

APPRAISAL
OF THE
AID PROGRAM IN MOROCCO

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A. I. D.

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Introductory Note

Comments were received on the draft of this report from the Near East Bureau, the Bureau for Population and Humanitarian Assistance, the Office of Nutrition, and the USAID. The NE Bureau found the report comprehensive and well considered and had no major substantive disagreement with its general tenor, but had reservations concerning several of the recommendations. Those reservations have been carefully considered and either reflected in revisions of the body of the report or in the recommendations themselves. In one case noted below, a recommendation was deleted.

The report findings and recommendations concerning the family planning program were generally accepted by AA/PHA. The NE Bureau agreed with the assessment of slow progress and cited evidence that problems are now being addressed. In particular, a recent GOM request for assistance in a survey of knowledge, attitudes, and practice about family planning may provide a useful vehicle for addressing the key program problem: the high dropout rate of family planning acceptors. Having taken note of the prospective survey, our findings and recommendations concerning family planning remain essentially unchanged.

The main long-term problem of Moroccan development identified in the appraisal is the pressure of an impoverished rural mass on the country's resources and the low level of productivity of those subsistence-level rural dwellers. We believe that Morocco needs to undertake a more comprehensive analytical effort to formulate strategies and develop programs for raising the incomes of the rural poor. The agricultural techniques first considered for increasing cereals yields in rainfed areas are based, for instance, on a sophisticated practice (clean-fallow "dryfarming") which is more likely to benefit larger farmers. The NE Bureau recognizes the need to develop new dryland farming methods adapted more to the needs of the small farmer and has reformulated the original proposal to insure that sufficient research will be accomplished before programs are implemented in the field. The new approach also takes account of the social constraints imposed by a traditional culture and has introduced a sociological research component into the project. We thus conclude that the concerns expressed in the draft report have been adequately considered and we have eliminated the corresponding recommendation.

The World Bank has recently undertaken an agricultural sector analysis which can constitute the basis for an agricultural strategy. We have therefore deleted that part of our recommendation relating to AID assistance in an agriculture sector analysis but still believe that AID financing of technical assistance in the formulation of a strategy for increasing rural incomes and creating alternate employment would be useful and possibly acceptable to the GOM.

The NE Bureau found unduly preclusive the recommendation that no further assistance be given to irrigation development. The two AID loans approved in the last two fiscal years for irrigation development aroused considerable controversy around the issue of direct benefits to the rural poor. While we found that the issue had been thoroughly aired during the review of those two projects, the concentration of Moroccan development resources in irrigation to date has benefited only a small proportion of Moroccan rural and agricultural families. We have therefore left the recommendation in its original form, rather than qualifying it to take account of potential future special cases.

The NE Bureau notes that they have begun to take into account the need for livestock programs in the design of assistance in dryland agriculture. Our original observation had been that programs for improving rainfed agriculture had concentrated unduly on cereals production, which offers little promise of making a significant contribution to raising rural incomes. The small farmer in the Moroccan rainfed zones often farms so small a plot of poor land that an increase in his yield of cereals is not likely to raise his income substantially. More remunerative opportunities are to be found in improved management of his herd and in growing higher-value crops than cereals. We have left the recommendation in its original form to emphasize the importance of this problem.

The NE Bureau indicates that there will be continuing consideration of and action on the issues raised by the appraisal.

PART I - GENERAL

A. Purpose and Scope

The Moroccan economy has been growing at a rate of about 6 percent for several years. Owing to a favorable market for phosphate exports, Morocco weathered the recent "energy crisis" better than a number of other countries. The question of program phase-out was raised in the Development Assistance Program (DAP) of January 1975. For these reasons it was timely to examine the current status of the AID program and its relation to Moroccan development.

The appraisal is a general review of the effectiveness and relevance of the AID program in Morocco. It examines the degree of conformity of the program and of Moroccan development priorities to the "new directions" in the Foreign Assistance Act and the justification for continuing U.S. concessional assistance to Morocco.

AG/OAS undertook preparation for the appraisal late in February and in March in Washington. Background information was developed through interviews with former U.S. ambassadors to Morocco (the newly-appointed Ambassador being en route), officials of the State Department, AID, IBRD, IMF, and through examination of available documentation. A field visit was made to Morocco by several members of the AG/OAS during April and May, and included field trips covering an area from Marrakech in the southwest to Oujda in the northeast. Interviews were held in Morocco with appropriate ministers and other Moroccan officials, the UNDP, Embassy, AID, and others.

B. Summary Findings

The general economic situation, which was particularly promising in 1974 when phosphate prices skyrocketed and protected Morocco against worldwide inflation, is not so optimistic now. The large balance-of-payments surpluses foreseen earlier are not likely to materialize because of the fall in phosphate prices and the continuing need to import large quantities of cereals. Morocco has borrowed heavily in the past two years on the Euro-dollar market to support planned levels of economic growth. Careful management of the debt burden will be needed to keep the debt service ratio within the limits of prudence. The level of GNP per capita,^{a/} the uncertain outlook for future overall economic performance, Morocco's serious problem of rural poverty, and the high population growth rate argue for continued AID concessional assistance.

^{a/} \$430 in 1974 at 1972-74 prices per the World Bank Atlas. See also footnote page 7.

Morocco faces several serious development problems. The National Family Planning Program, for example, has not significantly reduced the high population growth rate of about 3 percent. Rapid population growth is exacerbating the serious problems of unemployment, underemployment, and rural poverty. The cities are growing at over 5 percent, owing to migration from rural areas. Some nine million people--half the population--live at a subsistence level in the rural areas. Malnutrition is widespread--45 percent of children under four years suffer from second-degree malnutrition. Morocco has a large and persistent cereals deficit, and cereals imports press heavily on the balance of payments. The educational system must struggle with the problem of illiteracy and the use of three languages and several dialects.

The current Moroccan Development Plan stresses the importance of dealing with these key social problems but explicitly acknowledges past failure in meeting Plan goals with respect to many of them. There is, nevertheless, an increasing general preoccupation with the social problems of the country, but we did not detect the same sense of urgency in designing strategies and programs to cope with them. The current Development Plan (1973-77) is explicitly production-oriented "to assure a maximum growth rate." A secondary priority is "the more equitable sharing of the fruits of that growth." Probably more important, however, than the secondary nature of the priority accorded to social equity is the fact that social objectives have been receiving increasing emphasis and more resources in successive development plans.

