objectives and Institutional Changes

PDRY's economic and social objectives reflects the determination of the political power to develop the country through the interpretation of scientific socialism, which envisages an economy with the following features: (i) significant production and distribution mechanisms socialized by the state; (ii) orientation of the economy from services to productive sectors; (iii) development of a materials and technical base; (iv) equitable income distribution; and (v) provision of basic human needs, including appropriate cultural and educational services.

In order to achieve these objectives, the government has undertaken fundamental changes. These broadly center around the extension of government ownership and control over all significant economic entities, redistribution of assets and social reform. The prime instrument for extending public ownership to the largely foreign owned "modern" sector was the nationalization law of 1969. Among the institutions nationalized were the country's banks (amalgamated into the National Bank of Yemen); insurance companies (amalgamated into "The Insurance and Reinsurance Company"); major trading companies; all Aden port service companies; and petroleum distribution companies.

Assertion of public control and redistribution of domestically-owned assets were undertaken in the fields of agriculture, fishing and housing. An agrarian reform law which confiscated the lands of former rulers and agents of former governments was promulgated in 1970. It limited land holdings to 20 acres for irrigated land and 40 acres for rainfed land per individual or twice this limit per family. The government-encouraged peasant uprisings completed this process by 1972 when almost all arable land, except for a few isolated tracts, was reorganized into state farms or cooperatives. The fisheries sector was reorganized and under the "Cooperative Law" (1972), all capital assets for fishing, boats, nets, etc., became the property of the cooperative. Handicraft cooperatives, encompassing traditional manufacturing and consumer retail trade cooperatives were also established.

Substantial public sector investments, rising from less than Yemeni Dinars (YD) 1 million in 1970 to YD 135 million in 1982, accompanied public ownership of major sectors of the economy

The government has sought to provide for basic social needs through a variety of mechanisms including institutionalizing adult education in 1978 and a mass literacy campaign in 1984; enacting in 1974 family laws governing marriage and the rights of women; expanding of health services; instituting minimum wages in the government and public sector (excluding cooperatives); and regulating prices of basic consumer goods through the establishment in 1974 of a Price Stabilization Fund. These institutional changes reinforced substantial investment and recurrent expenditures in the social sector.

The structure of PDRY's economy reveals characteristics typical of an under-developed country.

Table 1

Population and Labor Force
(in 000 persons)

	<u>1982</u>	
1. Population		2004*
2. Total labor resources		901
of which:		
- population of working age 16-59 years		842
- working population less than 16 years old and over 59 years		59
3. Distribution of labor resources:		
- in the national economy		467
- students of working age		42
- in household activities		391
4. Total labor force in the national economy		467
by sectors:		
- agriculture		196.8
- fisheries		9.1
- industry		49.6
- construction		40.8
- others		171.7

* Of the total population, 992,000 are males and 1,012,000 are females.
Labor force is not disaggregated.

From Table 1, which shows the distribution of labor resources, can be noted the proportion of the manpower potential employed in the national economy. While in developed countries the share of the labor force working in the national economy usually is about 50% of the total population, in PDRY it is only 23.3%. This reveals a substantial waste of manpower potential especially as the lack of adequate manpower is

recognized as one of the constraints on the implementation of the 5-year development plan. Besides it reflects a high dependency burden on every employed person (4.3:1), and has an adverse effect on the levels of per capita income and consumption. Most of the huge reserve is in the female population engaged both in household activities as wives, mothers, etc., and in production activities as unpaid family members. Some are not seeking jobs because of traditions and customs. Others do not enter the job market due to the large size of the Yemeni family which, in conjunction with the lack of some necessary social facilities, binds them to looking after the children and other household responsibilities.

The government is aware that greater attention to the situation of women within the social reforms will help provide additional stimuli to national development.

Table 2

The Structure of National Income by Sectors
(in million YD. prices of 1980)

	1982 (actual)
1. Gross social product	376.4
2. Gross Domestic- Product Total	197.9
By sectors:	
- industry	17.9
- agriculture and fisheries	16.2
- construction	35.5
- others*	66.8

* Including turnover taxes and import duties.

