PD-AAG-044

UNCLASSIFIED

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DEPARTMENT OF STATE

AGECNY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER

MOROCCO: Agronomic Institute

608-0160

UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

WAIVER CONTROL NO: NE-80-014

THE ADMINISTRATOR

PROJECT AUTHORIZATION

Name of Country: Morocco

Name of Project: Agronomic Institute

Number of Project: 608-0160

1. Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Agronomic Institute Project for the Kingdom of Morocco involving planned obligations of not to exceed nine million seven hundred twenty-one thousand United States Dollars ($9,721,000) in grant funds over a five-year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project.

2. The Project consists of development of Morocco's College of Agriculture, the Institut Agronomique et Veterinaire Hassan II.

3. The Project Agreement which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in the United States or Morocco, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States or Morocco.

b. Initial Disbursement

Prior to any disbursement or the issuance by A.I.D. of documentation pursuant to which disbursement will be made, Morocco shall, except as the parties may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D., a copy of an agreement between the Government of Morocco and the University of Minnesota concerning the Project.

c. Equipment Procurement Disbursement

Prior to disbursement for equipment procurement or to the issuance by A.I.D. of documentation pursuant to which disbursement for such procurement will be made, Morocco shall, except as the parties may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D., an equipment procurement plan for the Project.

d. Waiver

Based upon the justification set forth in Annex 7.6 of the Project Paper, I hereby approve, in accordance with A.I.D. Handbook 11, Chapter 1, Section 2.4.2. a waiver to negotiate with a single source (the University of Minnesota) for services for implementation of the Project.

Douglas J. Bennet, Jr.

Date

Clearances:

AA/NE (Acting): Alfred D. White Date 20 MAR 1980
NE/TECH:Charles B. Weinberg Date
NE/DP:Bradshaw Langmaid Date
NE/NENA:Mary Huntington Date
NE/PD:Selig A. Taubenblatt Date
AA/SER:Donald G. MacDonald Date
GC:Norman L. Holmes Date 3/25/80
GC/NE:John E. Mullen Date
PPC/PDPR:Barry Sidman Date
AA/PPC:Alexander Shakow Date

Drafter:GC/NE:SECarlson:paj:3/10/80

Attachment A

Agronomic Institute 608-0160

PID Submission Date 2/26/79
PID Approval Date 3/29/79
PP Submission Date 1st 8/9/79
2nd 1/15/80
PP Final Review Meeting Date
(NEAC) 2/7/80

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete)

Amendment Number

DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Morocco

3. PROJECT NUMBER: 608-0160

4. BUREAU/OFFICE: NE 03

5. PROJECT TITLE (maximum 40 characters): Agronomic Institute

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 03 DD 31 YY 85

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 80 B. Quarter 2 C. Final FY 84

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

A. FUNDING SOURCE	FIRST FY 80 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(1800)	( )	(1800)	(9721)	( )	(9721)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country		500	500		3974	3974
Other Donor(s)						
TOTALS	1800	500	2300	9721	3974	13695

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) FN	600	630		-0-		1800		9721	
(2)									
(3)									
(4)									
TOTALS				-0-		1800		9721	

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

11. SECONDARY PURPOSE CODE

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

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To assist the Hassan II Agronomic and Veterinary Institute (IAV) in training a Moroccan faculty and strengthening its capacity to provide to the agriculture sector qualified Moroccan professionals who understand and are sensitive to problems of small producers.

14. SCHEDULED EVALUATIONS

Interim MM 04 YY 81 MM 04 YY 83 Final MM 04 YY 85

15. SOURCE/ORIGIN OF GOODS AND SERVICES

[X] 000 [ ] 941 [X] Local [ ] Other (Specify)

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

17. APPROVED BY

Signature: Alfred Dewitt

Title: Acting Assistant Admin. Bureau for Near East

Date Signed: MM 05 DD 20 80

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM 01 DD 15 YY 80

AID 1330-4 (8-79)

AGRONOMIC INSTITUTE PROJECT PAPER

TABLE OF CONTENTS

	PAGE NUMBER
1. Face Sheet	Front
2. Project Description (with Appendices) 1/	1
3. Project Specific Analysis	65
a. Economic Feasibility	65
b. Social Soundness Analysis	65
c. Technical Feasibility	65
d. Administrative Feasibility	66
e. Environmental Concerns	66
4. Financial Plan	66
5. Implementation Plan	75
a. Planning Schedule	75
b. Monitoring	80
6. Evaluation Plan	81
7. Annexes	86
1. AID/W Message Approving PID	87
2. Commodities	91
3. Logframe	99
4. Statutory Criteria Checklist	101
5. Request for Assistance	109
6. Request for Waiver - Non Competitive Procurement	111
7. Determination to waive Host Country Contracting	113

1/ see page 2 for expanded outline of the Project Description.

