

FIELD REPORT NUMBER No. 1

FIELD NO. 23

DRYLAND AGRICULTURE APPLIED RESEARCH

MOROCCO

December, 1982

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136PROJECT PAPER AMENDMENT No. 1TABLE OF CONTENTS

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AGENCY FOR INTERNATIONAL DEVELOPMENT <b>PROJECT DATA SHEET</b>		1. TRANSACTION CODE <input type="checkbox"/> A = Add <input checked="" type="checkbox"/> C = Change <input type="checkbox"/> D = Delete		Amendment Number <b>One</b>		DOCUMENT CODE <b>3</b>	
2. COUNTRY/ENTITY <b>MOROCCO</b>				3. PROJECT NUMBER <b>608-0136</b>			
4. BUREAU/OFFICE <b>Near East</b>				5. PROJECT TITLE (maximum 40 characters) <b>Dryland Agriculture Applied Research</b>			
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY <b>09 30 84</b>				7. ESTIMATED DATE OF OBLIGATION (Under "B:" below, enter 1, 2, 3, or 4) A. Initial FY <b>78</b> B. Quarter <b>4</b> C. Final FY <b>84</b>			

**8. COSTS (\$000 OR EQUIVALENT \$1 = )**

A. FUNDING SOURCE	FIRST FY <u>78</u>			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	2,096	-	2,096	4,000	500	4,500
(Grant)	( 2,096 )	( - )	( 2,096 )	( 4,000 )	( 500 )	( 4,500 )
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S.						
1.						
2.						
Host Country		1,300			3,040	3,040
Other Donor(s)						
<b>TOTALS</b>	<b>2,096</b>	<b>1,300</b>	<b>2,096</b>	<b>4,000</b>	<b>3,540</b>	<b>7,540</b>

**9. SCHEDULE OF AID FUNDING (\$000)**

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ARDN	121	080	-	4,342	-	-	-	4,500	-
(2)									
(3)									
(4)									
<b>TOTALS</b>				<b>4,342</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4,500</b>	<b>-</b>

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)  
 073      312      963

11. SECONDARY PURPOSE CODE  
 141

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To establish an applied agronomic research program which will (a) adapt existing technology to local conditions in order to increase the productivity of the dryland farmers; (b) train adequate Moroccan staff to operate the program and transmit the results to farmers; and (c) develop a program whereby suitable farming equipment can be made accessible to small farmers; and

To establish a socio-economic research program which will give a better understanding of the behavior of the dryland farmers and thus provide a basis for effective extension programs.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY  
 0 38 3 1 1 0 9 8 4

15. SOURCE/ORIGIN OF GOODS AND SERVICES  
 000     941     Local     Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 52 page PP Amendment.)

The purpose of this amendment is to readjust budget line items and to modify the magnitude of AID financial technical assistance and participant training levels. This amendment does not change the anticipated level of AID's contribution to the project, but due to the slow rate of implementation during years one and two, it does concentrate more activities in years four, five, six and seven.

17. APPROVED BY	Signature Robert <i>Robert Chase</i>	Date Signed MM DD YY 0 2 1 0 8 3	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY
	Title Director USAID/Rabat		

USAID PROJECT COMMITTEE

DORAL WATTS

ARLAN MCSWAIN

THOMAS EIGHMY

WILLIAM ERDAHL

HARRY PETREQUIN

DONALD WALLS

PROJECT OFFICER

FOOD & AGRICULTURE OFFICER

PROGRAM ECONOMIST

PROGRAM OFFICER

ASSISTANT DIRECTOR

CONTROLLER

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

I. SUMMARY AND RECOMMENDATIONS

- A. Grantee: The Government of Morocco (GOM)
- B. Implementing Agency: Ministry of Agriculture, Institute for National Research (INRA).
- C. Amount: This amendment does not change the authorized life of project costs to AID of the Dryland Agriculture Applied Research project, which is U.S. \$4.5 Million.
- D. Total Project Cost: Total project cost is estimated at U.S. \$7.54 Million. These costs broken out by source, foreign exchange and local currency are projected as follows:

<u>SOURCE</u>	<u>U.S. DOLLARS</u>		
	<u>FX</u>	<u>LC</u>	<u>TOTAL</u>
A.I.D. GRANT	4,000	500	4,500
GOM	--	3,040	3,040
TOTALS	<u>4,000</u>	<u>3,540</u>	<u>7,540</u>

- E. Project Purpose: To establish an applied agronomic research program which will (a) adapt existing technology to local conditions in order to increase the productivity of the dryland farmers; (b) train adequate Moroccan staff to operate the program and transmit the results to farmers; and (c) develop a program whereby suitable farming equipment can be made accessible to small farmers; and

To establish a socio-economic research program which will give a better understanding of the behavior of the dryland farmers and thus provide a basis for effective extension programs.

- F. Revised Project Description: The Dryland Agriculture Applied Research project has been designed with the recognition that the problems facing the dryland farmers are not susceptible to quick and easy solutions. Adequate time and much hard work will be required to develop, test and transmit to farmers improved technology that they can use without increasing the naturally high risks that dryland crop production entails.

To achieve the projects goals and purpose AID will finance technical assistance, training and project commodity procurement. Under the project an AID financed technical assistance team will assist the GOM develop institutional capacity to conduct applied research geared to increasing agricultural production in the dryland areas where annual rainfall averages between 250 to 450 mm, and subsequently increase farm income.

- G. Project Amendment Justification: In April, 1978, USAID/Rabat signed a bilateral grant agreement with the Government of Morocco (GOM) for an applied research project in the semi-arid regions of Morocco. This project provided AID financed inputs totalling \$4.5 million to strengthen the National Institute for Agronomic Research (INRA) applied research program in agronomy, cereal and legume varietal selection, farm equipment development and agricultural production economic analysis. It also provided support to rural socio-economic research activities of the Department of Rural Sociology, National Institute of Agronomic and Veterinary Sciences, Hassan II University (INAV-Hassan II).

The project also provided support for professional development and training of Moroccan research personnel. Research was focused on technology development to increase farm productivity and production of major cereals (wheat and barley), edible legumes, and forages in regions receiving an average of between 250 mm - 450 mm of rainfall annually. This semi-arid region continues to provide an estimated 70% of Morocco's barley production and 45% of the national wheat production. Increased forage production is also a critical variable in achieving the project's goal of increasing cereal production and farm income.

The original project paper project implementation was to have begun in FY 1978. The original implementation plan highlighted rapid in-country deployment of a 3-person U.S. scientific research team to initiate development of a collaborative multidisciplinary applied research program. The original plan also programmed a cadre of INRA personnel to be selected early in the project life for enrollment in advanced degree participant training programs in U.S. universities.

The stress on rapid phasing of project activities continues to be critical to the achievement of project objectives within the time frame of this project. Project implementation was seriously disrupted by various degrees of slow performance from all parties to this project. The U.S. technical assistance contractor initially failed to rapidly field an appropriately qualified team of French-speaking agricultural research scientists. The GOM funded construction of facilities at the central research station in Settat has progressed slowly and appears to be nearing completion. The selection of INRA personnel to be enrolled in advanced degree participant training programs has been a long, drawn out affair disrupted by institutional reorganization within the Ministry of Agriculture (MARA). During the first year of collaborative field research (1981-82), severe climatic conditions disrupted research plots, resulting in the generation of distorted, unreliable, and possibly misleading data. After working through numerous start-up implementation delays spanning almost three years, project implementation is now accelerating.

USAID/Rabat efforts to get this project on track have resulted in the satisfactory strengthening of project administration, a root cause of project implementation delays. The project is now proceeding with reasonable progress. The technological and institutional objectives in the original Project Paper remain valid. Therefore, the purpose of this amendment is to clarify and realign the project activities with a new implementation schedule and to shift financial resources to enable USAID to effectively support and evaluate project implementation activities described in the original Project Paper and further clarified in this amendment.

- H. Recommendations: It is recommended that this amendment to the Dryland Agriculture Applied Research Project (608-0136) be approved. The original AID authorization of \$4.5 million remains unchanged. The total GOM contribution has increased to \$3,040 million equivalent in local currency. All other recommendations made in the original Project Paper remain unchanged.

## II. THE PROJECT

- A. Problem Statement: The semi-arid region of Morocco is defined as receiving from 250 mm to 450 mm annual rainfall, albeit the temporal and spatial distribution of annual rainfall is highly erratic. This semi-arid region comprises approximately one-half of the total arable land base and provides a living for over one-fifth of all rural inhabitants of Morocco. The majority of farms located in the region are less than 20 hectares and are characterized by excessive fragmentation of holdings, sharecropping and other forms of insecure tenancy exacerbated by inheritance customs and rural-urban migration. Many of the regional soils are highly calcareous, rocky, shallow, non-uniform and deficient in nutrients. Farm implements and cultural practices employed by most farmers are, in combination with other agronomic and climatic conditions, constraining farm productivity and yields to an estimated 30 percent of potential. It is commonly assumed that most of the available improved production techniques and inputs utilized by more commercial farmers in the region are either not available/known to the majority of traditional farmers of the region, or the increased cost of production is beyond the financial risk perceived by the farmer under such variable and unpredictable climatic conditions. Additionally, highly complex lineage and political relationships characterize the social milieu in which farmers operate.

Although these generalizations describe the global characteristics, the major operational premise of this project is that very little detail is known of the region. The GOM has long emphasized the development of irrigated perimeters under more favorable agronomic conditions in an attempt to maximize production of high value export crops which earn valuable foreign exchange. However, the last decade has witnessed an

imbalance between domestic supply of and demand for basic cereal grains, a rapidly expanding population, dramatic growth in urbanization, and a consequent growing food import bill. In recognition of the potential social and political problems represented by this changing situation, the GOM has increasingly turned attention toward the stimulation of domestic agricultural production in the larger rainfed areas.

- B. Project Background and Purpose: In April, 1978, AID approved the Dryland Agriculture Applied Research Project Paper based on the results and commitments expressed during a 1976-77 policy dialogue. USAID and the GOM addressed both the importance of increasing developmental activities in semi-arid areas, both in terms of national food grain security objectives, and the comparative advantage of U.S. technical assistance in semi-arid grain production.

The goal of the Dryland Agriculture Applied Research Project of increasing farm productivity and production of major cereals and food crops in the rainfed areas, beginning in the semi-arid region of Morocco, and increasing farm income, remains unchanged.