The agricultural sector absorbs about 42% of the total labor force (196.8 out of 467,000), in 1982, its contribution to the gross domestic product was only 8.1%, reflecting the very low level of labor productivity in this important traditional sector compared with the other sectors. In 1982 the net labor productivity per capita in agriculture amounted to 83 dinars only. While there may be many sources of error in these figures, they represent an order of magnitude which is of concern. Firstly at this level productivity may not even maintain the consumption of the employees let alone their dependents. Secondly, since many women are engaged in agriculture as uncounted workers the actual per capita productivity may be even lower; and thirdly, such low production is obviously affecting national development and the redistribution of national income.

Some Basic Information About the Agricultural Sector

Agricultural resources are limited by the harsh climate which restricts crop production to irrigated areas. Of the total land area of 33 million ha, about 20,000 are irrigated from wells or permanent streams and 40,000-70,000 ha from wadis in spate. The average size of holding is between one and three hectares, with less than one hectare of cropped land per family.

Following independence, the revolution in 1967 and agrarian reform and peasant uprisings in 1970-72, the PDRY government followed a policy of:

- a. collectivising the meagre and scattered agriculture resource base into 35 state farms in 15% of the cropped area and 59 cooperatives over the remainder, and restricted private farming to remote areas;
- b. operating a centrally planned system in which the areas of crops planted were predetermined and the prices of inputs and outputs mostly controlled; and
- c. allocating a considerable proportion of the country's public investment to agriculture.

Investment in agriculture over the 1971-1982 period amounted to 310 million US dollars (19% of the development budget) and was mainly directed towards irrigation development. Agricultural production has not responded as yet, and agricultural value added has stagnated with the result that agriculture's contribution to GDP has fallen from 14% in 1975 to 8.1% in 1982. During the same period, imports of agricultural products rose from YD 22 million to YD 80 million in current prices, corresponding to 270% increase in real terms. Self-sufficiency in grains fell from 29% to 13%. Although the sector's forward linkages are still modest, the stagnation has had an adverse impact on the few agro-industries, e.g., canning, ginning and leather production.

Eighty percent of the production (excluding qat) is in the hands of state farms and cooperatives. Purchased input supply and most marketing is through government agencies. Since substantial producer price increases came into effect in 1979, most agricultural product prices have been above adjusted border levels. Notable exceptions are tobacco, cotton, bananas and dates.

With the exception of nonrecovered investments in irrigation infrastructure, subsidies to agriculture are relatively small and mainly comprise the provision of machinery services at below their economic cost. Fertilizer prices are substantially above current import parity levels.

Given the high cost of land development (US\$8,000 per ha.) and relatively high wage rates, but low levels of technology and low yield, PDRY has absolute comparative economic advantage in the production of very few crops--probably only water pipe tobacco for export and fruits and vegetables for the domestic market. The degree to which production of these crops can be expanded is governed by market limitations. Most other crops are worth producing at the margin, i.e., with irrigation infrastructure considered as a sunk cost, but would not cover the economic cost of new irrigation works.

The extent to which raising the productivity of women's efforts in the agricultural sector could increase the rate of return is an issue that merits consideration.

III. WADI HADRAMOUT AGRICULTURAL DEVELOPMENT PROJECT

Wadi Hadramout consists of a main valley and several tributary valleys bisecting the limestone plateau of East Central Yemen from west to east over a length of some 100 km at a distance of about 170 km from the Indian Ocean. At an altitude of about 600 m, the valley and its tributaries are flanked by 200-300m. high cliffs of the surrounding barren plateau. These are often vertical, narrowing from about 10 km apart in the west to 2 km in the east, then taper in a south easterly direction into Wadi Masila to the sea.

Traditionally the population of 190,000 in Wadi Hadramout thrived on the subsistence production of dates and cereals through an elaborate spate irrigation system supplemented by groundwater from open wells with old fashioned "dallous"^{2/} driven by man or beast, supplemented from remittances of its transient male population. During the fifties and early sixties an unprecedented expansion of groundwater irrigation took place. Some 2,000 open wells were fitted with motor pumps over an area of 14,500 ha of which half were cropped annually. The spate irrigation system was neglected and fell into disuse.

This expansion of groundwater was of more than local significance because Wadi Hadramout has about half of the area under perenial

^{2/} "Dallous" ...

irrigation in the country and most of the potential of its future expansion.