2. PROJECT DESCRIPTION

TABLE OF CONTENTS

		Page Number
I.	INTRODUCTION	4
II.	BACKGROUND	4
	Agricultural Development in Morocco	4
	AID Sector Goals	6
	IAV: Its History and Development	6
	Morocco's Needs for College Graduates	7
	Outline of the Program of Study at IAV	10
	Prior AID Assistance to IAV	16
	Summary	17
III.	IAV AND AID DEVELOPMENT STRATEGY	17
	AID Policy on Agricultural Education and Institutional Development	17
	IAV as a "Modern" Institution	18
	Program of "Stages"	19
	Applied Research	22
	In-Service Training	23
	Professional Associations	24
	Agadir	26
	Student Enrollment	26
	Fields of US Support	29
	In-Country Dissertation Research	30
	National Extension Center	30
	Extension Agent Training	32
	Institutional Philosophy	32
	Summary	33
IV.	THE PROJECT	33
	Purpose and Goals	33
	The Need for a Moroccan Faculty	34
	The General Strategy for Faculty Training	38
	Faculty Needs of IAV	40
	Role of Other Donors in Faculty Training and Institutional Development	42
V.	PROJECT DESIGN - INPUTS AND OUTPUTS	43
	Staffing Plan	43
	Resident Staff	43

Page Number

TDY..... 45
On Campus and In-Country Support Staff..... 47
Staffing Plan and French Language Competency.... 47
Staffing and Agadir..... 49
Participant Training..... 49
Third Cycle Training..... 49
Doctoral Training..... 50
Short-Term Participants..... 50
Lead Role of University of Minnesota..... 53
Commodities..... 53
Summary..... 53

VI. PROJECT IMPLEMENTATION AND MANAGEMENT..... 53

Appendices to Project Description..... 55

1. IAV Proposed Staffing Plan by Department and Specialization..... 56

2. IAV and Other Donors..... 59

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Harold S. Fleming, Mission Director, Chairperson
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2. PROJECT DESCRIPTION

I. INTRODUCTION

This project describes the Agronomic Institute Project (608-0160). It has been developed in a collaborative assistance mode with the GOM, USAID and the University of Minnesota. The PP has been fully discussed by all parties and there is excellent and common understanding on project purpose and design. This project is critical to USAID sector development strategy since it provides support to the development of scarce agricultural technicians without which all Moroccan development programs cannot succeed.

The project is an agricultural education project aimed at developing Morocco's only College of Agriculture, the Institut Agronomique et Veterinaire Hassan II (IAV). Careful attention has been given in project design to AID policy directives and to the impact of the project on the rural poor. The institutional capacity developed through this project will relate directly to the needs of Moroccan farmers and especially those small dryland farmers and herders with the lowest level of income and productivity.

II. BACKGROUND

Agricultural Development in Morocco

Morocco's population, currently estimated near 20 million persons, continues to grow at the very rapid rate of more than 3 percent annually. This, coupled with a relatively stagnant productivity for its traditional agricultural sector (particularly for cereals), has shifted the country from a net food export position (which prevailed until the early 1960s) to its current heavy dependence on food imports, particularly for bread wheat. If this trend continues, about 75 percent of the country's wheat requirements will need to be supplied via imports by the year 2000. Such a process would be dramatically detrimental to Morocco's economic development.

The country's average per capita income of about $550 in 1978[1/] masks a much lower per capita income of about $200 in rural areas where 60 percent or more of the national labor force is located.

A recent analysis of poverty in Morocco[2/] suggests that 44 percent of the population, or over 8 million people, are living below the poverty line expenditure level of $250 per year. This exceeds the combined total population of Mauritania and Mali. The poor are both urban and rural but the highest concentrations are in the rural, highland and arid pre-saharan provinces of Morocco. Farmers, farm workers and artisans have incomes of about one-half of those of workers in the modern sector. Morocco's rural area average expenditure levels are half that of its urban areas.

Among the rural population two groups are at particular economic disadvantage. They are: (1) small landholders who, with an average holding of 2.5 hectares of land, make up about 68 percent of the rural population

1/ A more recent method of calculation adopted officially by Morocco puts this figure even higher.

2/ T.H.Eighmy, "A Statistical Description of Morocco's Poor, (mimeo USAID/Morocco, May 1979).

and (2) landless rural families who number about 23 percent of the total. The combination of a rapidly increasing population and continued low productivity in agriculture have resulted in an absolute decline in per capita production in the agricultural sector, a widespread incidence of low incomes (and living standards) in rural areas and an annual migration of about 100,000 persons from rural to urban areas. Most of these outmigrants from rural areas have almost no potential for employment in the non-farm sector and, as a consequence, end up mainly as unemployed residents of urban slum areas.