The project purpose continues to be the establishment of an applied agronomic research program which will (a) adapt existing technology to local conditions in order to increase the productivity of the dryland farmers; (b) train adequate Moroccan staff to operate the program and transmit the results to farmers; and (c) develop a program whereby suitable farming equipment can be made accessible to small farmers; and

To establish a socio-economic research program which can give a better understanding of the behavior of the dryland farmers and thus provide a basis for effective extension program.

The institution building necessary to achieve the project goal demands a long term developmental commitment. This seven year commitment continues to be regarded as Phase One of a long term effort. The technical assistance financed by this project should not be separated from the critical step-by-step institution building process which entails both physical and human resource development. Coupled with shifts in attitude concerning management concepts used by Moroccan educational and scientific communities, U.S. technical assistance continues to play a catalytic role in demonstrating practical benefits of "hands on" applied research.

Project activities continue to be delineated to specific semi-arid regions receiving an average annual rainfall of between 250 mm and 450 mm. The map of Morocco provided in Annex 1 illustrates the project area, which includes all or parts of these provinces: Settat, Khouribga, Beni-Mellal, Marrakech, Essaouira, Safi, El Kelaa, and El Jadida. The project area

continues to include approximately 35,366 km<sup>2</sup>, or nearly half the total arable area in Morocco.

- C. Outputs: The specific outputs to be achieved to accomplish the project purposes are (1) a program of integrated INRA multidisciplinary applied research in cereals (wheat and barley), edible legumes, and forages which efficiently selects improved technologies/cultural practices under field trial conditions which are judged ready for extension to farmers in the target area; (2) a program of rural sociology and agricultural economics research which examines the potential acceptability, economic feasibility and financial profitability of proposed technological interventions; and (3) a National Aridoculture Research Center in Settat capable of managing, implementing and evaluation INRA's applied agricultural research programs. The following continues to be identified as the minimum necessary for full realization of these major outputs: (1) 33 trained INRA research scientists, administrative and support personnel; (2) 4 INRA research substations equipped with basic field equipment, repair and maintenance equipment and tools; (3) universal acceptance by INRA of controlled scientific field research methodology and concepts; and (4) annual multi-disciplinary seminars to enable the GOM, INRA and technical assistance personnel to review proposed research plans and analyze past and present progress.

Project activities will continue to concentrate on applied research as it relates to identifying solutions to observed constraints hindering increased production under existing semi-arid, rainfed agriculture conditions. The project's focus will continue to be on improvement of cereal and forage varieties, development of appropriate agricultural equipment and appropriate packages of crop management practices emphasizing alternatives which will result in improvements in crop rotation, tillage, seeding rate, weed control, soil-crop-water-use efficiency, and pest control. Promising results and practices selected from INRA station research will continue to be validated further through on-farm research trials. Selected yield increasing technologies will be presented to MARA for extension to farmers as quickly as is feasible. The Dryland Agriculture Applied Research project primarily supports agriculture research, with minor support to GOM extension activities. Other AID-funded agricultural projects, i.e. 608-017C, will be designed to address major extension program needs outside the scope of this project.

- D. Inputs: The inputs required to produce the outputs specified above include U.S. technical assistance, GOM staff, in-country and U.S. training, construction, commodities, land, physical facilities, operating expense, and other financial resources. This project will continue to be jointly funded by the GOM and AID. AID will continue to finance project foreign exchange costs and assume responsibility for a portion of the project local currency costs.

### 1. Technical Assistance

The long-term technical assistance team proposed in the original Project Paper will be expanded to include: (1) a cereal variety selection specialist, and (2) an agricultural equipment maintenance specialist. Due to the implementation delays in fielding the initial TA team early in the project, the costs of financing these additional long-term research scientists can be financed using funds authorized in the original project paper. The original project paper field team composed of a cereal agronomist, forage agronomist, and soil scientists will be continued under this amendment.

The short-term consultant technical assistance is also revised to meet revised project needs. Annex 4 presents the revised short-term technical assistance program, with flexibility to meet priority needs as they are identified.

### 2. GOM Staff

INRA staff will continue to expand to meet the staffing needs of applied research programs at four INRA research stations, as well as the National Aridoculture Center in Settat. Twenty-five INRA researchers and 8 INRA technicians and numerous support staff will be shifted to the project under a phased implementation plan. The central INRA administration backstopping the project will continue at the present INRA staffing level. A portion of the project research staff will be drawn from other institutes such as INAV Hassan II University and assigned responsibilities in coordination with INRA. Salaries, per diem and incentives will be paid by the GOM through their respective institutions during their association with INRA under this project.

### 3. Training

Long term training will be provided for approximately 25 individuals. Training will include 10 MS and 15 PhD academic degree programs at U.S. universities. In-country, third country, and U.S. short-term practical skill development programs for 62 pm of training is detailed in Annex 5. The GOM policy of in-country PhD dissertation and MS thesis work to be completed in Morocco with the degree to be awarded by INAV-Hassan II University will continue as proposed in the original Project Paper.

### 4. Construction

An INRA National Aridoculture Research Center is being constructed 5 kilometers south of the provincial capital of Settat, in the middle of the semi-arid project zone. This INRA Aridoculture Center will be the central facility to service the technical and support requirements of the national level semi-arid agricultural programs. This facility eventually will be composed of: (1) analytical laboratories for soil, forage, pest

control, agricultural economics, and agricultural equipment; (2) one seed house for drying, processing, storing, and handling of seed and experimental plant materials; (3) one warehouse and machine shop equipped for service and maintenance of INRA field research equipment and vehicles; (4) storage rooms for fertilizers and chemicals; (5) administrative unit and research staff offices; (6) housing for research personnel; and (7) a scientific reference center. Present Aridoculture construction and additional construction at any of the other four cooperating INRA research stations will continue to be the financial responsibility of the GOM.

#### 5. Commodities

The commodities to be financed under this Amendment are project vehicles; field and research plot machinery; research laboratory equipment; maintenance shop equipment, spare parts and tools; library equipment, professional reference materials. office equipment; and limited microcomputing hard/software. A revised commodity budget is presented in Annex 9.

#### 6. Land and Physical Facilities

The GOM has made significant INRA resources available for the project activities. The project continues to focus scarce developmental resources at the following 4 INRA research stations located within the semi-arid zone: Sidi El Aydi, Jemga Shaim, Tessaout, and Settat. The Settat station functions not only as the National Aridoculture Research Center and Project Headquarters, but is similar to the remaining three research stations in that they all have experimental plots, research field equipment, vehicles, research personnel and basic support facilities to support selected project research activities.

#### 7. Operating Expenses and Other

In order to maintain project implementation momentum, and meet the need for a effective level of liquidity beyond the support provided within the current GOM budget allocations to the project, limited support will be provided to both research activities, and the equipment/machinery maintenance operations. AID contributions will phase out at such time as increased budgetary allocations are made available by the GOM to INRA. Funds will be made available on a selective basis by the U.S. technical assistance contractor for local procurement involving; A) field research logistical support, B) temporary rental of complementary office space in Settat until the Center facilities are ready for occupancy, C) purchase of project office equipment and supplies; D) minor reproduction and printing costs; E) costs of secretarial, custodian, and administrative assistances; and F) other miscellaneous expenses. A revised budget is available in Annex 2.

### 8. Socio-Economic Research Program

The project continues to utilize the Institute National Agronomic and Veterinary-Hassan II Department of Rural Sociology (INAV-H2/DRS) to implement the project socio-economic program in collaboration with INRA and MIAC. Geographic location and research design will continue to be developed to support achievement of project goals and objectives. This study gives priority to developing the detailed understanding of technical, social, and economic factors which affect decision making by farmers under varying risk situations. Risk assessment is considered crucial in the farmers acceptance or rejection of improved cultural techniques.

A complementary objective is to increase the capability of both INAV-H2/DRS, and INRA researchers to apply more rigorous quantitative analytical methods to the process of data analysis. This project also seeks to strengthen the working relationships between professional social, economic biological, agronomic and engineering sciences to further encourage multidisciplinary problem identification and research design, as well as the quantification of production coefficients and constraints. Further, it is anticipated that research results will be produced which more clearly describe on-farm conditions to assist other scientists, government officials and extension workers in the selection of appropriate technologies for small-scale producers under semi-arid conditions.

The socio-economic research program consists of a series of inter-related activities conducted by INAV-H2/DRS southeast of Settat in the Haute Chaouia Region. A number of background studies are underway on specific topics which characterize the economic behavior and social organization of farmers in the project target area. These research studies include wage structures and employment patterns; food consumption; the extent of and impact of mechanization; input utilization and application; land distribution; evolution of farm size; economic behavior of family farms; and soil survey mapping. Annex 10 is a summary of these reports.

An extensive survey of 1,079 farm households in the Haute Chaouia region was carried out from FY 1979 to FY 1982 which resulted in a farm typology and subsequent selection of a representative sample for an in-depth socio-economic study of 50 farms in the pilot area. In November 1981, this 50 farm study and a complementary study of market prices at six farmers markets began involving three research staff of INAV-H2/DRS under the direction of DRS director, Dr. Paul Pascon. Quantitative data being collected for all farm types within the 50 farm sample continues to be based on the original project paper design. The generated data will continue to be analyzed using computer facilities available at INAV-H2.

The market price study for six representative regional farmer markets continues to focus on the generation of data on prices asked/received for all crops produced in the region, as well as all animals marketed. Study data continues to be collected recording A) prices paid by consumers for 12 key staples (e.g. sugar, flour, tea, etc.), B) observations of the behavior of market prices paid for cereal grain, i.e. bread wheat, durum and barley, over time, C) deductions of the farm gate prices received, and D) relationships of

official procurement target prices to actual farm gate prices. The research hypothesis is that the farm gate prices actually received are sufficiently lower than the "official" price such that they do not provide the producer with adequate economic incentive to increase cereal production nor to adopt new production technologies and associated higher production costs.

To enable achievement of the original project objectives for the socio-economic research program, an organization such as INAV-H2/DRS will continue implementation of the collection of data for the 50 farm study and the representative market price study in the Haute Chaouia region through FY 1983. This will allow the collection of information over time which does not necessarily reflect the distortions associated with past severe drought years. A limited amount of operating expense funding will be made available to continue these rural sociology research activities.

#### E. Administrative/Management Responsibilities

##### 1. Project Organization

a. GOM Institutional reorganization has occurred within the GOM since the preparation of the project in 1978. At that time the Ministry of Agriculture encompassed straight line authority over all agricultural research and extension activities, as well as numerous other functions. During the initial two years of the project, it became apparent that administrative encumbrances of the larger organization were diluting actual accomplishment of quality research work. In early 1980 the responsibility for national agricultural research programs was split from MARA and embodied in the new National Institute for Agronomic Research (INRA). INRA is now a semi-autonomous agency within MARA. The INRA Director is responsible to the Minister of Agriculture (MARA) and INRA's annual budget requests are presented to and received from the Ministry of Finance through MARA. Therefore, reference to the DRA sited in the original Project Paper should be deleted and INRA substituted as the primary GOM implementation agency.