The USAID Mission has identified the key development problems of Morocco and has proposed programs designed to help the GOM deal with some of them. The USAID approach was generally sound, although more comprehensive and penetrating analysis is needed. The serious situation of the 1.8 million rural families who are landless or own unviable plots calls for a more serious examination than USAID has given it so far. The present agricultural strategy of the GOM seems to accept that a large part of the rural population in the drier areas must be left ill-attended and continue to endure deprivation until the investments on the more productive, irrigated and well-watered lands have been completed. We believe it important for the Mission to take a new look at the problem of the rural masses which live in poverty on poor land, with a view to helping the GOM to devise a strategy for raising rural income levels and creating alternative employment. A comprehensive analysis of the agricultural sector is now being completed by the World Bank. While that study may make some observations about Moroccan rural development policy, particularly in the rainfed zones, it is not expected to recommend specific projects or a strategy at this stage. It could, however, constitute a useful basis for formulation of a rural development strategy, and we suggest that the USAID offer to the Moroccan Government AID financing of technical assistance by an independent consulting organization as an area where AID can help in dealing with the complex problems of rural sector development.

We questioned whether the USAID's original proposal to adopt the "dryfarming"^{b/} technique for cereals production in low-rainfall areas would be of much direct or immediate help to the rural poor, whose plots are too small and the soil usually too thin to permit application of such a sophisticated cultivation method. Because of the seriousness of the large cereals production gap, we believe that applied research on dryland agriculture is, nevertheless, important and that AID assistance is appropriate to help meet Morocco's food needs.

In any event, the "Dryland Farming" project, as revised by the NE Bureau, takes a more realistic approach in designing an applied research program "to develop dryland farming technology so small farmers will not have to try to adapt technology which was originally designed for larger operators or for different ecological zones." The most difficult part of the task will be to develop practices which are "economically and socially applicable to increase yields of food crops in dryland areas." (Emphasis added.) The inclusion of a social scientist in the research team is a significant improvement to address the problem of introducing innovations in a traditional setting.

The National Family Planning Program has failed, after ten years, to lower the population growth rate by any significant amount. We were not convinced that the assignment by the GOM of a "new, top priority" to family planning would be enough to affect the situation, which is more the result of ineffective management. We believe it serves little purpose to envisage early termination of our assistance for family planning, as has been suggested, but believe we should concentrate on helping the GOM improve its management of the program. We were surprised to find that there was little study or understanding of the key indicator of program failure--the high dropout rate of family planning acceptors. We urge that this problem be studied carefully by the GOM on an urgent basis, with USAID assistance as appropriate.

The KAP (knowledge, attitudes, practices) Survey requested by the GOM since our field visit may constitute an appropriate vehicle for a study of dropout rates. If that means is chosen to address the dropout problem, the USAID should insure that the study of dropout rates receives adequate emphasis in the design of the KAP Survey. The proposed new Family Health Project can be of help to the family planning program, particularly by training paramedical personnel who can reach those women who are now dropping out of the program.

We agreed with USAID on the urgency of a nutrition program and the potential benefit of cooperation between Morocco and Tunisia. The approach proposed by the Mission for beginning with planning and analysis

^{b/} The system of moisture preservation based on fallow, fine mulching, and weed control.

seemed appropriate. We suggest that an important part of the nutrition program would be an early national nutrition survey, since existing information is incomplete and out of date.

We found that the USAID Mission was well managed and of a size and composition generally appropriate to the current program. The USAID should, however, improve its capacity for economic analysis. The USAID appears to have very good rapport with the Government of Morocco, and conducts its relations in what appeared to us a particularly appropriate style.

We found adequate justification for a continued U.S. economic assistance program in Morocco at current levels, and scope for U.S. activities within the framework of the new directions in the Foreign Assistance Act.

C. Recommendations

1. Population

a. That the USAID arrange, in collaboration with the Ministry of Health, to conduct a comprehensive study of the reasons for the high rate of dropout of family planning acceptors.

b. That the USAID concentrate its efforts on assisting the GOM to improve management of the family planning program.

c. That the USAID, with the assistance of the Country Team, attempt to make a better assessment than now exists of the attitudes of key government officials and opinion leaders about family planning.

2. Agriculture

a. That the USAID offer technical assistance to the GOM in establishing a rural development strategy.

b. That the USAID undertake, as a priority, to examine the feasibility of raising incomes of the poorest Moroccan farmers through programs dealing with livestock and crops of a higher value than cereals.

c. That in any future PL 480 Title I sales agreements USAID and the Office of Food for Peace press for self-help provisions directed to attaining Moroccan self-sufficiency in cereals production and limited to significant measures stated quantitatively, so as to make assessment of performance possible.

d. That no further U.S. assistance be extended to Morocco for the development of irrigated agriculture.

3. Nutrition

That the USAID propose to the GOM that a national nutrition survey be carried out while the Nutrition Systems Study Unit is being established, in order to provide a data base for analytical and planning purposes.

4. Development Analysis

That the USAID increase its concern with and capacity for analysis of the Moroccan economy and Moroccan development planning, so as to permit USAID project development in the context of an adequate analytical framework.

D. Background

U.S. assistance to Morocco began in 1948 under the Marshall Plan while Morocco was still a French protectorate. Almost \$50 million were channeled through the French Government from 1948 to 1954 by assigning to Morocco counterpart funds from the program of aid to France. They financed such projects as road construction, irrigation and drainage, modernization of agricultural production methods, well digging, electrification, railroad and port construction, etc.

U.S. economic assistance to Morocco as an independent nation commenced in 1957. Total U.S. assistance to Morocco since that date through 1975 was some \$850 million in economic assistance, supplemented by \$130 million in military assistance, for a grand total of nearly \$1 billion. (Attachment A gives a breakdown of economic assistance by year.)

The period through 1963, at which time the Nouasseur Air Base was turned over to Morocco, was characterized by the annual provision of supporting assistance loans of the order of magnitude of \$15 million. Subsequent to that period, the practice of providing assistance to the government budget and the balance of payments by means of resource transfers in the form of "program" or "economic development" loans was continued until 1973. While those loans of \$8 to \$10 million were often referred to as "program" loans, they did not have the characteristics of program lending involving policy commitments, but were simply resource transfers to support the government budget. The counterpart currency of those loans was attributed to various activities in which the AID Mission was interested or involved, such as soil conservation, irrigation, mining, road construction, etc. The last loan of this type, an agricultural support loan, signed in fiscal year 1973, still had the characteristics of a resource transfer and did little to affect agricultural and economic development policy in the country.

Since the passage of the Foreign Assistance Act of 1973 containing the "new directions," the program in Morocco has undergone a distinct transformation. The USAID has conveyed to the GOM the changes in emphasis involved in the legislation, and particularly the move away from the practice of capital transfers to which Morocco had become accustomed. The GOM apparently has understood and accepted the U.S. emphasis on the poor majority, which is consonant with an increasing concern with social equity in Moroccan development plans.

