

USAID/MOROCCO

U.S. DEVELOPMENT ASSISTANCE STRATEGY

FY 1975-1977

USAID Rabat  
February 11, 1974

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## TABLE OF CONTENTS

	Page
Ambassador's Foreword	
CHAPTER I : Introduction and Summary	1
CHAPTER II : The Five Year Plans	11
CHAPTER III : Overview of the Agricultural Sector	16
1. Importance to the Economy	16
2. Structural Characteristics	17
3. Agriculture in Moroccan Five Year Plans	19
4. Government Programs in Food Production and Constraints	27
a. Agricultural Production Programs	27
b. Agrarian Reform	28
c. Agricultural Credit	32
d. Economic Incentives	33
e. Agricultural Extension	35
f. Food Crop Research	37
g. Agricultural Education and Training	39
h. Animal Production	44
CHAPTER IV : Overview of Moroccan Population Problem	49
1. Background	49
2. Moroccan FP Program - Five Year Plan 1968-1972	51
3. Moroccan FP Program - Five Year Plan 1973-1977	54
4. Demographic Research	56

	Page
CHAPTER V : Overview of Nutrition	59
CHAPTER VI : Overview of the "Bidonvilles"	64
CHAPTER VII : Proposed Assistance in Areas of Common Interest	67
A. Food Production	67
1. Technical Assistance	67
a. Extension Training	67
b. Higher Agricultural Education	69
c. Livestock Production	73
d. Agricultural Research and Training Block Grant	75
e. Nutrition Block Grant	76
2. Capital Assistance	78
a. Triffa Pumped Services	79
b. Doukkala Irrigation Perimeter	84
c. Local Currency Generation	89
3. PL 480 Title I	91
4. PL 480 Title II	92
B. Population	
1. Technical Assistance	100
a. Family Planning Support	100
b. Demographic Research	102
C. Housing and Urbanism	105
1. Housing Investment Guarantees (HIG)	105
2. Rabat-Sale Sewer Project	108

CHAPTER VIII: Other Donor Assistance 111

CHAPTER IX : Other GOM Requests 118

ANNEXES

Annex A Progress of Land Distribution, and Size  
Distribution

Annex B Population Density Map

Annex C Population by Age and Sex

Annex D Demographic Data

Annex E Triffa Irrigation (footnotes and map)

Annex F Doukkala Irrigation (Footnotes and map)

Annex G Methods of Generating Local Currency

Annex H PL 480 Title I Assistance

Annex I Analysis of Central Government Budget, Rabat A-9



EMBASSY OF THE  
UNITED STATES OF AMERICA  
Rabat, Morocco

Ambassador's Foreword

Morocco has achievements and peculiarities which place it in a special category. This is why I greatly appreciate AID/W's decision that the Moroccan setting does not permit the rigorous sector analyses needed for a full-fledged Development Assistance Program (DAP). In my opinion the USAID's submission which follows represents a valid framework for a multi-year approach to U.S. assistance planning and strategy.

The document presents an objective picture and makes realistic recommendations for a continuing aid relationship. The proposed activities respond to Moroccan requests. They also meet the criteria of the Foreign Assistance Act, which emphasizes the augmentation of food production and greater equity for the lowest income levels and improvement of their lives through population planning and better nutrition. The proposed capital projects also conform to pertinent aid criteria and concepts.

Equally important, if not more so, from the point of view of the management of our over-all relations with Morocco for which I am personally responsible, these capital projects will introduce a significant element of visibility into our assistance program, a special request by the King. They become symbols of our support in the context of our total and increasingly close relationship, the tone for which was set by Secretary of State Kissinger during his recent discussions with King Hassan II, Morocco's Chief of State.

Robert G. Neumann,  
American Ambassador

## I. INTRODUCTION AND SUMMARY

A 6 member Development Assistance Planning (DAP) Team from AID/W visited this Mission from December 5-9, 1973. We agreed that the host country's concepts of foreign assistance were not compatible with the collaborative style underlying the standard DAP format. Conversely, we concurred that an analytical framework, nevertheless, was needed to evaluate and justify a continuing aid relationship. This document, i.e. a modified DAP is the Mission's response to this jointly formulated requirement. It attempts to describe the local setting and its implications for the formulation of the American assistance program within the criteria established by AID/W and the Congress. The Mission is hopeful it has met AID's mandate for increased analytical and problem solving approaches.

### Major Factors:

#### Collaborative style

A basic element compelling important modification in the orthodox DAP approach is the fact that the GOM's interpretation of cooperation differs greatly from AID's definition of the "collaborative style." The GOM specifically eschews the involvement of foreign experts, U.S. and others, in the processes of policy formulation. The GOM considers that its objectives and its strategies constitute extremely delicate balances between economic, social and political factors that only it can and will determine. Once such a determination is made, the GOM rejects the idea of discussing the rationales,

options, trade-offs etc. that it considered in the decision-making process. Moreover, the GOM has no interest in reviewing possible alternate approaches, overall constraints and general problem-solving measures with foreign donors. Assistance requests are specific demands for resources -- financial, technical and human -- to address needs identified by the GOM. Thus, the Moroccan-American dialogue is essentially restricted to the project level, i.e. concerned with specific areas of technological transfer or with discrete capital development activities, i.e. the Lower Moulouya Project. A large part of the latter was funded with local currency. Much of the counterpart was host country owned and generated through commodity import loans. The GOM has looked upon this counterpart as a fungible budget support resource regardless whether the loans were called Agricultural Sector (ASL) or Economic Development Loans (EDL). The Mission has emphasized in its discussions with the GOM that no further program-type loans could be authorized. The improvement in the GOM's balance of payments and AID's revised concepts and criteria demand new orientations. Basically, these call for the justification of proposed activities (in the area of both capital and technical assistance) in terms of their intrinsic merits, in response to economic rationale and to the new Congressional mandate. The GOM, on the whole, appears to accept this redirection in our assistance rationale though it finds it difficult to accept the fact (mere "semantics" to some of our interlocutors) that commodity loans henceforth will be means rather than ends with the added result of greater involvement

by the U.S. partner in the programming of GOM owned counterpart.

(Alternate ways of generating local currency are discussed on page 89 of this document.)

The AID/W DAP Team and the Mission fully agreed on the need to evaluate and justify proposed assistance activities in the light of AID's new priorities and criteria. Team Leader Princeton Lyman's report\* contains an excellent summary of the 4 criteria that the Mission is applying in the analysis of the GOM's request for assistance:

1. Activities must be consistent with AID areas of emphasis, i.e., within the areas of food production, health or human resources development.

2. Activities must be contributive to equity objectives, i.e., of benefit to specific target groups at the lower end of the income scale promoting rather than reducing employment.

3. Activities must make "sectoral sense," i.e., without it having to be within a formal sectoral plan, it has to be shown that the project, nevertheless, fit with other relevant factors within the sector and that necessary complementary actions (by the GOM or other donors) would indeed take place or that the U.S. input would have influence on having them take place.

4. U.S. input would make some difference in the activity, i.e. that the U.S. contribution would qualitatively and/or quantitatively,

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\* TRIP REPORT - Report on DAP Team Visit to Ethiopia, Kenya and Morocco November 23-December 7, 1973, page 12.

help the GOM to do a better (or more widespread) job in meeting the objectives we and the GOM sought.

The GOM's Need for Foreign Aid

In separate speeches (subsequent to the DAP Team's departure) the King and the Minister of Finance have given details of the GOM's public finances and balance of payments. They indicated vast improvements and continued favorable projections, particularly in the wake of an announced 300% increase in the export price of phosphates (an increment of approximately \$400 million in 1974). These speeches also underline the availability of approximately \$200 million carry-over authority (credits d'engagements) for developmental purposes due to the slow start of the new Five Year Plan in 1973. Thus, at this time the immediate problems in the area of capital development projects are not so much of a financial nature as issues arising from the lack of projects ready for implementation. This, in turn, is a result of quantitative and qualitative insufficiencies at technical levels.

In this light the more specific question of the need for U.S. aid to Morocco must be posed in view of our reduced overall resources. The following points seem pertinent:

1. Morocco's friendship with the U.S. goes back to the days of George Washington. The Sharifian Empire, as Morocco was then called, was the first nation to recognize the independence of the USA. Secretary Kissinger's and Assistant Secretary Newsom's visits in 1973 during the height of the October 6 war (in addition to an earlier visit by Mr. Newsom) resulted in<sup>a</sup> joint communique stressing U.S. willingness

to reinforce our economic cooperation programs. These discussions are detailed in various messages.<sup>1/</sup>

Morocco's desire for U.S. assistance, in this context, characterizes its own choices and assessments, if not sympathies, in what it regards as a contest between the two superpowers on the chessboard of the Arab world.

2. Until 1965 the U.S. assistance program contained a supporting assistance component. Thereafter, the U.S. has consistently affirmed that our aid program is not linked to naval facilities in Kenitra, i.e. U.S. aid is not a quid pro quo. However, we cannot prevent the GOM from feeling that U.S. assistance is a positive element in the overall ambiance of cooperation of which Kenitra is just one facet; in fact Morocco considers our aid program as one of the most tangible expressions of its constructive over-all relationship with the U.S. The Secretary's recent visit and statements naturally have resulted in expectations of increased over-all cooperation both in the political and economic area. An augmented aid program is one concrete dimension of these expectations. The GOM emphasized especially its hope for visible aid in the form of capital development projects. Without making specific commitments, the U.S. side gave assurances of a special effort on Morocco's behalf.

3. Morocco's new Five Year Plan is extremely ambitious. It looks to the foreign donor community in particular for assistance in

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<sup>1/</sup> RABAT 5009, 5023, 5039, 5040 and corresponding memcons; TUNIS 6247; STATE 6594, 6630

financing the considerable number of capital project undertakings in the Plan. There are two elements: one is the simple fact that concessional aid relieves the strain on the Moroccan budget. Though the 300% increase in the price of its phosphate exports may more than offset the augmentation in petroleum based imports, these gains are still in the future. The impossibility of reliably forecasting its B/P in the light of the energy crisis and the floating franc would make it seem imprudent for Morocco to try to reduce its requests to the international donor community and try and go it on its own. Equally important to Morocco is the trust and confidence that foreign donors, including importantly the U.S. show by their very assistance -- in its institutions and economic potential, its Plan and the stewardship of its government.

U.S. Assistance Strategy 1/

The proposed American assistance program is relatively small. It does not claim that the proposed resource transfer -- financial and technological -- is an absolute sine qua non to the success of the Plan. In fact, since we propose to assist only in high priority areas it can always be argued that means would be found to service these in any event, presumably at the expense of secondary priorities.

This submission analyses a number of GOM assistance requests. It establishes that the USAID agrees that these requests address key problems in priority sectors. Although we would, in some cases, like to see a greater concentration of the GOM's resources in these sector/ sub-sectors we find that our proposed activities would promote greater

1/ The USAID has assured itself that GOM contributions to each proposed project will satisfy Section 110 of the FAA of 1973.

equity, i.e. improve the standard of living of the poorest classes, directly or indirectly, by increasing food production, improving nutrition, and promoting family planning and minimum shelter. The proposed U.S. in-puts are a relatively small percentage of the total resources devoted to these programs. However, they can be catalytic and essential in and to the process of strengthening and redirecting GOM resources to key problem solving undertakings and thereby become vital links in inter-related measures to remove developmental constraints. The transfer of U.S. know-how is limited to fields in which American technology is either unique or leading. These are specialized areas in which the U.S. has greater competency and consequently greater ability to offer advice, demonstrations and training to Moroccan officials than other donors.

Similarly, in the fields of our proposed capital projects, the U.S. not only possesses generally recognized competence, but has the special advantage of earlier field experience in related endeavors in Morocco. Equally important, preliminary analyses indicate that the proposed projects meet the criteria of providing greater equity for small or presently landless farmers, of increasing food production and employment in new agro-industries -- quite aside from their importance as visible symbols of Moroccan-American cooperation in the wider context of our over-all relationships.

As a follow-up to the high level discussions conducted by Secretary Kissinger and Mr. Newsom with King Hassan II and members of the cabinet, the GOM submitted to the USAID a list of assistance

requests (See Chap. IX ). In further discussions with the Ministry of Cooperation, the wide ranging proposals were vetted to satisfy both GOM priorities and the criteria developed during the DAP team's visit (See Chap.VII). The result of this process is a proposal for a multi-year assistance package with basic in-puts as follows:

Food and Nutrition

In the technical assistance area the U.S. would furnish a team of experts to up-grade the technical skills of extension agents with emphasis on food crops, especially cereals. The multiplier effect of this in-put is self-evident. To a large extent, this project would be aimed at institutionalizing the research and demonstration results of the "Improvement in Cereals Project," which terminates in FY 1974. Assistance to the Hassan II Agronomic Institute would continue.

A technical assistance block grant would assure the GOM's access to the growing international networks in a variety of agricultural disciplines. This provides the logical follow-up to the phase out of resident research experts (CIMMYT). The grant would also provide consultants to assist the GOM in the solution of problems and the overcoming of specific constraints, e.g. outbreak of plant diseases, evaluation of specialized research activities, etc. The grant would also sponsor training for Moroccans in specialized fields related to food production.

Similarly, a technical assistance block grant would provide problem solving in-puts in the field of nutrition. The interest of the GOM in this wider field is still in its early stages and not yet reflected

in a strong institutionalized approach. Thus, assistance to the various ministries involved must, to some extent, be designed around targets of opportunity. This would involve mainly consultations, trial and demonstration projects in nutritional technology and training opportunities for Moroccan specialists.

A PL 480 Title II Program under the auspices of the Catholic Relief Services is increasingly directed at nutritional problems, with both "preventative and curative" inputs.

A proposed livestock production project would make a major contribution to Morocco's indigenous protein supply and also help to exploit an important export potential. This project would move successful pilot/demonstration activities under a terminating USAID project to the production level. The USAID and the Ministry of Cooperation have agreed that this project would not be activated until the GOM has successfully resolved a number of legal and administrative constraints.

#### Family Planning

USAID support to the development of a small GOM office concerned with the gathering and evaluation of demographic data would continue for one to two years. The U.S. assistance program would continue technical and commodity contributions to the gradually developing GOM Family Planning Program. This effort is directed at the overriding constraint in the long term development of Morocco, i.e. its present 3.2% annual population increase.

### Capital Development Projects

This submission proposes two irrigation projects. Both would exploit existing water resources potential (as opposed to the construction of new dams). In one case the U.S. has constructed the dam and made major contributions to the financing of the existing infrastructure. In both cases, the increments in irrigated lands would increase food production and provide crops for new agro-industries and thus simultaneously address Morocco's rural unemployment problem. Land reform measures and the re-possessing of foreign-owned holdings in the areas of these two perimeters will assure greater equity for small and landless farmers. These projects would also supply the "visibility component" in the American assistance effort which is of such great importance to the GOM.

An additional GOM proposal involves a request for U.S. assistance to a sewer project that will serve the Rabat-Sale area. Given the nature of the project, USAID and the AID/W DAP Team agreed that possible U.S. in-puts should be contingent on IBRD leadership in a consortium approach. In that case USAID would recommend a modest U.S. contribution in FY 1976 and later years.

### Housing

A \$10 million Housing Investment Guarantee (HIG) loan was authorized in FY 1973. The negotiations between the GOM and potential U.S. lenders have met with delays due to high interest rates. On the assumption that this problem will be solved in the months ahead,

we are proposing a second tranche of \$10 million in line with the GOM's particular interest in solving the major social problem of inadequate shelter for the lowest income stratum of the population.

During Assistant Secretary Newsom's recent discussions in Rabat, the GOM suggested that the U.S. consider approval of a concessionary housing loan (3% - 40 years) to reduce the effective <sup>+</sup> 10% interest rate of conventional HIG borrowings. The USAID and the AID/W DAP team agreed that this type of loan was not favored under present AID criteria. However, the GOM's emphasis on low cost housing and the overwhelming need for better shelter by Morocco's poor would seem to justify further consideration in Washington of this request which, moreover, could also help to satisfy the King's insistence on greater visibility of American aid.

## II. THE FIVE YEAR PLANS

### A. Summary Analysis of Moroccan 1968-1972 Five Year Plan

(See 1973 IBRD Economic Report for Morocco)

### B. Summary Overview of Moroccan 1973-1977 Plan<sup>1/</sup>

NOTE: The Mission has been seriously handicapped by the lack of the IBRD 1973 Economic Report for Morocco. This section on the 1973-1977 Five Year Plan is therefore only a brief overview pending appearance of the IBRD Report.<sup>1/</sup>

The new Plan has as a target an average annual real growth rate of 7.5%, 2% higher than actually realized in the previous Plan. Overall investment targets are \$6.6 billion or over twice the amount achieved under the last Plan. Of this amount \$3.8 billion represent anticipated

<sup>1/</sup> Source: a) Economic and Social Development Plan 1973-1977, General Summary, Direction of the Plan, Morocco, July 1973  
b) AmEmbassy Rabat CERP 0004, October 1973

investments from the private sector and semi-public enterprises. The balance of \$2.8 billion is expected from the public sector, including \$930 million anticipated foreign aid receipts.

The Plan stresses industrial growth, with emphasis on agricultural processing industries, fish and minerals for export. A 10% annual rise in exports is planned for these sectors.

The new Plan places relatively less priority on agriculture, tourism and professional training, three areas of major emphasis during the last Plan. Growth goals for agriculture are 3.6% as opposed to 11% for industry. The Government's explanation for the decreased emphasis on agriculture is that as the economy modernizes, the relative importance of the primary sector falls. Within the agriculture sector produce and citrus are expected to grow at the overall agricultural growth rate of 3.6%, per year, fishing at 5.2%, livestock at 3.9%, forestry at 2.1% and grain production at 1.9%. The low rate of growth for grain appears to ignore Morocco's high dependence on grain imports to meet basic consumption requirements.

Citing the failings of the last Plan in terms of social betterment, the new Plan shows much greater emphasis on improved income distribution and improvement of the conditions of Morocco's poor. Government spending for education and public health is scheduled to triple. Housing construction is planned to increase five-fold. In further pursuit of these social goals, the Plan's intended emphases are on agrarian reform and land redistribution, on Moroccanization of certain sectors of the economy, on increasing the salaries of the

lowest wage earners, on developing a more progressive and equitable tax structure, on increasing employment, on increasing social investments, and on developing a regionalization policy of public investments intended to reduce disparities among Morocco 's people.

Measured against actual performance during the first year of the Plan (1973), achievement of Plan goals appears to be lagging. Also, despite the new Plan's emphasis on social equity, the 1974 investment budget does not appear to reflect this trend. The percentage share of the total investment budget going for education in 1974 remains unchanged from the last year of the previous Plan; the proportion of the budget for the Ministries of Health and Agriculture has dropped slightly. By contrast, the Ministry of Housing's budget is up slightly from 1973 and defense shows the biggest increase (from 7% in 1972 to 11% in 1974). It should be noted that the Plan's expenditures for housing will be largely financed by sources outside the National Budgets e.g. credit and commercial banks.

As the King has himself suggested in his December 1973 speech, the Moroccan government faces the problem of excessive investment resources with too few going or ready to go projects. Budget allocations for any sector may therefore reflect limited absorbtive capacity rather than lack of financing.<sup>1/</sup>

The Government will have to make a substantial effort to catch up on its investment expenditures during the remainder of the Plan.

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<sup>1/</sup> See AmEmbassy Rabat A-9 February 4, 1974 for analysis of 1974 Central Government Budget.