As a consequence of the institutional reorganization, the requirements for an advisory and coordinating committee has been incorporated into the INRA Aridiculture Committee composed of designated INRA, MIAC, and other donor research staff. These arrangements are designed to focus leadership of rather disperse and competitive INRA divisions having varying research responsibilities that need to be coordinated to reduce duplication and waste.

GOM project administrative responsibilities have been further streamlined as a result of the delegation of limited authority for on-going implementation decision-making from the INRA Director to the Director of the National Aridiculture Center, Settlat. The GOM makes no real differentiation between this project and the agricultural research program based at the Aridiculture Center in Settlat, named "Projet Aridiculture" by the GOM. Major implementation issues, research policy, budget requirements and program review remain the purview of the INRA Director.

Political affiliation and organization is an aspect of regional government administration which is no less important than at the national level. It would be naive to ignore the important influences exercised by the provincial level Department of Agriculture Production offices (DPA) of the each province within the project zone. Project activities have stimulated an upsurge of economic activity within the various provincial governments, especially at Settlat. In recognition of this dramatic impact on Settlat Province, the administration of this project explicitly cooperates and coordinates closely with the DPA, Settlat.

b. U.S. Technical Assistance Contract Team. The resident team will function in two capacities: advisory and operational. This dual role is necessitated by the nascent stage of INRA institutional development. INRA is looking to the project TA team to assist with a number of important institution building accomplishments, as well as the urgently needed technological developments required to boost production in the semi-arid zone. The two additional U.S. personnel funded under this amendment will expand this institutional building capacity. U.S. personnel will take direction from the MIAC team leader. General descriptions of work for each U.S. resident team member are presented in Annex 7.

The U.S. Contractor team leader will be responsible to USAID for the administration of AID financed inputs provided in Morocco. This team leader is responsible for the development of long-term and annual INRA collaborative agricultural research program work plans. The U.S. Contractor field team will continue to be responsive to the needs of INRA as approved by the INRA Director or his designee concerning implementation of activities within the scope of the original Project Paper and this amendment. The team leader will schedule necessary short-term consultants mutually agreed upon and programmed through INRA and USAID.

The U.S. technical assistance team will continue the collaborative administration of the participant training program. All participant trainees, either long-term or short-term, should be selected by INRA; agreed upon by the Contractor and approved by USAID. Monitoring the participant academic file preparation will continue to be the responsibility of the Contractor Team Leader or his designee. The Contractor will also provide English language training for participants and funding for internal U.S. travel, but INRA agrees to provide international transportation for all participants to the U.S.A. unless otherwise waived.

The Contractor will lend the guidance of its scientists in aiding the participants in conducting sound research and analysis for their dissertation. as part of an overall program to award degrees in-country. This will also involve a minimum of two visits of the participant's major professor from the appropriate U.S. university to Morocco to supervise the participant's research study as agreed by the U.S. Contractor team leader and approved by USAID. As the project develops and participants return from their academic training in the U.S., they will be expected to assume their roles in Settat as scientists with INRA, while further developing INRA as a research institution.

c. Work Plans. An Annual INRA-Contractor collaborative research work plan will be submitted by the Contractor each September 30th to USAID/Rabat for administrative approval. Each Contractor field team member's research objectives and responsibilities for the 12 month period will be clearly described, as well as individual scopes of work. Duplication and overlapping of research effort with fellow INRA-Contractor research team members will be minimized. Emphasis will be placed on increasing INRA-Contractor research collaboration through the framework of the INRA Aridoculture Committee and through daily research activities. These annual work plans will also define participant training programs, commodity procurement programs, short-term consultant work plans, and describe goals and objectives of overall research efforts to be supported under this project.

d. Commodity Procurement. The U.S. Contractor team will continue to ensure that all commodity procurement is carried out expeditiously and in accordance with AID policy. Field team members will advise the Contractor team leader of necessary commodities to be procured. The team leader will discuss commodity procurement with USAID/Rabat and receive approval and necessary procurement source/origin waivers of necessary. The team leader will coordinate procurement with backstopping institutions and inform USAID of arrival of project commodities. USAID will assist with necessary documentation to process project commodities through GOM customs clearance. Annex 9 summarizes the revised commodity procurement program.

e. AID. USAID/Rabat continues to be responsible for the management of AID-financed project inputs in a manner which is congruent with AID policy and agricultural development objectives of the FAA, as amended. The USAID Project Officer or designee will continue to be responsible for monitoring overall project progress in relation to the objectives and means of achievement contained in the project authorizations and conditions specified in the Bilateral Project Grant Agreement. The Project Officer or designee will continue to be responsible for explaining and advising the U.S. contract team and the GOM implementing agencies of AID policy. The Project Officer or designee will continue to cooperate fully with an external project evaluation team in the provision of all relevant implementation records/documents, and conduct on-site inspection tours, as necessary to verify project implementation status.

#### F. Project Relationship to Program Objectives

##### 1. Relation to GOM Objectives

During the past two decades, the GOM has given high priority to the development of irrigated cash crops such as vegetables and citrus for export. Over 50% of total annual agriculture sector investment has been directed at large-scale irrigation over the period 1958-78. While investments in large scale irrigation continue to average about 50% of planned expenditure in agriculture the GOM has increasingly focussed attention, and increasing investment allocations, to small-scale rainfed agriculture. Thirty-two percent (DH 3.3 billion) of agricultural investment is scheduled for allocation to the rainfed subsector during the current planning period (1981-5). The expanding GOM investment in the rainfed subsector is in part attributable to IBRD integrated rural development projects, as well as AID activities in dryland agricultural applied research. The availability of expertise and upgrading of research capabilities in rainfed agriculture has provided a basis for these new GOM initiatives. Development of agricultural projects which directly contribute to import substitution, rural labor mobilization and increased labor productivity are high priority areas of GOM targeted investment.

The dryland agriculture Project addresses the stated GOM Five Year Plan priorities for the agriculture sector in that the Project goal is to increase on-farm productivity and production of major cereals, legumes and forages in the semi-arid rainfed region of Morocco. The cereal grains and pulse legumes

form the basis of the rural Moroccan diet, while meat produced from the feed and fodder crops provides an important element of farm income. While it is generally recognized that Morocco cannot realistically expect to completely eliminate imports of cereal grains the GOM is firmly committed to reducing their reliance on the uncertain and volatile import market.

The Project also supports the GOM institutional reorganization of the MARA. The divestiture of agricultural research functions from MARA, the creation of INRA as an organization solely responsible for agricultural research and the establishment of a National Aridoculture Research Program is completely supported by this Project. The assessment and integration of past agronomic research in semi-arid regions is supported in the Project. This will give INRA the baseline data needed to enunciate a comprehensive program of applied research resulting in the identification, adaptation and development of improved technologies for increasing yields under semi-arid agronomic conditions.

## 2. Relations to AID Objectives

The FY 1984 CDSS Agriculture Sector Strategy has articulated support for two GOM FYP priorities: 1) increased equity by directing activities and resources to small and medium-scale farmers; and 2) achievement of a greater degree of food self-sufficiency, especially in cereals (the largest item in the import budget). The equity and cereals objectives argue for concentration in rainfed areas outside the irrigated perimeters.

The extent to which gains can be achieved in cereal production will depend on the availability of suitable higher producing practices which are technically, economically and culturally acceptable to small-scale farmers. The consensus of Moroccans and expatriate technicians is that such technical innovations have been developed elsewhere in the world for the higher rainfall areas. However, the certainty of the suitability or adaptability of existing technological "packages" declines sharply with rainfall.

The problem of the paucity of available improved production technologies, low productivity of the factors of production in the semi-arid regions, and the subsequent impact on farm income is the focus of the Dryland Agriculture Project. The Project seeks to establish an institutional capacity within the GOM to adapt existing "shelf" technologies to Moroccan agronomic, economic and social conditions. Where no suitable technology exists the Project sees to develop that which is needed to increase both productivity and production of major cereals, legumes and forages.

## 3. Other Activities in Related Areas

### a. Other Donors

Three other international donor agencies have activities which relate to the AID financed applied research in the rainfed areas: the World Bank-IBRD; the Federal Republic of Germany (FRG) and the Food and Agriculture Organization (FAO).

The IBRD agriculture sector activities in Morocco have been primarily focussed on large-scale infrastructure developments and credit operations, emphasizing the irrigated sub-sector. However, beginning in 1975 the

Bank entered into its first activity which exclusively addressed the constraints to improving the productivity of rainfed agriculture, the Meknes Agricultural Development Project. The Project revolved around the GOM redistribution of 30,000 ha. of land, mainly ex-foreign owned farms. The redistribution would benefit 8,500 rural families who in 1975 were landless or marginal land-holders, 85% of whom earned incomes of less than one-third of the average national per-capita income. The Project was designed with an integrated rural development approach, providing farmer cooperatives with essential infrastructure, potable water, storage facilities, improved irrigation facilities. The Project provided for minimal research in crop production, however the research focus was primarily on higher value crops, such as sugar beet.

The second IBRD involvement in the rainfed sub-sector is the Fes-Karia-Tissa Project which is also an integrated rural development project focussed on a limited geographic area. The primary activities of the project are rural infrastructure improvements and increasing the availability of critical production inputs to approximately 33,000 farmers within the project area.

The FRG is providing limited technical assistance in the project zone to the GOM commercial seed multiplication and distribution authority, SONACOS, for the technical improvement of seed cleaning and treatment processes prior to sale to farmers. SONACOS distributes seed from INRA research/experiment stations and private farmers under seed multiplication contracts to local farmers at planting time at fixed prices.