PART II - FINDINGS AND OBSERVATIONS

A. Economic Conditions and Outlook

The Moroccan economy has been growing since 1968 at a rate of almost 6 percent. While prospects for continued growth at that level are fairly good, they are far from assured. Except for a possible rapid expansion in the private sector, there is no single factor which could lead to a significant acceleration of Morocco's growth. Several factors, largely beyond Moroccan control, could seriously hamper growth: weather is critical to agriculture, particularly the important cereals and citrus crops; phosphates, the major export, are subject to a cyclical foreign demand pattern; workers' remittances depend heavily on European economic conditions. The level of GNP per capita,^{c/} the uncertain outlook for future overall economic performance, Morocco's serious problems of rural poverty, and the high population growth rate argue for continued AID concessional assistance.

Morocco weathered the "energy crisis" largely because the oil price coincided with a 400 percent increase in the price of phosphates, Morocco's major export. During 1974 it appeared that Morocco might look forward to significant surpluses in the balance of payments to help finance the development program. In 1975, however, a rapid weakening of demand for phosphates and a bad crop year punctured that expectation and again revealed the relative vulnerability of the Moroccan balance of payments. Earnings from exports of phosphates fell 40 percent. Unfavorable weather caused a 20 percent loss in the value of citrus exports and required the importation of 1.5 million tons of cereals. The result was a deterioration in the balance of payments and a current account deficit of \$512 million. A large part of that deficit was financed through official borrowing, and foreign exchange reserves were drawn down by \$23 million. Those results took place even in the face of continued increases in tourism earnings and in remittances of workers abroad, two important shock-absorbers for the Moroccan balance of payments.

^{c/} The 1975 World Bank Atlas lists \$430 per capita in 1974 at average 1972-74 prices. That figure is based on the new Atlas methodology for calculating GNP per capita, which is designed to reflect the price and exchange rate movements of recent years. The new Atlas figure compares with a 1974 GNP per capita of \$342 in 1973 prices calculated by AID using the standard method. In addition to the differences introduced by the new Atlas methodology, there is also a discrepancy between IBRD and AID calculations due to the use of different population estimates. We have chosen to use IBRD figures for GNP because they have been cited by the Congress as authoritative international figures.

The phenomena of 1975 constitute a revealing barometer of the Moroccan economy. Phosphate rock exports, which previously had accounted for some \$200 million annually in the 1970-73 period, shot up to nearly \$1 billion in 1974. Then they fell to about \$585 million in 1975 as a result of a decline in volume of exports from 18 million tons to 13 million tons, while the price fell gradually from \$68 to \$38/ton. Demand forecasts indicate that Morocco should be able to count conservatively on selling 13-14 million tons per year at a price near the current level of \$38-\$40 per ton, for an annual export value of \$500 to \$550 million. Production of super-phosphate eventually will increase the value of Moroccan exports of phosphate products to some \$600-\$700 million per year. Assuming an economic recovery in Europe, worker remittances and tourism also should constitute a relatively stable element of foreign exchange inflows. Morocco is, however, a long way from self-sufficiency in cereals, sugar, dairy products, and meat. While Morocco should technically be able to produce enough cereals and meat to feed her population, it is unlikely in the near future that Moroccan farmers will achieve the level of technology which would assure self-sufficiency. Rather, imports will continue to be necessary except during favorable years.

At current growth rates, Morocco has a built-in current account deficit caused mainly by the need to import food, principally wheat and edible oils. The pressure on the balance of payments from financing the development plan, the recent military exposure, and the Sahara acquisition have forced Morocco to borrow abroad from private banks, after initial recourse to the IMF.

The external debt service ratio declined from 12 percent of export earnings in 1972 to 6 percent in 1974, largely as a result of higher prices for phosphate exports. External borrowing in 1975 and a less favorable export performance raised it to 9 percent. This ratio probably will rise further in 1976 if the GOM is successful in carrying out its plans to borrow \$200 million from the foreign private sector, in addition to the \$300 million already contracted in 1976. Those sums are in addition to official credits. While the current debt service ratio remains in a satisfactory range, it is vulnerable to swings in phosphate prices and levels of agricultural exports. Careful management of the debt burden will be needed to keep the debt service ratio within the limits of prudence.

Unless there is an unexpected upsurge in private sector investment or a spectacular export performance to finance government investment levels, it is unlikely that the growth rate target of 7.5 percent will be met in 1976. Real growth in 1975 of 3 percent was virtually wiped out by population growth. The economic growth which has occurred in recent years has done little to improve the lot of the poor. On the basis of household expenditure statistics provided by the Plan

Directorate-General, the per capita income of about half of the urban and three-fourths of the rural population still would be less than \$250. Half the rural population would have less than \$125 per capita. Subsidies of consumer products like kerosene and price controls on staple foodstuffs have constituted the major, indeed virtually the only, means of dealing with the skewed distribution of income. The related system of subsidies has placed a heavy burden on government finances, and those subsidies have been reduced by 50 percent in the 1976 budget. To compound the problem for the urban poor particularly, price inflation was about 8-9 percent in 1973, rose to 12-14 percent in 1974, and was still about 12 percent in 1975, according to GOM figures, which the Embassy believes are low.

The private sector is seen by the GOM as an important component of economic growth. The process of recapturing economic resources from the former colonists and the subsequent process of introducing Moroccan ownership and management ("Moroccanization") put a brake on private investment. Recently, however, private investment has picked up, the result in part of the new 1975 Investment Code, which provides incentives for private investment.

Rising public sector investment undoubtedly stimulated the increase in private investment. Public sector capital investment in 1974 increased by 85 percent to contribute to an overall increase of 46 percent in gross fixed capital formation. A doubling of the investment rate is estimated to have taken place in 1975.

B. Development Planning and Development Outlook

1. Problems of Development

Morocco presents striking contrasts. There are lush, irrigated or well-watered agricultural areas, excellent main roads, electrification, and fine ports. And there are near-desert areas of eroded and impoverished soil, without communications, electricity, schools, hospitals, or other services. According to the current Development Plan, the gap between rich and poor in Morocco widened in the ten years prior to the Plan period. The main development problems Morocco faces are difficult ones, and solutions will call for great determination on the part of the GOM:

- The population growth rate is high at near 3 percent. The National Family Planning Program is not producing results and a significant drop in the population growth rate seems unlikely.
- Unemployment is estimated at 11 to 20 percent of the working-age population and underemployment is generalized in the rural areas. Urban populations are fed by migration from the hinterland and are growing at a rate of 5 percent, further adding to urban unemployment.