The population of Wadi Hadramout is fortunate in being the focus of attention of many financiers, spearheaded by IDA, including Credit 494 YDR which provided a Rural Development Center and a Farm Machinery Training Center in Seiyun, and Credit 560-YDR which cofinances the Mukalla-Seiyun Highway. The 16 megawatt Wadi Hadramout Electric Power Station was cofinanced by IDA (Credit 892-YDR). The 36 million dollar Hadramout II, the first 5-year phase of a 20 year irrigation strategy, is on line for a 9 million dollar IDA credit, and an equivalent sum is also earmarked for the Seiyun domestic water supply project. This is additional to investments on state farms by the Yemeni-Soviet projects, and other government investment.

The Wadi Hadramout Agricultural Development Project was first conceived as a \$300,000 allocation for exploring groundwater resources and study of the feasibility of its further exploitation in the first IDA agriculture sector project (Fisheries Credit 370-YDR). This identified a development project to increase agricultural production, which was in full accord with the objectives and components of PDRY's first five year plan (1974-79).

The main objective of the project was to increase agricultural production in the groundwater irrigated annually cropped area of about 8,000 ha in Wadi Hadramout. This would be done in a period of three years mainly through input supply, imparting improved technology through an agricultural extension service and efficient project management.

Additional objectives were: (a) introduction of a small date packing plant to reduce spoilage losses; (b) experimental programs to define inputs for the improvement of date production and for sand dune fixation through green shelterbelts in the projects' western boundary; (c) to connect 19 villages by feeder roads to the main road (about 120 km); (d) to provide drinking water to villages and towns in urgent need of a potable water supply; and (e) to carry out a feasibility study which would explore the development potential of groundwater aquifers of the project area.

The project, IDA Credit 615 YDR for US\$7 million, with an estimated 10% equivalent of the credit in local currency to be provided by the PDRY government, was declared effective in September 1976 and implemented during the five year period from mid-1977 to 30 June 1982. The main reasons for the delay in implementation were the unavailability of experts and qualified local counterparts, and the time needed to assemble an extension service and provide the essential training. All project components were satisfactorily implemented with cost overruns of 53% due to increased labor, construction and transport costs for feeder roads, domestic water supply schemes and for the date packing plant. The increased costs were met by the government.

Official production statistics of 1977/78 and 1981/82 indicated total increase in the production of all crops, with the exception of sesame, ranging from 20 to 50%. The value of production increased, in 1977

economic prices, by 347,600 YD representing 24% increase in real terms. Yield increases were due to improved inputs supply, the extension services and abandonment of wheat cultivation in marginal areas.

Constraints to agricultural production which limited the impact of Hadramout I included production planning and producer prices, taxation and marketing policies, and the organization of cooperatives. Human resource development including women's roles was a further constraint. These issues are part of the current dialogue between IDA and the PDRY government on policy issues aimed at improving overall agriculture sector performance, the results of which will be applied in Hadramout II.

The feasibility study done as part of the project indicated the technical and economic feasibility of increasing the water extraction rate by at least 50%. Hadramout II was designed as the first 5-year phase of a 20 year strategy aimed at increased agricultural production through the increase in irrigation intensity in the total command area of 14,500 ha. Hadramout II will benefit directly about 900 farming families organized in 65 farming units of about 50 ha each in a total area of 3225 ha evenly distributed in 15 sectors along the Wadi. It will organize pilot farms of about 50 ha each similar to those successfully established by the project at El-Suwairy and Al-Gara in Tarim and Shibam cooperatives.

IV. WOMEN'S ROLES IN THE PROJECT AREA

Crop Production

Women participate in the production of most crops grown in the Wadi Hadramout project area such as wheat, sorghum and other cereals, tomatoes, potatoes, other vegetables, dates, alfalfa, etc. The tasks they performed in agricultural operations are mainly those which do not require great physical effort but need care and patience in execution. Some of the tasks in which women participate or implement fully are planting of wheat, sorghum and other cereals, transplanting of tomatoes and potatoes, picking of vegetables. Women do the weeding for most crops. Application of pesticides, irrigation, ploughing, and use of agricultural machines are rarely done by women.

Most of women's agricultural tasks in the Wadi are done manually. They use simple hand tools such as sickles, knives, scissors, as well as metal, plastic or leather buckets. They drive away birds with a stone tied to the end of a string.

Cooperative services and all types of assistance, such as hiring machines or extending credit facilities, are available for farmers without sex discrimination, but are used rarely by women. None of the women interviewed was herself a member of a cooperative.

Most of the crops cultivated by the family are either sold through the cooperative marketing channels or directly by farmers

themselves. Grain production is partially sold but certain amounts for family consumption are usually stored at home. Forage is also partially sold and the remainder of the production is kept for feeding the animals which are raised by rural women.