Though the bulk of the rural population of Morocco live and work in traditional agriculture (mainly cereals and livestock), most of the past public investment to agriculture (60 percent of the GOM budget for agriculture during the last two five year plans) went to the irrigated sector and much of this went to support the production of export crops. This allocation of support, though vital for the growth and development of the irrigation and export sectors, has been of little benefit to the small dryland farmer whose major crops (and major foodstuffs as well) are cereals, particularly wheat and barley. Moreover, though about one-half of the 1 million hectares or more of land targeted for irrigation have now been developed, little progress has been made in increasing food production and income from approximately 4.5 million hectares of wheat and barley and from some 10-12 million hectares of range land.

However, although the present situation in regards to GOM agricultural development policy and public investment is overshadowed by the foreign exchange shortage and other factors arising from Morocco's current border disputes, there are signs of increasing GOM awareness of the need to pay more attention to the dryland sector. GOM is not only becoming more conscious of the need to increase the participation of the poor majority in the benefits of economic growth but also of combatting increasing food imports and rising prices of staple food commodities which impact particularly severely on both the rural and urban poor. There is also concern that the Ministry of Agriculture and Agrarian Reform (MARA) has not been able to fully absorb GOM development funding earmarked for the agricultural sector. Indeed the past emphasis on capital intensive projects has, in part, been due to limited MARA capacity to design, plan and implement more widespread less capital intensive development projects. It is the absence of sufficient number of properly trained technicians available to MARA that has created this limited capacity. This project by aiding the expansion of supply of such properly trained technicians is important to GOM execution of a more widespread equitable agricultural development program which can benefit the large number of Morocco's rural poor, particularly in the dryland areas.

Continued development of the irrigated sector of Moroccan agriculture remains of importance to the future of Moroccan economic development and for expanded employment and incomes for the rural poor. For example, projected development of some 60,000 hectares of labor intensive irrigated fruit and vegetable crop production in the Souss-Massa area alone, if successful, is expected to provide some 35 million man days of employment

annually and to generate annual family incomes of 10 thousand dirhams for project participants. And, this employment and income will be generated principally in rural areas where it is needed most. In the creation of employment, irrigation development continues to offer a major opportunity for reaching the landless laborer class whose sole means of income generation is from the sale of its daily labor. Continued improvements (particularly in product quality) will also be necessary if the Moroccan export sector is to meet successfully the increasing competition from other Mediterranean countries and from increasing protectionism and self-sufficiency of an expanded EEC in regard to Morocco's agricultural export commodities.

AID Sector Goals

In response to the critical problems facing economic development and human welfare in Morocco, USAID's comparatively small but not unimportant program will emphasize (1) improvement of the agricultural/food production sector, (2) improvements in critical education and health services (the latter including nutrition), and (3) improvements in related areas of human resource development. If upgrading and expansion of the IAV faculty affect favorably, as expected, the productivity of the agricultural sector in Morocco, several ultimate trends will be aided: (1) the critical food import problem will be alleviated, (2) increased income will be generated for those most needing it (i.e., the rural poor), and (3) expanded employment in the farm input and farm production related sectors should dampen the high current rate of migration from rural to urban areas.

IAV: Its History and Development

At independence in 1956, Morocco had no college of agriculture and only a handful of agricultural graduates who had gone abroad for their education. In 1964 the GOM announced its intent to establish a Moroccan college of agriculture. The Institut Agronomique et Veterinaire Hassan II (IAV) was established in 1968. It started with 12 students, no buildings and no equipment. The Institute now has (1979) 2,300 students and 15 programs of specialization on 3 campuses, 210 faculty members, teaches 70 different subjects in 13 fields of specialization, has created 5 professional associations and developed an integrated philosophy of agricultural education in Morocco. (See M.L.Firdawcy, A System of Integrated Education of Trainers in Agriculture in Morocco, Association of Faculties of Agriculture in Africa, June 1979). The IAV curriculum has evolved over time and it now provides both 4 year and 6 year programs.

IAV is still heavily dependent on foreign teachers and faculty members. Over half the faculty are foreign. It uses large numbers of visiting as well as resident foreign staff. The dependence on visiting staff has required that courses be taught in short periods of time (2-3 weeks) and prevented the development of a more orderly term (quarter/semester) system. Of the approximately 100 Moroccan faculty, 95 are young assistants, with no more than the equivalent of M.S. training, almost all trained by IAV in the last 4-5 years. Only five faculty members have advanced degree (beyond the M.S.).

The mission of IAV is to train appropriately, in Morocco, the college level graduates in agriculture, forestry and veterinary medicine needed for the development of Moroccan agriculture. IAV is the only source of the college graduates, in all the agricultural science disciplines, indispensable to the development of Morocco's rural and agricultural sector.