- Domestic food production is insufficient to feed the growing population. Only the most optimistic estimates would conclude that Morocco could reach self-sufficiency in staple foods by the end of this decade.
- Nine million persons (more than half the population) live from traditional subsistence agriculture on less than ten acres of land per family. For the most part, they are illiterate, malnourished, and poor. The chances of significantly raising their incomes or providing them employment in the near future are not very great.
- Malnutrition is widespread; 45 percent of children under four suffer from second-degree malnutrition.
- Only 44 percent of children at primary-school age are in school--and only 14 percent in the rural areas. The national literacy rate is estimated between 15 and 26 percent.

2. GOM Planning

The Directorate-General of Planning and Regional Development has achieved a respectable capacity for macroeconomic planning. It is generally recognized that the greatest weakness of the Plan Directorate-General lies in the preparation of specific projects for financing. The volume of project summaries presented as backup of the current Plan (1973-77) is a shopping list of programs or projects, most of which were yet to be developed at the time of its publication.

The major emphasis of the Plan is on productive investment and on development of outlying regions to stem the flow of internal migration into the coastal zone dominated by Casablanca. It gives a derived but secondary priority to social objectives in summarizing the two principal goals:

- "-- The mobilization of all the productive capacities of the country to assure a maximum growth rate;
- "-- The more equitable sharing of the fruits of that growth within the framework of true social justice."

The current Plan states explicitly that the previous plan was inadequate in its attention to social objectives, and it provides a larger share of resources for social development. Moroccan officials are aware of the need to devote more attention and funds to the problems of the "least favored layers of the society." The "technocrats" appear to realize that a change from the production orientation of previous planning to more attention to social equity is overdue.

The situation in Morocco appears receptive to programs which conform to the new directions of the FAA. There is a relatively high degree of concordance between stated U.S. and Moroccan development priorities. We cannot, of course, expect that the GOM will give social objectives a higher priority than economic output or defense. Bearing those qualifications in mind, we found that there is ample scope for U.S. assistance in helping Morocco to cope with the problems which beset her poorest majority.

C. Major Programs

1. Agriculture

The current program of assistance in agriculture consists of two continuing grant projects: "Assistance to Higher Agricultural Education" and "Agricultural Research and Training"; a new grant extending the "Dryland Farming" project in order to design an applied research program; and two loans for irrigation--"Triffa High Service" authorized in FY 75, and "Doukkala-Zemamra" authorized in FY 76.

a. Irrigation Development

Since independence, the GOM has opted to give highest priority in the field of agriculture to the full development of Morocco's irrigation potential. By 1985, Morocco hopes to have under irrigation virtually all of its potentially irrigable land--over one million hectares, or one-eighth of its arable land.

To accomplish this objective the GOM has allocated most of its financial and human resources for agriculture to support irrigation development. This has resulted in using most of the available resources on 15 percent in value of agricultural production to help a little more than 100,000 of Morocco's 2,100,000 rural families with benefits averaging \$15,000 per farmer. The policy of supporting irrigation development has led to a serious lack of attention to rainfed agriculture, with the further result of an ever-increasing deficit in Morocco's production of staple foods, namely, the cereals and pulses. In 1975 Morocco was forced to import 1,500,000 tons of cereals.

AID has assisted development of Moroccan irrigation since 1960, mainly in the region of the Lower Moulouya River, where the Triffa Project is located. The two irrigation loans recently authorized were subjected to intensive reviews by the responsible offices in AID/W. A number of issues concerning the small farmer implications, farmer incomes, farm size, number of beneficiaries, distribution of benefits among the small and large farmers, cost per unit, and other economic factors were thoroughly considered during the review process, and it was concluded that small farmers were adequately benefited.

We endorse the present USAID position that no further U.S. support to irrigation development in Morocco is warranted at present. Irrigation projects are receiving adequate financial support. The vast majority of Morocco's rural poor lives outside irrigable zones.

b. Rainfed Agriculture

Rainfall ranges from about 50 inches per year in the Rif Mountains in the northwestern part of Morocco to less than 8 inches in the southeastern part of the country. The problem of low rainfall in much of Morocco is further aggravated by wide variations in both the amount and distribution of rainfall during the growing season, causing serious fluctuations in yields and total harvest.

Cereals, primarily barley, durum wheat, bread wheat, and maize, in that order, and pulses--broad beans, chick peas, peas, and lentils--constitute the staple diet of the Moroccan people. Until recently the country was self-sufficient in good years in all these commodities, and in unusually good years even exported some corn and wheat.

Traditional farmers produce 80 percent of the cereals and pulses and nearly all of them raise some livestock--sheep and goats--which constitute their primary source of cash income. These traditional farmers consume nearly all of the cereals and pulses they produce, and only contribute 15 percent of Morocco's commercialized agriculture.

About 4.5 million hectares are planted to cereals every year, but due to poor seed and poor cultural practices, yields are low and average between 0.9 and 1.3 tons per hectare. Given Morocco's endowment, it is not unreasonable to expect yields of 2 to 3 tons per hectare on nonirrigated land, with proper cultural practices.

The current Five Year Plan recognizes that Morocco's cereals deficit must be attacked by increasing production in the rainfed areas. The planned use of funds under the Plan will support activities primarily within the 16-inch rainfall belt, and most of the benefits will go to the larger commercial farmer.

The USAID attempted to address the problem of increasing cereal yields in the drier rainfed areas. A project was recently proposed under the title "Extended Agricultural Development." The principal aim of the project was to conduct applied research on application of proven dryland production practices in order to determine techniques appropriate to Moroccan soils and climatic conditions in the 8-16 inch rainfall belt. The project intended to draw on experience in other countries, notably Turkey, where "dryfarming" techniques (fallow, weed control, and fine mulching to preserve moisture) had been successful.

This concern with problems of dryland agriculture is perhaps the most important part of the current AID program in Morocco and the one where it may be possible to make a significant contribution to Moroccan development. There were, however, issues which needed to be clarified.

- i. If a research effort were successful in developing a "dryfarming" technology which would permit Morocco to increase yields of cereals significantly in rainfed areas, who would benefit?

We are convinced that the larger farmers on the better rainfed lands who now account for 85 percent of the commercialized cereals production would be the most likely to benefit from introduction of the "dryfarming" technology. The size of a plot necessary to achieve a significant income increase, by applying dryfarming techniques, is upwards of 10 hectares, depending on the climate. Large equipment is needed to prepare the bed and a seed drill is virtually essential. Finally, more risk is associated with the higher-yield dry-farming technique than with the traditional practice of fallow and grazing of residual stubble, which provides some value in the driest years. The obstacles for the small Moroccan farmer are such that we believe it a mistake to expect, as the original USAID Project Paper did, that development of a successful dryfarming technique for Moroccan conditions would benefit the small Moroccan farmer directly, at least in the short run. If the dryfarming technique eventually were successful and widely adopted, small farmers could join together in farming "pools" or cooperatives. But that possibility seems to us to be a long way off.