Livestock Production

Livestock are well cared by rural women in Wadi Hadramout because they constitute an important capital asset for the family. Mainly sheep and goats are raised, and the number of heads and types of livestock and poultry depends on the financial possibilities, the availability of time and the size of the family. Usually a family may keep from 10-20 sheep and 1-2 goats, and one donkey for working and transportation purposes. Sometimes as many as 200 or more sheep and goats are raised to be sold and the funds are used to improve the family's standard of living. Sheep and goats are also raised for milk which is either processed or used fresh for feeding both children and the young animals. Poultry, pigeons and rabbits are not raised by many women in the project area.

Livestock feed is made of alfalfa which is cut by women as well as sorghum and other grains. Vegetable and fruit residues such as melon peels are also fed to livestock. Animals are usually sent for grazing in the fields where they get a large part of their daily rations.

Because of lack of qualified staff and veterinary products, veterinary services are limited to irregular field visits organized by specialists.

In the project area, livestock care is women's work and they are given assistance by their children. Women are kept busy at home preparing the feed, cleaning the stalls and milking, and in addition to working on the farm, they also shepherd the animals for grazing.

Decision Making

Decisions regarding food production are usually taken by men. They make the decisions regarding allocation of crops in the family land, purchase of agricultural imports such as seeds, fertilizers and pesticides and the purchase and marketing of animals. Applications for loans and hiring of labor is always a matter for the head of the family. If the male head of a nuclear family has migrated these decisions will be taken by another male in his family.

Food Processing and Preparations for Household Use

Women process a few agricultural products such as grain for bread, and milk for youghurt and cheese. Though electricity has been installed recently in most of the Wadi villages, including villages in the project area, food processing remains traditional and uses the simplest technology. Women may use stone mills for grinding grains and traditional

sieves to clean flour. Milk processing is mainly done by using local skin shakers. Food is prepared and cooked in local ways by women, assisted by their female children, for family consumption or for feeding their animals, and no type of food is prepared or cooked for sale.

Fetching water and wood for fuel is the responsibility of women assisted by male and female children. Women assisted by their female children, also take care of the household sanitation.

Usually, activities that take place inside the house are performed by women and their female children whereas those done away from the home such as shopping and transportation are done by men and male children.

Pre and Post Harvest Losses

Women play an active role in preventing or reducing preharvest food losses by chasing birds whenever possible. Pesticides are used by men assisted by their male children.

Post harvest losses are caused by bad handling of the produce, and sometimes by lack of transportation. Often part of the crop is spoiled in the field due to shortage of labor for harvesting or picking. Relatively small losses occur during threshing of grains due to the inappropriate techniques and tools used by farmers.

Because of shortage of male farm labor much of the harvesting and picking operations are done by women. Women therefore play an important role in reducing food losses.

Project-Related Changes in Women's Production Role

Modernization of production methods resulted in valuable changes in family behavior related to agriculture.

Agricultural Inputs

Fertilizers and pesticides were distributed in the project area where they had been used previously only in negligible quantities. Tractors, pumpsets and other implements were provided by the project. Farmers in rural areas in Wadi Hadramout have become receptive to the use of these inputs which have proved their efficiency in increasing crop yields. However, as their proper use requires training, close supervision and physical effort, women have been very little involved.

Irrigation

Three farms were established by the project: Al-Suwaivy Farm in Tarim Cooperative and Al-Gaya Farm in Shibam Cooperative with areas of 53 ha and 70 ha, respectively, and each with two production groups. A third farm at Tareba in Seiyun Cooperative has been established. These farms were not included in the project as appraised, and were intended to be pilot farms for the second phase of the Wadi Hadramout agricultural

project. Lands of these farms have been levelled and ploughed, borders, furrows, basins, etc., have been constructed and an irrigation network and boreholes have replaced shallow wells.

Before the project, rural women played an important role in irrigation. Crops were irrigated in the traditional way where women drew water from shallow wells in their lands using plastic buckets tied with long ropes. They dropped buckets into the wells, pulled up the filled buckets and poured the water onto the lands. In large areas in the Wadi rural women still irrigate the lands in this way. It is a tiresome process requiring much time to irrigate a small area of land. Sufficient water for only a small number of animals could be obtained.