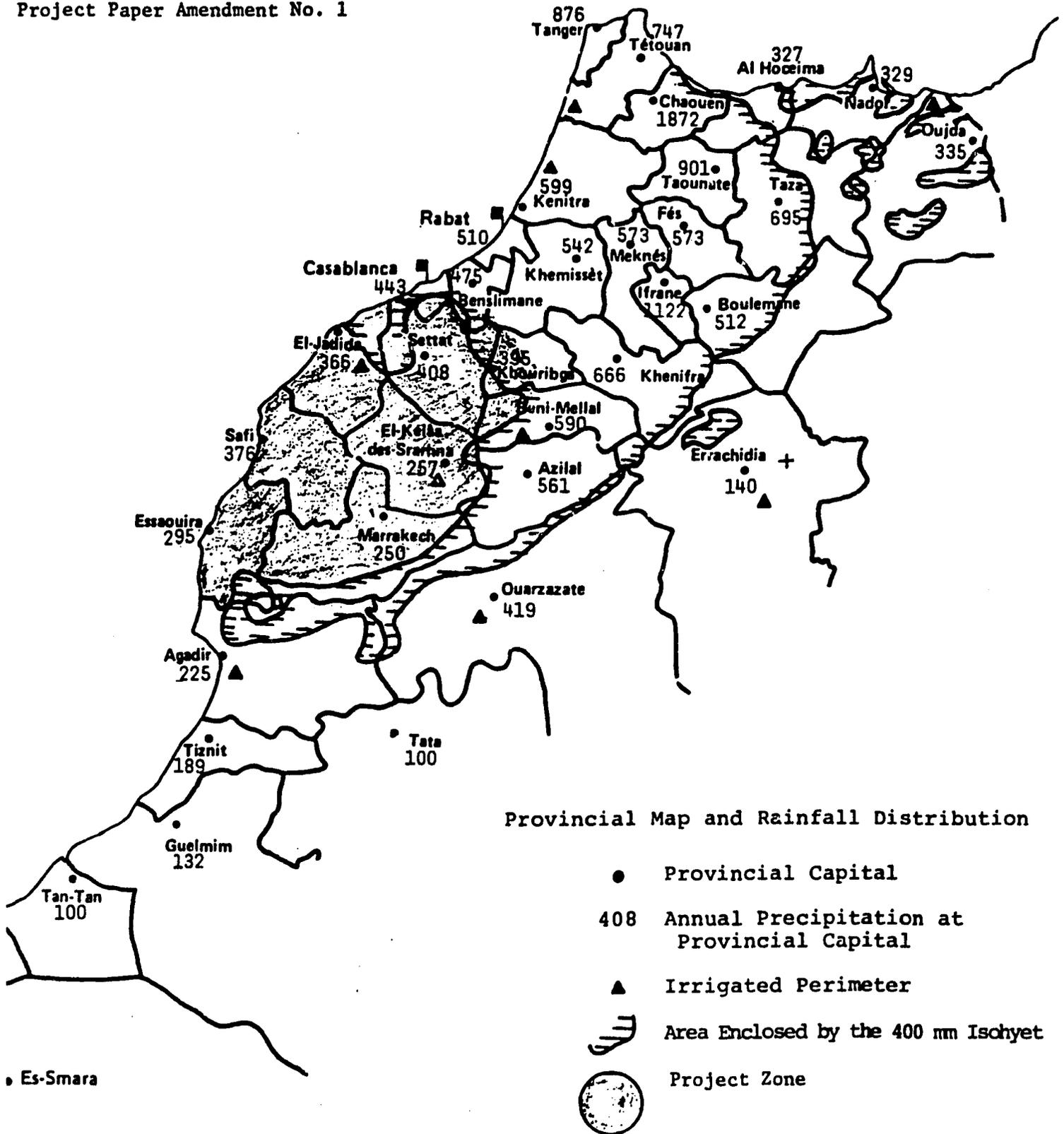
FAO has recently provided technical assistance to the GOM/MARA to develop a new rainfed agriculture production improvement strategy. This institution building activity called for the development of a 10-20 year Master Plan and autonomous institutional mandate on rainfed agricultural research, focussing on a strategy for increasing national cereal production. INRA has requested that the World Bank review the preliminary INRA plan and assist in its refinement. In conjunction with this effort, and in recognition of the direct involvement of USAID in cereals research, short-term technical assistance in the further development of the plan will be provided.

#### G. Peace Corps Volunteer Collaboration

The involvement of Peace Corps Volunteers based at the INRA Research Station level is an innovative implementation element that offers a practical approach to the achievement of the project goal of establishing a trained INRA cadre to continue implementation of applied agricultural research programs. The initial involvement will focus on the on-the-job training of selected INRA agricultural research equipment managers, operators, and maintenance staff at specific INRA research stations. Jemaa Shaim is a possible priority INRA station for initiating this PC program. The individual PCV's will be responsible to their designated INRA research staff member. The Peace Corps Volunteer logistical support system will be complemented by the US project implementation resources in collaboration with INRA management, i.e. per diem and travel support along with provision of necessary research supplies; vehicular support, and technical backstopping. The US contract team leader will approve in advance allocations of complementary project resources to assist PCV's within this project. Monthly progress reports will be submitted by recipient PCV's to the US Contractor team leader for incorporation into Contractor monthly progress reports. PCV progress will continually be appraised against this Project's goal, purpose, and objectives. This initial PCV involvement will be evaluated during the mid-project evaluation to appraise the potential for expansion of PCV involvement in this agricultural research project.

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

Project Paper Amendment No. 1



Provincial Map and Rainfall Distribution

- Provincial Capital
- 408 Annual Precipitation at Provincial Capital
- ▲ Irrigated Perimeter
- ☞ Area Enclosed by the 400 mm Isohyet
- ⊙ Project Zone

PROJECT PAPER 608-0136 AMENDMENT ONE - AMMENDED BUDGET SUMMARY

	Original PP		Amendment Shifts		Amended PP	
	PM	\$000	PM	\$000	PM	\$000
U.S. Technical Assistance	141	1,333	+143	+ 157	284pm	\$1,176.0
- Long Term						
- Short Term	70 pm	210	- 30	- 98	40pm	112.0
Commodities		405		+ 424.6		829.6
Participant Training						
- Long Term	690	855	+ 342	+ 193	1,032	\$1,048
- Short Term	20	45	+ 42	+ 137	62pm	182.0
Overhead/Indirect Costs		333		+ 240		573.0
Other Costs		664		- 84.6		579.4
Inflation	17%	385		- 385		000
Contingency		270		- 270		000
Total		4,500				4,500

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT  
608-0136

PROJECT PAPER AMENDMENT No. 1

GOM Contruction of Aridoculture Complex, Settat

The following describes the GOM financial contribution towards the construction of the INRA Aridoculture Research Complex located in Settat:

	<u>Dirham Value</u>	<u>Approximate Value</u>
<u>Office/Laboratory:</u>		
- Foundation and building construction	3,400,000	\$567,000
- Wood working and finishing	920,000	154,000
- Electricity installation	715,000	110,000
- Plumbing	680,000	113,400
- Water works	478,000	80,000
- Sewage facilities	1,361,000	227,000
- Painting	215,000	36,000
	<hr/>	<hr/>
Subtotal No. 1	7,769,000	\$1,297,400
 <u>Lodging:</u>		
- Two 3 bedroom houses	500,000	84,000
- Two 2 bedroom houses	300,000	50,000
	<hr/>	<hr/>
Subtotal No. 2	800,000	\$134,000
 <u>Warehouse:</u>		
- One equipment repair/storage facility	500,000	84,000
	<hr/>	<hr/>
Subtotal No. 3	500,000	\$84,000
 <u>Electrical transformer:</u>		
Transformer installation	117,623	20,000
	<hr/>	<hr/>
Subtotal No. 4	117,623	\$20,000
	<hr/>	<hr/>
<u>Subtotal A</u>	<u>9,186,623</u>	<u>\$1,535,400</u>
GOM Salary Contribution <u>Subtotal B</u>		<u>400,000</u>
GOM Commodity Contribution <u>Subtotal C</u>		<u>854,600</u>
GOM Operating Expense Contribution <u>Subtotal D</u>		<u>250,000</u>
	<hr/>	<hr/>
	<u>TOTAL</u>	<u>\$3,040,000</u>

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136  
PP AMENDMENT No. 1

ANNEX 2

	Original PP PM	\$000	Amendment PM	Shifts \$000	Amended PP PM	\$000
<b>A. Salaries:</b>	346	1,125	-22	-157.2	324 pm	967.8
1. Short term US consultants	70	210	-30	- 98.0	40 pm	112.0
2. US Backstop office staff	90	195	-6	+ 2.0	84 pm	197.0
a. US Contractor	30	110	--	18.8	30 pm	91.2
b. US Assistant Coordinator			+24	+ 69.5	24 pm	69.5
c. US Secretary	60	85	-30	- 48.7	30 pm	36.3
3. Resident US Field Team	180	600	+15	+ 43.8	195 pm	643.8
a. Cereal Expert /Team Leader					54 pm	177.8
b. Soil Scientist					39 pm	127.0
c. Cereal Variety Specialist					31 pm	106.0
d. Forage Scientist					42 pm	159.0
e. Ag Equipment maintenance	30	100	- 1	- 26.0	29 pm	74.0
4. Evaluation Team	6	20	- 1	- 5	5 pm	15
<b>B. Indirect Costs:</b>		333		+ 91		424.0
1. On-campus		100		+ 34		134.0
2. Off campus		233		+ 57		290.0
<b>C. Travel, Per Diem, Transportation:</b>		418		- 97.8		320.2
1. US Travel		5				5.0
2. Arrival-departure Int'l travel		34		- 5.1		28.9
3. Invitational travel/Int'l center visits		6		+ 14.6	4.85	20.6
4. Short-term staff, consultant, advisors		158		- 92.7	40 pm	65.3
5. Equipment Specialist		24		- 22.4	1 trip	1.6
6. Evaluation Team		18		- 13.5		4.5
7. Inspection Visits	5 trips	10		+ 22.0	14 trips 7 1/4pm	32.0
8. Shipping HHE, POV, Storage		57		- 48.0		9.0
9. Shipping Commodities		66		+ 84.0		150.0
10. In-Country Travel		40		- 36.7		3.3
<b>D. Other Direct Costs:</b>		664		- 84.6		579.4
1. Fringe benefits	20%	201		- 21.0		103.0
2. US supplies/expenses		31		- 6.3		24.7
3. In-country supplies/expenses		5		+ 12.0		177.0
4. Preparatory costs & language training		27		- 27.0		.0
5. Temporary lodging		76		- 38.0		38.0
6. Resident lodging & utilities		220		-103.2		116.8
7. Temporary office & utilities				+ 17.9		17.9
8. Education allowance		104		- 99.0		5.0
9. Socio-Economic staff & expenses				+ 80.0		80
<b>E. Commodities:</b>		405		+424.6		829.6
1. Vehicles		75		+ 49.0		124.0
2. Ag Machinery & equipment		250		- 67.1		317.1
3. Laboratory equipment		55		+ 91.6		145.6
4. Herbicide/fertilizer		25		8.5		16.5
5. Household furnishings & appliances			+ 4 sets	+ 72.0	4 sets	72.0
6. Participant training in-country support				+ 25.0		25
7. Socio-economic support				17.2		17.2
8. Workshop/maintenance support				+ 83.7		83.7
9. Administrative equipment				+ 27.5		27.5
<b>Subtotal</b>						3121.3