One reason for slow performance during 1973 was the lateness of the Plan itself. Investment targets were not approved until half way through the year. For the first two years of the Plan, investment targets were DH 3.8 billion (approximately \$950 million), DH 1.8 billion in 1973 and DH 2.0 billion in 1974.

Certain quantitative forecasts of the 1973-1977 Plan are given below:

Average Growth of GDP, 7.5%

- Moderate growth in agriculture & primary sectors . . . . 3.6%  
(growth in cereals, 1.9%)
- Rapid growth in industry, mining energy, construction  
and public works . . . . . 11 %
- Average growth for trade and service sectors . . . . . 6.9%

Consumption

4.8% average increase, twice the projection of  
the previous Plan

Reduction of Income Disparities

- 10% highest incomes . . . . . 0% growth
- 40% middle incomes . . . . . 1% growth
- 50% lower incomes . . . . . 3.8% growth

Investments, by Investors

Public Sector . . . . .	\$ 2.8 billion
Reinvestment of Public Enterprises . . . . .	.8
Private Investment . . . . .	1.4
Bank Credit. . . . .	1.6

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\$ 6.6 billion

Investments, by Sector

Agriculture . . . . .	\$ 1,050 million
Industry and Tourism . . . . .	2,450
Infrastructure . . . . .	550
Education & Training . . . . .	400
Social & Cultural . . . . .	1,550
General Administration . . . . .	300
Regional Development . . . . .	275
	<hr/>
	\$ 6,575 million

Foreign Trade

- Annual rate of growth of exports . . . . . 10%
- Annual rate of growth of imports . . . . . 8%
- Most dynamic export sectors planned are textiles, weaving apparel, chemicals, and transportation equipment.

Increased employment is being stressed. According to Ministry of Plan calculations, the labor supply will reach an estimated 5 million people in 1977, 1.9 million in urban areas and 3.1 million in rural areas. The Plan estimates the demand for labor services in 1977 at 4.45 million, leaving a gap of 550,000 unemployed, compared to an estimated 350,000 in July 1971 (without taking account of under-employment).

### III. Overview of the Agricultural Sector

#### 1. Importance to the Economy

The importance of the agricultural sector is indicated by the following statistics:

- a. 65% of the population, or about 10.5 million people (based on 1971 census), live in rural areas;
- b. Agriculture accounts for 70% of total employment;
- c. contributes between 25% and 31% of the Gross Domestic Product;
- d. and accounts for between 54% and 58% of total annual export value, amounting to DH 1,030 million in 1972.

These statistics, however, do not indicate the agricultural sector's importance in terms of potential employment and output. The low annual gross output per man employed and its slow growth over time reflect both underemployment of labor (at least most of the year) as well as continued low productivity. In view of the high rate of population growth (3.2% per annum), it is essential that the Government fully exploit the growth potential of the agricultural sector, if food production is to keep pace with the growth of domestic demand. The magnitude of the gap between domestic food consumption and production is indicated by the fact that the food imports (including edible oil) in recent years have made up about one-fourth of annual import value. In 1972 imported agricultural products cost Morocco 742 million dirhams, and in 1973 even larger food imports were required.

2. Structural characteristics of the Agriculture Sector

Morocco's agricultural and forest lands total some 20.60 million hectares. They are used as follows:

	<u>Million Hectares</u>
Annual crops	5.41
Tree crops	.44
Fallow	1.78
Grazing (collective)	7.80
Forests	<u>5.17</u>
	20.60

In years of low rainfall the area in annual crops, particularly cereals and grain legumes, goes down and fallow land consequently increases. Industrial crops (cotton, sunflower seeds, sugar beets, safflower and flax) account for 3-4% of the annual crops area. Cereals (wheat, barley, grain sorghum, rye, oats and corn) account for about 85 percent of the acreage in annual crops.

The relative value of the different items of agriculture products is estimated as follows:

	<u>Percent</u>
Cereals	32
Meat & meat products	35
Dairy products & eggs	15
Fruits	7
Vegetables	4
Others	<u>7</u>
	100

One should note that the livestock industry, one of agriculture's least developed enterprises, accounts for some 50 percent of total production. However, this is far from meeting

needs, particularly in milk and milk products, and in 1972 imports of these products amounted to DH 69.7 million.

For analytical purposes, Moroccan agriculture is divided into a modern sector and a traditional sector but the boundaries between the two are not clearly defined. About 1.5 million hectares of the best lands may be considered to be in the modern sector with the remainder (about 6 million hectares) constituting the traditional sector. Farmers in the modern sector generally follow improved production practices including use of fertilizers, improved seed, pesticides, and crop rotations. They usually have tractor-drawn machinery suited to size of farm and crops grown. Yields are substantially above those of typical nearby farms in the traditional sector.

The traditional sector is characterized by primitive production practices, low yields, small holdings and a high proportion of output consumed at home. About 75% of all land cultivated under annual crops is held by traditional farmers. More than 80% of these lands are privately held and the remainder are collective lands divided into farm units of less than 10 hectares. Nearly 70% of the privately held lands consist of landholdings of under 8 hectares. Only 6% are in the 15-20 hectares category. More and more farmers in this category use modern inputs and could be classified as part of the "modern" sector or in an intermediate "transitional sector".

A statistical survey conducted in 1962-63 \* estimated that 90% of the land reported as cultivated under annual crops by traditional

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\* Enquete a Objectifs Multiples (EOM), Service Central des Statistiques (1961-63).

farmers were under cereal crops. The figure seems still valid. The survey also indicated that 83% of rural households which produce crops also raise some livestock. From these figures, one can judge the importance of cereal and livestock production to the traditional farmers and, conversely, the importance of the traditional sector's potential, as well as actual, contribution to the output of cereals and livestock products.

The figures given above on the size of the farm units in the traditional sectors reflect the sharply skewed land tenure structure. The above mentioned statistical survey (EOM) indicates that out of a total of 1,650,000 (traditional) rural households 53% own only 6.4% of the means of production (land plus draft animals and implements), while 3.3% own nearly 30% of the means of production. One-third of rural households do not own any land at all and 60% only own 7% of the total land in the traditional sector.

### 3. The Place of Agriculture in Moroccan Five-Year Plans

The FYP 73-77 contains a number of proposed actions benefiting the small farmer. These include an accelerated land distribution program, greatly expanded agricultural credit program targeted to reach at least 350,000 small farmers, government subsidies of production inputs (fertilizers, seed and tools), and an intensification of farmer training programs through a strengthened extension service.

The small farmer is now recognized as the key to change in Moroccan agriculture. He must be educated, and motivated to respond to economic incentives. By contrast, previous plans concentrated largely on development of irrigation projects, i.e. the modern farm sector.

a. FYP 1968-72 - Objectives and accomplishments

Agriculture had priority accounting for 45 percent of all funds allocated for public and semi-public investment. This is approximately three times the amount allocated to agriculture in the current plan.

1) Development of Irrigated Perimeters

The development of water resources for irrigation was the main agricultural focus of the 1968-72 plan. The long-term national goal was, and still is, eventually to have 1,000,000 hectares under some form of modern perennial irrigation. Specific targets and accomplishments were as follows:

	<u>In Hectares</u>		
	<u>Targets</u>	<u>Achieved</u>	<u>Percent</u>
Water distribution systems	122,810	106,860	87
Farm delineated	116,550	69,950	60
Land cleared of stones or other impediments to cultivation	34,500	26,450	76
Land levelled	94,950	66,360	70
Small and medium irrigation systems	10,200	3,200	31

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During the plan period five major dams for water retention and irrigation were completed, as follows:

<u>Dam</u>	<u>River</u>	<u>"Office"</u>	<u>Hectares to be Irrigated</u>
Moulay Idriss I	Inaouene	Rharb	38,000
Moulay Youssef	Tessaout	Haouz	27,000
Mansour Addakli	Draa	Ouarzazate	18,000
Hassan Addakhil	Ziz	Tafilalet	15,000
Youssef Ben Tachfine	Massa	Souss	10,000
			-----
		Total . . . . .	108,000

By the end of 1972, 392,500 hectares were subject to perennial irrigation from completed major reservoirs. However, water distribution systems and farm development was complete on only 214,650 hectares. Thus a major lag exists in getting land into production following completion of the dams.

In addition to the large irrigation perimeters, somewhat less than 400,000 hectares scattered over the country are irrigated in a more or less irregular fashion by pumping from deep and shallow wells, or streams, and stream diversions.

The plan envisaged small irrigation development on 50,000 hectares but achieved only 32,300 hectares. The main problem was the difficulty in planning and development of viable project proposals.

2) Development of Rain-fed areas

The 1968-72 plan paid less attention to investment in rain-fed agriculture than in irrigation development. Few specific targets for agricultural extension were set. However, certain qualitative decisions and recommendations were made which served to orient and direct the areas of concentration of agricultural extension programs.

Large numbers of on-farm demonstrations of improved crop varieties, fertilizer use and new crops were established each year for farmer training purposes. Frequently the quality and usefulness of these demonstrations were mediocre to nil due to inadequately trained agents, or lack of resources available to the CTs\* or CMVs\*\* responsible for the demonstrations.

"Operation fertilizer", a USAID supported program in its early years which grew out of a fertilizer study by a TVA team, covered a total of 2.14 million hectares during the 5-year period. This major activity was aimed at small farmers of very limited means. Unfortunately, additional credit for purchase of improved seed, tools and pesticides was frequently lacking. Moreover the program was administered at the local level by committees with no capacity for technical follow-up or on-farm supervision. "Operation fertilizer" resulted in limited identifiable production increases, and served to introduce fertilizers into farming communities where it had not been used before.

"Operation crop rotation" is designed to encourage through a schedule of subsidies, wider use of fertilizers, modern crop rotations and use of improved tools and pesticides. Results have been very satisfactory with 75,000 hectares under contract in 1972.

\* Centres des Travaux Agricoles

\*\* Centres de Mise en Valeur Agricole

In addition to the above fertilizer and crop rotation programs, the Ministry provided subsidies for forage production for livestock. In 1972 an estimated 55,000 hectares of crops were under this program. Special support was also given to improvement of olive trees.

3) Land Tenure and Redistribution

The Plan provided for distribution of 75,000 hectares of state-owned land - largely recuperated from foreigners - to small landless farmers. This target was substantially exceeded with the distribution of 158,200 hectares. A total of 9,350 families received an average of 16.9 hectares (42 acres). Farmers receiving land were generally organized into cooperatives with a GOM appointed technician to teach them improved farming practices, how to handle farm accounts and arrange for marketing of their crops. Field studies by USAID of a limited number of these cooperatives indicate the soundness and usefulness of the concept.

b. FYP 1973-77 - Development Priorities

1) Development of Irrigated Perimeters

The current plan proposes to bring into balance the disequilibrium between the installation of water distribution systems on irrigation perimeters and actual farm development and start-up of farming operations. Further, it intends to reduce the usual delay between the completion of construction of dams and installation of water distribution systems.

The target is to equip (water distribution systems) 116,400 hectares out of a total of 180,000 hectares, which are or will be subject to modern perennial irrigation as a result of dams constructed during the past 5-year plan.

Two major dams as follows, are planned:

<u>Dam</u>	<u>River</u>	<u>"Office"</u>	<u>Hectares to be Irrigated</u>
Khoudiat El Ghorra	Loukkos	Loukkos (to be created)	32,000
Issen	Issen	Souss	<u>68,000</u>
		Total	<u>100,000</u>

The new plan points out the need to choose wisely the crops to be grown and rotations to be followed in the irrigated perimeters. Sugar beets, sugar cane, cotton and forages are to be emphasized. The use of cereals (mainly wheat) of high yield potential is now recognized by the GOM as economical and valuable for irrigated perimeters.

Experience during the preceding plan confirmed the very promising potential for further development of medium and small irrigation systems. A total of 16,900 hectares of medium size systems will be installed or renovated at a cost of DH 3,200 to DH 6,000 per hectare. Studies covering 50,000 hectares will be carried out.

Small perimeters totalling some 16,000 hectares will be equipped. The total amount to be spent on medium and small systems is DH 125 million.

2) Development of Rain-fed areas

Training of Agricultural extension agents and staff has high priority. Special emphasis will be given to:

- improved agricultural techniques
- methods of conveying information to farmers
- utilization and adaptation of agronomic research information.
- development and evaluation of farmer training programs.
- extension of credit to 350,000 small and medium size farmers.

A total of DH 17.84 million has been allotted to these training (including field demonstration) programs.

About DH 12.6 million will be spent to subsidize farmer purchases of machinery, such as sprayers, tractors, combines, plows, etc. and for purchase of small tools for the little farmer. These include animal drawn implements, hand tools and back-pack sprayers.

Cereals production will be supported by "Operation fertilizer" and "Operation crop rotation". These programs will concentrate on expanding and intensifying the use of fertilizers and high-yielding varieties. Small farmers will be encouraged to form groupments of 20 - 80 hectares to facilitate use of new technology. Such groupments will benefit from a 30 percent subsidy on the cost of fertilizers whereas it will be only 20 percent for individuals. Fertilizer subsidies will amount to DH 23.2 million. All farmers may

benefit from a 20 percent subsidy on improved (certified) seed. Funds allotted to this purpose total some DH 15.4 million.

A special program will expand the corn (maize) hectarage from 10,000 to 20,000 hectares. To encourage use of hybrid varieties seed costs will be accorded a subsidy of 30 percent for groupments and 15 percent for farmers signing crop rotation contracts.

In a further effort to reduce the serious animal forage deficit, the GOM will spend some DH 18.3 million in subsidies. The target is to expand the area in forage crops from the present area of 64,000 to 81,000 hectares in 1977.

The hectarage of tree crops will be augmented as follows:

	<u>Hectares</u>
Fruits	9,600
Olives	9,483
Almonds	7,560

### 3) Land Tenure and Redistribution

During the course of the plan a total of 395,000 hectares of state-owned or controlled land will be distributed to landless and small farmers, having less than 2 hectares. Some 240,000 hectares of the land to be distributed is land recuperated from foreign owners. Of this amount approximately one-half (120,000) is in orchards (largely citrus) and vineyards. The remaining 155,000 hectares to be distributed is classed as collective (30,000 ha), "habous" (45,000 ha) and state-owned (80,000 ha).

A total of DH 122.9 million has been allotted for this large scale undertaking.

4. Government Programs in Food Production and Constraints

a. Agricultural Production Programs

The agricultural development programs and undertakings briefly described in 3.b. above are aimed largely at improving the lot of the vast numbers of medium and small traditional farmers which make up rural Morocco. Since the traditional sector covers some 6 million of the 7.5 million hectares of cropland any serious effort to increase overall production in Morocco must make a major effort to bring the traditional farmers into the money economy.

The problems of the small farmer of the traditional sector are numerous and sometimes complex. The traditional sector is based largely on rain-fed lands and thus is subject to the vagaries of a climate characterized by wide variations from year to year in the frequency, distribution and amount of rainfall. Yield, therefore, may vary greatly from year to year. Farms are small. The main crops are cereals and grain legumes grown during the rainy season. A few live-stock provide milk, wool and some meat, with occasional animals for sale. Approximately 74 percent of rural families have no land or cultivate less than 2 hectares. Those with no land work as farm laborers or in nearby towns. Underemployment is high. Farming methods are rudimentary. Animal power and the wooden plow are widely used. Farmers use little or no fertilizers and relatively few use improved (certified) seed. Farm size is frequently too small to be economically viable, productivity is low and much of the output is consumed on the farm.

The farmer and his family are frequently poorly nourished, inadequately housed, disease ridden and physically weak. The rate of illiteracy is high and declining only very slowly if at all.

Until very recently credit to purchase needed production inputs such as fertilizers, good seed, better tools, and animals for traction or milk has not been generally available. Although improving, credit is still difficult to obtain by marginal farmers. Thus the traditional farmer usually plants inferior seed on poorly prepared unfertilized land long depleted by generations of poor farming practices. Yields under these conditions predictably are low. On the other hand, agricultural research and on-farm experience in Morocco clearly shows that yields of annual crops, particularly cereals and production of meat and milk, can be increased greatly by general adoption of improved technology known to be suited to local conditions.

b. Agrarian Reform

Since 1963 the Government's agrarian reform program has concentrated on laying the necessary legislative framework with Royal Decrees concerning land recovery, land distribution, creation of cooperatives, the Agricultural Investment Code of 1969, and the most recent nationalization and expropriation decrees on all remaining foreign land.

Government attention during this period has focused primarily on retrieving national land resources from foreign hands with a minimum loss in production. Annex A shows the rate of distribution of recovered lands since 1957. Little has been done in a practical

way to implement the Agricultural Investment Code of 1969 to redress the inequities and inefficiencies in the land tenure system with respect to holdings by Moroccans.

Now that the foreign-held land recovery program is virtually finished the GOM is ready to turn its energies to the more complex task of tempering existing land tenure patterns to fit the requirements of expanded food production and rural income.

The Five-Year Plan has set the following goals:

- To distribute 395,000 hectares at the same rapid pace as in 1972
- To take certain steps which favor further development of viable farms, including:
  - a) limit the size of agricultural holdings
  - b) allotment of additional land to farmers with only 1-2 hectares.
  - c) exercise the right of eminent domain to expropriate land for the collective good in irrigated and in better dryland areas.
  - d) systematic application of the requirement to develop and use agricultural land rather than letting it lie unused.
  - e) recuperation of the value added to land as a result of irrigation either in the form of money or land.
- To carry out studies on landownership, farm management, and costs of production.
- To simplify land registration procedures

Uneven distribution of land ownership and complex tenure patterns characterize Moroccan agriculture. There are close to 6 million hectares of farmland in the traditional sector and around 1.5 million in the modern sector.

Approximately 700,000 of the estimated total 2.1 million rural families own one hectare or less of land while another 560,000 families own none at all.\* Side by side, about 7% of all farmers possess 50% of all privately held land - usually in the better farming areas.

Land recovery efforts and progressive Moroccanization measures over the years have prompted foreign land-holders to sell their property to private Moroccans before government take-over. This has tended to concentrate further land in the hands of the few. Land tenure changes in the Rharb (Kenitra province) between 1965 and 1970 serve to illustrate this process: foreign held land in the modern sector during this period declined by 40,000 ha. while Moroccan holdings in the sector increased by 45,000 ha. benefitting only 150 households (an average of 300 ha per household). Meanwhile, the number of farmers without land increased from 16% to 33% of all Rharb households during the same period.\*\* With the nationalization by the GOM in 1973 of all remaining foreign-held land (some 200,000 ha.) this process presumably has been halted.

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\* Data based on the 1971 census and 1964 figures of 27% for near-landless (0 to 1 hectare) and 33% for landless families.

\*\* Abstracted from: *Revue de Géographie* #20, 1971 - "Quelques données élémentaires sur l'évolution des structures agraires dans la plaine du Rharb". M. Bouderbala, pp. 114-124.

The rapidly expanding rural population which adds 370,000 people a year to its ranks increases the pressure on the unevenly distributed land resources.

Moroccan land tenure patterns are diverse and complex. Croplands belonging to the State amount to about 1.6 million hectares of which 1.2 million hectares fall in the traditional sector. These traditional lands are generally leased by plot to individuals on an annual basis. Leases, however, may sometimes run as long as three, six or nine years. Some occupants have acquired title to the land through continued and appropriate use over a period of time.

Collective croplands are assigned to individual families within a tribal commune. Rights to use of habous (religious) lands are auctioned off, parcel by parcel, by the Ministry of Economic Affairs.