The new irrigation system established by the project in the three farms mentioned above has relieved women of their traditional role in irrigation. Now men are responsible for the total irrigation operation. With the new system, sufficient of fresh water is available from boreholes to irrigate mechanically the levelled field with border strips and long furrows. The improved conveyance networks facilitate the application of the recommended fertilizer, pesticides and other technological inputs.

The new irrigation system has led farmers to increase the areas cultivated and has raised the productivity of each feddan and of most agricultural products. Though the irrigation operation has been transferred from women to men, rural women are still in charge of planting, transplanting, weeding, picking and chasing birds in an expanded area.

With the increase of agricultural production, family income increased accordingly. One result of the improved financial position was that it allowed women to keep more animals on which they must spend more time and greater efforts. Thus under the new irrigation system, with working on the increased cultivated areas and caring for larger herds, women's productive contribution in the project area has increased.

Extension

The staff for the extension service, many from the project area, was gradually assembled by the project, and provided with equipment and offices in Seiyun. Some were trained abroad. About half the staff are stationed in cooperatives and the other half work in the sections centered in Seiyun. Farmers training was carried out and various film shows, radio talks, booklets, bulletins and other audio visual aids were developed.

Rural women in the project area have not benefited directly from the extension service. According to traditions existing in the Wadi Hadramout region, it is difficult for adult females and adult males to make direct contact and all the staff in the extension service are males. Also because rural women are, in general, illiterate, they cannot understand the written or illustrated information and instructions prepared by the extension service.

The Yemen Womens Union plays a limited role in the Wadi Hadramout and thus in the project area. Few rural women listen to the radio and

television programs on family life and household economies presented by the Union to the rural women.

Domestic Water Supply

The provision of domestic water supply is the most important component of direct benefit for rural women in the project area. In Qatan from one borehole connected to a new reservoir 13 other villages with a population of 9,500 were supplied. In Shibam two boreholes and reservoir were connected to eight villages with a total population of 7,500. An additional reservoir was constructed at Haula, and improvements of Al Ghurfa Scheme, benefited 22,300 more people.

Before the project, women experienced many difficulties to get clean water into their houses. They carried water in leather containers, on their backs, sometimes over long distance, depending how far the well was from their houses. Only limited quantities of water could be brought by the women and this was used mainly for drinking and cooking purposes. Washing clothes and cleaning dishes usually took place by the well. Bathing also used to take place near the well. Women were burdened with all these tasks, bringing water from the well on their backs for cooking and drinking, and carrying all dirty clothes and dishes to the well for washing. They had also to take their children for bathing. Rural women spent many hours on these tasks.

Now the project has made available clean water in sufficient quantities for about 40,000 people. This enables rural women to save

time and effort and they are able to give more care to their houses, children and husbands. They can also take more care of themselves, and their health has benefited.

Feeder Roads

Feeder roads constructed by the project connected 20 villages in the project area to the main road in the Wadi. Before the project, movement of people and goods between the villages was difficult. During rainy seasons cart tracks got muddy and were impassable. At these times, farmers could not get to market or deliver their products. Also, it was difficult to take seriously sick people to a health center for urgent medical treatment.

The completion of the roads within the project made it easier for people to move from their villages to the center of the Wadi and from one village to another. Farmers are able now to market and deliver their products in good condition and convenient timing, and avoid considerable post harvest losses.

Rural women as well as men have shared the benefits from the construction of the roads, but men are the main beneficiaries because they are responsible for all tasks outside their houses and fields.

Date Packing Plant

A date packing plant was established under the project. Its capacity was 2000 tons in a 150 day season per year processing in bulk and

small packs. Though the plant is underutilized at present, project inputs improved date production conditions in the Wadi and deliveries of dates by farmers are increasing. Compared with 411 tons in 1981, 1070 tons were delivered to the factory in 1983. The establishment of the date packing plant has benefited the farmers who can easily market their dates to the plant through their cooperatives, thus reducing post harvest losses.

Of 90 laborers employed by the plant in 1983, 50 were rural women living in the areas surrounding the plant. Women were given lighter jobs than men, like grading dates into the different categories presented by the plant and packing them in small packs. Women and men were paid equally without sex discrimination.

Rural families, in general, benefited from the establishment of the plant which provided both for selling their date production and a new opportunity for employment.