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136  
PP AMENDMENT

	Original PP		Amendment Shifts		Amended PP	
	PM	\$000	PM	\$000	PM	\$000
F. <u>Training:</u>	710	900	+ 374	+330	1.094	1.230
1. Long term	690	855	+ 342	+193	1.032	1.048
2. Short term	20	45	+ 18	+137.0	62	182.0
G. <u>MIAC G &amp; A:</u>				+149.0		149.0
H. <u>Inflation:</u>		385		-385.0		
I. <u>Contingency:</u>		270		-270.0		
	<u>TOTAL:</u>	4,500		-0-		4,500

AMENDMENT NUMBER ONE  
TO  
PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY '78 to FY '84  
Total U.S. Funding \$4,500,000  
Date Prepared: December, 1982

Project Title & Number: DRYLAND AGRICULTURE APPLIED RESEARCH (608-0136)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																						
<p>Program or Sector Goal: The broader objective to which this project contributes: To increase basic food production in order to meet the needs of Morocco's fast-growing population, and improve income of traditional small dryland farmers.</p>	<p>Measures of Goal Achievement:</p> <ul style="list-style-type: none"> <li>- Increase in food production.</li> <li>- Reduction in basic food imports in absolute terms or in relation to population increase.</li> <li>- Increase in consumption in dryland areas.</li> <li>- Increase in income of small farmers.</li> </ul>	<p>GOM statistical and other reports.</p>	<p>Assumptions for achieving goal targets: The GOM will:</p> <ul style="list-style-type: none"> <li>- effect program and price policy changes so as to encourage greater farmer productivity.</li> </ul>																						
<p>Project Purpose: To establish an applied agronomic research program which will (a) adapt existing technology to local conditions in order to increase the productivity of the dryland farmers; (b) train adequate Moroccan staff to operate the program and transmit the results to farmers; and (c) develop a program whereby suitable farming equipment can be made accessible to small farmers; and To establish a socio-economic research program which will give a better understanding of the behavior of the dryland farmers and thus provide a basis for effective extension programs.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ul style="list-style-type: none"> <li>- A unit in MARA with adequate staff facilities, and budget is conducting production-oriented research.</li> <li>- Production technology that is economically applicable is being developed.</li> <li>- Improved technology is being made available to farmers.</li> </ul>	<ul style="list-style-type: none"> <li>- GOM reports</li> <li>- Annual and Special Evaluations</li> </ul>	<p>Assumptions for achieving purpose:</p> <ul style="list-style-type: none"> <li>- MARA is committed to establishing a permanent applied dryland research program.</li> <li>- MARA and AID will provide adequate human, material, and financial resources on a timely basis.</li> <li>- MARA will implement programs to transmit to farmers the results of the research program.</li> </ul>																						
<p>Outputs:</p> <ol style="list-style-type: none"> <li>1. Improved technology.</li> <li>2. Trained Moroccan scientists and technicians.</li> <li>3. Relevant information from the socio-economic research.</li> <li>4. Analytical report on dryland mechanization.</li> </ol>	<p>Magnitude of Outputs:</p> <ul style="list-style-type: none"> <li>15 Scientists trained to PhD in the U.S./Morocco</li> <li>10 Scientists trained to M.S. in the U.S./Morocco</li> <li>8 Technicians trained on-the-job</li> <li>13 Socio-economic study reports</li> <li>1 Report on mechanization.</li> </ul>	<ul style="list-style-type: none"> <li>- Annual Project Evaluations</li> <li>- Special Evaluations</li> </ul>	<p>Assumptions for achieving outputs:</p> <ul style="list-style-type: none"> <li>- MARA will assign qualified "ingenieurs" and "adjoints techniques" in agreed-upon numbers and on a timely basis.</li> <li>- Adequate resources--funds, equipment and land--will be provided on a timely basis.</li> </ul>																						
<p>Inputs:</p> <p>A.I.D.</p> <ol style="list-style-type: none"> <li>1. Research Team</li> <li>2. Consultants</li> <li>3. Commodities</li> <li>4. Training</li> <li>5. Other Costs</li> </ol> <p>GOM</p> <p>Land, buildings, equipment and machinery, agricultural and social scientists and technicians, laborers and administrative personnel.</p> <p>Operating budget.</p>	<p>Implementation Target(type &amp; Quantity):</p> <table border="0"> <tr> <td>A.I.D.</td> <td>US \$(000)</td> </tr> <tr> <td>23 1/2 P/Y 6 Technicians</td> <td>1,749</td> </tr> <tr> <td>3 1/3 P/Y Consulting Services</td> <td>112</td> </tr> <tr> <td>Commodities See Equipment List</td> <td>829.6</td> </tr> <tr> <td>1,094 P/M 15ST and 25 LT)Training</td> <td>1,230</td> </tr> <tr> <td>Other costs</td> <td>579.4</td> </tr> <tr> <td><b>Total A.I.D.</b></td> <td><b>4,500</b></td> </tr> </table> <p>GOM</p> <table border="0"> <tr> <td>Capital Budget</td> <td>900</td> </tr> <tr> <td>Operating Budget</td> <td>2,140</td> </tr> <tr> <td><b>Total GOM</b></td> <td><b>3,040</b></td> </tr> <tr> <td><b>TOTAL PROJECT</b></td> <td><b>7,540</b></td> </tr> </table>	A.I.D.	US \$(000)	23 1/2 P/Y 6 Technicians	1,749	3 1/3 P/Y Consulting Services	112	Commodities See Equipment List	829.6	1,094 P/M 15ST and 25 LT)Training	1,230	Other costs	579.4	<b>Total A.I.D.</b>	<b>4,500</b>	Capital Budget	900	Operating Budget	2,140	<b>Total GOM</b>	<b>3,040</b>	<b>TOTAL PROJECT</b>	<b>7,540</b>	<ul style="list-style-type: none"> <li>- USAID and GOM records</li> <li>- On-site visits</li> </ul>	<p>Assumptions for providing inputs:</p> <ul style="list-style-type: none"> <li>- AID inputs will be provided on a timely basis.</li> <li>- Contractor staff will have proficiency in French.</li> <li>- GOM will provide inputs on a timely basis.</li> <li>- GOM will provide adequate budget for operating costs.</li> </ul>
A.I.D.	US \$(000)																								
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21

Short-term Consultant

	PM			
	FY81	FY82	FY83	FY84
Ag Equipment		1/2	1 1/2	1 1/4
Ag Research Management		1 3/4	2 1/4	1
Weed Science		1/2	3/4	1
Soil Science		1/2	1 1/2	1/2
Ag Statistic			1 1/2	1 1/2
Forages			1 1/2	1 1/4
Edible Legumes			1 1/2	1/2
Ag Water Use Management		1/2	1	1
Administration		1 3/4	1	1
Cereals		1/2	2	1
Rural Sociology		4	3/4	3/4
Ag Economics		1	2	1/2
<b>Subtotal</b>		<b>11 PM</b>	<b>17.25 PM</b>	<b>11.75 PM</b>
<b>TOTAL</b>				<b>40 PM</b>

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

Short-term Training Summary:

The following is a breakdown of the project short-term training plan to be implemented over the life of this project:

Specialization	pm	Budget (\$000)
Cereal Variety Selection	15 pm	17.0
Cereal Crop Protection	1 pm	4.5
Grain Marketing, Storage and Protection	4 pm	10.65
Soil Analysis laboratory	12 pm	25.0
Research Station Management	6 pm	12.0
Forage Analysis Laboratory	12 pm	25.0
Cereal Analysis Laboratory	12 pm	25.92
	<hr/>	<hr/>
	TOTAL 62 pm	120.07

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

PROJECT PAPER AMENDMENT No. 1

Long Term Training Summary

The following breakdown is presented to further clarify the emphasis on strengthening selected specializations in order to establish a competent INRA cadre to conduct research at the Aridoculture Center based in Settat:

	<u>Masters</u>	<u>PhD</u>
Cereals:	Bouchoutrouch Karrou	El Yamani El Mourid  Ouassou Amri Jlibene
Edible Legumes:	Sakr	Kamel
Forages:	Amar	Mazhar Derkaoui Arif
Soil Fertility:	Azzaoui El Charous	Oubahammou Bouzza
Soil Management:	Bouksirat	Berrada
Plant Pathology:	Toufiq	Lyamani
Farm Management/Economics:		Zagdouni
Weed Science:		Tanji
Entomology:	Lhaloui El Bouhssini	
<b>TOTAL</b>	<b>10 Participants</b>	<b>15 Participants</b>

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

PROJECT PAPER AMENDMENT No. 1

Technical Assistance Team Scope of Work Summary

I. Cereal Expert /Team Leader

A. Responsibilities:

The Team Leader is responsible to the Dean of International Programs at the University of Nebraska and shares all aspects of program coordination with the stateside Project Coordinator. He will represent UNL and MIAC, and administer the operational program in Morocco. He will maintain liaison with USAID and appropriate GOM and INRA staff at national and provincial levels to assure close coordination in planning and operations to meet project objectives. He will be the Cereal Agronomist on the Contract field team.

B. Duties:

1. To provide administrative leadership to the staff so that pertinent regulations of the Contract, UNL, AID and INRA are met. This entails assuring that bank accounts are maintained, expenditures are authorized, financial records are maintained, and receipts are organized and sent to the Morocco Project Office in Lincoln for processing and billing.

2. To maintain continuing liaison with USAID and INRA. This is to assure coordination of plans and operations, to avoid undesirable duplication, to develop joint efforts, and to achieve continuing growth in INRA's capability to manage and carry out project operations.

3. To hire and supervise a supporting staff of Moroccan nationals to carry out administrative assistant, secretarial, translator, janitorial, research support and other functions essential to operation of the project. This includes regular evaluations of performance and action on salary adjustments.

4. To function actively as Team Leader for the professional MIAC staff to maximize cooperation and effective interactions in planning and conduct of experiments and other program activities. Mutual agreement on desirable activities and approaches to them is essential so that a "team spirit" prevails with associated gains in efficiencies and morale.