Recovery of foreign held lands and distribution to small farmers' cooperatives have further complicated tenure patterns and have fueled more disputes over title or tribal rights.

Agrarian reform is needed to permit more efficient utilization of land resources and to enable the small traditional farmer to contribute to and share in the fruits of agricultural development. At present, inadequate holdings contributing to widespread underemployment and subsistence production, along with absentee ownership and inefficient land utilization, impose severe constraints on expanded agricultural production and increased income for traditional farmers.

The GOM has indicated that due to the sensitivity of agrarian reform, it is not interested in foreign assistance in this area.

c. Agricultural Credit

Systems of agricultural credit have been developed to service two highly different sectors, the traditional and the modern. The modern market-oriented economy has been favored in the past with limited assistance to traditional farmers channelled through the SOCAP.\* These are more properly social assistance committees rather than true credit institutions.

As a result of the breakdown after independence in commercial credit available to farmers, the GOM scrapped the old system and established a unified National Agricultural Credit Bank, the CNCA\*\* in 1962. The small system of local credit societies, SOCAPs, were left intact.

The CNCA is the only government credit institution serving commercial agriculture. Private banks, trading companies and merchants finance a few of the larger farmers. However, their role has been declining since the expansion of the CNCA.

The CNCA established the CLCA\*\*\* in 1967 to serve the need of medium and small farmers in the provinces. Fifty-three offices of the CLCA are distributed throughout the agricultural regions of Morocco.

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\* Societe de Credit Agricole et de la Prevoyance

\*\* Caisse Nationale de Credit Agricole

\*\*\* Caisse Locale de Credit Agricole

They have begun lending to small farmers and within four years are scheduled to replace entirely the SOCAPs.

The task of reaching the mass of small farmers will not be easy. However, the CLCA has made an impressive beginning. In 1972-73 total lending in the first province to be incorporated in the new program was DH 10.4 million to 9,000 farmers. This was one-fourth of all eligible farmers. The previous year the CLCA loaned only DH 1.4 million and the SOCAPs DH 3.4 million in the same province.

Moroccan officials feel that the major constraint on expansion of small farmer credit programs are, in order of decreasing importance: the land tenure system; poor or uncertain markets; lack of funds; inadequate supply of production inputs for sale to farmers, and the receptivity of small farmers to new ideas.

Loan projections of the CLCA are as follows:

<u>Agricultural Year</u>	<u>Loans - DH</u>
1972-73 (actual)	72,000,000
1973-74	72,375,000
1974-75	121,575,000
1975-76	135,450,000

The GOM has advised USAID that the CNCA is not in need of additional resources as it recently received IBRD/IDA loans of \$34 million.

d. Economic Incentives

GOM policy is to support further development and expansion of the market economy. Agribusiness to process food products for the

domestic and export markets are encouraged. Investment in irrigated land for the production of industrial, food and export crops is to continue but at a more rational pace. Greater economic incentives to dryland farmers have been established. Incentives to encourage greater use of production inputs include subsidies on improved seed, fertilizers, and small tools. A price subsidy on improved breeding stock (cattle and sheep) is also provided. In addition, GOM guaranteed floor prices for wheat, barley, corn and oilseeds have recently been increased substantially. Likewise the price paid to farmers for sugar beets was set higher. The amounts of these subsidies and floor prices are shown below. For the first time price supports have been set at the beginning of the crop year rather than toward the end of the harvest period.

Market prospects for most crops are good and the constraints for further growth lie rather on the supply side, e.g. insufficient credit, fertilizer, improved seed, and excessive transportation and marketing costs, and the lack of effective extension services to bring more advanced methods to the small dryland farmer. In the ultimate stages of increasing production Kingdom-wide, attention must be given to establishing modern markets farther into the interior, connected by transport and communication to the central markets. The FYP 73-77 does not envisage any road building of this type. These constraints are reducing growth and delay the modernization of the dry-land traditional farming sector.

Subsidies: Farm Inputs

	<u>Individuals</u>	<u>Groupments</u>
	<u>Percent</u>	<u>of Cost</u>
Improved seed	20	20
Fertilizers	20	30
Small tools	60	60
Machinery	-	25

Floor prices for commodities

	<u>Former</u>	<u>New</u>
	DH/q	(1973-74 Crop) DH/q
Wheat (bread)	45	60
Wheat (durum)	49	63
Barley	30	40
Corn (maize)	none	45
Sugar beets	66	76
Sunflower	73.50	90

e. Agricultural Extension

Agricultural Extension began as a census-taking service during the Protectorate. Its functions changed gradually. First it changed into an organization to provide certain services such as plowing, seeding and harvesting using tractor-drawn machines. More recently - from 1971 - its primary mission has been farmer advisory services. The staff comprises about 1,305 technical people of which

25 are "Ingenieurs", 480 "Adjoints Techniques", and 800 are "Agents Techniques". The staff includes several expatriates, mostly Yugoslavs.

The central office is in Rabat. The network of offices through which the Division works is 16 Provincial offices, 228 Work centers, 64 Sub-work centers and 64 "Antennes".

The program of the Division actually focuses sharply on Plan goals. In the FYP 1973-77, the major programs consist of:

- (a) demonstrations of improved farming practices, new varieties, fertilizer use, crop diversification;
- (b) short courses;
- (c) farmer tours;
- (d) audio-visual activities including radio and TV.

There is a definite focus on improving the level of living of the small farmer. However, in spite of good program planning several constraints brake the effectiveness of the service in the "diffusion process" for spreading information to farmers. First, there is a shortage of qualified agents. The Plan 1973-77, gives high priority to increasing the number of contact agents. Second, the agents are mainly of urban origin with a minimum of practical agricultural experience. Although they may know agricultural arithmetic for seed rates, fertilizer analyses, etc., they are not adequately trained in the application of their book learning and of modern research, and in how to approach farmers to achieve adoption of new practices. Third, the agents are not involved in a program of reaching farmers en masse. This is necessary for the modernization of Moroccan agriculture.

The USAID through the Increase in Cereals Production Project has made important contributions to agricultural extension in Morocco. Since 1969 USAID extension advisors have assisted in the establishment and monitoring of wheat variety and fertilizer demonstrations. These were based on research conducted by 3 USAID funded agronomists (CIMMYT) regarding the best varieties, fertilizers and required cultural practices for different areas.

In addition, 3 Moroccans have received degree training in the U.S. in cereals production, and about 30 others have received short term training in cereals either in the U.S. or in Mexico.

The present project will terminate on June 30, 1974. However, the GOM and USAID have a continuing common interest in further upgrading the extension services by familiarizing them with the results of research and demonstration/pilot efforts for broad application in the rain fed areas, the area of concentration of the small and medium sized farmer.

f. Food Crop Research

The food crop research program is in the Division of Agronomic Research (DRA). The work of this Division is well regarded and consideration is currently being given to raising the Direction to an "institute" level to increase its autonomy. Four main services operate notably:

- the production and certification of improved seeds;
- plant protection, including plant quarantine;
- laboratories and inspectors to conduct official testing of agricultural products and chemicals;

- the agricultural research complex itself comprising the central headquarters in Rabat and about 35 experiment stations located at points throughout the country.

The USAID has assisted very substantially in food crop research through the Increase in Cereals Production Project noted above. Also, the Merchouche seed processing plant including purchase of U.S. equipment was financed entirely under the U.S. assistance program. This plant has enabled the Moroccans to more than double their output of certified seed of a number of food and forage crops including wheat, corn, barley, chick peas, etc. An extension of the plant and construction of a new plant at Fez is provided for under the FYP 1973-77.

Research in Plant breeding, agronomy, plant pathology, etc. is rated adequate for developing the innovations required to support the crop production targets of the FYP 1973-77. The vulnerable point of the research operations concerns its ability to produce the necessary quantities of seed particularly cereals, to meet the goals. Four priority groups of crops are scheduled in the FYP 1973-77 for improvement: cereals, food legumes, oil seed crops, and forages. To meet the goals will require more than tripling of the present seed production capacity.

Future needs that will be most difficult to obtain for the Division are qualified scientists. The expatriate staff of "Ingenieurs", numbering some 75 out of a total "Ingenieur" level staff of 135 are being terminated at an accelerating rate.

Resident full time U.S. research personnel have been phased out in FY 1974. However, the Research Division (DRA) recognizes

its continuing need for specialized U.S. technology. It has expressed the hope and expectation that USAID will respond favorably when requested from time to time to provide technical consultants and short-term technicians to advise the Division on particular research problems and activities. These requests would be funded from the block grant described further on.

g. Agricultural Education and Training

Agricultural education is receiving special attention in this paper since it is supported by a major U.S. grant project.

Formal agricultural education in Morocco concentrates on four levels of training. The highest or University level produces "Ingenieurs d'Etat". This is roughly equivalent to the M.S. degree in the U.S. These graduates are intended to fill higher level planning and management positions in the Ministry, serve as experiment station directors, and chiefs of substantive divisions. The "Ingenieur d'Application" is about equivalent to our B.S. degree. They fill middle level management positions, and serve as project leaders and heads of substantive sections. The "Adjoints Techniques" (technical assistants) generally work under the guidance of a higher level technician. They serve in large numbers on experiment stations, in the extension services, and on state-owned or operated farms, etc. The "Agents Techniques" are the lowest level technician. They serve as extension agents, farm managers, section foremen, etc.

Training targets and achievements under FYP 1968-72 and targets for FYP 1973-77 are as follows:

<u>Level</u>	<u>FYP 1968-72</u>		<u>FYP 73-77</u>
	<u>Target No.</u>	<u>Actual No.</u>	<u>Target No.</u>
Ingenieur d'Etat and Veterinaire	165	129	292
Ingenieur d'Application	196	204	517
Adjoint Technique	1,540	1,221	1,580
Agent Technique	-	743	2,667

Estimated long-term manpower needs of the Ministry and semi-government agencies but excluding the private sector, are as follows:

<u>Level</u>	<u>On board Dec. 31, 1972</u>	<u>Long-term need</u>
Ingenieurs d'Etat	203	1,250
Ingenieurs d'Application	376	2,100
Adjoint Techniques	2,236	7,200
Agent Techniques	2,615	11,400

The GOM estimates that not until 1988 will the numbers of technicians graduated be sufficient to meet annual needs. In the meantime the GOM will depend upon foreign technicians to fill critical gaps.

It appears that the above estimates very significantly understate the need for trained agricultural technicians since it ignores the future needs of the private sector. One can envision

that agricultural industries, farm chemical companies and agricultural machinery enterprises, and large private farms will have increasing need for well-trained technicians.

1. Higher Agricultural Education

Recognizing that modern agriculture requires a well-trained corps of technicians, and the many uncertainties and problems of depending upon foreign institutions to train Moroccan technicians, the GOM initiated plans in 1963 for an institution of higher agricultural education. It was called the Hassan II Agronomic Institute. In 1966 the first class to begin the 6-year curriculum of the Institute was enrolled at the Faculty of Science, Mohammed V University. A beginning class has enrolled each succeeding year. Construction of buildings, laboratories and other facilities required to handle about 310 boarding students got underway.

In 1971 the Ministry of Agriculture reorganized all higher agricultural education. Schools of Veterinary Medicine, Agricultural Engineering, and Food Technology were integrated with the Agronomic Institute on a single campus. The Agronomic Institute was renamed, Hassan II Institute of Agronomy and Veterinary Medicine. In addition, Schools of Forestry at Sale and Agriculture at Meknes complete the institutions of higher agricultural education in Morocco.

All students (with a Baccalaureat in Science) slated to study agriculture, veterinary medicine, forestry, rural engineering, or food technology, follow a common course during the first year.

These classes are given in the Faculty of Sciences of the Mohammed V University in Rabat. At the end of the first year student specializations are chosen or assigned and they proceed to one of the schools shown below.

<u>School</u>	<u>No. of Years</u>	<u>Diploma</u>	<u>Location</u>
Agriculture	6	"Ingenieur d'Etat"	Rabat
Vet. Medicine	6	"Doctorat Veterinaire"	Rabat
Agriculture	4	"Ingenieur d'Application"	Meknes
Agricultural Engineering	4	"Ingenieur d'Application"	Rabat
Food Technology	4	"Ingenieur d'Application"	Rabat
Forestry	4	"Ingenieur d'Application"	Sale

The 6-year program of study at the Hassan II Agronomic Institute leads to the "Ingenieur d'Etat" diploma with a particular field of specialization in Agriculture such as plant breeding, soil science, rural economy and sociology, etc.

Six members of the class entering in 1966 graduated in 1972. Eighteen graduated in 1973. The current (1973-74) enrollment by year and cycle is as follows:

<u>Class year</u>	<u>Cycle</u>	<u>1973-74</u>			<u>Total</u>
		<u>Agriculture</u>	<u>Vet. Sci.</u>	<u>Agr. Eng.</u>	
6	3rd	33	-	-	33
5		46	-	-	46
4	2nd	40	12	20	72
3		42	19	26	87
2	1st	44	22	36	102
1		44	23	35	102
	<u>Totals</u>	<u>249</u>	<u>76</u>	<u>117</u>	<u>442</u>

Although the Institute has now begun to produce "Ingenieurs d'Etats", it will be many years before needs are filled.

Several considerations led the GOM to the decision to train their own technicians. First, the heavy reliance on foreign technicians in the years since independence have clearly demonstrated the limitations of this approach. The top professional guidance and leadership for national programs simply cannot be effectively given by personnel from other countries. Not speaking Arabic, such personnel have been largely cut off from communication with the great majority of Moroccan farmers. Research programs planned and managed by foreigners have been technically competent but often limited, and not selected on the basis of a rigorous review of priority problems. Secondly, dependence on foreign experts has also been costly relative to Moroccan salaries and in foreign exchange. Recruitment uncertainties have made organizational and program planning extremely difficult. Last, but equally important, dependence on foreign personnel inevitably results in a degree of dependence on foreign decisions in planning, funding, recruitment and use of personnel. With the development of the Hassan II Agronomic Institute, the GOM should be able eventually to train its own higher-level agricultural specialists.

The National Agricultural School at Meknes, and the National Forestry School at Sale turn out students with the "Ingenieur d'Application" certificate (approximately equivalent to the B.S. degree). In 1973 the graduating classes of these schools numbered 32 and 18

respectively. We understand that the target for Meknes is 40 graduates per year and for the Forestry School, 20 graduates.

2. Intermediate and Lower Level Agricultural training

The Ministry of Agriculture operates eight regional 3-year schools for training "Adjoints Techniques" (Technical Assistants). Each school is specialized in either Crop Production, Agricultural Engineering, Surveying, Horticulture, Animal Husbandry or Forestry. In 1973 these schools graduated a total of 172 students. Graduates are obliged to work for the Government as Extension Agents, Farm managers, Forestry technicians, etc.

In addition, there are four centers for 2-year training courses leading to the "Agent Technique" (Agent) certificate. These centers graduated 166 agents in 1973 trained in the general techniques of crop and livestock production, forestry livestock and surveying. They serve as low-level technicians in the Government.

h. Animal Production

As noted above livestock and livestock products account for 50 percent of the value of annual agricultural production in Morocco. In spite of the relative importance of the livestock sector production lags far behind its potential.

Centuries of overgrazing and abusive grazing practices have driven forage production on most rangelands far below their economic potential in both quantity and quality of forage produced. Herds and flocks are often two or three times larger than the carrying capacity of the range based on sound management norms.

Although tribal grazing rights are generally known through a history of use, definitive boundaries between tribes and groups by and large have not been established. Individuals within the tribes similarly have no identifiable lands reserved exclusively for their use.

In 1969 a joint GOM-USAID Livestock and Rangeland Improvement Project was initiated. The project, at the outset, was intended to reach 12 management areas covering 325,000 hectares of Morocco's depleted rangelands. Subsequently it was determined that the scope of the project was far beyond the capabilities of the Livestock Service to manage.

The scope was reduced to some 70,000 hectares in two areas and the research element intensified.

The USAID has provided the continuous services of one senior Range Management Advisor and in the earlier stages up to five IVS (International Voluntary Services) contract technicians to work on the pilot project sites.

The initial objectives of the project, testing and demonstration of methods of rangeland and livestock improvement, have been largely accomplished although on a reduced scale. Activities have centered mainly around seeding, grazing and livestock production studies on 1,000 hectares in the Midelt region. Experimental plantings have been made on 700 hectares using introduced varieties (largely wheatgrasses) found to be highly adapted.

Grazing trials conducted at Midelt have demonstrated that the seeded ranges produced 5-6 times as much forage as non-seeded. Live weight gain of lambs grazing the seeded rangeland was nearly double that of lambs on native range. Number of lambs per ewe produced per year under improved management has increased significantly.

Expanding the experience on the pilot area to the collective grazing lands is a complex undertaking. A successful effort would require dealing adequately with problems of tradition, legislation, administration, and lack of trained personnel.

The Livestock Service has not been able to establish an organization with the manpower and administrative capability to carry out a meaningful national program of livestock and rangeland improvement. Likewise at the higher levels, Royal Decrees officially establishing rangeland perimeters and limiting grazing to those holding permits have not been issued, although one was prepared in draft in 1970.

Under the FYP 1973-77 emphasis is being given to the establishment of integrated livestock production units. An agreement has been signed with Roumania to establish such units in the El Jadida and Settat provinces. These installations will grow forage under irrigation, produce pelleted feeds and fatten animals in feed lots. Negotiations are now in progress with Switzerland and Yugoslavia to establish similar units in other provinces.

A new experimental farm is planned for Casablanca province to conduct cross-breeding experiments with imported rams such as Suffolk and French breeds. This will be an enlargement of the cross-breeding trials initiated under the Range and Livestock Improvement project at Midelt in 1971.

Past activities, such as artificial insemination, subsidies for the purchase of improved animals, will be continued as well as subsidies for feeds.

Primary development activities in dairy production center around the expansion of herds through importation of heifers and cows and artificial insemination. Seven hundred and forty Holstein cows contracted for in 1973 are now arriving. Larger importations are planned for succeeding years. The GOM subsidizes the price of purebred animals in the amount of DH 800 per head.

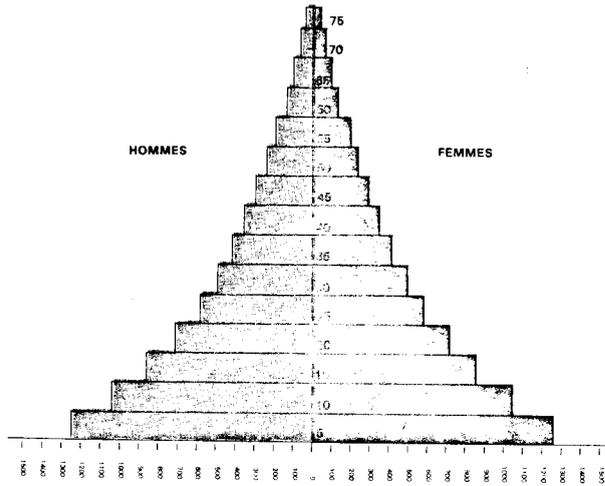
Five new plants are to be constructed for processing fresh and powdered milk and the Marrakech, Oujda and Meknes facilities are to be expanded.

The facilities at the Temara poultry experimental station are to be expanded to facilitate experiments and research. Increasing the local production of broiler chicks is being given priority in order to make unnecessary the importation of chicks from European sources.

Finally, the livestock veterinary inspection offices are to be expanded to provide better coverage. The facilities of the Livestock Institute for the production of vaccines is to be increased to produce

20 million units of vaccine annually, and the animal health programs, which provide certain vaccines and external parasite treatments at a subsidized cost or free, are to be continued at an increasing rate.