We agree that it is urgent for Morocco to develop farming methods which can increase cereal yields in the rainfed areas. AID has experience of this kind, and the resources of Oregon State University are available under a centrally-funded contract. There is ample latitude in the foreign assistance legislation to permit applied research of this kind, and we would encourage it.

- ii. What programs are needed and feasible to raise the level of income for small farmers and improve the quality of their lives?

The 11 million rural inhabitants constitute about 2.1 million families. Of this group, only 150,000 are in the modern sector and another 250,000 families occupy viable farms. The vast majority of the rural people, about 1.7 million families, either own no land (about 400,000) or cultivate small farms of less than four hectares, which are considered too small to be viable. Many of the landless people do have employment, either on the larger viable farms or in some aspect of rural services. The great majority, however, are underemployed. The number of unemployed and underemployed is growing and their overall plight is worsening.

Although there are some small farmers in the irrigated zones, the vast majority are subsistence cereal farmers in the dryland regions who derive a small cash crop from sheep and goats and occasional fruit trees. In general, given the poor, thin, badly-eroded soils in the lower rainfall areas on which they plant a low-yield cereal crop (usually barley) it is not reasonable to expect that those farmers could increase their incomes significantly by applying improved technology to cereal production alone.

The NE Bureau project review committee concluded that the revised project proposed by the USAID lacked the depth of detail required to start the applied research proposed and was deficient in analysis of research information which exists in Morocco. Thus, in June 1976, AID/W approved funding under the expiring Dryland Farming Project (608-131) to conduct three studies including: (1) a research planning study that will focus on the socio-economic justification for the proposed applied research and on the development of the detailed research plan, including the selection of research sites; (2) an evaluation report on the effectiveness of the Agricultural Extension Service; and (3) a report on the establishment of seed nurseries for range forage crops adapted to the dryland areas of Morocco.

The revised project is intended to assure that the analytical base is available for conducting applied research in increasing food crop yields in dryland areas. The new approach consists of a comprehensive study of existing research, the state of dryland farming technology, the impact of social and economic conditions on farming, the design of an applied research project, the selection of research sites, and a research methodology. Although the execution of a research project will be somewhat delayed, this more careful approach promises to avoid lost motion and to penetrate more effectively the complex agronomic and social problems which have conspired to keep Moroccan rural masses poor: plots are small, soils often thin and eroded, rainfall is erratic, and summer temperatures make moisture conservation more difficult than in other climates where the "dryfarming" technique has proved successful; the traditional modes of nomadic life, communal grazing, storage of wealth in scraggly herds, avoidance of risk, and traditional resistance to change are further challenges to increasing productivity and incomes. The proposed studies, including forage production and the effectiveness of the extension service in dryland areas, aim in the right direction by addressing these various problems of the dryland areas.

The GOM proposes regional development as a means of creating employment in rural areas. During our field visits in Morocco we had an opportunity to observe the positive effects of regional development, namely, at Berkane in the Lower Moulouya irrigation zone. We saw there the employment opportunities created by the agribusiness and other services that are associated with the 16-year-old irrigation effort. The project area and the overall development looked good, although we did not have an

opportunity to analyze the costs or to evaluate the benefits in money terms. Obviously, agribusiness investments offer opportunities to create additional employment and these developments are taking place in the irrigation zones; but by the same token, the rural poor are growing in absolute numbers and the total rural situation appears to be deteriorating. Also, we did not see or hear of any successful regional development schemes outside of the major irrigation zones.

One major regional development effort, the DERRO Project, assisted by UNDP, FAO, Canada, and others, has been underway for some ten years in the Rif Mountains where there is the densest concentration of poor small farmers. It has been a high-cost project which has not succeeded in significantly improving the income of the participants. It appears to have been a mistake to seek an exclusively agricultural solution when the resource base was visibly inadequate to support the number of people residing within the project area. Impartial studies of the DERRO Project might reveal valuable lessons for the design of future similar projects in Morocco and elsewhere.

We did not find that the USAID had done enough analysis to identify alternative solutions and strategies to help the GOM deal more effectively with the problems of the poor rural masses. We believe that a comprehensive analysis of the agricultural sector is needed to probe the realities of the rural development problem with greater precision than has been done to date. Such a study is currently being completed by the World Bank and should provide a better basis for identifying program alternatives and the cost of increasing the incomes of the rural poor. We are aware of the oft-repeated contention that the GOM does not welcome outside participation in policy formulation. We believe, nevertheless, that the GOM might be willing to accept assistance with formulation of a rural development strategy aimed at one of the major development concerns clearly identified in the current Development Plan. Indeed, the Secretary-General of Agriculture stated that his ministry was particularly pleased with the USAID initiative in the dryland areas, because that problem would be serious in a few years, if not addressed now.

c. Higher Agricultural Education

AID support to the Hassan II Institute of Agronomy and Veterinary Science began in 1970. Phase I was scheduled to be completed by June 30, 1976. Prior to completion of Phase I, USAID obtained approval of a Phase II to commence in FY 1977 and continue through FY 1981.

In an evaluation of the project carried on in 1975, a U.S. contractor had concluded that the project was not accomplishing its objectives and that it should be either terminated or revised. The USAID revised the project in accordance with the contractor's recommendations. The project purpose under the second phase is: (1) development of an indigenous teaching and research capability geared to training students in soil and plant sciences; and (2) training manpower to increase food production and improve nutrition status of the population.

In revising this project, the USAID sought to coordinate its efforts to support the new focus on the small farmer in the rainfed areas.

At the Institute we observed a number of specific results of teaching methodology which indicated that the Institute has basically adopted a pragmatic field-oriented approach involving a considerably greater amount of practical work than normally found in schools modeled on the French pattern. We saw examples of field mapping exercises, nutritional studies carried out by students at the village level, and practical studies by students dealing with problems of Moroccan ecology and agriculture. While the Institute cannot be expected to become a "land grant" college on the American pattern, owing to the basically French model of administration adopted in Morocco, we formed the distinct impression that the Institute is serious about reinforcing the practical value of its teaching and maintaining a close touch with the real problems of Moroccan agriculture and farmers.