In its original conception and its subsequent development, the IAV has consciously tried to develop a unique, Moroccan institution. At the origins of its creation was the recognition of the many disadvantages as well as the cost of perpetual dependence on the training of college students overseas in many different countries. The IAV was established with the idea "that emphasis (should) be placed on techniques which are most useful to the country as well as on problems which are of immediate importance" (Royal Decree of 8th April 1968 establishing IAV). From the beginning it was foreseen that the mission of IAV "is to teach the scientific, economic and social science disciplines related to agriculture and to contribute to study and research necessary to this teaching. It is to train specialized agricultural graduates and veterinarians with the objective of meeting the needs of the different sectors of Agriculture. It is to contribute to the continuing education of the Ministry of Agriculture"(Dahir of 8th April 1968 as amended by Dahir of 2nd January 1974).

The mission of IAV is therefore primarily a teaching mission. However, like the U.S. land grant colleges, it has recognized the needed and necessary interaction between teaching, research and extension (see below). Most importantly, IAV perceives its role as one of actively contributing to and participating in the development process in Morocco. It recognizes that agricultural education requires a two-way communication with the challenges, problems and difficulties faced by Moroccan farmers and that a successful college of agriculture, if it is to contribute to the development process, is far more than classrooms for teaching students.

IAV is organized as an independent institution of higher education, governed by an advisory board (whose representational composition is established by law and is made up of representatives of the Ministries of Agriculture, Education and Finance and includes the Directors of Agricultural Research and Extension). Its budget is channeled through the Ministry of Agriculture. It is headed by a Director who also happens to be Director of Agricultural training in the Ministry of Agriculture and thus also responsible for all sub-university training in agriculture.

The IAV is a composite of 4 campuses each with different missions and varying degrees of autonomy (Chart 2). All students spend some time on the main campus at Rabat and varying amounts of time at one of the other campuses which are located in Sale, Meknes and Agadir.

Morocco's Need for College Graduates

It is self-evident that no agricultural development can take place without manpower with appropriate skills and training. In one development

project after another in Morocco, the most serious difficulty has been obtaining sufficient numbers of college trained people who can effectively plan, implement and manage development projects.

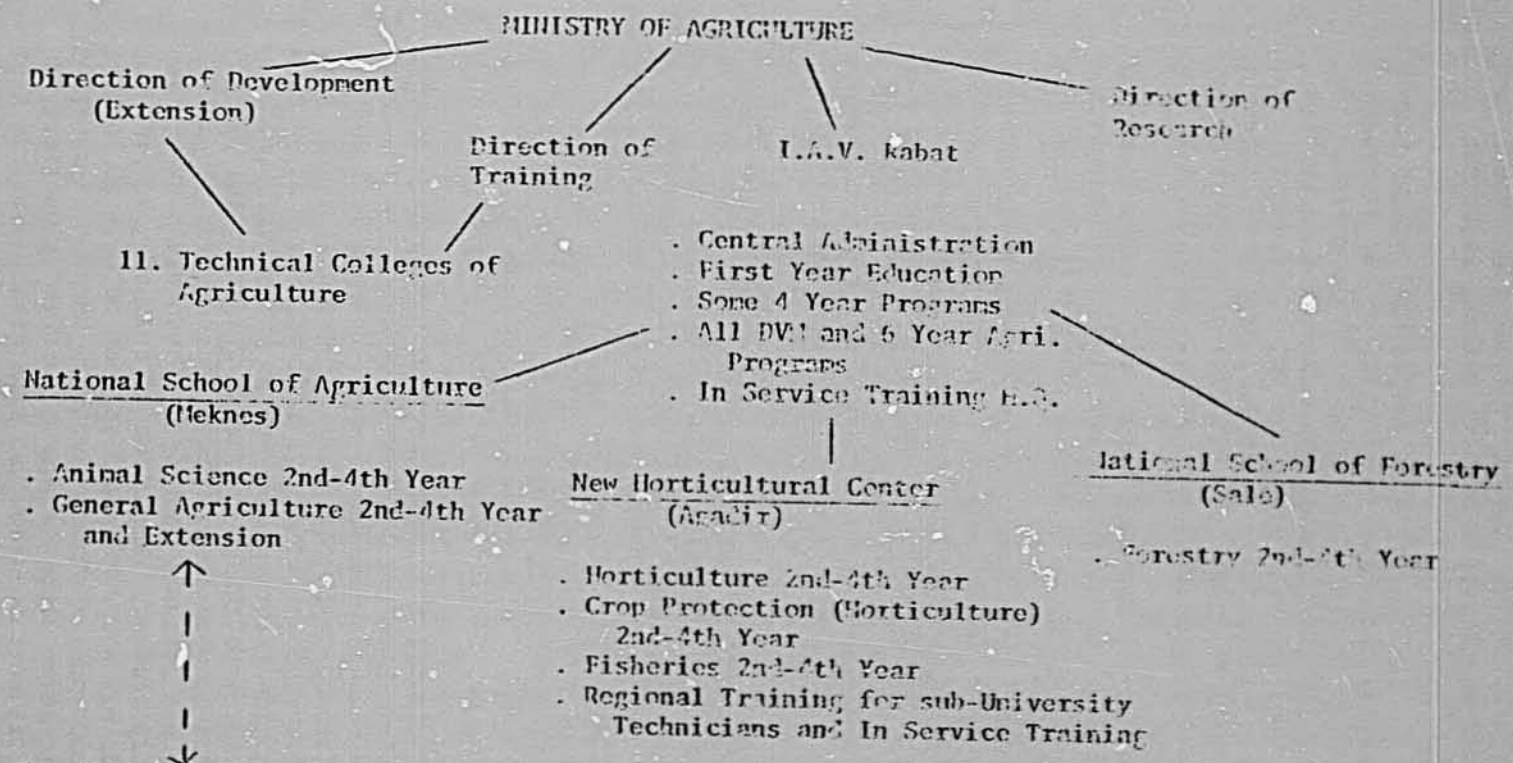
Morocco is far from achieving its needed manpower goals in agricultural training. Almost the entire output of IAV has so far been absorbed by the public sector; many of the first graduates of IAV have had to take on relatively senior administrative jobs for which they do not always have the necessary experience. Nevertheless, the pump is being primed and more and more of the graduates of IAV are being placed "on the firing line" in action jobs in which they can make effective professional contributions. However, the need remains colossal. The Manpower Planning Commission for the agricultural sector in preparation for the 1978-82 Plan estimated for the public sector that only a third of the 1977 needs for college graduates was being met. Even with the rapid increase in IAV enrollment, the new needs for 1978-82 from the public sector will only just be met (i.e., without allowance for the needs of the private sector) (Preparation du Plan 1978-82. Commission de l'Agriculture et des Barrages: Formation des Cadres). IAV throughput of about 450 students a year (1982 on) is barely sufficient for the development of a country of 20 million, of which approximately 60 percent are in the agricultural sector. (By comparison, the State of Minnesota with population of only 4.0 million, of which only 16 percent are dependent on agriculture, graduates 850 B.S. students per year in agriculture and forestry). There is an evident need for a College of Agriculture of the capacity of IAV.