#### IV. Overview of the Moroccan Population Problem



Pyramide des âges

#### 1. BACKGROUND

##### A. The Demographic Problem

According to the 1971 census, Morocco's population was 15.4 million in July 1971, and growing at an annual rate of 3%. This growth rate is among the highest in the world and constitutes a primary threat to the country's social and economic development. Another factor contributing to the demographic problem is age distribution. Forty-six percent (46%) of Morocco's population is under 15 years of age, causing an unfavorable ratio of dependents to providers and foreboding continuing high birth rates during the next decades, even if the family planning program succeeds in reducing the high

fertility rates. The GOM estimates the present birth rate at 17 per thousand of population, thus giving a natural population growth rate of 3.2% per annum (excluding emigration).

The effect of these factors has been felt already in in - creased unemployment, especially in the 18-25 years age group; a decreasing rate of school age children attending primary schools; a growing gap in health facilities and in food production, necessitating increasing imports of cereals. This need is estimated at one million metric tons for the crop year 1973/74, a staggering figure.

Preliminary figures from a recent survey of children in the 0-3 years age group indicate that 25% in urban and 33% in rural areas suffer from second degree malnutrition (30% underweight) with another 4-7% suffering from third degree malnutrition (40% underweight). This high incidence of malnutrition is an important factor in the high mortality rate, which - although decreasing - is still estimated at 149 per thousand live births (100 in urban and 170 in rural areas).

B. Political and Religious Attitudes Towards Family Planning

The introduction of a modern concept, like family planning, into the traditional Moroccan society is slow, difficult, and at times painful, and numerous problems and obstacles have hampered and continue to delay the development of a strong, viable program to meet the demographic challenge. To start with, many Moroccan families, especially in the rural areas, still believe in the old tradition which values "seven sons and seven pilgrimages to Mecca" as a man's greatest blessing. The average marriage age for women is

15-16 years and 19-20 for men. To have many children, preferably sons, is still a status symbol in the male-oriented Moroccan traditional society. Further, Islamic attitudes towards family planning are known to be a delicate issue. While some Islamic scholars emphasize the family's right to space its children in accordance with its desire and economic ability to feed and educate them, many of the traditional "Marabouts" consider the use of contraceptives a sinful act and against the writings of the Koran.

To obtain an agreed policy on Islamic attitudes towards the use of contraceptives, abortions and sterilizations, the IPPF Middle East/North African Regional Office sponsored a conference on "Islam and Family Planning", which convened in December 1971 in Rabat. Attended by some 80 highly esteemed Islamic scholars, scientists, and politicians from 24 Islamic countries in Africa, the Near East and Asia, the conference produced a communiqué endorsing the Moslem family's right to space its children by "legitimate and safe (reversible) contraceptive methods", but the Moroccan political opposition launched some of its most vicious attacks on FP during and after the proceedings.

Although the political and traditional opposition has been less felt during the last year, it is still a serious handicap to the rapid development of a large scale FP program. This was most recently reaffirmed by Dr. Benhima, the Minister for Cooperation. Progress to date should be evaluated in the light of the official go-slow attitude. Interest in family planning is steadily growing in govern-

ment circles and among the population at large. This trend is gradually breaking down existing reservations about family planning.

2. THE MOROCCAN FP PROGRAM - FYP 1968-72

The KAP (knowledge, attitudes and practice) surveys conducted as far back as 1967 with the assistance of the Population Council demonstrated that some 50 to 60% of Moroccan women and men in urban as well as rural areas were favorable towards the concept of family planning (spacing of births), and almost 25% of the women in the 25-45 years age group did not want any more children. The possibilities for a program to reach these target groups, especially the women who want family planning, thus exist. The Moroccan Government with the assistance of the Population Council and the Ford Foundation started, in 1966, a small pilot family planning project. The 1968-72 Five Year Plan called for the establishment of a countrywide program, the goal of which was to reduce the birth rate by 10% from 50 to 45, during that five-year period. This was to be accomplished by IUD insertions in 500,000 fertile women and by the provision of other contraceptives (pills, condoms, etc.) to an additional 100,000 fertile couples. Actual achievements fell considerably short of the goal. 41,435 IUD's were inserted (8.2% of goal) and 69,033 acceptors were provided with other contraceptives (69.0% of goal) during this Plan period.

While the overall GOM demographic policy was to be directed by a "Superior Council for Population" established by Royal Decree in 1967 under the Chairmanship of the Minister of Health and supported by representatives from the Ministries of Planning, Interior, Education,

Youth and Sports, Islamic Affairs and several others, the actual responsibility for implementing the FP program rested almost solely with the Ministry of Public Health. During the 1968-72 Five Year Plan period the Ministry of Health received only scant support from other Ministries, and the "Superior Council" met only twice (in 1968 and 1971) during that period.

Faced with the difficulties, the Ministry of Health early in the planning phase decided to integrate the FP program into its general medical services directed at serving all health needs of the family. While this design had its obvious advantages in utilizing the existing infrastructure of some 160 health centers and 500 dispensaries in both rural and urban areas in the nation, it also had the disadvantage of adding another service to an already understaffed and under-budgeted delivery system.

In spite of shortcomings in the training of professional personnel in FP technology and in the establishment of an information and education program sufficiently large to reach the more than three million fertile couples in the nation, the Ministry did make modest progress in delivering FP services from all its health centers (which by now number 202). Clearly, Morocco shares with other countries the experience that the IUD insertions are increasingly unpopular and yield to the more popular "pill" which although safer has lower continuation and cost-efficiency rates. The number of non-medical contraceptive acceptors (such as foam and condoms) under the Ministry of Health program is small.

The above figures do not include the contraceptive users in the private sector. While the number of IUD insertions is unknown, the sale of oral contraceptives from private pharmacies has increased from zero in 1967 to more than 80,000 monthly cycles in 1973. This may be partially attributed to the interest and education in FP stimulated by the Ministry of Health FP program.

The new Five Year Plan describes/ <sup>these accomplishments</sup> as modest and admittedly far from reaching the ambitious goals of the 1968-72 Five Year Plan. Nevertheless it indicates that a basis has been laid upon which future program development can build as "family planning remains an imperative requirement!"

### 3. THE 1973-77 FIVE YEAR PLAN FOR FP

The program is aimed at the education, information and motivation of the population. The number of acceptors targeted is 391,000 during the Plan, the estimated number needed to reduce the birth rate from 49 per thousand in 1972 to 43 per thousand in 1977.

Some of the shortcomings of the first Five Year Plan may be attributed to the lack of experience, to the lack of a carefully designed plan of implementation, and to an exaggerated view of what could be realistically accomplished. The new Plan includes a number of features designed to overcome the deficiencies of the last Plan period.

A. Organizationally, the FP service which presently is one of several sections of the Division of Technical Services of the Ministry of Health is to be upgraded to a Division with its own tech-

nical and administrative staff to be housed in the new National FP Center together with the Health Education, Training, and Statistical Services of the Ministry.

B. The delivery of FP services is to be considerably enhanced by the establishment of a "Reference FP Center in each province and prefecture (25). These centers will be established in or adjacent to already existing maternity wards or health centers. Each center is to be headed by an OB-GYN physician and staffed with two full-time nurses or nurse-midwives and one full-time health educator (animatrice). It is to become the focal point for FP services, education, research and training in each province, and provide services to the post partum and FP programs in the maternity wards. The plan for the reference centers also includes the establishment of FP teams to visit the rural dispensaries in the province and provide "on the spot" FP services.

C. Substantial emphasis is placed on the improvement of in-service training and education in FP through national and provincial seminars and workshops. The first National Seminar was conducted in January 1974 in Rabat for some 40-50 medical and para-medical personnel who are to constitute the core personnel for the first Reference Centers. Similar seminars for medical and para-medical personnel will be conducted in several provinces during 1974-77. Seminars of a less technical nature will be conducted for social assistants and monitresses in the Ministries of Interior's, and Youth and Sports' Women Centers.

D. The Public Information, Education and Motivation Program is to be strengthened through the establishment of an "audio-visual

unit" in the National FP Center. An official request for technical assistance to this unit and for equipment of the National Family Planning Center has been submitted to the UNFPA.

Improved cooperation among the Ministry of Health and the Ministries of Interior, Youth and Sports, and Education resulted in the conclusion of an agreement. Under it, the Ministry of Health will provide training in FP motivation and education to the monitresses working in the close to 400 women centers administered by the Ministry of Youth and Sports in urban, and by the Ministry of Interior in rural, areas of the country.

Conclusions. The Moroccan FP program has had a slow start. It has encountered many obstacles; nevertheless, the number of pill acceptors has been increasing steadily. Opposition to the FP program - although still an important factor - is slowly diminishing. Positive developments in the first year of the 1973-77 Five Year Plan period would indicate an acceleration of progress in the program. Within the limitations of Title X and the policies set by AID/W, USAID expects to emphasize the development of the FP program in the broader context of family health rather than making FP a separate entity with the sole goal of birth control.

#### 4. DEMOGRAPHIC RESEARCH

Another problem hampering Morocco's development is the scarcity of reliable demographic data on which to base planning for social and economic development and the evaluation of progress and problems in the development programs.

The GOM recognizes that no sound plan for economic or social progress can be designed in the absence of precise data on population growth.

The Moroccan Government decided in June 1970 with U.S. assistance to establish the Demographic Research Center (Centre de Recherche Démographique - CERED). Its main objectives are conducting research in demographic measurements and at the same time providing a flow of demographic data from the CERED sampling areas, which will be useful for development planning. The major steps in its research program are:

- Sampling, delineating and mapping the sampling areas, and establishing baseline population counts;
- Designing and testing improved statistical methods for measuring population change.

This will involve comparative analyses of birth and death data obtained from different methods of recording such data and from demographic surveys.

- The collection of special types of substantive data on population.

#### PROGRESS TO DATE

1. First and second rounds of surveys have been completed.
2. Matching criteria and tolerances have been developed and matching of data from continuous observation and retrospective surveys has been completed.
3. Field work has been suspended temporarily to permit concen-

tration on analysis; an analysis program has been developed and analysis is underway.

4. Expansion of the research to national scale is under consideration; a national sample has been drawn.

5. A journal of demographic research, As Soukan, has been initiated and various articles are in preparation for publication elsewhere.

While the CERED is a Moroccan institution, controlled and supervised by the GOM, it is also one of several Population Laboratories located in developing countries in Africa, Asia, and Latin America, established with the technical assistance of the University of North Carolina under a contract with AID. The demographic research conducted by CERED, therefore, not only benefits the GOM but is also a substantial benefit to the U.S. Government's demographic efforts in other developing countries.

## V. Overview of Nutrition

With 46% of its population under 15 years of age and with more than 2.5 million children - or 16.3% of the population - between 0-4 years of age, Morocco faces enormous problems in maintaining an equilibrium between its population growth rate and its socio-economic development.

In the last decade, the agricultural production in the country has increased by about 2% p.a. while the population has grown more than 3% annually, resulting in a devastatingly low nutritional status of its infant and child population.

Several studies were conducted during this period in order to determine the nature and scope of malnutrition in Morocco.

In 1960, the United Nations Food and Agriculture Organization (FAO) used a "nutritional Balance Sheet" as a measuring technique in Morocco. The statistical survey demonstrated a deficiency in intake of total calories, proteins (especially animal proteins which counted only for 11.3% of the total protein intake), fats, calcium, and vitamins A and C. When broken down by income level, these deficiencies were highly prevalent among the lower income groups. The survey concluded that 1) 80% of the population had a poor nutrition status, 2) protein deficiency was the critical nutritional problem, 3) 80% of caloric intake was furnished by cereal products (mostly wheat and barley), and 4) the pre-school age child was the most vulnerable.

In 1970, the Ministry of Planning and Development authorized a nationwide survey of food consumption which clearly demonstrated the

imbalance in the Moroccan diet.

Yearly per Capita Consumption in Kilos

<u>FOODS</u>	<u>Urban</u>	<u>Rural</u>	<u>National</u>
Cereals	157.9	245.1	216.4
Dairy Products	30.5	27.3	28.4
Fats	15.9	11.8	13.1
Meat	24.1	14.8	17.9
Fish	7.1	1.8	3.6
Vegetables	123.6	71.2	88.6
Fruits	47.7	45.8	46.5
Sugar	27.4	31.4	30.1

In 1967, the World Health Organization (WHO) and the Ministry of Health made a study of 1,412 children in the 0-14 age group, chosen by random sampling in the cities of Rabat and Casablanca and in the rural areas north of the Rif and south of the Tafilalet. In the study, the weight curves were normal at birth until six months, but well under the lowest 3 percentile curves from 6 months to 14 years. ( In Morocco, the weaning period begins after the sixth month.) Of 277 children from 6 months to three years, 42 or 15% had edemas due to protein deficiency. When limited to the rural children, the incidence of clinically demonstrable protein malnutrition was 32.5%. In 29.3% of the children examined, clinical symptoms of D avitaminosis were detected.

In 1972, the Ministry of Health conducted a nationwide survey of children in the 0-4 years age group. 41.58 percent of the 7,000

children surveyed were suffering from second degree protein/caloric malnutrition, meaning that the children were between 20 and 40% under weight, due to insufficient intake of proteins and calories. Another 4.66% were victims of third degree malnutrition, a serious protein - caloric deficiency evidenced by a weight loss greater than 40 percent. Such children are threatened by death and require hospitalization.

These studies indicate that there is a qualitative and quantitative deficiency in the diet of a significant number of Moroccan children.

Adding to nutritional problems is the high incidence of communicable diseases: tuberculosis, dysenterias, typhoid fevers or simple infantile diarrhoeas and intestinal parasites. All these conditions, by ensuing mal-absorption of needed nutrients, further increase the need for them, thus creating a vicious circle; i.e., lack of proteins and other important nutrients make the child more vulnerable to communicable diseases - and the fevers, diarrhoeas and other effects of the infections increase the child's need for more proteins while lowering his absorptive capacity up to 50% of normal.

The results of this vicious circle are high infant mortality rates -- in Morocco presently estimated to be 149 per thousand live births; 100 in urban and 170 in rural areas, and also high fertility and birth rates.

The Government is aware of these problems. There is in existence an Inter-ministerial Commission for Food and Nutrition represented by the Ministries of Public Health; Youth, Sports and Social Affairs; Interior, National Education, and Agriculture and established by

Royal Decree of May 8, 1959. Collectively the Commission has met only rarely over the intervening years while individually, the Ministries have been active to varying degrees in nutritional efforts. The Ministry of Public Health, through Maternal and Child Centers (MCH) attached to each neighborhood clinic, supervises health conditions of pre-school children. The children's growth is closely watched, involving some supervision of their feeding. Primarily, the role of MCHs is educational. The Ministry of Youth, Sports, and Social Affairs works through its existing network of Centres Féminins along parallel lines. The Ministry of Interior maintains the maisons communales where elementary nutrition and the problem of deficiency diseases are discussed. The Ministry of National Education has included elements of nutrition in the high school science curriculum. Finally, the Ministry of Agriculture lends its support to projects in nutrition education or applied nutrition by supplying technical assistance, materials and equipment.

The 1973-1977 Five Year Plan addresses the problem of nutritional equilibrium. It calls for specific actions to reduce food deficiencies in the following target groups:

- Pre-School Feeding: Activities must be reoriented to improve the nutritional status of children in the South and North of the country not previously integrated into the existing dispensaries and foyers.
- Cantines Scolaires (School Lunch): Program must be developed to cover 50% of rural and 25% of urban students.

- Other Programs: New Programs must be introduced and existing ones reinforced in order to meet nutritional objectives.
- Workers' Canteens: Canteens and inexpensive restaurants must be established for workers.

The GOM has been very reluctant up to now to make readily available the results of its nutrition survey, data essential to program planning. The Government's efforts will remain frustrated until it creates an effective unified approach to the overall problem, trains personnel and allocates budgetary resources on a priority basis. Only in this fashion will it overcome the scatteration of efforts.

Opportunities exist to design a progressively more coordinated program in nutrition utilizing existing GOM programs as a base. The Mission has proposed that an AID nutrition team arrive in Morocco in early 1974 to assist interested elements in the GOM to design a comprehensive nutrition program and to identify areas of possible USAID involvement.

## VI. Overview of the "Bidonvilles"

Morocco is today one of Africa's most urbanized nations. About 35% of the population (5,4 million out of Morocco's population of 15,4 million) lives in urban centers. Eleven cities have populations of over 100,000. Casablanca's population is over one and a half million.

Morocco's cities have been shaped by three important urban traditions. The Islamic culture brought to North Africa in the seventh and eighth centuries was an urban civilization, in theory and in practice, and in North Africa the cities developed in a distinct pattern: walled cities with palaces, mosques and markets, and above all a cultured and powerful bourgeoisie. The Spanish colonial system was also centered in its cities, though in Morocco the Spanish colonial centers were predominantly military outposts. Finally, the French brought with them an urban civilization, and they built in Morocco French cities to house Frenchmen and their enterprises, in the most advanced traditions of French architecture, administration and planning.

Morocco, like most other countries of Africa, is urbanizing rapidly. The natural growth rate of the population is very high -- about 3% a year. In addition, since the 1920s, there has been a significant migration of rural people to the cities, which since the end of World War II has accelerated dramatically. The urban growth rate is 5.5%. As elsewhere, these rural people are forced, because of lack of other shelter, to make makeshift living quarters in so-called bidonvilles. Several bidonville communities, notably in Casablanca, number over 100,000 residents, and are growing at a rate of about 7% a year. The

total population in bidonvilles is well over one million, more than one fifth of the total urban population. Densities in the bidonvilles are extremely high, and increasing.

During the last years of the French colonial government, significant efforts were made to deal with the problem of the bidonvilles. Plans were made, institutional infrastructure was established, and much public housing was constructed. These plans were very effectively continued in the first years following independence. Around 1965, a general re-evaluation of the government's social and economic policy led to a major reordering of priorities, with greater emphasis on development.

Rural development was designated as priority number one, partly because the stagnation of the agricultural sector was viewed as the principal impediment to national development, but also because the government hoped to check, or at least to slow, migration to the cities. This general policy found expression in Morocco's 1965-1967 development plan and in the 1968-72 Plan, in the high proportion of resources earmarked for rural development. Very limited funds were designated for urban planning, public housing for the poor, and development of urban services.

After 1968, however, many high government officials began to re-evaluate these negative policies towards urban development. They were stimulated above all by the urgency of the urban problems, but also by pride in their cities. Of particular importance, the GOM is now insistent on the need for a new

approach and new attitudes towards the bidonvilles. They must be regarded not as evil aberrations, a threat and a shame to the nation, but an inevitable stage in the path of development. They stress the notion expressed by John Turner of MIT (a major influence on Moroccan planners), that there is much energy in the bidonvilles which government should harness and direct towards positive ends, notably towards self-help in housing construction.

A 1969 survey of Rabat/Sale bidonvilles indicated that some 60,000 bidonville families had regular monthly incomes from 175 to 350 dirhams and thus were eligible for government-sponsored low-cost housing assistance. This and other similar studies have confirmed the soundness of this premise. The Five Year Plan for Housing to be described later in this paper is consonant with it.