The Institute has succeeded in assigning student research fellows to the American professors under the project and they are of high quality, according to the Minnesota professors, and are conducting relevant research, notably on barley yields.

d. Agricultural Research and Training

This project was first authorized in 1974, implementation commenced in 1975, and completion is scheduled in FY 1980. The project purpose is to create a corps of trained Moroccan specialists. The U.S. will also provide specialized consultant advice on Moroccan farm problems. An additional objective is the creation of functional linkages with the international research network. This project supports Moroccan agriculture across the board and is not directed exclusively to the small farmers in Morocco's dryland areas. We are not prepared to quarrel with this approach, since the project can be directly supportive of the two irrigation projects recently approved (Triffa and Doukkala), where specific cropping problems may benefit from U.S. technical assistance. Also, significant benefits can be obtained from establishing linkages with the international research network.

2. Nutrition

Various studies since 1958 by FAO, WHO, and the Moroccan Ministry of Health have indicated serious nutritional deficiencies in Morocco. A 1971 sample survey by the Health Ministry concluded that 45 percent of children below the age of four had second-degree (moderate) malnutrition. AID recently has approved a project to assist the Planning Ministry to establish a nutrition systems study unit in order to provide the necessary analytical and planning skills. Such a unit is expected to assist the Interministerial Commission on Food and Nutrition to carry out its

mandate of coordinating national nutrition policies and programs. As work progresses on improving yields and diversifying crops in the dryland areas, this unit should be in a position to assure that the introduction of new crops and varieties takes account of the need to increase their nutritional content.

It appeared to us essential that a more comprehensive and reliable data base be available before a relevant national nutrition strategy can be developed. We believe that a national nutrition survey needs to be conducted at an early date. The national survey could be conducted while the nutrition study unit is being established and could endow the unit with a solid base of information on which to formulate its action proposals. Contacts have already been established with the excellent and well-equipped Nutrition Institute of Tunisia (an AID project) which recently completed such a national survey. The Director of the Tunisian Institute has acted as consultant to Morocco, and the experience of Tunisia in conducting a national survey should be valuable.

The cooperation between Morocco and Tunisia in the field of nutrition is an excellent example of how AID experience can be transferred. At the initiative of Catholic Relief Services (CRS), a program of training and interchange was set up between the two countries. An Operational Program Grant (OPG) to CRS financed training at the Nutrition Institute in Tunisia of some 25 provincial Moroccan supervisors who oversee the programs of the National Social Welfare program (Entr'aide Nationale), which provides supplementary food to preschool children and indigent mothers. The OPG also financed the services of four Tunisian nutritionists who form the initial faculty of a nutrition training center in Marrakech, where the provincial supervisors and the program monitors are to be trained in nutrition. The objective is to use the child feeding centers as a focal point for disseminating information on better nutrition to mothers. The Tunisian teachers have established excellent rapport with their Moroccan students, who have shown an enthusiastic classroom response.

The program is expected eventually to reach out to the 250 Social Welfare Centers around the country and the estimated 250,000 preschool children and 125,000 mothers receiving supplementary feeding. There is a controversy surrounding this program. On the one hand, the Ministry of Health questions the wisdom of allowing persons without the equivalent of secondary school diplomas to give advice on nutrition to mothers. On the other hand, the Training Center believes that the monitors can absorb enough technical information to allow them to give accurate and useful advice and to detect when it is necessary to recommend medical attention.

We doubt that the controversy can be resolved by anything less than a thorough evaluation. We believe that the USAID should arrange for an evaluation as soon as there is enough field experience on which to base

a judgment. That evaluation should also provide information on the actual coverage of the program and on the extent to which the nutritional education is being understood and applied by the mothers reached.

3. Food for Peace

a. PL 480 Title I

From July 1954 through May 1976, sales agreements under PL 480 Title I totaled 198.7 million (CCC prices). Commodities have included wheat, cotton, tobacco, and fats and oils. No sales agreements were concluded during FY 1974 and FY 1975. The latest agreement (May 1976) provided 100,000 tons of wheat valued at \$14.7 million and was justified on the basis of Morocco's need to import 1.5 million tons of wheat in 1975 and the deteriorating balance of payments.

The Title I sales program was intended to help Morocco meet consumption requirements, provide local currency for economic development purposes, and help establish markets for U.S. agricultural commodities. The Food for Peace Act stipulates that the availability of PL 480 Title I commodities should not constitute a disincentive to the production of staple foods. The availability to Morocco of PL 480 wheat imports over a number of years appears to have been one contributing factor which supported the GOM policy of favoring irrigation development over the agriculture of rainfed areas where most of the cereals are grown. Although import needs were relatively low in a few years of good weather, they oscillated around 40 kg. per capita until the recent high levels of 45 kg. per capita in 1973 and 85 kg. per capita in 1975. Between FY 1963 and FY 1974, PL 480 Title I shipments of wheat were 1.7 million MT, or about 30 percent of total imports of 5.7 million MT in calendar years 1966 through 1974. Most imports were used as bread wheats, to meet changing consumption patterns. While growing population has played a role in rising total import requirements for wheat, the price control policy of the Ministry of Agriculture on soft wheats has failed to provide a sufficient incentive to increase bread wheat production, even on irrigated land. The absence of a policy to encourage dryland cereals production and the emphasis on investment in irrigation have combined with the availability of PL 480 wheat on concessional terms to permit continued Moroccan reliance on importing bread wheat to meet consumption needs. Since durum wheat commands a higher price in markets accessible to Morocco, programs to increase durum wheat yields in rainfed areas could serve to substitute for imports and relieve pressure on the balance of payments.

The self-help provisions in the May 1976 sales agreement referred specifically to training Moroccans and improving farmer extension programs in wheat production technology. Other specific provisions related directly to research on dryland farming and improving linkages between the research program and extension services in rainfed areas. Although

those provisions pertain directly to the problem of wheat deficits, they are not set forth in quantitative terms. We suggest that in any future agreements the language in the self-help provisions be more specific and susceptible to later assessment of performance.

Other provisions of the agreement appeared to be either irrelevant to U.S. objectives or perfunctory. We see no reason, for example, to include provision No. 6 calling for "continued development of irrigated perimeters in the areas listed in the GOM's current fiscal year plan," because presumably the GOM will try to carry out its own plans. We found provision No. 8, regarding a general improvement in the conditions of credit for small farmers and co-ops, to be too general. We stress here the vague and perfunctory nature of some of the self-help provisions, because of the lack of negotiating strength in such language. We suggest that in subsequent sales agreements only self-help provisions be included which require specific, measurable steps to increase the production of cereals significantly. U.S. negotiating officers should try to insure full understanding of the significance of such provisions during agreement negotiations, and should stress the potential relation of country performance to the negotiation of subsequent sales agreements.

b. PL 480 Title II

The PL 480 Title II program in Morocco is implemented through two voluntary agencies, the American Joint Distribution Committee (AJDC) and the Catholic Relief Services of the National Catholic Welfare Conference (CRS).