This flow of trained technicians is indispensable to Moroccan agricultural development. College graduates are needed to staff dairy cooperatives, to implement small farmer extension input and credit programs, to organize the multiplication and distribution of improved seeds, to design farm buildings, to keep sugar refineries running, to analyze soil samples and formulate fertilizer needs, to control plant and animal disease, to inspect exports, to implement grades and standards and to perform all the daily functions and services of a modern and dynamic agriculture. Without these graduates Moroccan agriculture cannot develop its capacity for expanded output, employment, incomes and consumption or service the information and extension needs of Morocco's thousands of small farmers.

Equally important is the ever present shortage of conceptual ability in the GOM to formulate problems and develop (and implement) programs, policies and projects to resolve them. These functions cannot be carried out in Morocco by people with less than college educations anymore than they can in the U.S. Trained manpower (at all levels) is a necessary condition for agricultural development. Morocco needs to develop its own capacity in agricultural education which is not perpetually dependent on foreign teachers and assistance.

The IAV has developed 13 B.S. programs of specialization and through its direct contract with the Ministry of Agriculture (MARA) continually monitors the expressed needs of the public and private sector for particular numbers and types of needed graduates.

Chart 2: Principal Units of IAV and Linkages to some other Major Units of the Ministry of Agriculture.



Outline of the Program of Study at IAV

The program of studies at IAV is based on a fundamental assumption that Moroccan agriculture can never develop its potential without the application of sciences to the solution of problems. To say otherwise would be to condemn Morocco to ancient (and sometimes destructive) technology with no hope of developing new and appropriate technology. It would be dependent on technology transfer from outside--with the well known consequences that such transfer usually entails. In agriculture it is this application of science to problem solving that has created the basis for expansion of agricultural potential. It is the underlying principle of the International Agricultural Research Centers which also recognize that the greatest bottleneck to agricultural development is not basic research but in-country capacity to assimilate and adapt technology, such as improved germplasm, to local needs. In other words, IAV accepts that the hallmark of successful agricultural education is in its applied scientific focus.

The Institute has made an organized and successful effort to train Moroccans in Morocco for both the "B.S." (deuxieme cycle) and "M.S." (troisieme cycle). It now has 2300 students with 600 students entering the freshman year and 300 graduating with B.S. degrees and 150 with the M.S. (including 50 DVMs) each year. The 100 M.S. students in Agriculture are trained abroad--during the fifth year. Starting in 1979-80 the students in the agricultural specializations of Soil Science and Forestry will start to get fifth year training in Morocco. The sixth year is devoted to carrying out an applied research problem and the writing of a "Memoire" (Thesis).

The IAV teaching program is carried out in the classroom, in the laboratory and in the field. Students spend one and a half months every year in the field--much of that time living in villages and studying Moroccan peasant agriculture and rural life. The Institute is moderately well equipped with classrooms, teaching labs and other basic infrastructure. However, without its own Moroccan faculty, the teaching program can never develop into a truly Moroccan curriculum adapted to Moroccan needs.