VII. Proposed Assistance in Areas of Common Interest

A. Food Production

1. Technical Assistance

a. A.I.D. Extension Training in Food Crop Production

The current "Increase in Cereals Production" project involves 6 American agronomists and the Project Manager. It will terminate on June 30, 1974 as planned. Major accomplishments of the project are:

(1) wheat yields in Morocco have increased an average of 12 percent per year since the beginning of the project (assisted by generally favorable weather)

(2) research program has developed high-yielding varieties which are being multiplied and used

(3) at least 75 percent of increasing demand for certified seed is being satisfied

(4) the amount of fertilizer per hectare recommended by the extension services has doubled. Actual use of Nitrogen fertilizer in Morocco has about tripled since the project began.

A major remaining bottleneck to increasing food crop production is the transfer of known technology into small-farmer practice. The new Five Year Plan calls for a better trained, highly motivated and adequately equipped Agricultural Extension Service as the best mechanism for farmer training. Such a service supported by the recently announced economic incentives (page 33 ) should make inroads

on the problem of low productivity and income of small farmers. The GOM has requested American assistance in this effort.

In response, the USAID proposes an intensive agricultural extension agent training project utilizing the present Cereals Project contractor.

The purpose of the project would be to upgrade the professional training of agricultural extension agents in the Division of Agricultural Extension, by familiarizing them with the results of pilot and demonstration trials based on research under the present project. In addition to new technology, the agents would be trained by Moroccan specialists to provide basic information on agricultural credit, supply of production inputs and market possibilities.

By the end of the projected three year period the project should result in a strengthened GOM extension service, especially oriented towards the dry-land, traditional farming sector. It is anticipated that 1,000 extension agents would be given intensive training in (a) technology of modern food crop production and (b) methods and techniques of agricultural extension (food crops). Further by the end of the three year period a long-range plan would have been designed to permit the extension service to reach 600,000 subsistence farmers on dryland.

Specifically the U.S. technicians would assist in:

(1) The establishment of a pilot center for training agricultural extension agents;

(2) The assembly of a core of basic research and other information needed for the training program;

(3) The design and preparation of training materials;

(4) The conduct of extension agent training programs;

(5) The development of a village level seed multiplication program; and

(6) The design and development of model plans of work for extension agents.

The project also provides consultant services and training grants.

Estimated Financial Requirements (\$ 000)

FY 1975	445
FY 1976	405
FY 1977	210

b. Assistance in Higher Agricultural Education

The GOM and USAID jointly identified the lack of university trained agriculturalists as a major near and longer term constraint to the development of food and crop production. The GOM requested American assistance in the development of the Hassan II Agronomic Institute. AID experience and policy suggested technical assistance through a contract with an American University as the most effective means in developing the required institutional capacities. The key importance of soil and plant sciences, in which U.S. Universities have unequalled qualifications, indicated that these were the disciplines in which USAID could best respond to the GOM's request.

In 1970 AID entered into a contract with the University of Minnesota. The purpose of the contract was to provide assistance to help the new Institute plan its program and develop a Moroccan teaching and research capability in the soil and plant sciences.

Minnesota now has four professors in residence at the Institute as follows:

	<u>Date of Arrival</u>
Soil Chemist-Pedologist -	July 1970
Soil Microbiologist -	January 1971
Plant Breeder -	July 1971
Virologist -	December 1971

In addition, Minnesota has provided laboratory and field equipment, books, journals, and language teaching equipment totalling some \$41,000 in value.

The U.S. soil scientists, jointly with Belgian and French colleagues, have designed and equipped soil science laboratories and planned and initiated research projects designed for student teaching, dealing with agronomic problems of immediate importance to Morocco. Other projects are in the planning stage. In addition, U.S. professors have assisted in developing course curricula in their respective departments. Two of the U.S. professors give lectures and laboratory training to third cycle students. To date there are no students majoring in soil microbiology. Should this situation continue, the question of the continued need for the soil microbiologist should be reviewed.

In plant sciences both U.S. professors have developed laboratories and planned and initiated applied research on problems of importance to Moroccan agriculture. The plant breeder is concentrating on improving strains of barley; and the virologist is working on identification of virus diseases of Moroccan vegetable and fruit crops. Their research is planned and oriented for 3rd cycle training of students in research planning, methodology, and techniques.

The contract provides for U.S. training of selected 5th year students in special subjects not yet available at the Institute. At present there are four 5th year students in the U.S. Two are studying range management science and two are studying plant pathology. They will return in the Fall of 1974 and take their 6th year at the Institute.

As part of the faculty training and development program, up to 10 soil scientists and 10 plant scientists may receive U.S. training towards their doctorate programs. Up to half of these may go on to the U.S. Ph.D under the terms of the contract. Some members of the faculty having the doctorate may also receive short intensive training in the U.S. to prepare them as fully effective teachers.

The present professional staff in soil and plant sciences at the Institute can be grouped by source as follows:

	<u>Moroccan</u>	<u>U.S.</u>	<u>French</u>	<u>Belgian</u>	<u>Total</u>
Soil Science	1	2	-	2	5
Plant Ecology	-	-	3	-	3
Plant Breeding	-	1	-	-	1
Plant Pathology	1	1	1	-	3
General Agronomy	-	-	2	-	2
					<hr/>
			TOTAL		14

The work is carried out under the general guidance of the Director of the Institute or his designee. Other countries, particularly France and Belgium, are also assisting the Institute on a substantial scale in plant and soil science by providing complementary laboratory and classroom facilities and equipment, professors for teaching and research and participant training in their countries.

Coordination and cooperation between the different donors is achieved under the chairmanship of the Institute Director through departmental planning, meetings, personal contacts between professors, and contact from time to time between Minnesota on-campus project officers and their French and Belgian counterparts.

A revised PROP, submitted in October 1973 proposes to extend the project through FY 1980 provided certain bench marks are achieved in FY 1975. Although the purpose of the project has not changed, certain modifications of the means to achieve project objectives were proposed. These include broadening U.S. training to include 5th year students, recognition of the desirability of U.S.

professors participating in second cycle training, reduction of emphasis on U.S. Ph.D. training, and expansion of the U.S. team to include two horticulturists. Recently the Belgians have indicated that they may also be willing to provide assistance in the field of Horticulture. Whether the U.S. provides two horticulturists depends on the outcome of an internal GOM reassessment of its earlier request for assistance in this field. Depending on the results of this evaluation, discussions will be held among the GOM and the donors (Belgium, Franch and USAID) to coordinate their inputs.

	<u>Funding Requirements</u> (000 dollars)
Prior years	682
FY 1974	570
FY 1975	450
FY 1976	537
FY 1977	553
FY 1978	563
All subsequent years	970
	<hr style="width: 10%; margin: 0 auto;"/> 4,325

c. Livestock Production and Marketing

In view of the constraints described earlier (page 46 ) USAID proposes to defer a decision on the GOM request for the activation of a FY 1975 project involving four American advisors. If, by the end of FY 1974 the GOM has passed the Royal Decrees establishing at least one Range Management Perimeter and has taken convincing steps



"Ingenieurs" is proposed to overcome the shortage of trained technicians and administrators.

Short-term observational and specialized training in the U.S. for up to 12 key policy making officials and high-level technicians would also be provided.

Consultants worth \$75,000 and Training valued at \$150,000 are presently shown in the Agricultural Research and Training Block Grant (see below). In the event the new livestock activity were to go forward in FY 1975, USAID would subsume these costs under the new project with a corresponding reduction of the Block Grant.

Estimated Funding Requirements<sup>\*</sup>  
(000 Dollars)

FY 1975	165
FY 1976	165
FY 1977	80
	<hr/>
	410

d. Agricultural Research and Training Block Grant

This project is designed to assist several divisions of the Ministry of Agriculture with whom we have no longer direct project relations such as the Research Division (DRA) and other agencies dealing with food crop production, livestock, etc. The project would provide access to the global network of international agricultural research institutes and universities through AID/TAB. For instance,

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\* Excludes \$225,000 Consultants and Participants under Block Grant.

the project would help the DRA in problem solving approaches and help it overcome deficiencies in specialized talent. The grant would provide for training and some consultant services in livestock disciplines if there should be no on-going project after FY 1974 (see page 75 ).

Illustratively, requests from the DRA could involve one or several of the following: plant breeding, seed technology, cultural practices, soils and fertilizers, plant pathology, entomology, and food chemistry. The food crops of interest to Morocco, covered by the networks comprise rice, wheat, corn, sorghum, barley, potatoes, sweet potatoes, beans, cowpeas, soybeans, mungbeans, and chick peas.

Estimated Financial Requirements  
(000 Dollars)

	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>Totals</u>
Consultants	55	35	40	130
Participants	90	110	105	305
Other Costs	5	5	5	15
	<u>150</u>	<u>150</u>	<u>150</u>	<u>450</u>

e. Nutrition Block Grant

There has been little progress on the nutritional front since the September 1973 visit of an AID/W nutritional expert. In recent discussions with the GOM, it would appear that interest in a nutrition program varies from that of indifference at the Ministry of Cooperation level to that of positive involvement at the Ministry of Agriculture, Ministry of Public Health and Entraide Nationale levels.

In March 1974, a nutrition-planning team from AID/W consisting of experts in the areas of nutrition education, food technology, and nutrition economics will come to Rabat for a period of 4-6 weeks to advise and assist interested GOM Ministries and the USAID in the formulation and development of a nutrition strategy. Thereafter, depending on the recommendation of the team, the services of various consultants will probably be required.

The Ministry of Health is currently formulating a new nutrition policy for its network of delivery services. In the past, much of their effort has been expended on curative medicine for victims of malnutrition, but there is now evidence of a greater appreciation of the need for a broader preventive and educational approach to the whole field of nutrition. We expect that part of the grant would assist the Ministry of Health to plan this new approach and to take initial steps towards its implementation.

The GOM organization responsible for social welfare services is "Entraide Nationale." "E.N." has established 150 MCH centers throughout the country to provide nutrition education and food supplements to 95,000 children aged 2 to 5 and their mothers. The American voluntary agency, Catholic Relief Services, has been working very closely and very effectively with "E.N." in establishing these centers. C.R.S. has provided technical assistance and supervision, and distributes PL 480 Title II commodities at the centers. Each center has two Moroccan "monitrices" who monitor the normal physical development of the baby. The mothers receive simple instructions on basic nutrition. The centers are unsophisticated but effective.

In FY 1975, C.R.S. plans to have 200 MCH centers serving 200,000 mothers and children.

C.R.S. has requested a grant to upgrade these "E.N."/M.C.H. centers. Through a series of regional seminars, the "monitrices" would be better prepared to instruct the mothers in the understanding and practice of good nutrition for their children. The services of one full-time professional nutritionist would be added by C.R.S. to assist in the instructional program of the seminars and in other forms of in-service training. Additionally, C.R.S. plans to extend the nutrition education segment to 9,000 mothers and future mothers working and training at 48 "E.N." vocational centers called "ouvroirs."

Three hundred "monitrices" are already at work in these M.C.H. centers, and their number will be increased to 400 in FY 1975. This worthwhile C.R.S./"E.N." training project is ready for immediate implementation.

	<u>FY 75</u> (Illustrative)	<u>FY 1976</u>	<u>FY 1975</u>
Consultants	15,000	To be developed after	
Ministry of Public Health	140,000	the AID/W team survey	
Entraide Nationale	95,000	scheduled for March 1974	
	<hr/>	<hr/>	<hr/>
	250,000	250,000	250,000

## 2. Capital Assistance

Among the capital assistance proposals submitted by the Ministry of Cooperation, the USAID has identified two projects which meet the Congressional intent of stressing food production and social

equity, which involve a large number of people, which the Moroccan government has particularly singled out for American participation, which can be clearly visible as an American effort, and which can serve as the framework for capital assistance to Morocco over the next three years. These projects are the Triffa Pumped Service of the Lower Moulouya and the Doukkala irrigation perimeter, located inland from El Jadida. The choice of these projects followed discussions with the Ministry of Cooperation during which USAID emphasized the Congressional concern about improving the standard of living of the nation's poor, especially through food production and greater equity.

a. Triffa Pumped service of the Lower Moulouya

Total GOM Request:      Approx. \$8.0 million\*

Duration of Construction:      1974-1977

(1) Background

Since 1960 construction of the project has been financed by a series of AID loans which now total \$43,700,000 plus the equivalent of \$5,145,000 in counterpart funds. The project consists in the development by the GOM of 50,000 hectares of irrigated agriculture in the Lower Moulouya Irrigation Perimeter in northwestern Morocco, utilizing the gravity flow of water from the existing Mohammed V (AID financed) and Mechra Homadi dams. Works required to complete the project consist of land preparation, land redistribution, levelling, hydraulic design, and the construction of water distribution and drainage systems.

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\* The fluctuating exchange rate does not permit precise conversions.

(2) Project Description

The Triffa Pumped Service consists of about 6,200 hectares of land located at the foothills of the Beni Snassen mountains which are to be irrigated by pumping water from the Triffa main canal. Water will be pumped to two canals located at higher elevations and will then flow by gravity to the areas to be irrigated. The first stage pumping station is located just north of the city of Berkane where a combination of pumps will pump a maximum of 4 cubic meters of water per second to a canal located at some 33 meters higher elevation. From this canal a second stage pumping plant will then pump part of the water still higher to another canal in order to utilize all the good soils in this area and obtain the maximum economic benefit from the water for agriculture.

(3) Estimated Cost of Construction and Schedule of Completion

The cost of the entire project has been estimated at DH 48 million and is now about 29% complete. A breakdown of costs and scheduled time of completion furnished by the Government of Morocco is shown below. USAID would propose to finance the portion of construction scheduled for the period 1974-1977, amounting to approximately \$8 million.

Calendar Year	1973	1974	1975	1976	1977	Total
Distribution Network (Ha.)	500	-	2,700	2,100	920	6,220
Investment (1,000 od Dirhams):						
Main Civil Works	11,650	8,300	2,800	2,100	-	24,850
Main Distribution Network & Drainage	500	500	5,400	4,200	1,840	12,440
Internal Distribution Canals	1,140	3,020	3,115	2,025	375	9,675
Cooperatives	600	-	435	-	-	1,035
TOTAL:	13,890	11,820	11,570	8,325	2,215	48,000

(Total equivalent to: \$10,800,000)

COMMENT: The above estimated costs and schedule of completion appears to be reasonable. Mechanical and electrical equipment for the main pumping plant has been purchased but not installed. It is estimated that equipment for the second stage pumping plant will cost approximately one million dollars and is the only remaining foreign exchange requirement.

(4) Benefit-Cost Analysis  
(in dollars - using only net agricultural or farm yield)

Benefits:

Production after installation of irrigation system:

Gross agricultural yield . . . . . \$3,114,860

Less: Farm Input costs:		
Power, Tools, Fertilizer		
Disease Control, Taxes		
Seeds, Insurance, Fuel		
Bldg. maintenance, etc:	\$957,262	
Net agricultural yield after completion of irrigation system <sup>1/</sup>		\$2,157,598
Production before irrigation with rain fed crops: (Wheat & Barley)		
Gross Agricultural yield	\$783,955	
Less farm input costs	\$541,466	\$ 242,489
Net agricultural yield after completion of irrigation system		\$2,157,598
Net agricultural yield before irrigation		\$ 242,489
DIFFERENCE IN PRODUCTION BEFORE AND AFTER		\$1,915,109
Less discount for lag in accrual <sup>2/</sup>	\$408,205	
Less associated costs - capital investment in farm irrigation and drainage system amortized <sup>3/</sup>	77,400	
Less annual O&M on associated costs <sup>4/</sup>	3,870	
	<hr/>	
	\$489,475	
<u>ANNUAL NET BENEFITS</u> . . . . .		\$1,425,634
<u>Costs:</u>		
Total cost irrigation water: \$11,935,214 <sup>5/</sup>		
Total cost pumped irrigation system amortized over 50 years at 3½% interest	\$468,930	

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See Appendix for Footnotes.

Less discount for lag in accrual <sup>6/</sup>	\$ 19,950
Annual electricity, overhead & maintenance costs <sup>7/</sup>	209,141
Personnel for pumping plant and building maintenance	11,457

ANNUAL NET COSTS . . . . . \$ 709,568

$$\frac{\text{BENEFITS}}{\text{Costs}} = \frac{1,425}{709} = 2 : 1 \frac{8/}{}$$

CONCLUSION:

1. Economic Benefits

The investment required is economically justifiable with a positive benefit-cost ratio of 2 to 1 which is even slightly higher than the 1.6 to 1 ratio calculated previously for the entire project. This additional investment will permit the realization of benefits from the large amount of funds which have been already invested in the Mohammed V dam and the Triffa main canal to bring water to this area. Only when all possible areas of good soil have been developed will the maximum potential and possible return for the capital invested be realized.

2. Social Benefits

It is estimated that approximately 6,000 farm people will eventually benefit from the development of this area into farm plots which will have an average size of 5 to 8 hectares. The Triffa area will also supply farm produce for canning factories located in Berkane, largely contributing to increased employment both on the farm and in

See Appendix for Footnotes.

industry and in the service sector that will form itself around the new cash economy of the area.

b. Doukkala Irrigation Perimeter

Total GOM request: Approximately \$17-20 million

Duration of Construction: 1974-1978

(1) Project Definition

The Doukkala irrigation perimeter is a 450,000 hectare plain lying near the Atlantic Ocean between the port of Safi and El Jadida and extending East to the Rehamna mountains. The administration of the project is under the Office Regional de Mise en Valeur Agricole des Doukkala, ORMVAD, and was started in 1960 at the same time as ORMVAM for the Moulouya irrigation perimeter. The Oum-er-Rbia river is the second largest in Morocco. It first irrigates the Tadla and the Haouz perimeters before it finally reaches the Northern edge of the Doukkala plain where its flow is checked by the Im-Fout dam.

The Im-Fout is a concrete gravity dam 50 meters high and 200 meters long at its crest which was put into service in 1944. The dam has a useful reservoir capacity of 20 million cubic meters and a power plant with two turbines which generate 160 million Kwhrs of electricity per year. A 17 km tunnel leads from the Im-Fout dam to the 111 km main canal which presently irrigates some 22,800 hectares of land in the Doukkala. A.I.D. assistance has been requested to complete an additional 10,500 hectares for irrigation by extending the main canal, adding new secondary canals, and providing drainage.

The tunnel from the Im-Fout is 5 meters in diameter and was designed to carry 42 cubic meters per second; however, only 25 cubic meters per second can be supplied from the dam and this limits the total amount of land that can be irrigated to some 33,500 hectares.

(2) Social Benefits

The Doukkala with over 100 inhabitants per square kilometer has one of the densest populations in Morocco in a semi-arid climate. The area is having a difficult struggle for survival on rain fed agriculture which is causing the poor of the region to migrate toward the slums of nearby cities. A.I.D. assistance in this project would enable over 10,500 subsistence farmers to help themselves earn a better living from irrigated agriculture. To this number must be added a large segment of the population who will be employed in food processing and ancillary service sectors based on this perimeter.