5. To make performance evaluations of long-term and short-term MIAC staff. Provide support and give counsel to maximize effectiveness of each staff member. Transmit staff evaluation reports to the Morocco Project Office at UNL.

6. To guide the development and submission of monthly activity reports as requested by USAID. See that appropriate staff reports are sent to the Morocco Project Office quarterly for inclusion in a consolidated Quarterly Report. Prepare materials and suggestions for the Project Coordinator to use in preparing the annual project report for fiscal years ending September 30.

7. To maintain an inventory of all equipment and furniture items purchased under the contract or in support of the project that have been received. Assist the Project Coordinator in preparation of the equipment report due February 28 each year. Assume responsibility as Team Leader for safeguarding the equipment, its proper maintenance, and its appropriate and effective use in project activities. This includes supervision of the Personal Service Contractor staff designated to the project.

8. To maintain communications with the Institut National Agronomique et veterinaire Hassan II (INAV) on the socio-economic studies carried out as a part of this project. To help evaluate resulting information and its use in planning for extension and development activities needed to achieve agricultural improvement in the project area.

9. To request consultants to bring special expertise to specific components of project activities, and schedule and support their activities to accomplish project objectives.

10. To guide a program for machinery development for small farmers that will enhance their productivity and permit adoption of new technologies stemming from the applied research program.

11. To encourage INRA to identify potential participants; cooperate in their selection, their acceptance by INAV for advanced degrees, and the defining of their ultimate role and areas of desired study; arrange English language study and counsel and assist in the assembly of the dossiers required to apply for admission to U.S. institutions for course work. Upon their return to Morocco to do thesis research, arrange for supervision, use of facilities, and fitting the thesis research into overall activities of the project. Such returned participants will be considered part of the professional staff, integrated into the program, extended support, cooperation and courtesies accordingly.

12. To participate in water and cereal research activities. This involves planning the research jointly with appropriate INRA personnel, requesting necessary equipment, arranging support personnel and other elements necessary to carry out the field and laboratory experiments, and finally summarization and reporting of data, as approved in the Annual Work Plan.

## II. Participant Monitor and Agricultural Equipment Economics Researcher/Interim Team Leader

### A. Duties as Participant Monitor

Duties after September 1, 1982, as Participant Monitor will be:

1. To assist the Team Leader in duties through a transition period, as assigned by him.

2. To continue to monitor the MIAC Participant Training Program under the direction of the Team Leader. Generally, these duties will be:

(a) To encourage INRA to identify potential participants;

(b) To cooperate in their selection, their acceptance by INAV for advanced degrees, and the defining of their ultimate role and areas of desired study;

(c) To arrange English language study;

(d) To counsel and assist in the assembly of the dossiers required to apply for admission to U.S. universities for advanced degree course work.

### B. Duties as Agricultural Equipment Economics Researcher

Duties after September 1, 1982, as Agricultural Equipment Economics Researcher will be:

1. To design and execute a comprehensive research program within the applied agriculture research project area concerning agricultural equipment sales and service availability, the extent of use of this equipment by Moroccan farmers, and the economics of its use.

### C. Duties as Interim Team Leader

To assume those tasks presently defined in present Team Leader scope of work.

## III. Soil Scientist

### A. Responsibilities:

The Soil Scientist is responsible administratively to the Team Leader and, through him, to the Project Coordinator and

Dean of International Programs at UNL. He is to function as a team member, representing the soil science area of expertise, but cooperating and sharing in routine operational duties so as to enhance the mutual effectiveness of the entire team in implementation of the program approved in the Annual Work Plan.

B. Duties:

1. To identify priority needs for applied research in soil fertility and land management. With appropriate INRA staff and other members of the MIAC team, jointly plan the experiments to be conducted. The planning and implementation should be coordinated so that undesirable duplication is avoided, work timing and sharing will increase efficiency, and growth in ability of INRA staff toward independent capability in effective experimentation will be nurtured. Data from field harvests and laboratory analyses will be summarized and interpreted as a basis for guiding future research and for recommendations to farmers.
2. To supervise the development, staffing, and operation of soil testing and analytical laboratories. Plans for the new headquarters facility at the National Aridoculture Center have provisions for soil testing, and soil and plant analysis laboratories. Since most applied research will require some soil and plant analysis, appropriate liaison is needed with all segments in planning. Priority equipment procurement lists have been developed.
3. To supervise and counsel with participants in the layout and implementation of their thesis research plans. While particular attention will be given to those doing research related to soil science, this position shares responsibility for seeing that all participants receive support and guidance to enhance their abilities as budding scientists. Appropriate liaison will be maintained at all times with members of the participant's advisory committee, whether from INAV, MIAC or INRA. To help in describing staff roles and developing training objectives for potential participants, where possible.
4. To prepare appropriate contributions to monthly, quarterly annual or special reports under guidance of the Team Leader.
5. To establish and maintain liaison with related INRA and INAV personnel. Activities should be continuously assessed, with the project objective in mind that the goal is to have capable Moroccans handling an effective, ongoing applied research program.
6. To advise the Team Leader and Project Administrators of any needs for consultants, equipment, or other support necessary for proper development of soil science and other aspects of the program where soil science expertise or personal background of the position pertain.

7. To assist and guide returning participants in developing their roles as staff members with responsibilities for their areas of expertise,

#### IV. Cereal Variety Selection Specialist

##### A. Duties

1. To assist INRA cereal breeding staff in the determination of objectives for a rainfed cereal variety selection program involving barley, durum wheat and bread wheat as approved in the Annual Work Plan.

2. To assist INRA cereal breeding team in identification of appropriate genetic parent material to serve as the basis for hybridization and selection for improved varieties with the following traits: high yield, disease resistance, grain quality, drought tolerance, early maturity and other agronomic characteristics

3. To develop cereal germplasm nurseries in collaboration with the INRA cereal breeding team. These germplasm pools will be generated through a program of specific crosses as well as random mating populations using male sterility techniques to facilitate genetic recombination.

4. To screen segregating generations of cereal crosses for insect and disease resistance, e.g., leaf rust, stem rust, stripe rust, and powdery mildew.

5. To collaborate with INRA cereal variety cataloging and seed multiplication programs, including assistance with activities designed to expedite release, production, and distribution of certified seed of improved varieties.

6. To establish and maintain liaison with related INRA and INAV personnel. Activities should be continuously assessed, with the project objective in mind that the goal is to have capable Moroccans handling an effective, ongoing applied research program.

7. To prepare appropriate contributions to monthly, quarterly, annual or special reports under guidance of the Team Leader.

8. To advise the Team Leader and Project Administrator of any needs for consultants, equipment or other support necessary for proper development of the cereal breeding components of the program.

9. To assist and guide returning participants in developing their roles as staff members with responsibilities for their areas of expertise.

10. To supervise and counsel with participants in the layout and implementation of their thesis research plans. While particular

attention will be given to those doing research in cereal breeding, this position shares the responsibility for seeing that all participants receive the support and guidance required to complete their training programs. Appropriate liaison will be maintained at all times with members of the participant's advisory committee, whether from INAV, MIAC or INRA. To help in describing staff roles and developing training objectives for potential participants, where possible.

11. To conduct Project 608-0136 activities as an integrated field team member under direct supervision and guidance of the Team Leader.

#### V. Forage Crop Agronomist

##### A. Responsibilities:

The Forage Crop Agronomist is responsible administratively to the Team Leader and, through him, to the Project Coordinator and Dean of International Programs at UNL. He is to function as a team member, representing the forage crop production area of expertise, but cooperating and sharing in routine operational duties so as to enhance the mutual effectiveness of the entire team in implementation of the program as approved in the Annual Work Plan.

##### B. Duties:

1. To identify priority needs for research in forage crop production. With appropriate INRA staff and other members of the MIAC team, jointly plan the experiments to be conducted. Planning and implementation should be coordinated so that undesirable duplication is avoided, work timing and sharing will increase efficiency, and growth in ability of INRA staff toward independent capability in effective experimentation will be effected. Data from field harvests and laboratory analyses will be summarized and interpreted as a basis for guiding future research and for recommendations to farmers.

2. To supervise the development, staffing and operation of the forage crop research components of the project. This includes requesting and developing appropriate equipment, land, facilities and support personnel for implementing a productive program addressing priority objectives.

3. To supervise and counsel with participants in the layout and implementation of their thesis research plans. While particular attention will be given to those doing research in forage crop production, this position shares the responsibility for seeing that all participants receive the support and guidance required to complete their training programs. Appropriate liaison will be maintained at all times with members of the participant's advisory committee, whether from INAV, MIAC or INRA. To help in describing staff roles and developing training objectives for potential participants, where possible.

4. To prepare appropriate contributions to monthly, quarterly, annual or special reports under guidance of the Team Leader. These reports should identify activities, describe accomplishments, and discuss problems or needs in line with the purpose of the report in supporting program development.

5. To establish and maintain liaison with related INRA and INAV personnel. Activities should be continuously assessed, with the project objective in mind that the goal is to have capable Moroccans handling an effective, ongoing applied research program.

6. To advise the Team Leader and Project Administrators of any needs for consultants, equipment or other support necessary for proper development of the forage crop science components of the program.

7. To assist and guide returning participants in developing their roles as staff members with responsibilities for their areas of expertise.

## VII. Agricultural Equipment Specialist

### A. Responsibilities

The agricultural equipment specialist is responsible administratively to the team leader, and through him to the Project Coordinator, UNL. He is to function as the team member representing the agricultural equipment maintenance, repair, adaptation, alteration and fabrication area of expertise, while upgrading institutional capability with repair shop management and inventory control through on-the-job training. He is to cooperate and share in routine operational duties in order to enhance the effectiveness of the entire team in the implementation of the program approved in the Annual Work Plan.

### B. Duties

1. To train and upgrade a limited INRA cadre in improved repair facility management and inventory control at up to four INRA research stations in the project zone.

2. To train and upgrade the vocational skills of INRA staff, managers and trainers in the repair, overhaul, fabrication, calibration, adaptation, maintenance, operation and preparation for storage of agricultural equipment at selected INRA research stations within the project zone.