Effects of Migration on Women's roles

A large number of males have migrated from Wadi Hadramout to neighboring countries in search of work. This migration has caused a serious scarcity of male labor in the region and has a high cost. While males who are working outside regularly send remittances for their families for home management and care of children, rural women who are in real need have had to look for jobs in order to contribute to household income.

Training for Women

No training courses were given to the rural women in the project areas in the field of family life and home economics.

V. ANALYSIS OF IMPLICATIONS FOR WOMEN

Development planning in PDRY was considerably influenced by the sectoral approach which paid little attention to inter-sectoral links, and which overlooked some categories of the population who have special requirements, such as children, youth and women. Many of the economic and social targets of development cannot be realized except through integrated measures related to increased production, human resources advancement, full employment, equality and social justice, and raising standards of living.

The human element deserves great attention both as a means and an end of development. As women constitute about one half of the population, or in other words one half of the country's human resources, the role of women has become a fundamental issue. The importance attached to women's participation in development has been clearly reflected in the steps taken by the Government. The Government has been providing facilities and supports to increase girls enrollment in schools and to eradicate illiteracy. There have been social reforms emphasizing that rights and responsibilities are not governed by the biological differences between the two sexes. Labor legislation provides for equal pay. Women's organizations headed by the Yemen Women's Union, have been established everywhere and with the increased entry of women into the labor market, some social services such as nurseries' have been provided.

The Wadi Hadramaut Project (I) was regarded as one of the main activities promoting rural development. Its impact specifically on production and more generally on the society is spread widely, in different degrees all over the Wadi. Suwairy Farms and Garaas farms have benefited directly and totally from the project. Other areas have benefited through the services provided from the Extension Centre, the agricultural machinery available for hire, fertilizers, the construction of feeder roads, the provision of water network for irrigation and for drinking and the construction of the date packing plant.

The gross value of production in Wadi Hadramout increased by an estimated 10%. The appraisal estimate of the per capita income growth attributable to the project was 23% in real terms. Although in the course of the project the cropped area was reduced, the beneficiaries of the various project components including feeder roads, and rural water supply, number between 30,000 and 40,000 persons.

We noted above that the agricultural sector absorbs over 40% of the total labor force and simultaneously the greatest share of women's labor contributions. In the Wadi, 70-90% of economically active women work in agriculture, and the survey indicated that about 50-60% of the agricultural work is done by women on whom the project has had a substantial impact. Some of the women's tasks in the project area are now done using machines. The new irrigation system has changed

traditional production and has relieved women from manual drawing of water manually. Some respondents noted that the provision of water into houses makes the families live in prosperity. But this has not decreased women's contribution in economic activity. Their participation has increased in the expansion of the agricultural plots, raising productivity, raising livestock and processing some animal products in addition to their usual household activities.

This increase, however, still does not utilize fully the female resources available for production. The development of female labor potential is still relatively restricted in scope and quality. Although legislation provides for equal pay, in agriculture women in fact earn less in proportion to men, than they do in many economic fields. This inequality is attributable mainly to the limited opportunities for training, acquisition of skills and specialization open to women compared with the opportunities available to men.

With respect to extension, the unit presently comprises 25 extension officers with college degrees and nine technicians, but includes no female employees. The employment of women in the extension service would help to make possible more useful direct contact with female workers and the provision of the appropriate extension inputs. Some information is available to farmers through radio and television programs. However, these may not be at the time or content to effectively reach women who are combining their agricultural and household tasks.

The spheres of training for women in the Wadi are still narrow and incompatible with the increased participation of women in all fields of labor and production. The objective of raising the productivity of working women is not accorded the importance it deserves as a measure contributing to the increase of production and national income:

It is recognized that the need to care for children is one of the factors limiting the women's contribution within the productive labor force. The Government has begun to provide social services such as establishment of nurseries to help working women combine the responsibilities of home and work. In the rural areas, programing such services is still at a preliminary stage and substantial development is necessary if the desired benefit is to be realized.

We noted that many rural families raise livestock and that herding and stall care of animals is women's responsibility. This activity could be more profitable if adequate veterinary services and extension on livestock care were available. No services for home production of poultry are available. These are women's activities with a high potential for expansion, since the livestock and poultry development projects are not fully satisfying the market demand.

Problems of estimating socio-economic benefits inherent to most Bank-financed projects, especially those for rural development, may lead to underestimating the actual impact of the Wadi Hadramout project. However, despite the considerable impact the project appeared to have on women's position, the potential may not have been maximized. At present,

measurement of the benefits is hampered by conflicting and sparse data. The follow-on project makes explicit provision for monitoring and evaluation, and it is expected that better information on the overall benefits, and particularly those for women, will be available at completion of the IDA assisted Wadi Hadramaout Agricultural Project II.