(3) Estimated Cost of Construction

The cost of construction of the facilities to irrigate an additional 10,500 hectares of land in the Doukkala from the existing Im-Fout dam has been estimated by the GOM as follows:

Studies	3,600,000	dirhams
Land Re-distribution	1,575,000	"
Main canals & civil works	35,300,000	"
Second canal/Distribution network & drainage	38,900,000	"

Grading, levelling, soil preparation & secondary drainage	15,860,000 dirhams	
Total irrigation facilities		95,235,000
Construction of Cooperatives	2,565,000	
Farm equipment for Cooperatives	5,017,000	
Total farm input cost:		7,582,000
Total Cost:	102,817,000	102,817,000
		(equivalent to \$22,848,000)

The average cost per hectare of the above estimate is approximately DH 9,000/Ha which is about the same as the total average cost which was required to put land under irrigation in the Moulouya. However, the above costs do not include the original costs of the Im-Fout dam and 17 km tunnel and are therefore certainly on the conservative side. The cost of engineering studies to design the facilities is about 4% of the construction cost which is reasonable. Land redistribution costs are estimated at DH 150/Ha which compares reasonably with DH 136/Ha paid for the last contract of this type in the Moulouya. The average cost of the secondary canal network and drainage estimated by the GOM is DH 3,704/Ha which is 40% higher than those paid in the Moulouya and should be checked on more detailed estimates. After more detailed engineering studies have been prepared, a more accurate cost estimate will be possible.

The estimated yearly completion of the construction of the project is shown in the following schedule as a percentage of the total investment:



Less Discount for lag in accrual <sup>3/</sup>	\$ 989,097
Less associated costs - capital investment in farm irrigation and drainage system amortized <sup>4/</sup>	150,247
Less annual Operation & Maintenance <sup>5/</sup>	42,165
	<hr/>
	\$ 1,181,509

ANNUAL NET BENEFITS

\$ 3,453,872

Costs:

Total cost irrigation water:	\$ 19,323,777 <sup>6/</sup>
Total irrigation water amortized over 50 years at 3½% interest	823,773
Less discount for lag in accrual <sup>7/</sup>	35,117
Annual Operation & Maintenance costs <sup>8/</sup>	256,666
	<hr/>

ANNUAL NET COSTS

\$ 1,115,556

$$\frac{\text{BENEFITS}}{\text{Costs}} = \frac{3,458}{1,115} = 3.10:1 \quad \frac{9/}{}$$

CONCLUSION:

The investment required is economically justifiable with a positive benefit-cost ratio of 3.10 to 1 which is much higher than the average return for this type of project. However, what especially justifies this project is the large number of small farmers who will be able to earn a better living from irrigated agriculture. As mentioned previously, this is one of the most populated areas of Morocco and it is estimated that over 10,500 subsistence farmers will benefit.

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See Appendix for Footnotes.

GOM Proposal for Construction of Sidi-Cheho Dam

The irrigation of over 100,000 hectares of good soil in the Doukkala would be possible with the construction of another dam, the Sidi-Cheho, which would be located upstream of the Im-Fout dam. Besides developing the Doukkala to its maximum economic potential, the Sidi-Cheho would also supply domestic and industrial water to Safi and other coastal cities. The Sidi-Cheho dam is not included in the present five-year plan (1973-1977). However, because of the immediate economic assistance irrigated agriculture would give to some 67,000 subsistence farmers, the GOM is now considering the dam as a higher priority and has requested A.I.D. assistance in starting its construction during the next two years. USAID is not considering this proposal. It is a major capital project estimated at \$60-70 million and presumably more suited to IBRD financing.

c. Local Currency Generation

Any consideration of capital project financing must deal with the problem of generating the required local currency to cover construction costs. The forementioned irrigation projects, except for certain equipment and services, largely involve dirham financing. A program loan which generates dirhams cannot be justified in Morocco, either on balance of payments grounds or under present AID concepts. Similarly, the recent USAID-DAP team discussions found sector lending inapplicable within the Moroccan setting.

Several options exist for generating local currency. The one employed most frequently in recent years is the Commodity

Import Program (CIP). In the future, this course would require an understanding with the GOM that such a CIP loan serve solely as a means of generating counterpart for the specific capital project spelled out in the loan agreement. USAID would expect the GOM to accept AID's concept that these local currency funds do not represent fungible budget-support items.

Past experience indicates that the Commodity Import Program in Morocco presents a number of difficulties. At this writing, it appears that Morocco cannot utilize a CIP program in excess of \$10 million annually. The particulars of the local setting are discussed in Annex G .

Alternative methods of generating local currency include the Special Letter of Credit, Direct Reimbursement Approval, and Dollar Purchase of local currency. These are discussed in greater detail in the Annex.

3. PL 480 Title I

The GOM has advised the American Embassy of its continuing desire to satisfy appropriate agricultural import requirements, especially in wheat, to the extent possible through PL 480 Title I agreements.

In years past, the amounts of wheat imports under Title I, in excess of UMR's, were largely determined by Moroccan demand for these U.S. surpluses. Since 1972/73, the amount has become a function of U.S. supply availabilities.

The Embassy in cooperation with USAID recently prepared an analysis of Morocco's wheat requirements and of the potential role of Title I sales in meeting the country's deficit (See Rabat A-178 of December 1973). An updated, unclassified version of this study is attached to this submission (Annex H ).

Morocco's relatively favorable B/P situation, in conjunction with the fact that AID's programming concepts are increasingly less based on macro-economic indicators and inputs, relegate Title I to a peripheral element within the framework of a DAP-type submission for Morocco.

Morocco's Title I agreements, in recent years provide that local currency proceeds be used for specified chapters of its investment budget (i.e. "agriculture and rural development," "employment and manpower development" etc.). The GOM considers the funds completely fungible and its utilization reports are ex-post facto bookkeeping attributions.

4. PL 480 Title II

The 1968-1972 Plan goals to increase agricultural production were exceeded but the objective of self-sufficiency is still far in the future.

The problem of self-sufficiency is compounded by the continuing rapid growth in population. A modest beginning in family planning has been made by the GOM. The implementation of the program at the clinical level and the general acceptance and practice of family planning at the personal level will not result, in the short run, in establishing a reasonable equilibrium between food consumption requirements and local food production.

To meet the food deficit in the foreseeable future, Morocco must continue to import food. In recent years, these food imports have been financed by the GOM's own foreign exchange by CIP and PL 480 Title I and Title II. Last year, approximately one million tons of wheat (the staple food of Moroccans) was imported.

The Title II food assistance program has been particularly helpful to Morocco in meeting its critical food deficit. It is a grant program for the lowest income segments who suffer most in food deficit situations.

The Title II program is an important AID intervention relieving food deficits and malnutrition. It reaches some 800,000 recipients of whom 600,000 are children, the rest being handicapped workers, seasonally underemployed farmers, mothers, and trainees. Each recipient

receives prescribed supplementary rations of enriched flour, soybean oil, corn-soya blend, wheat-soya blend, and soy-fortified rolled oats. In FY 1974, the Title II program as approved consists of 58,000 m/t of commodities valued presently at US \$10 million. This program is limited to the AID priority categories of pre-school and primary school-age children and food-for-work participants.

The cooperating sponsor for this Title II program is Catholic Relief Services (CRS). Under a formal agreement, CRS works directly with the GOM. It cooperates with the following ministries:

1. "Entraide Nationale", CRS' main counterpart, is responsible for port clearance and inland transportation of all Title II commodities
2. the Ministry of Education is responsible for the primary school feeding program.
3. the Ministry of Health receives Title II assistance for day care centers for sick and undernourished children
4. the Ministry of Labor, Social Affairs, Youth & Sports sponsors kindergartens and day nurseries
5. the Ministry of Interior has jurisdiction over all activities at the provincial level, including the logistic and management aspects of the feeding programs

The GOM appreciates the value of the Title II program and cooperates fully with CRS in its management. The contribution of the GOM to the various feeding programs is considerable:

1. <u>"Entraide Nationale"</u>	<u>Dirhams</u>	<u>Dollar Equivalent</u>	<u>1/</u>
Administration	7,297,278	1,717,006	
Warehousing	250,000	58,823	
Inland Transport	<u>8,726,379</u>	<u>2,053,266</u>	
TOTAL.....	16,273,657	3,829,095	
2. <u>Ministry of Primary Education</u>			
Administration	300,000	70,588	
Inland Transport	250,000	58,823	
"Equipment"	460,000	108,235	
Local Foods	<u>6,000,000</u>	<u>1,411,765</u>	
	7,010,000	1,649,411	

1/ 4.25 DH = \$1.00

CRS has four categories of feeding projects: maternal/child health, primary schools, child institutions, and economic/community development. A brief description of each of these follows:

Maternal/Child Health

Nutrition education for mothers and medical treatment for children suffering from malnutrition or rickets are provided by the Ministry of Health in 200 health centers and 600 dispensaries throughout the country. The program is directed at pregnant women, lactating mothers, and children under 2 years of age.

Children age 2 to 6 are assisted in another MCH program sponsored by "Entraide Nationale", which is the social welfare ministry of the GOM. The FY 74 program consists of 150 MCH centers where 95,000 mothers and children receive Title II commodities through CRS. Two monitrices (trained attendants) work at each center, instructing the mothers on basic nutrition and child care and weighing the babies

regularly to monitor the normal physical development of the child. Demonstrations on the use of local food and Title II commodities are provided in order to foster correct attitudes and practices of good nutrition.

CRS is upgrading this program through the in-service training of the monitrices. With the advice and assistance of a professional nutritionist, the CRS staff and their "Entraide" counterparts arrange periodic regional seminars of two-week duration to better prepare the monitrices for their role as innovators in instilling proper attitudes towards food, nutrition, health in a country where some studies indicate that 80% of the population has a poor nutrition status. Besides these seminars, CRS plans regular supervision of the monitrices at the centers. To assist in this project for upgrading the instructional program of these MCH nutrition centers, CRS has requested a grant of \$95,000 to be used in 1975.

In FY 1975, CRS and "Entraide" plan to assist 200,000 mothers and pre-school children with Title II commodities. The pre-school age children are the most vulnerable to malnutrition. The mothers who come to the centers are from the poorest families.

One weakness of this program is the inadequate ration of food authorized for the MCH category by AID guidelines. The per capita monthly ration is 4 lbs grains, 3.3 lbs of blended foods, and 1 lb of vegoil. 7.3 lbs of cereals is too low a ration, even as a supplement to the 30-day food requirement of a growing child. It is highly recommended that the USAID Missions and the Volags be allowed some flexibility in

determining the per capita rations for the MCH to suit the particular needs of a given situation. For Morocco, a suggested per capita monthly ration for MCH should be 6.6 lbs of blended foods, 6.6 lbs of processed grains, and 1 lbs of vegoil. \*

#### School Lunch

The School Lunch program called "Cantine Scolaire" is administered by the Ministry of Education. With the strong encouragement of the USAID and CRS, the GOM has expended considerable resource in developing this school lunch program in the past several years. Besides providing kitchens, dining facilities, utensils, storage, and local food, the GOM has engaged personnel at the cantine sites and established a central office for food and nutrition at the Ministry in Rabat.

Only children of the poorest families and those living great distances away from the schools participate in the program. Although cantines are established in nearly all primary schools, only 240,000 boys and girls are permitted to have lunch at school out of a total primary school enrollment of 1.2 million.

The Ministry has placed emphasis on rural schools, since recent nutrition studies found clinically demonstrable protein malnutrition in 32.5% of the children.

Besides the actual cantines, the Ministry has prepared lesson plans and teachers' texts for nutritional education at all levels.

\* Off-sets in the number of recipients, if necessary, would be made in the food-for-work program category.

The GOM is being advised that the present level of 240,000 recipients of Title II commodities in the school category cannot be exceeded and that the emphasis should continue to be directed at rural schools. During the next five years, while the GOM is making efforts towards increases in quality food production and controlled population growth, Title II food assistance should be continued at the present level.

#### Food-for-Work

The approved CRS Title II program for FY 1974 specified 400,000 Food-for-Work participants. A worker receives 106 lbs of flour and vegoil for a family of five. The worker is engaged as an unskilled laborer in development projects, sponsored by the local government. All projects are subject to the approval of Entraide Nationale, CRS and USAID/FFP with priority placed on those rural development projects relevant to the agricultural sector.

Workers in these Title II projects are often seasonally underemployed farmers, all of them are indigent. Moslem families are traditionally large, and less than 35% of the children are in educational institutions. The Food-for-Work program reaches children who are not included in other food assistance programs. Poor nutrition and malnutrition lead to higher morbidity and mortality rates among these rural children. Where such conditions are common, birth rates are always high, and economic and social development is blocked. The Food-for-Work development project is one small but effective means of assisting these families in a dignified and productive manner.

CRS also has a Food-for-Work project for girls and women, who are usually unschooled and of poor families. Under the management of "Entraide", workshops (ouvroirs) provide vocational training for these women, including sewing, weaving, rug-making, literacy in Arabic, and nutrition. Some 10,000 girls and women now receive such training. CRS would like to expand this type of non-formal education.

Also under the Food-for-Work category are several institutions supported by "Entraide" to assist handicapped people. These centers are called "Yousifias". The blind, the crippled, the paralytics, the retarded are trained in arts and handicrafts, and are later formed into cooperatives for the commercial production and sale of their products.

Considering the humanitarian and nutritional aspects of these Food-for-Work programs and the actual accomplishments of the work projects, this category of Title II food assistance should continue at the present level of 400,000 recipients through the next 4 years.

#### Child Institutions

The GOM maintains orphanages (SMB) throughout the country. There are 105 SMB homes caring for 45,000 boys and girls. The boys range from 7 to late teens and attend nearby schools. CRS provides Title II food for these orphans, whose care "Entraide" considers its most worthy and necessary program. In this respect, "Entraide" does not share AID's order of priorities but considers the SMB's as equal in importance to the MCH centers. Since the "Entraide Nationale"-- which is the GOM counterpart agency of CRS--places such emphasis on

this humanitarian program, it is strongly recommended that the Title II support of the SMB's continue at the present rate.

Projected Requirements

	Recipients	M/T	US \$
FY 1974 (approved) *	768,000	58,000	10 million
FY 1975	900,000	70,000	12 "
FY 1976	900,000	70,000	12 "
FY 1977	900,000	70,000	12 "
FY 1978	600,000	46,000	8 "

The USAID has analysed the CRS/GOM requests and found them constructive and realistic programs with special emphasis on AID's nutrition and equity criteria. On the other hand, the USAID recognizes that the dollar costs and/or food quantities involved in the CRS/GOM requests may exceed availabilities.

If reductions became unavoidable, they would be absorbed by cut-backs in the food-for-work and school-feeding categories in order to safeguard the MCH and orphanages programs, the latter being of very special concern to the GOM.

\* When this Title II program requirement for FY 1974 was approved in July 1973 the CCC value of the 58,000 m/t of commodities was estimated at US \$7 million; by December 1973 these same 58,000 m/t of commodities had an estimated CCC value of US \$10 million.

B. Population

1. Technical Assistance

a. Family Planning Support

The purpose of the FP project is to assist and encourage the expansion and improvement of GOM and voluntary agency maternal and child health and family planning (MCH-FP) institutions and services, with the objective of reaching the estimated three million fertile couples in the country with FP information, education and contraceptive services.

During the 1968-72 Five Year Plan period the USAID has assisted the 1971 population census. Further it has provided one Population/Public Health Adviser since December 1969, participant training, contraceptive and other supplies, medical and audio-visual equipment and funds towards the construction of the national FP centers.

The 1973-77 Five Year Plan calls for the following activities:

1. Strengthening the administration and organization of FP services through the appointment of a qualified central administrative and technical staff to be housed in the new National FP Center, expected to open in 1974, together with the Health education, training and statistical services of the Ministry of Health;

2. Establishment of FP Reference Centers in all provinces and prefectures. The centers are to be staffed with medical

and paramedical personnel. They are to serve as the focal point for FP information, education and services in each province, and to conduct post partum FP programs in the adjacent maternity wards;

The Plan calls for the establishment of 12 centers in CY 1974, 12 in 1975, and 6 in 1976;

3. Increasing the number of Health Centers providing MCH-FP services from 202 in January 1974 to 239 in 1977;

4. Improving training and education in FP of medical and paramedical personnel through the introduction of FP courses in all medical and paramedical schools, and conducting of national and provincial seminars and workshops;

5. Expanding the public information and communication program through establishment of a communications unit in the new National FP Center; introducing FP information and education in the 400 women centers directed by the Ministries of Interior and Youth and Sports; conducting sex education courses in all secondary schools, and expanding the education program conducted by the National FP Association through mobile educational units visiting urban and especially rural areas.

6. Improving the statistical and evaluation program through follow-up surveys of FP acceptors, conducted by the Division of Health Statistics in the Ministry of Health, and establishment of a demographic analytical unit in the Division of Statistics of the Secretariat for Planning (see CERED Project).

Estimated Financial Requirements

(\$000)

FY 74	320
FY 75	270
FY 76 *	315
FY 77 *	347
	<hr/>
	1,252

b. Demographic Research Center (CERED)

The purpose of the project is to establish a Demographic Research Center (CERED) in Morocco which will be capable of collecting, analyzing and presenting data needed by the GOM for planning purposes and for conducting research in measurements of demographic changes.

The CERED was established in 1971 as one of a network of Poplabs receiving technical assistance from the University of North Carolina (UNC) under a contract with AID/W. The UNC technical support has consisted of one senior resident demographic adviser and short-term TDY demographic consultants. The USAID has supported the field operation with funds for the operational budget, vehicles, and miscellaneous equipment and materials.

In July 1973 the CERED temporarily suspended its field work in order to permit concentration on analysis of the demographic data collected under a dual reporting system from its large sampling area covering about 1/3 of the nation and representing all different urban as well as rural strata.

The UNC Resident Adviser left in September 1973. Two (junior) analytical demographers are expected to replace him in March 1974.

At a recent meeting between UNC-CERED and USAID it was agreed that the CERED needed to concentrate on its analytical work and refine its methodological research in the dual reporting system and alternate methods of data collection during CY 1974 and 1975.

This will be carried out with a professional staff of 6 persons utilizing a small subsampling area and a field staff of 10-15 persons.

The remaining field-staff about 60-70 persons will prepare a national sampling area designed for the CERED dual reporting system about a year ago. During 1974 this work will be supervised by the Moroccan Bureau of Census and in 1975 the field-personnel will be legally transferred to that Bureau in order for the GOM to assume 50% of the cost of the field operation. At the end of CY 1975 USAID support will terminate, and the Bureau of Census will assume the full operational cost of conducting a national demographic survey utilizing the methodology and experience gained from the CERED. Plans for GOM participation in the World Fertility Survey in conjunction with the National Demographic Survey are presently underway.

After the withdrawal of UNC in December 1975, the GOM expects to continue a small demographic analytical unit, Poplab B or CERED II, which will analyze existing demographic data, plan and prepare demographic surveys, etc.

In spite of an intensified training program in Demography the GOM will need assistance in the form of 2-3 "OPEX" positions for middle level demographers and some short-term TDY consultants for the next 2-3 years (1976-1977).

If no other donors, foundations, etc. come forward, the USAID will consider this request under the FP support project at a cost not to exceed \$50,000 a year for two years.

Estimated Financial Requirements

(\$000)

Prior Years	469
FY 1974	210
FY 1975	180
	<hr/>
	859

C. Housing and Urbanism

Given a national need of 391,000 houses in 1973 and an anticipated increase in demand of an additional 600,000 by 1977, the approved Plan calls for the construction in the cities of 120,000 dwellings with public financing and technical supervision; 130,000 houses with public technical supervision and private financing, and for 40,000 rural units. The program will require an estimated total investment for five years of 5,717 million dirhams; 3,288 million from the State and 2,430 million from private sources-- a substantial part of the investment foreseen for the total Five Year Plan.

The focus of publicly-assisted urban housing construction will be on lower income groups, for families with monthly incomes of less than 350 dirhams,\* by whom 70,000 housing units called "ZEP 5" and 60,000 shelters on progressively equipped lots called "ZEP 15" will be built with State financing, and for families with incomes between 350 and 1,000 dirham monthly whose eventual ownership of some 145,000 new units will be State-facilitated.