The AJDC supports a relatively small program for 200 mothers and infant children through MCH centers and 2,300 school children out of a total Jewish population of 20,000 in Rabat, Casablanca, Marrakech, and Tangiers.

The CRS in Morocco has adjusted its program directions to meet the priorities established by the U.S. interagency committee. Title II inputs for school feeding programs have been phased out, assistance to Maternal Child Health has increased, and the total number of recipients has been reduced by 10 percent.

The CRS major feeding program is the maternal-child health (MCH) program for 250,000 preschool-age children and 125,000 mothers from indigent families. The food is distributed through 250 centers located in all provinces and prefectures.

AID has granted \$282,000 to CRS for a nutrition education project to improve the services of these social education centers. The grant supports a Nutrition Training Center in Marrakech which will train 500 female monitors over a 24-month period. We found this to be a constructive and potentially successful program, since nutrition education for indigent mothers can significantly increase the value of the supplementary feeding program carried out through the centers.

Under other child feeding programs, CRS will support 25,000 orphaned and needy children in orphanages and day-care centers. Under a food-for-work program, a total of 118,000 workers and dependents will receive food as a result of participating in various activities, including vocational training, cooperatives, and self-help projects in the areas of health, nutrition, sanitation, agriculture, and water supply.

The PL 480 Title II program in Morocco appears to be successful in helping to achieve the U.S. and Moroccan development objectives and is consistent with the relevant programming directives and guidelines.

4. Population and Family Planning

Morocco's population growth rate of about 3 percent^{d/} constitutes a serious brake on Moroccan development. The national family planning program which was begun in 1966 has had little impact on the growth rate. There is a high dropout rate among family planning acceptors. There has been no satisfactory study to explain this phenomenon, which is critical to effectiveness of the program.

The Secretary-General of Health (equivalent of Deputy Minister) founded the private family planning association. He commented that "motivation" of the political level, i.e., the ministers and the provincial governors, is of prime importance. Implicit in his remark is the notion that in his official capacity he is not getting support from his colleagues at the top levels of government despite his own personal views and long association with the program.

The Planning Secretariat confirmed that they use a rate of 2.9 percent population growth for their projections of development investment targets. The Secretary-General of the Planning Ministry did not appear to be impressed by the achievements of the family planning program and commented that the current approach will not be successful if made in terms of national concerns. Rather, it must reach down to individual Moroccan families and must be convincing to them "psychologically and economically." That comment emphasizes the difficulty of penetrating the value systems of a society as traditional as that of Morocco to reach and influence a large target audience.

^{d/} The estimates of Morocco's population growth rate vary. The Secretary-General of the Directorate of the Plan and Regional Development informed us that the growth rate figure currently in use by his office is 2.9 percent. Since this does not differ greatly from the official AID figure used in the Congressional Presentation, we have preferred to use the AID figure throughout this report.

An evaluation ("Robbins Report")^{e/} of February 1976 concluded that the Government of Morocco needs to assign a higher priority to family planning if its own efforts and the AID investment are to have any appreciable effect in reducing the population growth rate. That view was repeated to the OAS team by members of the country team, Moroccans, and representatives of international organizations.

The absence of an aggressive and strongly promoted government policy is not necessarily the exclusive or even the primary impediment to a successful program. Equally important may be better management of the program. The family planning program already has a prominent place and formal priority in the Development Plan. It is financed and operated as an official program of the Ministry of Health. The infrastructure is available in the public health system, and manpower is there. The Robbins Report contains numerous practical recommendations for improving management of the program. If these are carried out, the question of assigning a significantly higher priority to the program may become moot. In any event, we believe that the USAID should avoid becoming unduly concerned with the "priority" question and that it should give adequate emphasis to management issues and practical means of helping to move the program forward.

Subsequent to our field trip, the Minister of Health did remind all doctors-in-charge of the health system of the priority given to family planning in the Development Plan. The Minister's action may have reflected agreement with the recommendations of the evaluation team in the Robbins Report, as well as an existing Moroccan priority.

The principal import of this observation is that it can have considerable significance for the style of our relationships with the GOM in supporting the family planning program. Any efforts to achieve the assignment of a higher priority are bound to take place in an arena of qualitative judgment as to what a high priority consists of. Moreover, the classical means of elevating the status of a priority is exhortation. We could perfectly well accept the contention that the GOM already places a high priority on family planning and population control but is unwilling, and perhaps wisely so, to risk assuming too high a profile in public promotion of the policy. We believe that the significant conclusion for AID is that: progress in the family planning program is important to Moroccan development; there is an adequate policy base and infrastructure; and the key problem is improving management of the existing program.

Another critical problem which the managers of the program should address is the high dropout rate among family planning acceptors: for every ten new acceptors, six other women drop out. As a consequence, the program

^{e/} "Report of the Evaluating Team on the Morocco Family Planning Program," under the auspices of American Public Health Association, February 16 through 27, 1976, AID/pha-C-1100.

is not making progress, but is actually falling behind the number of women entering the reproductive age each year. The Robbins Report did not dwell on the reasons for the dropout rate, except to infer that the program was not paying sufficient attention to families who had already accepted a method of family planning. Nor did we discover an explanation for the phenomenon in the Mission. As pointed out in the Robbins Report, those families who have accepted a method have already been motivated. An effort should be made to retain them in the program. We believe that the reasons for the high dropout rate should be determined. This may require a full-scale study of this problem. The national Follow-Up Survey of 1972-73 dealt with the figures, but did not, as far as we could determine, go deeply into the reasons for the problem. The KAP (knowledge, attitudes, practices) Survey requested by the GOM since our field visit may constitute an appropriate vehicle for a study of dropout rates. The USAID should insure that the question of dropouts receives adequate emphasis in the design of the KAP Survey.

We believe that the USAID and the Embassy should attempt to obtain better understanding of relative Moroccan priorities. The priority given by the Moroccan policy level may be perceived by the GOM as a high priority. There may not be enough feedback, however, from lower levels of government to the management level that lack of program results belies the priority as perceived from above. A better management information system is required to pinpoint the relationship between perceived priority and program effectiveness. The USAID, with the help of the country team as appropriate, should make a major effort to discuss with and understand the views of the GOM at the policy level with respect to family planning.

PART III ~ MANAGEMENT

A. General

USAID/Morocco gives the impression of good horizontal and vertical communication. Morale is high. Liaison with the Embassy and Peace Corps is good. Communication with AID/W, program guidance received, and backstopping appear to meet USAID needs, although that has not been the case at all times.