3. Submit the following reports:

a. A draft annual report component to be included in the Contractor Annual Report.

b. A draft of quarterly implementation plans in collaboration with the MIAC Team Leader and the INRA Regional Research Coordinator elaborating selected training programs, specific objectives to be accomplished, training sites, training resources and materials and selected INRA participating trainers and staff. Each quarterly implementation plan will cover three month periods beginning May 1, 1982.

c. A monthly status report, one copy each to USAID and to the MIAC Team Leader, which will highlight significant progress and/or problems in project implementation.

d. A report submitted to USAID and the MIAC Team Leader prior to January 1, 1983, and a revised report August 1, 1983, showing an analysis of the production economics of both animal-drawn and tractor-drawn agricultural equipment, which will include:

- prices of specific agricultural equipment, and the annual usage costs, to individual or collective cereal producers;
- evidences of the degree of machinery utilization and mechanization problems within the project zone;
- the linkage of specific agricultural equipment to the expected cereal production yield increases;
- the alternative organizational and managerial improvements likely to facilitate access to the agricultural equipment needed by cereal producers in the project zone.

e. A report to USAID and the MIAC Team Leader, prior to August 31, 1982 and updated prior to August 31, 1983, showing the current status of agricultural equipment available to cereal producers from specific organizations within the project zone.

#### VIII. Administrative Management Specialist:

##### A. Responsibilities:

The responsibilities of the Administrative Management Specialist are basically these of training and supervising office personnel for the MIAC-INRA headquarters office of the applied agriculture research project in Settat. Also, he will function as an assistant to the Team Leader of this project.

##### B. Duties:

1. To recruit, train and supervise an efficient cadre of personnel in the office skills necessary to function in an expanding situation such as in the MIAC-INRA applied agriculture research office. These skills will include typing, office machine operation and maintenance, simple ledger book accounting, office procedures and filing, and inventory procedures.

2. To coordinate English or French language training where appropriate and necessary for all office personnel.

3. To be responsible for all translations of written materials from French to English, and from English to French.

4. To supervise the preparation and dispatch of all prepared reports to their proper destinations in an expeditious manner.

5. To supplement the Administrative Assistant's duties where needed and appropriate.

6. To supervise the paying of all bills pertaining to MIAC's expenditures in the applied agriculture research project in a timely and regular manner.

7. To organize and supervise a periodical inventory of all materials ordered and purchased by MIAC, including those to be turned over to INRA at the end of the present project agreement.

8. To extend all the aforementioned management training supervision to include INRA office personnel at the time when INRA and MIAC share an office complex at the National Aridoculture Center. This will include training INRA staff members in cost depreciation accounting and projected cost analysis.

**IX. Administrative Assistant:**

**A. Responsibilities:**

An Administrative Assistant is responsible for execution of all administrative directives and to facilitate the achievement administrative objectives. He is directly responsible to the Team Leader.

**B. Duties:**

1. To manage all air and sea shipments, process all documents pertaining thereto, and take the necessary steps and procedures to arrange passage of all shipment through customs.

2. To purchase all office supplies, furnishings, and materials as designated by the Team Leader and keep an up-to-date inventory of these purchases.

3. To attend to the acquisition of all such required documents and official papers for the expatriate MIAC staff, as are necessary for their living in Morocco according to the laws of the country. For example: Residence Permits, Exit-Entry Visas, auto licenses, auto insurances, etc.

4. To represent the Team Leader, at his request, in business negotiations concerning rentals, utilities and maintenance of expatriate housing and offices.

5. To pick up and deliver mail on a regular basis, as well as to send telexes as requested by the MIAC Team Leader.

6. To serve as MIAC Team Translator and Interpreter when called upon to do so.

7. To be responsible for a precise and orderly accounting of a 3000 DH revolving fund provided for the purpose of making small office and project purchases, parking labor, lunches and expenses while on assigned duty trips away from the office, and such small personal, but reimbursable, purchases as requested by the MIAC team members.

8. To submit the revolving fund account book and receipts of expenditures to the Team Leader on a monthly basis for audit purposes.

**X. Secretary:**

**A. Responsibilities:**

The Secretary will work under guidance of the Administrative Management Specialist and Team Leader.

**B. Duties:**

1. To type all material assigned by the Supervisor.
2. To do filing as directed, and be responsible for the office filing system.
3. To operate all office machines efficiently.
4. To assume new responsibilities, as ability and efficiency increases, including bookkeeping, inventory, and translations.

**XI. Secretary/Accountant:**

**A. Responsibilities:**

The Secretary/Accountant will work under the guidance of the Administrative Management Specialist and Team Leader.

**B. Duties:**

1. To type all material assigned by the Supervisor.
2. To do filing as directed, and to be responsible for the office filing system.
3. To learn to operate all office machines efficiently.
4. To assume responsibilities for bookkeeping and inventory.

**XII. Office Custodian:**

**A. Responsibilities:**

The Office Custodian is directly under the supervision of the Administrative Management Specialist and Team Leader.

**B. Duties:**

1. To maintain the INRA MIAC team office and surrounding grounds in a neat and clean condition.
2. To report any irregularities and malfunctioning of office furnishings, doors, windows, locks, etc., to the Administrative Management Specialist or Team Leader, and to tend to the proper opening and closing of the office according to established office hours.
3. To conduct official trainees for the office as the needs arise.
4. To prepare and serve tea, coffee or water to all office staff and visitors upon request at reasonable times during the morning as a "coffee break".

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

PROJECT PAPER AMENDMENT No. 1

Commodity Procurement Plan Summary

This commodity procurement plan has been developed in collaboration with INRA and INAV-Hassan II. This procurement plan supports the project goals and objectives, and complements the GOM procurement capability to support applied agricultural research and socio-economic analysis. This revised procurement plan takes into consideration A) the potential inputs of projects presently in the design stage, i.e., Project 608-0170, B) addresses the need to strengthen linkages with ongoing projects presently in the USAID agricultural portfolio, C) meets the immediate procurement priorities until such time as the proposed Project 608-0136 expansion project paper amendment is authorized. This revised procurement plan also addresses the needs of return participants scheduled to conduct PhD dissertation research in-country under this project.

	Commodities	No. Units	Budget (\$000)
1	Vehicles	(20)	\$124.0
2	Household Furnishings	(4 sets)	72.0
3	Tractors	(9)	66.0
4	Plant Protection Equip.		12.4
5	Fertilizer		10.0
6	Planter/Seeder Equip	(16)	68.5
7	Cereal Harvesting Equip	(11)	83.5
8	Tillage Equip.	(18)	34.3
9	Fertilizer Equip.	(7)	11.0
10	Seed Handling Equip.		33.0
11	Ag Extension Material		5.5
12	Socio Economic Program		17.2
13	Soil Laboratory		68.9
14	Cereal Laboratory		40.9
15	Forage Laboratory		36.8
16	Agricultural Chemicals		6.5
17	Administration		27.5
18	Participant in-country Research Support		25.0
19	Meteorological Station		2.0
20	Maintenance/Repair Workshop		83.7
		TOTAL	829.6

DRYLAND AGRICULTURE APPLIED RESEARCH PROJECT 608-0136

PROJECT PAPER AMENDMENT No. 1

BUDGET REVISION SUMMARY - SOCIO ECONOMIC RESEARCH PROGRAM

<u>Researchers</u>	<u>11/79</u> <u>Dirhams</u>	<u>12/81</u> <u>Dirhams</u>	<u>7/82</u> <u>Dirhams</u>	<u>PP Amendment</u> <u>Dirhams</u>	<u>\$ Equivalent</u>
- Salaries	60,000	60,000	60,000	120,000	
- Per Diem	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>	<u>57,000</u>	
<u>Subtotal No. 1</u>	80,000	80,000	80,000	177,000	\$29,500
<u>Investigative Research Assistant</u>					
- Salaries	30,000	30,000	30,000	70,000	
- Per Diem	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>	<u>40,000</u>	
<u>Subtotal No. 2</u>	50,000	50,000	50,000	110,000	\$18,400
<u>Travel</u>					
- In-country	10,000	16,000	16,000	42,000	
- International 1 trip Paris	5,000	5,000	5,000	5,000	
- 1 trip U.S.A.	<u>30,000</u>	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>	
<u>Subtotal No. 3</u>	45,000	36,000	36,000	62,000	\$10,400
<u>Computer Services</u>	10,000	15,000	15,000	30,000	\$5,000
<u>Subtotal No. 4</u>	10,000	15,000	15,000	30,000	\$5,000
<u>Office Supplies and Computer Cards</u>	10,000	35,000	35,000	70,000	\$11,700
<u>Subtotal No. 5</u>	10,000	35,000	35,000	70,000	\$11,700
<u>Miscellaneous Operational Expenses</u>	10,000	15,000	15,000	30,000	\$5,000
<u>Subtotal No. 6</u>	10,000	15,000	15,000	30,000	\$5,000
<u>TOTAL</u>	<u>215,000 DH</u>	<u>216,000 DH</u>	<u>231,000 DH</u>	<u>479,000 DH</u>	<u>\$80,000</u>

1. Ljouad Lahcen, Caracterisation et Cartographic (1/50.000) des Sols de la Region Had Mzoura - Ouled Moussa, Zone Ouest (Province de Settat), Juillet, 1981) (about 120 pages and map)
2. Badraoui Mohamed, Cartographie et Caracterisation des Sols de la Region: Ettnine Khemis, Zone Nord (Province de Settat), Juillet, 1981. (about 110 pages and map)
3. Ihouddin Moughli, Caracterisation et Cartographie des Sols de la Region Guisser-Ettnine, Zone Nord (Province de Settat). Juillet, 1980. (about 95 pages and map).
4. Daniane Mohamed, Caracterisation et Cartographie des Sols de la Region Khemisset-Khemiss Sidi Mohamed B. Rahal (Province de Settat). Juillet, 1981. (about 125 pages with map).
5. Kabbassi El Mostafa, Caracterisation et Cartographie (1/50.000) des Sols de la Region Guisser Dar Caid es Sghir, Zone Est (Province de Settat), Juillet, 1981. (about 120 pages with map).
6. El Harize Khalid, Essai Sur les Comportements Economiques des Exploitations Familiales en Chaouia. Quelques Faits face aux Theories, 1977-1978 (about 130 pages).
7. Asserghine Mohamed, Les Exploitations Paysannes en Zone Semi-Aride. Formation et Evolution. Quelques Aspects de la Dynamique des Exploitations Agricoles dans la Fraction "sninat Hfirt Chems" en Chaouia. 1979. (about 110 pages)
8. Mouddene Mohamed, Evolution des Rapports de Production dans le Douar Laamiriyine Haoud Chkaoui (Haute Chaouia). Salarariat et Migrations, October, 1980. (about 100 pages).
9. B. Zagdouni Larbi, La Mecanisation Agricole en Zone Bour: Cas de la Haute Chaouia. Volumes I and II, 1979-80 (about 650 pages).
10. Schmitt, Bertrand. Projet Chaouia: Etude Statistique de 1079 Foyers Ruraux. C.R. Tlata des Oulad Sghir; Haute Chaouia. Analyse des Donnees. Analyse en composantes Principales, May, 1981. (about 20 pages)
11. Institut National de la Recherche Agronomique, Seminaire sur l'Aridoculture. Settat, 26-27 Decembre, 1980 . (about 175 pages)