1. HOUSING INVESTMENT GUARANTEES (HIG)

In 1971, when GOM was reorienting its rural-urban strategy and beginning its preparation of the 1973-77 Five Year Plan, it requested AID to undertake a pre-investment survey to explore the possibility of a housing investment guarantee (H.I.G.) program.

The survey, completed in June 1971, recommended a \$ 10.0 million HIG program for low cost self-help sites and services, and core housing units. The proposed program was approved in principle

\* \$1 = approx. 4.50 DH

by the African Bureau Housing Guarantee Review Committee on September 16, 1971.

During the following year, various delays, not directly related to the project, ensued. In April 1973, when the newly created Ministry of Housing, Urban Affairs and Environment had completed its draft plans for the 1973-77 Five Year Plan, a feasibility team visited Morocco to update the HIG program in the framework of the plan.

In August 1973, the HIG loan was authorized by the Development Loan Committee. A loan agreement, largely due to prevailing high interest rates, has not yet been concluded. The conclusion of the HIG loan agreement will provide the GOM with the means to finance low cost 'core' houses\* in Casablanca, Rabat-Salé, and Meknes for some 4,000 Moroccan families now living in Bidonvilles but earning an income of from 175 to 350 dirham monthly. These "ZEP 5" houses, of which it is planned to build a total of 70,000, will be of so-called 'auto construction', i.e. each family will make individual arrangements for the construction of its house according to government-provided plans and construction supervision. This method will further the explicitly expressed intent of the government to "mobilize the production capacity of that part of the building sector which, although archaic, is labor-intensive, cheap and preserves artisan traditions" and as such will not only benefit the family for which the dwelling is built but will increase employment in bidonvilles areas.

\* at an average cost of 11,000 dirhams per unit

The extension of \$10 million in dirham loans, under the HIG program, to 4,000 family heads within a year by the GOM "Banque Populaire" is technically feasible.

The GOM has expressed an interest in an additional loan of \$10 million in FY 1975 to be applied either to additional "ZEP 5" houses or to "ZEP 15" houses; the latter type house being similar in eventual plan and method of construction to "ZEP 5" but would be equipped at a slower rate. The construction of either type house will benefit the poor employed in Moroccan cities, provide them with healthy living conditions, promote employment and result in visible qualitative support of an objective shared by the GOM and the USAID.

The basic problem in activating the HIG program is the present high cost of money. This issue was discussed during Assistant Secretary Newsom's recent visit to Morocco. The Moroccan Government suggested that the U.S. consider providing a concessionary AID housing loan (3% - 40 years) to reduce the high commercial interest rates of HIG loans. Approval of a concessionary loan may well become the key element in the GOM's decision whether or not to go ahead with the HIG program, a major component in the proposed U.S. assistance package<sup>for</sup> the next 3 years. A housing program in Morocco clearly meets the new criterion of greater equity for the lowest income segment of the population. On the other hand, the USAID recognizes that AID's "shelter policy" does not favor the allocation of appropriated funds for construction purposes. Nevertheless, AID/W may wish to evaluate the GOM request for a concessionary housing loan in the light of the circumstances under which it arose.

2. RABAT-SALE SEWER PROJECT

Total GOM Request:

Phase I 1974-1975 : \$ 2.2 million

Phase II 1976-1985 : \$14.4 million

The Moroccan government's request for U.S. assistance also includes a proposal to finance the Rabat-Salé sewer project, an activity which indisputably would benefit a large number of the urban poor. We are including the proposal in this submission as a possible area of U.S. involvement not earlier than FY 1976; however, we and the AID/W DAP team agreed that this is an activity generally more suited to IBRD financing. In the event the World Bank were to take the lead in this project, USAID would recommend a limited U.S. input in collaboration with the Bank.

Project Background

In May 1972, WHO completed a feasibility study of this project which was financed under the UNDP Special Projects Fund. The WHO study collected plans of the existing collection and distribution system, recommended locations of treatment and compost plants for both Rabat and Salé, and made cost estimates for the facilities. The complete project was estimated by WHO to cost the equivalent of \$30 million.

Untreated raw sewage from Rabat and Salé flows directly into the Bou Regreg river and the Atlantic Ocean causing serious pollution of the river and the beaches surrounding the area, and creating a serious health problem. The pollution in the river will become worse when completion of the Bou Regreg dam stops the flushing action of the

river now carrying pollutants out to the ocean. The engineering design of the Bou Regreg dam was financed by AID to supply additional water for both cities; however, this will also increase the load on the present sewer system which is already inadequate. Cholera germs have been found in the sewer system and their number is increasing.

An analysis by WHO in 1972 of a sample of water taken near the Salé beach found from 50,000 to 1,000,000 E. Coliform germs per liter. The safe tolerable limit recommended by the WHO for bathing water is a maximum of 20,000 E. Coliform per liter.

There are probably some 50 to 100,000 people living in the bidonvilles around Rabat and Salé who are bathing in the polluted waters of the Bou Regreg river.

Project Definition and Assistance Requested from AID

In addition to the feasibility study prepared by WHO (UNDP), two other international design firms have completed the engineering studies for eliminating the direct raw sewage discharge into the Bou Regreg from Rabat and Salé. AID assistance has been requested for starting construction of facilities to alleviate the sewer situation as follows:

Phase I : 1974-1975

Sewer collection system, Rabat, between Hassan bridge	DH 2,500,000
to Oudaya	
Sewer collection system, Salé, Takadoum, Maadid &	DH 5,500,000
Hajja	
Design and construction of the Rabat outfall pipe	DH 2,000,000
into the Atlantic Ocean	_____
TOTAL	DH 10,000,000

Equivalent to US \$2,222,000

Phase II : 1976 - 1985

Extension of Rabat Sewage and Waste system	DH 50,000,000
Extension of Salé Sewage and Waste system	<u>DH 15,000,000</u>
Phase II TOTAL	DH 65,000,000
Phase I TOTAL	<u>DH 10,000,000</u>
GRAND TOTAL	DH 75,000,000

Total assistance requested from AID- Equiv. to US \$ 16,666,000.

The GOM plans to amortize the total cost of the project with a tax of DH 0.12 per cubic meter of water sold to water users from 1974-1985 to furnish approximately DH 67,000,000 of the required funds. A population tax of DH 5.88 per person a year is also planned which will raise another DH 65,000,000 for the project.

In conclusion, the project falls very clearly under AID's policy on health and greater equity in the social and economic welfare of people in the lower income strata.

### VIII. Other Donor Assistance

Accurate data on other donor assistance are generally hard to come by. Individual donors are frequently reluctant to reveal the extent of their assistance. In any event, the definition of "assistance" can vary considerably from donor to donor. In some cases export credits financed by the public sector are considered as assistance even if the terms are not concessional. In other cases private capital flows are not distinguished from public. To further complicate matters, some assistance is reported as gross disbursement, some as net disbursement (minus repayments of previous loans), and some as obligations.

The Development Assistance Committee of the OECD reports total net flows of aid resources to Morocco of \$139 million in 1972.<sup>1/</sup> Average annual official development assistance from DAC countries for the period 1969-1971 was \$158 million in bilateral assistance and \$24 million in assistance from multilateral agencies. The U.S. share of bilateral assistance was 40%, with France in second place at 30%.<sup>2/</sup>

Technical Assistance to Morocco covers a large number of sectors, with agriculture receiving the most important share.<sup>3/</sup> Among the principal donors, France provides the widest range of technical assistance, funding a number of technical studies and providing expert staff in government administration and technical bureaus. Total French Technical Assistance in 1972 was \$4.1 million.<sup>4/</sup> There is a particularly large

1/ Development Cooperation, 1973 Review, OECD, Paris, p.208

2/ Op. Cit. p. 217

3/ The GOM looks upon technical experts more as OPEX personnel rather than as advisors whose objective it should be to train their Moroccan replacements in the shortest time possible.

4/ Rapport Annuel Sur l'Assistance au Development, UNDP Morocco, 1972, p.ii.

French involvement in public works; some 400 experts work in this area. All told, about 9,000 Frenchmen (including teachers) work in various branches of the Administration. GOM contributions range from 0 to 100% under a multitude of formulae and statutes.

Belgium contributed \$2.5 million in technical assistance in 1972, largely in agriculture. Its 135 experts staff several of the irrigation offices, the Rif rural development program (DERRO), and higher agricultural schools where teaching aids, equipment, and participant training are also provided. Belgium has a few people in urbanism, health, planning, secondary school education, industry and commerce and tourism. It furnishes a number of scholarships in these fields.

While German technical assistance figures for any one year are unavailable, the UNDP estimates total German technical assistance in the past ten years at \$17 million.

The Federal Republic of Germany assists Morocco in agriculture principally. Also involved in the DERRO project in the Rif, their experts are active in soil erosion control and development of forest resources. Elsewhere in Morocco, they contribute staff to a livestock experimental station, an agricultural machinery school, and a livestock artificial insemination center. They provide equipment, seeds and insecticides to agricultural cooperatives. In industry, Germany finances experts and studies in electro-mechanics, energy, mining and mineral prospecting and agro-industries. Germany is active in tourism planning for the Ministry of Tourism.

Canada has a four year \$1.2 million project to assist the Hassan II Agronomic Institute in cartography, geodetic surveying, photogrammetry and topographic surveying. Laval University, Quebec is the source of this assistance, which includes some \$116,000 of equipment. Over the 1973-1977 Five Year Plan period, Canada, again through a contract with Laval University, will assist the Meknes agricultural school with four professors and \$400,000 worth of equipment. Total cost of this effort is estimated at \$1.6 million. Other Canadian activities in Morocco include training in animal husbandry at the Kenitra Livestock School (2 professors), and, along with Germany and Belgium, assistance to the DERRO project in northern Morocco (Rif). Canada has 10 full time technicians assigned to DERRO. It plans to augment this number by 5.

Canada's largest technical assistance input terminated in 1971. This was a \$6 million cadastral survey, begun in 1969, which covered some 400,000 hectares of land mostly in existing or planned irrigation perimeters. Canada has requested the GOM to submit additional technical assistance proposals.

After France, the UNDP with a technical assistance level of \$2.9 million in 1972 finances the widest range of projects, consultants and studies. The UNDP and UN specialized agencies have experts assigned to or planned over the next five years in agricultural marketing, olive production, dairy technology, cheese production, marine fisheries, forestry, rural development (DERRO), erosion

control, planning of national parks, land and water use, seed selection, meat production, educational planning, higher education in biology, forestry, science, statistics, physics, nutrition, etc.

Presently, the UN organization has 108 experts in Morocco plus varying numbers of short-term consultants. The UNDP also advises in vocational training, packing and packaging for export industries, manpower utilization and planning, training of office employees and engineers. Included in the UNDP's \$20 million Five Year Program (1973-1977) are plans to provide consultants for the National Social Security Fund, rehabilitation of the blind, telecommunications, the textile industry, the plastics industry, a tool center, and an agricultural machinery center. It either plans or is engaged in a mineral survey of the Anti-Atlas, studies on the launching of a mining cooperative for exploitation of copper, foreign trade, printing, arts, conservation of sites and monuments, libraries and documentation, sanitation and environmental hygiene, water supply, maritime transport, tourism, meteorology, taxation, economic planning, agricultural statistics and public administration.

This list reveals the extraordinary scope of UNDP activities in Morocco, either presently underway or planned under the UNDP's Indicative Planning Figure (\$20 million) over the next Five Years. To be sure, some of the projects are extremely small in scale, involving only one consultant for a limited period of time. Others, like the proposed assistance to the National Public Works Institute and to the Telecommunications Institute require a UNDP contribution of \$1 million each.

A question clearly poses itself at this point regarding AID's own Technical Assistance program in Morocco in light of the availability of assistance from other sources. It would appear that the UNDP, the UN specialized agencies and other large donors provide all the technical assistance Morocco needs or can absorb. However, American assistance has limited itself to areas where the U.S. is pre-eminent (e.g. wheat growing). Further, while other donors are willing to provide OPEX-type experts who perform specific jobs for lack of trained Moroccans, the USAID technicians are chiefly concerned with training Moroccans to take over their jobs.

Capital Assistance to Morocco is shown in the accompanying table. France provides loans for specific projects as well as balance of payments assistance, partly in public and partly in private credits. German Federal Republic capital loans are earmarked for such undertakings as dams, hydro-electric installations, tourism infrastructure, and mineral extraction. The USSR is active in the financing of dams and studies for the mining sector. Kuwait is also involved in dam construction and in irrigation. The UK, Belgium, Italy and Denmark provide tied loans for the purchase of equipment. In 1973, Canada provided a \$5 million, 50 year no-interest commodity loan. As far as can be determined, none of the above commodity or equipment loans require programming of the counterpart which in all cases reverts to the GOM general budget without attribution.

The IBRD is the largest source of capital project loans for Morocco. The Bank is active in irrigation development and construction

of the Arabat dam on the Sebou river. It is constructing the new dam on the Bou Regreg river outside of Rabat, designed to increase the potable water supply for both the capital and Casablanca. USAID financed the design of this dam. The IBRD provides financing for the National Development Bank (BNDE), the National Agricultural Credit Bank (CNCA), and for the national education program. Recently, it accorded \$29 million for highway construction. According to IBRD officials, a major constraint to a much higher level of World Bank assistance (up to \$100 million per year) is the lack of "bankable" projects, projects which are packaged and presented in such form as to make them acceptable for consideration by lending institutions. Other donors, actual and potential (e.g. Japan) also deplore the dearth of projects in a form that would permit serious consideration. Canada, e.g. has stated its willingness to increase its aid to the new Five Year Plan to \$100 million provided the GOM comes up with project proposals.

OFFICIAL LOAN ASSISTANCE <sup>1/</sup>  
(million dollars)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
	<u>99.6</u>	<u>115.1</u>	<u>94.9</u>	<u>100.0</u>	<u>115.0</u>
France	25.3	27.0	34.8	25.0	35.0
West Germany	21.0	33.3	12.8	15.0	17.5
IBRD/IDA	18.8	31.0	28.8	32.5	37.5
USSR	16.0	10.0	11.5	12.5	12.5
Kuwait/Iran	9.5	6.5	5.0	6.3	7.5
Italy	8.5	3.8	-	-	-
Canada	-	-	-	5.0	-
Other Official	.5	3.5	2.0	3.8	5.0

1/ IBRD and IMF reports and USAID records.

Against this backdrop of other donor contributions, AID's role takes on several dimensions. As pointed out in the first part of this submission, capital assistance should partly be considered in terms of the GOM's expressed desire for visible U.S. projects in response to the expectations raised by the visits in October/November 1973 of high State Department delegations. Finally, capital assistance can serve as a means of transferring U.S. engineering and scientific know-how where it can have particular impact on Moroccan development.

IX. Other GOM Requests

In addition to the projects presented in the foregoing sections, the GOM Ministry of Cooperation submitted for USAID consideration the following other project proposals:

NOUASSEUR AIRPORT

- Terminal and parking for planes (\$ 18 million)

EDUCATION

- Short term education team to study education problems
- Training in education planning (6 participants)

Assistance to Faculty of Science

- Books
- Equipment
- 1 U.S. professor - 1 year to develop courses
- 6 participants (short-term) lab work, etc.
- 1 month training for Dean Science Faculty

Assistance to Rabat Normal School

- Participants (Director and 4 professors) to visit U.S. Universities
- Manuals, and books on training
- English language labs (2)

Training in Commerce and Business Administration

Assist Institute of Commerce and Business Administration  
(Casablanca)

- 4 scholarships for doctorate (marketing, business, statistics, mathematics)
- 6 scholarships for Masters degree in business
- 4 U.S. professors to train teachers in Morocco -2 years

PLANNING

- Assistance in training computer technicians and analysts at Secretariat for Planning
- Provision of computer (reader)
- Regional planning team to assist in Plan execution and development of next Plan (economists, agro-industrial engineer, agronomist, civil engineer, human resources specialist)

MINING AND GEOLOGY

- Following on National Science Foundation and University of South Carolina work here, request Moroccan access to U.S. laboratories for specific analyses (e.g. geological dating)
- Provide training for Moroccans in U.S. labs
- Provide 2 scholarships (1 year) in steel making

The USAID did not feel in a position to respond favorably to these requests in its discussion with the Ministry of Cooperation.

First of all, AID guidelines call for maximum concentration; thus, the American assistance program, proposed in this submission, concentrates essentially on the Food and Agriculture and Population sectors.

Secondly, the assistance requested in the areas of education and development planning would involve large OPEX components. The basic differences in U.S. and GOM technical assistance concepts (OPEX vs. advisers training their Moroccan replacements) are discussed in the submission. The request for planning assistance would be a renewal of a 3-year project which just terminated. Although successful in its direct contribution to the drafting of

the new Five Year Plan, the project was less effective in institutionalizing basic planning concepts. There are no indications that a new project would specifically address this prime U.S. objective.

Thirdly, although education (especially the non-formal type) is a priority sector under AID's new criteria, the GOM requests involve almost exclusively formal teaching and training. The King has just announced the institution of sweeping Arabization reforms in the Moroccan educational system. This system involves a number of ministries as well as the French Cultural Mission which furnishes 7,000 teachers at the secondary and university levels. Other donors, including Canada, provide at least another 100 educators. Under these circumstances, USAID cannot visualize adequate GOM appreciation of, and cooperation in AID's need for a comprehensive education sector analysis as long as other donors respond to much larger requests without posing exhaustive analytical requirements.

Finally, the GOM's request for assistance in building a new air terminal and related facilities at Nouasseur (the airport serving Casablanca), while important for the tourism sector, has been rejected by USAID as being clearly outside the scope of the Congress' and AID's present philosophy.

Progress of Land Distribution

<u>Year</u>	<u>Area Hectares</u>	<u>No. of Farms</u>	<u>No. of Cooperatives Formed</u>
1957-1960	11,827	1,262	-
1964	2,560	355	-
1966	5,666	691	30
1967	2,964	443	15
1969	16,949	1,471	48
1970	19,016	1,213	45
1971	31,355	1,864	70
1972	90,857	3,802	140
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TOTAL	181,194	11,101	348
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Source: Official statistics of Ministry of Agriculture.