The curriculum has undergone considerable change since 1968 and will continue to develop in its structure, pedagogical methods and types of specializations offered as a Moroccan faculty is built up.

All students entering the Institute of Agronomy and Veterinary Medicine Hassan II take the same basic classes in the physical, chemical and biological sciences during their first year. Those who receive superior grades during the first year are then given the choice to continue in the 6-year program of agronomy or veterinary medicine leading to the Ingenieur d'Etat (equivalent M.S.) or to continue with the other students in one of thirteen 4-year programs leading to the Ingenieur d'Application (equivalent to B.S.).

Candidates for the Ingenieur d'Etat who receive poor grades during their second year are shifted into the program for the Ingenieur d'Application. However, upon completion of the Ingenieur d'Application and after three years service any former students can sit for a competitive examination and can be re-admitted into the third cycle (5th and 6th years) at IAV to continue toward the Ingenieur d'Etat.

Beginning with the second year there are separate programs for students in the Ingenieur d'Application programs in Food Technology, Rural Equipment, Topography, and Forestry. Students in Plant Protection and Horticulture follow the same program until the third year as do those in Animal Science. Students in Food Industry, Wood Technology and Landscape Architecture are at the moment trained in France beginning with the second year. Sea Food Science is not yet available but will be taught in Agadir. This information is summarized in Chart 2.

The details of the curriculum for each of the 4th year and the 6th year program are not reproduced here 1/. However, Table 1 shows the basic organisation of Departments and "Blocs" at IAV. In Table 2 we have shown a summary of the course laboratory and field work of the 4 year program in Agronomy which trains all the students going for specialized third cycle studies in Agriculture and Forestry, (apart from those coming back to the institute through the competitive exam route after 3 years of job experience who have previously had one of the 13 specialized B.S. programs) and from whom the major part of past project participants and current IAV staff have been drawn.

Students typically take very heavy course loads in terms of classroom, practical and laboratory work. This leaves little time for assimilation, synthesis and integration. The problem is exacerbated since many courses are taught by foreign visiting scientists. Although students are exposed to a wider variety of subjects and opinions by these short term visiting (and often well known) professors, there is not sufficient time during an intensive short course to integrate the information and to interact with the professor.

Because of the reliance upon visiting (principally French and Belgian) professors, course content changes frequently. That, in turn, creates situations in which permanent professors are not fully aware of subject matter covered in prerequisite courses.

Nevertheless, in general the curriculum at IAV is designed to offer a variety of disciplinary "Majors" and provides a reasonable background in agricultural science. The applied programs of the Ingenieur d'Application offer opportunity for "hands-on" training. The overall quality of instruction is acceptable--the performance of IAV graduates in third cycle graduate level programs in the U.S. has generally been good. A remarkable feature of the program is the effective rate of training which by repeated screening sorts out students into areas in which they demonstrate greatest aptitude. The overall attrition rate from failure to pass exams is extremely low (less than 10 percent)--by contrast the University Mohammed V has a 65 percent or higher annual drop-out rate. Further improvements in the program of study and the curriculum of IAV are critically dependent upon the development of a Moroccan faculty which can develop and teach an appropriate curriculum and provide the necessary on-going student-faculty contact.

1/ See the IAV Annual Rapport d'Activite (most recent for 1978-79) and the IAV "Bulletin", Programme d'Enseignement de la Section Agronomie (Rabat, Octobre 1979).

Chart 2.

[illegible]

[illegible] INSTITUTE OF AGRONOMY AND VETERINARY MEDICINE

INGENIERING OF AGRICULTURAL MANPOWER

M.S LEVEL : 6 YEARS
"INGENIEUR D'ETAT" VETERINARIAN

AGRONOMY	AG	100 Year
FOOD INDUSTRIES	FI	
FOOD TECHNOLOGY	FT	
VETERINARY MEDICINE	VM	50 Year

B.S LEVEL : 4 YEARS
"INGENIEUR D'APPLICATION"

FOOD TECHNOLOGY	FT	50 Year
RURAL EQUIPMENT	RE	40 Year
TOPOGRAPHY	TOPO	40 Year
AGRICULTURAL MACHINERY	AM	10 Year
HORTICULTURE	HOR	25 Year
LANDSCAPE ARCHITECTURE	LA	5 Year
PLANT PROTECTION	PP	20 Year
SEA FOOD SCIENCE	SFS	10 Year

[illegible]

TECHNICS AND DEVELOPMENT	TD	60 Year
LIVE STOCK	LS	20 Year

[illegible]