- 12 Addi, A, Amerhoune, M; Azzimi, B, Bouaziz, A and Ouchtou, M. Evolution Revenu et Emploi dans les Cooperatives Pastorales d'El Brouj (Settat) Chaouia. Stage de Développement 4ème Année, INAV, 1977-78.
- 13 Bennar, M, Ezza Miti, A, Guercouali, A, Mouddene, M and Sefiani, M. Le Rôle de Beni Meskine dans l'Approvisionnement d'autres Régions du Maroc en Ovins. Stage de Développement 4ème Année en Chaouia, INAV, 1977-78.
- 14 Laraiche, Moujane, Oulhaj, Rannah and Zagdouni. Propriété des Moyens de Production et Possibilités d'Emploi. Chaouia et Beni-Meskine. Rapport de stage de 4ème Année, INAV, 1977-78.
- 15 Kartas A, Diop, A, El Khyari, A, Jaafari S and Ba Marrada, A. Qu'est ce qui Détermine le Sol des Légumineuses au Sud de la Région de Settat ? Stage de Développement de 4ème Année en Chaouia, 1977-78.
- 16 Barnicha, B, Boutouba, A, El Jerrari, M Laadnani, M and Solem A. Les Systèmes d'Embouche de Bovins dans la Région de Staze, Stage de Développement 4ème Année en Chaouia, INAV, 1977-78.
- 17 Agouzoul, Ben Bouhou, Boutgayout, Hammadi and Khouzaimi. Les Dominantes Pathologiques chez les Ovins dans la Chaouia. Stage de Développement, INAV, 1977-78.

ANNEX IIDRYLAND AGRICULTURE APPLIED RESEARCH(608-0136)STATUTORY - CHECKLISTCOUNTRY CHECKLISTA. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy? NO
2. FAA Sec. 113. Has particular attention been given those programs projects, and activities which tend to integrate women into the national economics of developing countries, thus improving their status and assisting the total development effort? YES
3. FAA Sec. 481. Has it been determined that the government of Morocco has failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in Morocco, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? NO
4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not dominated or controlled by the international Communist movement? YES

5. FACC Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? NO, REMEDIES NOT YET EXHAUSTED
6. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? NO
7. FACC Sec. 620(a), 620(b), 620D; Appropriations Act Sec 509, 510 and 511; ISDCA of 1980 Secs. 717 and 721. Is Morocco a Communist country? Will assistance be provided to Angola, Cambodia, Cuba, Laos or Vietnam? (Food and humanitarian assistance distributed directly to the people of Cambodia are excepted). Will assistance be provided to Afghanistan or Mozambique without a waiver? Are funds for El Salvador to be used for planning for compensation, or for the purpose of compensation, for the confiscation nationalization, acquisition or expropriation of any agricultural or banking enterprise, or property or stock thereof? NO
8. FAA Sec. 620(i). Is Morocco in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance or (b) the planning of such subversion or aggression? NO

9. FAA Sec. 620(j). Has Morocco permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? NO
10. FACC Sec. 620(k). Does the program furnish assistance in excess of \$100,000,000 for the construction of a productive enterprise, except for productive enterprises in Egypt that were described in the Congressional Presentation materials for FY 1977, FY 1980 or FY 1981? NO
11. FAA Sec. 620(l). If Morocco has failed to institute the investment guaranty program for the specific risks or expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? NOT APPLICABLE
12. FACC Sec. 620(m). Is Morocco an economically developed nation capable of sustaining its own defense burden and economic growth and, if so, does it meet any of the exceptions to FAA Section 620(m)? NO
13. FAA Sec. 620(o); Fishermen's protective Act of 1967, as amended, Sec. 5. If Morocco has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, HAS NOT
- a) has any deduction required by the Fishermen's Protective Act been made?
- b) has complete denial of assistance been considered by AID Administrator?
14. FAA Sec. 620(g); Appropriations Act Sec. 516  
(a) Is the government of Morocco in default for more than six months on interest or principal of any AID loan. NO , NO.  
(b) Is Morocco in default exceeding one year on interest or principal on any U.S. loan under a program for which the Appropriation Act appropriates funds?

15. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the record of the annual "Taking into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.) NOT APPLICABLE
16. FAA Sec. 620(t). Has Morocco severed diplomatic relations which the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? NO
17. FAA Sec. 620(u). What is the payment status of Morocco's U.N. obligations? If Morocco is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? MOROCCO UP TO DATE ON ITS PAYMENT TO U.N. OBLIGATIONS.
18. FAA Sec. 620A; Appropriation Act Sec. 518 Has Morocco aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed an act of international terrorism? Has Morocco aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed a war crime? NO

19. FAA Sec. 666. Does Morocco object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in Morocco to carry out economic development programs under the FAA? NO
20. FAA Sec. 669, 670. Has Morocco, after August 3, 1977 delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? NO  
Has it detonated a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty?

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

- a. FAA Sec. 102(b)(4). Have criteria been established and taken into account to assess commitment progress of Morocco in effectively involving the poor in development, on such indexes as:  
(1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment and (6) increased literacy. YES
- b. FAA Sec. 104(d)(1). If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, assistance to urban poor and through community-based development programs which give recognition to people motivated to limit the size of their families? YES

PROJECT CHECKLISTA. GENERAL CRITERIA FOR PROJECT

1. Appropriations Act Sec. 521, FAA Sec. 634; Sec. 653 (b).
  - (a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project; (b) Is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?
    - a. CONGRESSIONAL NOTIFICATION
    - b. YES
  
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance.
  - a. YES
  - b. YES
  
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
 

NONE REQUIRED
  
4. FAA Sec. 611(b); Appropriations Act. Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and standards for Planning Water and Related Land Resources, dated October 25, 1973?
 

NOT APPLICABLE
  
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
 

NOT APPLICABLE
  
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.
 

NO

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry agriculture and commerce; and (f) strengthen free labor unions.
- Project will IMPROVE THE EFFICIENCY OF LOCAL AGRICULTURE AND IMPROVE TECHNICAL EFFICIENCY OF INDUSTRY AND COMMERCE.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
- U.S. academic training will be provided by U. institutions.
9. FAA Sec. 612(b), 636(h); Appropriation Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, Morocco is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.
- GOM WILL CONTRIBUTE AT LEAST 25% OF THE COST OF THE PROJECT.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of Morocco and, if so, what arrangements have been made for its release?
- No.
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?
- YES
12. Appropriation Act Sec. 519. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?
- NOT APPLICABLE

**B. FUNDING CRITERIA FOR PROJECT**

**1. Development Assistance Project Criteria**

a. FAA Sec. 102(b), 111, 113, 281(a).  
Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries, (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

**PROJECT SHOULD ASSIST  
ITEMS (A), (B), (C)  
AND (D).**

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available.

(1) (103) for agriculture, rural development or nutrition; if so (a) extent to which activity is specifically designed to increase productivity and income of rural poor; 103A if for agricultural research, full account shall be taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made; (b) extent to which assistance is used in coordination with programs carried out under Sec. 104 to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value, improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuff; and the undertaking of pilot

The Project is an agricultural applied research program design to improve cultivation practices and develop improved agricultural systems which will lead to increased agricultural production. Socio-economic studies will be conducted to ensure agriculture systems that are either improved or developed are compatible with local customs and desires.

or demonstration of programs explicitly addressing the problem of malnutrition of poor and vulnerable people; and (c) extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

(2) (105) for education, public administration or human resources development; if so, extent to which activity strengthens non-formal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development.

c. FAA Sec. 110(a). Will Morocco provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least developed" country)?

YES

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

NO

e. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires and capacities of the people of Morocco; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

THE PROJECT EMPHASIZES IMPROVEMENT IN ANALYTICAL MANAGERIAL AND TECHNOLOGICAL EXPERTISE AND UTILIZES THE INTELLECTUAL RESOURCES AVAILABLE IN BOTH PUBLIC & PRIVATE INSTITUTIONS BY PROVIDING TRAINING TO INDIVIDUALS INVOLVED IN THE MOROCCAN DEVELOPMENT PROCESS.

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

YES

STANDARD ITEM CHECKLISTA. PROCUREMENT

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? YES
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? YES
3. FAA Sec. 604(d). If Morocco discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with a company or companies authorized to do a marine insurance business in the U.S.? MOROCCO DOES NOT DISCRIMINATE AGAINST U.S. MARINE INSURANCE COMPANIES.
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) NONE
5. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. - flag commercial vessels to the extent that such vessels are available at fair and reasonable rates? NO
6. FAA Sec. 621. If technical assistance is financed, to the fullest extent practicable will such assistance, goods and professional and other services be furnished from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? YES. NO USE OF FEDERAL AGENCIES

7. International Air Transport. Fair Competitive Practices Act, 1974. YES  
If air transportation of persons or property is financed on grant basis, will provision be made that U.S. carriers will be utilized to the extent such service is available?
8. Appropriations Act Sec. 504. YES  
If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?

B. OTHER RESTRICTION

1. FAA Sec. 122(b). NOT APPLICABLE  
If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?
2. FAA Sec. 301(d). NOT APPLICABLE  
If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?
3. FAA Sec. 620(h). YES  
Do arrangements exist to insure that United States Foreign aid is not used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects or activities of the Communist-block countries?
4. Will arrangements preclude use of financing:
- a. FAA Sec. 104(f). YES  
To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization?
- b. FAA Sec. 620(g). YES  
To compensate owners for expropriated nationalized property?

- c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? YES
- d. FAA Sec. 662. For CIA activities? YES
- e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained. YES
- f. Appropriations Act Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel? YES
- g. Appropriations Act Sec. 505. To pay U.N. assessments, arrearages or dues. YES
- h. Appropriations Act Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending.) YES
- i. Appropriations Act Sec. 508. To finance the export of nuclear equipment fuel, or technology or to train foreign nationals in nuclear fields? YES
- j. Appropriations Act Sec. 509. Will assistance be provided for the purpose of aiding the efforts of the government of Morocco to repress the legitimate rights of the population of Morocco contrary to the Universal Declaration of Human Rights? NO
- k. Appropriation Act Sec. 513. To be used for publicity or propaganda purposes within U.S. not authorized by Congress? YES