Size Distribution of Traditional Moroccan Farms and  
Cultivated Melk Land\*

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Size of Holding Hectares	RURAL HOUSEHOLDS			AREA CULTIVATED		
	Number	Percentage	Cumulative Percentage	No. of Hectares	Percentage	Cumulative Percentage
0	543,284	33	33	-	-	-
0-1	446,412	27	60	236,120	7	7
1-2	233,627	14	74	314,838	9	16
2-6	300,787	19	93	1,139,699	34	50
6-10	70,163	4	97	575,210	17	67
10 plus	55,776	3	100	1,124,624	33	100
	1,650,049**	100		3,390,491	100	

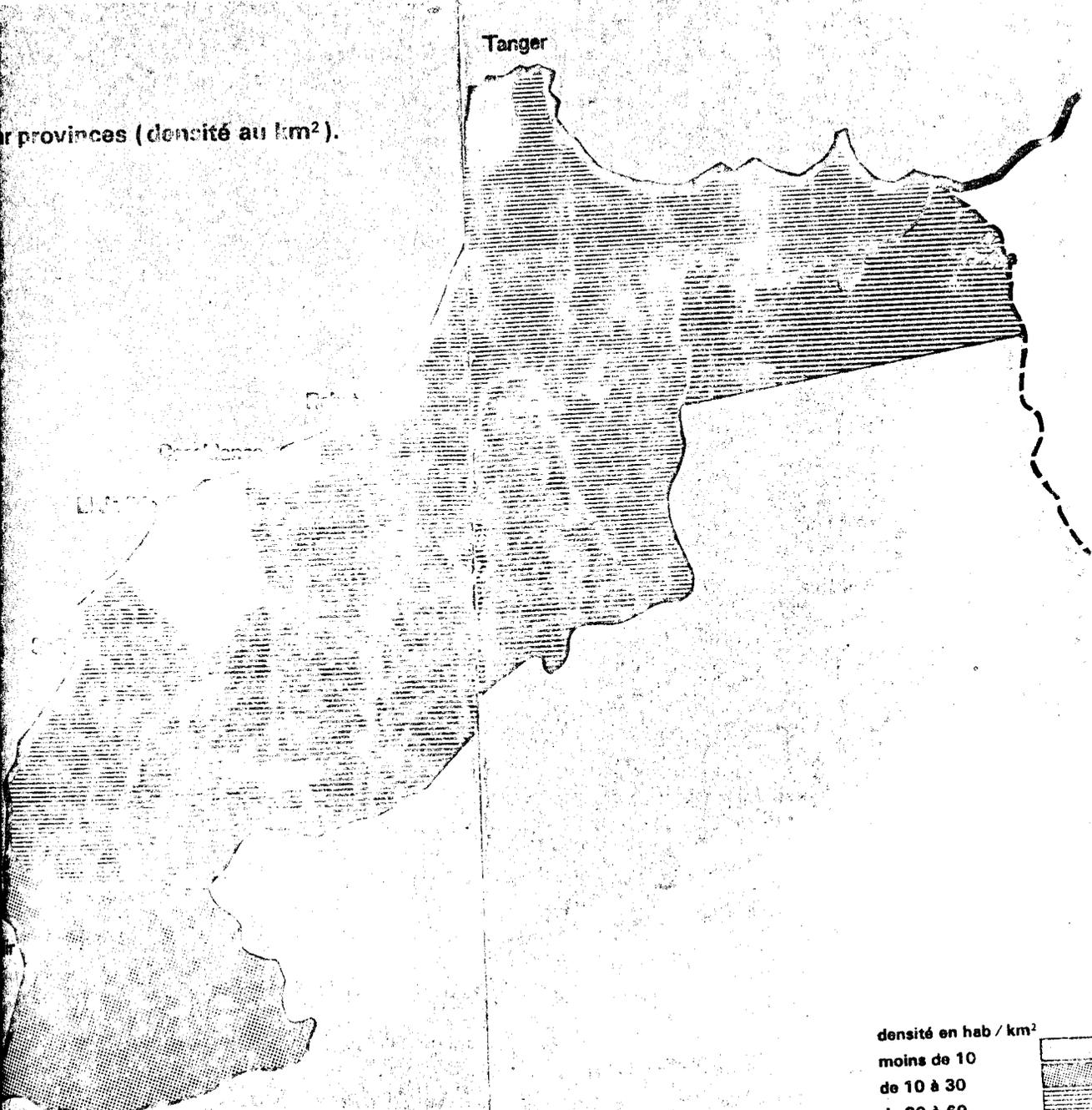
\* The number of traditional farmers using State-owned, collective, Habous and guich lands is not known but is estimated to be about 0.5 million.

\*\* In addition, there are approximately 35,000 Moroccan farmers on Melk land in the Modern sector with about half of these in the irrigated perimeter and the remainder in rainfed areas having 20 hectares or more land each.

Source: El Ghorfi - "Contribution a l'Edification d'une Politique Agricole."

Comment: The increase in number of irrigation perimeters and transfer of ownership of former colon lands which has occurred since 1964 probably has resulted in at least doubling the number of Moroccan farmers on Melk land (footnote \*\*). Otherwise the data are believed to be essentially unchanged.

provinces (densité au km<sup>2</sup>).



densité en hab / km<sup>2</sup>  
moins de 10  
de 10 à 30  
de 30 à 60  
de 60 à 90  
plus de 90



**Population Marocaine Musulmane  
estimée au milieu de l'année 1972  
selon le sexe et l'âge.**

Groupe d'âge	1972		
	Hommes	Femmes	Total
0 — 4	1.480.000	1.466.000	2.946.000
5 — 9	1.198.000	1.195.000	2.393.000
10 — 14	989.000	988.000	1.977.000
15 — 19	823.000	820.000	1.643.000
20 — 24	680.000	680.000	1.360.000
25 — 29	548.000	547.000	1.095.000
30 — 34	455.000	453.000	908.000
35 — 39	386.000	380.000	766.000
40 — 44	327.000	321.000	648.000
45 — 49	269.000	267.000	534.000
50 — 54	216.000	218.000	434.000
55 — 59	169.000	174.000	343.000
60 — 64	128.000	136.000	264.000
65 — 69	87.000	95.000	182.000
70 — 74	54.000	61.000	115.000
75 et plus	43.000	53.000	96.000
Tous âges	7.852.000	7.852.000	15.704.000



FOOTNOTES

- 1/ All data used in calculation of agricultural benefits are actual production statistics supplied from the Lower Moulouya for the 1971-72 crop year. Net agricultural yield is based on the average value of production from the same ratio of crops now used in irrigated areas except for citrus and grapes which have been limited to 10% of total area. Net yields before irrigation are the average return from wheat and barley crops. Price increases granted in 1973 to the farmers on wheat, beets, and barley, have been used.
- 2/ During the first ten years it is estimated that only 50% of the agricultural yield will be realized and the resulting loss of \$9,575,545 amortized over 50 years at 3½% = \$408,205.
- 3/ Associated costs include land development for irrigation such as sub-soil preparation and leveling (using unit prices from previous Moulouya contracts). Exchange rate used: DH 4.43 = \$1.00.

Land preparation average costs	-	400 DH/Ha
Leveling costs	-	<u>900 DH/Ha</u>
Total	-	1,300 DH/Ha (\$293/Ha)

\$293 x 6,200 Ha = \$1,816,000 amortized over 50 years @ 3½%  
= \$77,400.

- 4/ The annual operation and maintenance on the associated costs is estimated at 5% of the total investment in associated costs.
- 5/ Calculation of the total cost of pumped irrigation water:

Estimated construction cost of Project:

DH 48,000,000 - \$10,835,214

Proportional cost of Mohammed V dam:

$\frac{6,200 \text{ Ha}}{50,000 \text{ Ha}} = 11\% \times \$10 \text{ million cost of dam} = \$1,100,000$   
Total \$11,935,000

- 6/ Discount for lag in accrual on amortization charges for the cost of construction of the system is estimated to amount to one year's payment amortized over 50 years at 3½% = \$468,930 x 0.04263 = \$19,950.

7/ Calculation of annual electricity requirements:

Using 1972 average water consumption in the Triffa gravity service:

6,000 cubic meters/Ha x 6,200 Ha = 37,200,000 cubic meters per year (equivalent to 30,170 acre feet)

Using formula: (Bureau of Reclamation)

Energy in KwHr = 1.024 x acre feet x static head x ave. efficiency

= 1.024 x 30,170 x 111 ft. x 0.75 (assumed pump efficiency)

= 2,700,470 + 5% for loss = 2,700,470 KwHr. per year

ONE selling price to large customers = \$0.02/KwHr x 2,700,470 = \$54,000/yr. (A)

Calculation of pump replacement costs (25 yr live):

6 pumps @ \$20,000 each = \$120,000 x 0.2330 = \$27,960 - Present amount required to provide for this future expenditure.

\$27,960 amortized over 50 yrs at 3½% = \$1,191 (B)

Annual O&M for the entire system is figured at 110 DH/Ha x 6,200 Ha = 682,000 DH = \$153,950 (C).

Total O&M costs = (A) + (B) + (C) + \$209,141

8/ The benefit/cost methodology and capitalization rates used conforms exactly with that employed by the DLF in approving the first \$23,000,000 loan and CDF/AID/W in approving the second loan for the Moulouya of \$5,000,000.



DOUKKALA IRRIGATION  
(Footnotes and Map)

ANNEX F

FOOTNOTES :

- 1/ All data used in calculation of agricultural benefits are production statistics supplied from the Doukkala and prices include the latest increases given to farmers on December 8, 1973. Production is calculated using crops of beets, cotton, cereals, alfalfa, clover, and garden crops. Clover is double cropped on 1,320 hectares.
- 2/ Farm input cost data is taken from the 1973 Manual of Statistics production costs of various crops prepared by M. Stojan on the DMV of the Ministry of Agriculture.
- 3/ During the first ten years it is estimated that only 50% of the agricultural yield will be realized, and the resulting loss of \$23,201,905 amortized over 50 years at  $3\frac{1}{2}\%$  = \$989,097.
- 4/ Associated costs include land development for irrigation such as sub-soil preparation, leveling, and grading :

$$10,500 \text{ Ha} \times \text{DH } 1,510/\text{Ha} = \text{DH } 15,860,000 - 3,524,444 \\ \text{amortized over 50 years at } 3\frac{1}{2}\% = \$150,247$$

- 5/ The annual operation and maintenance on the associated costs is estimated at 5% of the total investment in associated costs.

6/ Calculation of the total cost of irrigation water :

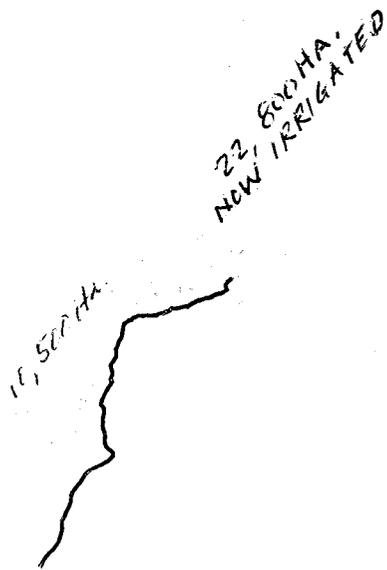
Estimate construction cost of project :

Engineering studies	DH	3,600,000
Land Re-Distribution		1,575,000
Main canals & civil works		35,300,000
Secondary canals & drainage		38,900,000
Construction of cooperatives		2,565,000
Farm Equip. for cooperatives		5,017,000
		<hr/>
	DH	86,957,000
	(\$	19,323,777)

NOTE : Land preparation costs are included in 4/ above.

No costs are included for the construction of the Im-Fout and tunnel which was completed thirty years ago and has already been amortized by the electricity which it has produced. By the same logic, the sale of electricity and water to the city of Safi and the Safi chemical complex are not included as benefits.

- 7/ Discount for lag in accrual on amortization charges for the cost of construction of the system is estimated to amount to one year's payment amortized over 50 years at  $3\frac{1}{2}\%$  = \$823,773 =  $0.04263$  = \$35,117
- 8/ Annual O&M for the entire system is figured at DH 110/Ha X 10,500 Ha = DH 1,155,000 = \$256,666.
- 9/ The benefit/cost methodology and capitalization rates used conforms exactly with that employed for the Lower Moulouya irrigation project.



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to existing local production.

## METHODS OF GENERATING LOCAL CURRENCY

I. Through Commodity Import Program (CIP)

Moroccan imports fall into three categories:

Category A corresponds to approximately 75% of total imports. There are no limitations as to kind or value of purchases. The importer simply opens a Letter of Credit through his bank anywhere in Morocco, and the GOM authorities in Rabat are notified of the transactions post facto. Consequently, the Moroccan administration can neither force nor direct an importer to make his purchase in the US or, if the importer does import from the USA, to channel such purchase through the cumbersome procedure of an AID procurement instead of a very simple banking operation.

Category B corresponds to approximately 20% of total imports. Here, import licenses are required and are issued by the GOM Min/Commerce. Consequently this is the only area where GOM could induce importers to use the AID procurement channels, provided however that the desired commodities are available and at competitive prices in the US market. (Another limiting factor quite often is the AID requirement of a minimum amount of \$5,000 per transaction).

Category C lists commodities largely excluded from being imported due to existing local production.

A- Letter of Commitment

In the last few years, C.I.P. dollars have been used for imports of commodities in the "B" category, though with occasional difficulties, as no programming, except for a few items such as tallow and tinsplate, is possible in this category and purchases are made more or less on an ad hoc basis.

Should there be a shortage in the United States of commodities usually imported under current or future ASLs or EDLs (like tinsplate or tallow) which would make a full utilization of the loan within the prescribed time limit practically impossible, it would be necessary to adopt some other methods of financing instead of the presently employed Letter of Commitment.

B- Special Letter of Credit (generating GOM-owned counterpart)

This method has been used to generate GOM-owned local currency immediately. In Morocco it does not represent any particular advantage. Further, USAID experience in the early nineteen-sixties, when the Special Letter of Credit procedure was applied in Morocco, has shown that the GOM was slow to use the available dollar funds within prescribed time limits which had to be extended repeatedly.

C- Direct Reimbursement Approval.

Under this method AID would reimburse GOM for US dollar costs already incurred in commodity import transactions for which payment has been made from GOM's own resources. The counterpart local currency would be deposited by the GOM to the AID counterpart account.

The Direct Reimbursement method should consider the following:

- a) It would be used only if and when needed. In the Economic Development Loan (EDL) or any other loan a provision for the Direct Reimbursement method of disbursement should be included as an option. At the discretion of the Mission Director, Direct Reimbursement could be used when, for example, 3 months before the TCD (Terminal Contracting Date) a sizeable unutilized balance is still available with poor prospects of being used in time.
- b) Transactions selected for reimbursement would be closely checked for their commodity eligibility and origin. The selection would be made by the Mission from documentation submitted by the GOM. For proper selection the GOM will submit for reimbursement only transactions in eligible categories and a number much greater than actually required to fill the gap of the unutilized part of the loan.

The Direct Reimbursement method insures expenditure of equal amounts of dollars in the U.S.A. and provides the necessary flexibility for adjustment to GOM import categories and controls.

## II. Through Dollar Purchase of Local Currency

Loan 608-H-031 for the partial financing of the Lower Moulouya is being drawn down by local currency disbursements charged to the dollar line of credit. This procedure draws upon the "near-excess" availabilities

of dirhams in the U.S. Treasury. Once such reserves are exhausted, further dirham payments would require corresponding purchases of local currency with loan dollars. Thus the dollars paid to the GOM would be "free dollars" available for use anywhere, including the financing of imports from unfriendly countries.

There is no way to insure re-use of such dollars in the United States, once the dollars have served for an outright purchase of local currency. The objections to this method are as valid as in the case of an outright Dollar Loan paid out in lump sum to the host country.

III. By Special Letter of Credit (for the purchase of US-owned local currency)

Special Letters of Credit can be used to purchase US-owned local currency. The host country receives a line of credit to draw down. In practice, this line of credit may be left open and only partially used for a very long time, and it is difficult to close out the dollar account when it properly belongs to the benefiting country. Of course, SLC's are out of the question in a "near excess" local currency country.

P.L. 480 Title I Assistance

## I. HISTORICAL OVERVIEW

Since the early 1960's, Morocco has not produced enough wheat to meet consumption requirements. Title I programs have played an important part in filling the gap. The 14 sales agreements signed between 1962 and April 1973 had a total value of \$ 159 million. Wheat sales accounted for \$ 100 million. During the 1968-1972 period, on the average,

- - Title I deliveries represented 25 percent of all wheat imports.
- - Title I disbursements financed 16 percent of Morocco's resource gap.

They also accounted for 33 percent of U.S. loan assistance and 12 percent of official loan assistance from all sources.

- - Title I loans represented 11 percent of the GOM's budget deficits or in other terms, 8 percent of its investment expenditures. They provided 60 percent of gross AID financing of the budget and 25 percent of the budget's total external financing.

The April 1973 Title I agreement specified a maximum quantity of 91,500 tons of wheat and a maximum export market value of \$9.37 million. At the time of signature, however, we informed the GOM that we could only guarantee the availability of 66,500 tons. The Department of Agriculture issued a purchase authorization for this amount in May 1973, but the GOM only utilized 48,700 tons before it expired on July 31. We later offered to provide an additional 7,700 tons (for a total of 56,400) under the FY 73 agreement, waiving the usual requirement that 50 percent

disbursements last year did not matter appreciably.

Until late last year, balance of payments prospects for 1974 seemed much less favorable as a result of factors such as (a) the increased cost of petroleum imports (currently projected to total roughly \$ 200 million), (b) heavy wheat imports and (c) rising purchases of foreign equipment to implement projects under the new 5 year plan. These and other negative factors should be more than offset, however, by the massive rise in receipts from phosphate exports (around \$ 500 million) resulting from the tripling of phosphate prices which the National Phosphate office announced in December. Assuming that the energy crisis only moderately reduces tourist and overseas worker earnings in 1974, it now appears that at worst, Morocco will again have a moderate balance of payments surplus this year. Under more favorable assumptions (including a good harvest), reserves could rise over \$ 100 million.

E. The Need for a Title I Wheat Agreement

The GOM values Title I assistance because the loans are easy to draw and counterpart is disbursed quickly, providing rapid budget support. Although the tripling of phosphate prices will swell government's revenue this year, current expenditures will also grow sharply. (For details see Embassy's A-9 of February 4, 1974.) One reason is large wheat imports. The GOM pays a subsidy making up the difference between world prices of bread wheat and lower controlled domestic prices. Despite a 28 percent increase in the domestic price of bread wheat, such payments will still be substantial this year (an estimated 100-300

million depending on the size of the harvest).

If central government investment expenditures reach DH 2 billion this year (DH 700 million less than the amount targeted in the 1974 budget but a more reasonable expectation), there will still be a budget deficit on the order of DH 1.4 billion as compared with an average of DH 872 million in the 1968-72 period and an estimated DH 1 billion in 1973. Without thoroughgoing tax reform increasing the elasticity of the tax system, the prospects are for even larger deficits in later years.

Increased foreign financing for budget deficits, such as that provided by Title I, would reduce their inflationary impact. Like most countries, Morocco is now experiencing a period of rapidly rising prices. Consumer prices, as measured by the Casablanca cost of living index, went up around 11 percent in 1973 and will probably advance at least 8 percent this year.

### III. A TITLE I AGREEMENT IN VEGETABLE OILS

We project the value of Moroccan vegetable oil imports around \$ 35 million in 1974, which provides adequate scope for a Title I program. In addition to economic assistance considerations, usual marketing requirements in Title I sales agreements could help the United States regain a share of the commercial market for oils. UMRs in the FY 69, 71 and 72 agreements (which together provided \$ 32 million worth of concessional vegetable oil imports) clearly buoyed our share. By contrast, there were no imports from U.S. sources in 1973.

The table next page shows the supply and distribution of fats and

oils in the 1968-72 period with estimates for 1973 and projections for 1974. The most important single commodity involved in a Title I vegetable oil agreement would be crude soybean oil.

SUPPLY AND DISTRIBUTION OF FATS AND OILS 1968-1974  
(Thousands of Metric Tons)

	<u>Average 1969-72</u>	<u>Estimates For 1973</u>	<u>Projections For 1974</u>
Stocks on January 1	11	18	15
Production	44	42	50
<u>Imports</u>	<u>73</u>	<u>100</u>	<u>108</u>
Total Supply	128	160	173
Consumption (Including Spoilage)	94	123	128
Exports	23	22	30
<u>Stocks on December 31</u>	<u>11</u>	<u>15</u>	<u>15</u>
Total Distribution	128	160	173

American Embassy, Rabat - Economic Section, February 11, 1974.