VI. SOME SUGGESTED LESSONS

The urgent task of socio-economic development can be realized only with the conscious assessment and the rational utilization of the resources available. The issue of developing women's contribution, as discussed above, has various implications.

Among the several factors affecting women's contribution to national development as well affecting their role and position, the most significant is education in the broad sense.

In a short period, since independence, PDRY has rapidly expanded the education and training system, with an ever increasing proportion of school age children being provided the opportunity for education. Since 1967 the number of students has grown by 300%.

One of the main targets of the education policy is to increase female enrollment and to reduce imbalances in the education system. Female enrollment at primary level has risen from 5% to 54% of the age group. However, there is need to integrate and ensure a close link between educational planning, economic and social development plans and labor

policies. Curricula that would emphasize the equal responsibility and role of the two sexes in shaping the future of their society are needed. It should emphasize the importance of female education not only to prepare for family life, but also for labor force participation and for the community as a whole. In addition to the formal education system, there is need for continuing efforts to eradicate illiteracy and to improve the quality, relevance, and functionality of the training materials. Since female illiterates outnumber males, this is of greater importance for them.

A review of the programs and objectives of the existing training institutions is a pre-requisite for increasing employment of women, in order that they can benefit from growing opportunities in the labor market and qualify for promotion. Where working women are uneducated, vocational training programs to upgrade their skills should be linked with literacy programs aimed at broadening their understanding of community development, and encouraging them to participate in public services for village development. Both the practical relevance and the content of extension programs and their modes and timing of delivery to women should be studied.

The information media could play an important educational role. It would be useful to hold seminars among information media employees and extension agents to discuss the findings of studies of women's education and training. TV programs could transmit special educational programs for women unable to attend regular classes.

To promote agricultural production, and improve women's position in rural areas, more agricultural extension workers who can reach women are needed. They should help women to acquire the skills and knowledge relevant to the types of productive work they are performing. Health and nutrition education and family planning programs would also lead to better child care and nutrition and encourage women's increased participation in various services.

There is need for periodic evaluations of the situation of women to monitor the positive or negative changes which occur. The application of the various social reforms and legislation regarding women should be reviewed both to evaluate their impact and to identify any constraints to the full exercise of women's vested rights.

The Yemen Women's Union should play a key role in this process. As an official mass organization with a branch in each governorate, and membership in every national committee and leading body of Party and State, the Union helps the State to integrate women into economic activity, provides a forum for debating issues related to women and instruments for implementing government policies which affect women. It works through different cultural and information media to create political awareness among women, encouraging them to exercise their voting rights and take leadership responsibilities according to their capacities and potentialities. These efforts should be supported and the relevance of the training and income generation programs the Union provides for women should be assessed.

As an important source of external development finance for PDRY, IDA can facilitate the institutional changes required for recognizing and maximizing the contribution of women to the economy. In this connection, IDA assisted projects where appropriate should take account of relevant women's activities and should include components, inter alia, for:

- (a) Programs for women in vocational training centers;
- (b) Training female trainers in various technical and vocational fields, and extensionists to work with women as well as female researchers;
- (c) Agricultural extension programs and provision of tools, instruments and materials to raise women's skills and productivity;
- (d) Building up establishments for handicrafts and traditional industries utilizing simple, modern technology and training women to work in them;
- (e) Research and studies about women's situation to reveal the female labor capacities, underutilized opportunities, and to monitor the impact of projects on women.

- PDRY - Women in Agriculture -

OFFICE MEMORANDUM

file

DATE August 29, 1986

TO Mr. V. Rajagopalan, EMPDR

FROM Barbara K. Herz, PPDR

BKH

EXTENSION 76957

SUBJECT Women in Agriculture in Yemen

In case I am on mission during the upcoming meetings on Yemen's Southern Regional Agricultural Development Project, I wanted you to know that, as far as I can see, it is one of the Bank's outstanding women-in-development efforts. If we can bring agricultural extension services to women in such difficult circumstances, it may give us food for thought elsewhere. The project officer, Mr. Hikmat Nasr, has worked closely with me for some months. Of course I will do whatever I can to assist.

BKHerz:ra