B. Program Guidance and Program Analysis

From October 1973, following the visit of the U.S. Secretary of State to Morocco, until about April 1975, program guidance received by the USAID was often unclear and inadequate. Time was lost and an impression of bureaucratic delay and ineptitude may have been conveyed to the GOM.

The Secretary's visit had resulted in some general commitments to develop loan projects of the order of magnitude of \$25 million. The Government of Morocco had been encouraged to submit proposals for projects and did so in December 1973.

A Washington team was sent out in December to prepare a strategy; it reported in February, and Washington finally commented in August, rejecting the major part of the report prepared by the Washington team. The USAID was told to start over and prepare a DAP according to some fairly detailed guidance as to content, format and length. That guidance set forth clearly and comprehensively for the USAID the analytical content desired. Given the analytical depth desired, it appeared to us difficult for the USAID to produce the quality of analysis desired in either the time or the space prescribed. Although sector analyses were not asked for, the kinds of issues raised in the guidance presumed that the virtual equivalent of sector studies already was available in "existing analysis." The USAID did not have the staff resources, however, to conduct or identify the level of analysis needed to design programs which could deal with the more complex problems of rural development in Morocco.

We believe that the performance of USAID/Morocco in project development would be enhanced by a more comprehensive perspective on the economy as a whole, and by more wide-ranging discussions on economic trends and developments with the GOM, the IBRD, and other donors. Thus, we recommended that a program economist position be established in the USAID and that there be more interchange between the USAID and the Embassy on the economics (and the sociology, for that matter) of Moroccan development.

We were informed that an International Development Intern who is an agricultural economist will be joining the Mission staff. This addition will certainly strengthen USAID analytical capacity in agriculture. We believe that the overall outlook of the Mission could also benefit by a more analytical approach. The use of short-term consultants to supplement permanent staff, as suggested by the NE Bureau, could be very helpful.

C. Relations with the GOM and Other Donors

Relations with the GOM are patterned pragmatically for effectiveness rather than for purposes of protocol. During our meetings we observed that USAID officers had good rapport with their counterparts.

We visited the UNDP headquarters, where we received a detailed briefing which revealed several instances of excellent coordination between UN technicians and the USAID. The USAID appeared to be generally well informed about the activities of other donors. We suggest that the USAID cultivate greater familiarity with the DERRO project in the Rif Mountains, since it may have lessons for rural development applicable in Morocco and elsewhere.

Relations with the Peace Corps are excellent. The Peace Corps is eager to cooperate with USAID and to increase its participation in AID projects, particularly in health and agriculture. They complained, however, that the AID and Peace Corps program cycles are so different that it is hard to coordinate programs. Better coordination should be possible, and we urge the USAID to attempt to improve it or to make suggestions to AID/W which might make the two programming processes more compatible.

D. Staffing

USAID/Morocco has a ceiling of 23 positions. This appears to be an appropriate level for the program size and composition. We recommended to the Director that a program economist be added to the Program Office, and that the change of personnel taking place offered a good opportunity to accomplish that. We also believe that the Agriculture Division could benefit by additional economic analysis capability and were encouraged to learn that an economist intern is being assigned.

Because the problems of the family planning program are largely managerial, it does not appear necessary that the Population Adviser have a medical degree. It is important, however, that he have good management and communications skills.

U. S. ECONOMIC AND TECHNICAL ASSISTANCE TO MOROCCO
 Indirect Program Via France: 1948-1954
 Bilateral Program FY 1957 - 1975
 (\$ Million)

| FY | PL 480 Title I | PL 480 Title II | SA Grants | SA Loans | DL | TA | TOTAL |
|------|-------------------|--------------------|-----------|----------|-------|-------|-------|
| 1948 | - | - | - | - | - | 2.6 | 2.6 |
| 1949 | - | - | - | - | - | 11.0 | 11.0 |
| 1950 | - | - | - | - | - | 16.9 | 16.9 |
| 1951 | - | - | - | - | - | 4.3 | 4.3 |
| 1952 | - | - | - | - | - | 7.6 | 7.6 |
| 1953 | - | - | - | - | - | 7.5 | 7.5 |
| 1954 | - | - | - | - | - | 0.1 | 0.1 |
| | - | - | - | - | - | 50.0 | 50.0 |
| 1955 | No program | | | | | | |
| 1956 | No program | | | | | | |
| 1957 | - | 9.4 | - | 20.0 | - | 0.1 | 29.5 |
| 1958 | - | 2.3 | - | 19.1 | 10.5 | 0.9 | 32.8 |
| 1959 | - | 2.8 | 3.6 | 13.9 | 24.9 | 1.5 | 46.7 |
| 1960 | - | 5.1 | 10.0 | 19.5 | 42.9 | 1.8 | 79.3 |
| 1961 | - | 53.0 | - | 11.8 | 27.5 | 1.3 | 93.6 |
| 1962 | - | 7.9 | - | 14.9 | 15.0 | 1.4 | 39.2 |
| 1963 | 13.2 | 36.4 | - | 19.6 | - | 2.1* | 71.3 |
| 1964 | - | 12.4 | - | 14.5 | - | 3.3* | 30.2 |
| 1965 | - | 11.9 | - | 9.2 | - | 34.2* | 55.3 |
| 1966 | 19.4 | 23.7 | - | - | 5.7 | 0.9 | 49.7 |
| 1967 | 11.6 | 14.4 | - | - | - | 1.4 | 27.4 |
| 1968 | 22.6 | 18.9 | - | - | 14.2 | 1.8 | 57.5 |
| 1969 | 16.2 | 14.6 | - | - | - | 1.4 | 32.2 |
| 1970 | 1.5 | 17.9 | - | - | 7.1 | 2.6 | 29.1 |
| 1971 | 14.7 | 17.2 | - | - | 8.6 | 1.7 | 42.2 |
| 1972 | 10.6 | 7.5 | - | - | 9.1 | 1.8 | 29.0 |
| 1973 | 16.7 | 8.1 | - | - | 10.0 | 2.0 | 36.8 |
| 1974 | 7.8 | 7.4 | - | - | - | 2.2 | 17.4 |
| 1975 | - | 9.4 | - | - | 8.0 | 2.1 | 19.5 |
| | 134.4 | 280.3 | 13.6 | 142.5 | 183.5 | 64.5 | 808.7 |

Estimated ocean freight costs for FY 1957-75

| | | |
|-------------------------------------|------|-------|
| Voluntary Agency Programs | 25.0 | 25.0 |
| | 89.5 | 833.7 |

* Includes excess property transferred to GOM
 at no cost - FY 1963 - \$0.3 million
 FY 1964 - \$2.1 million
 FY 1965 - \$32.9 million