FORESTRY	F	40 Year

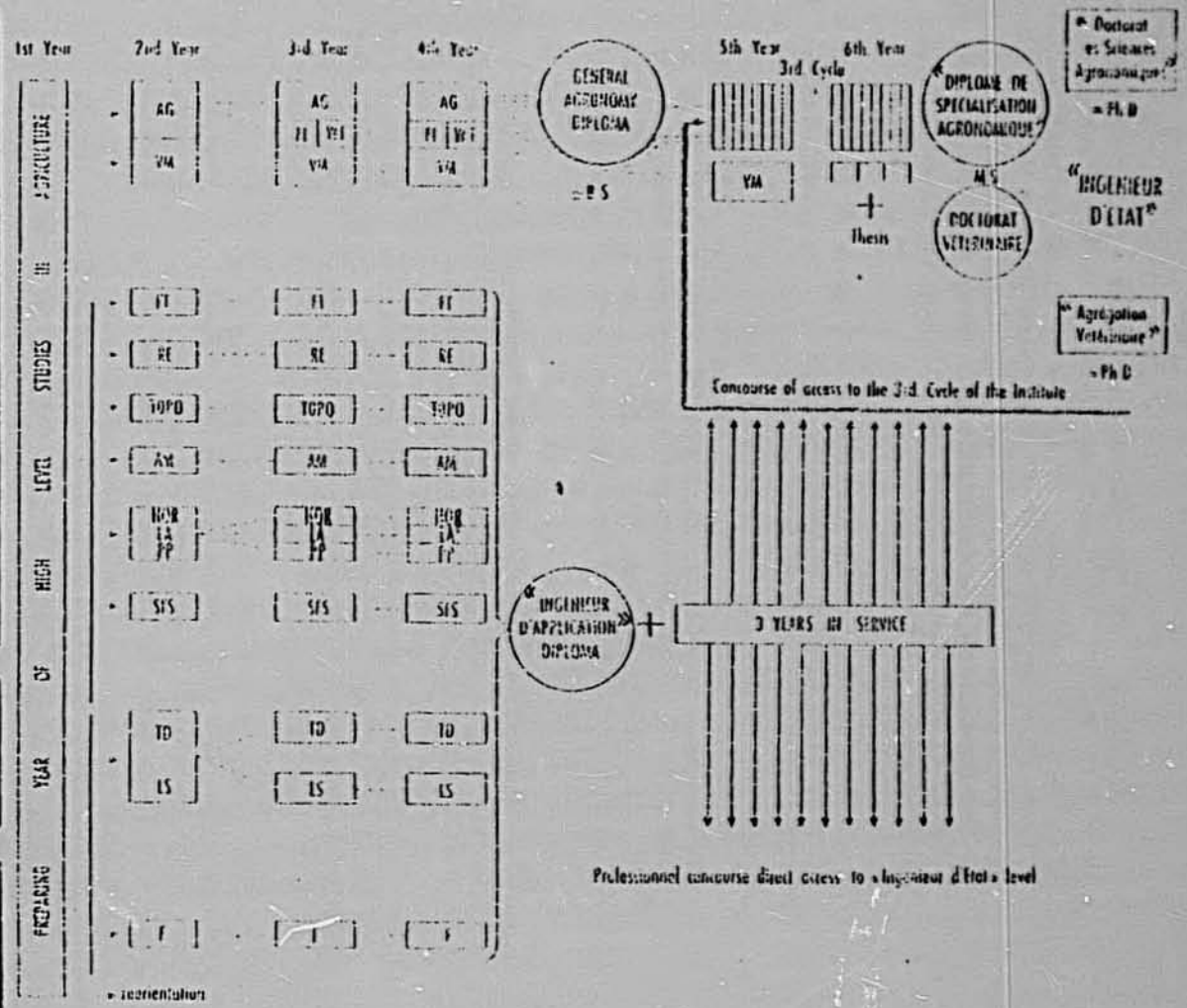


TABLE 1. Departmental Organisation of IAV 1979

"Bloc"	"Department"
Administration	Central Administration Accounting Student Records
Basic Sciences	Plant and Cell Biology Zoology Animal Physiology Geology Applied Math and Biometrics
Environmental Sciences	Soil Science Watershed Management and Hydrology Rangeland Management/Ecology Entomology Weed Control
Agronomy	Agronomy Plant Pathology Horticulture (Vegetables) Horticulture (Tree Crops)
Animal Science	Animal Science
Veterinary Science	Anatomy Physiology Pharmacology and Toxicology Microbiology and Immunology
Veterinary Medicine	Parasitology Reproduction Pathology Clinical Methods
Hygiene and Feeds Control	Hystology Hygiene
Social Science	Agricultural Economics Rural Sociology Economic Geography Agricultural Law
Food Technology	Agricultural and Food Industries Human Nutrition

Note: From an administrative point of view the Bloc is currently the organisational sub-unit with an elected chairman. The organisations of departments is variable depending on the development of staffing in each unit - some are well developed, others not.

TABLE 2. IAV Curriculum for 4 year Program in General Agriculture, 1979

Year/Subject	Course Work	Laboratory Work (hours)	Field Work
FIRST	425	180	136
Math.	90	90	-
Physics	80	50	30
Chemistry	80	40	16
Biology	110	-	30
Geology	25	-	30
Geography	20	-	-
Drafting	20	-	-
Stage		6 weeks	
SECOND	469	100	104
Math.	35	20	-
Statistics	35	20	-
Physics	60	30	-
Chemistry	40	15	32
Bio-Chemistry	80	-	40
Crop Physiology	20	-	10
Animal Physiology & Zoology	80	15	72
Geology	25	-	40
Economics	40	-	-
Regional Geography	34	-	-
Stage		6 weeks	
THIRD	536	182	70
Crop Physiology	20	10	-
Genetics	25	10	-
Statistics	14	16	-
Soil Science	22	2	-
Soil Chemistry	20	10	-
Crop Ecology	20	-	-
Botany-Systematics	16	20	8
Animal Ecology	10	12	-
Entomology	10	-	-
Agronomy	30	12	12
Pathology	25	24	18
Virology	15	-	-
Crop Protection	12	-	18
Animal Science	84	14	10
Agr.Engineering	82	30	4
Farm Management	24	16	-
Rural Sociology	15	-	-
Land Tenure and Law	28	-	-
Economic Theory	14	6	-
English	30	-	-
Stage		6 weeks	

TABLE 2. Cont'd

Year/Subject	Course Work	Laboratory Work	Field Work
FOURTH	576	80	53
Computer Science	12	18	4
Biometrics	14	16	-
Nutrition	30	-	-
Applied Pedology	16	8	9
Soil Conservation	15	-	-
Fisheries	10	4	-
Crop Ecology	20	-	-
Range Science	30	-	-
Weed Science	6	-	4
Agronomy	30	-	-
Plant Breeding	25	-	6
Plant Pathology	14	-	-
Small Grains	14	-	18
Tree Crops	16	-	6
Animal Science	72	14	6
Farm Machinery	30	-	-
Hydrology	33	20	-
Watershed Management	30	-	-
Food Technology	38	-	-
Development Theory	30	-	-
Sociology	15	-	-
Food and Nutrition Planning	28	-	-
Production Economics	15	-	-
English	30	-	-
Stage		6 weeks	

Prior AID Assistance to IAV

Since 1970 USAID has provided support to the development of IAV through a contract with the University of Minnesota. Under this activity the University of Minnesota has provided resident staff, TDYs and participant training. The initial objectives were modest. There was, for the first 4 years, a major emphasis on resident instruction in the undergraduate program. In 1974 the first participant was sent to the U.S. for M.S. level training. Since 1974, 75 third cycle students have been sent to the U.S. The objective of the current contract (FY 77-79) has been to aid the development of the third cycle program in Morocco. The development of an entirely IAV-taught third cycle program in Soils and Forestry starting in September 1979 is an indication of project progress. Starting in August 1978 the first IAV faculty members were sent under the project to the U.S. for doctoral training. There are now 21 in the U.S.

The project was favorably evalued by an external review team in November 1978. The most significant achievements have been a growing IAV appreciation of U.S. agricultural training. The project has had a disproportionate impact (AID has provided only about 4 percent of the foreign staff of IAV) on institute and faculty development. Over 20 percent of U.S. trained third cycle students have been recruited by IAV to its faculty as compared to a graduating class average of about 10 percent. The Institute has asked for continued AID assistance in the development of its faculty and for the training of 50 percent of its future faculty over the next 10 years. This appreciation of U.S. agricultural training and effectiveness is impressive, and compared to the situation in 1970 when European philosophical domination of IAV was almost absolute, is quite remarkable.

In the light of the evolving nature of assistance being requested by IAV, USAID determined it desirable to take a longer term look at the project (objectives, inputs, etc.) and, under a new project, to link more formally a major U.S. agricultural educational institution with IAV's own institutional development.

The prior successful involvement of the University of Minnesota in the development of IAV and, under collaborative assistance, in the design of this new project creates an unusually favorable environment for project success since the new project is built on substantial experience and understanding of IAV and its goals and objectives. The development of IAV has been rapid. It has already achieved in a decade the basic elements of a successful institution. This new project is in this sense a completion of past AID assistance. It deals with the new and final phase of institutional development: the development of a fully staffed national capacity for the essential education of Morocco's agricultural technicians.

Summary

The foregoing has outlined the development problems of Morocco, the IAV, Morocco's need for college graduates and prior AID assistance to IAV. The question of whether there is a need for a college of agriculture in Morocco, or a need for the number of students it will produce or whether past assistance has been successful are not at issue. There is clearly such a need. The issues are whether AID should continue to support IAV (and if so in what manner) in order that IAV will develop into the kind of institution that will promote broad based participatory agricultural development in Morocco. It is to these matters that we now turn.

III. IAV AND AID DEVELOPMENT STRATEGY

There are two fundamental questions for AID in evaluating this project paper: First: Does assistance to IAV contribute to AID's agricultural policy and program objectives of supporting a broadly participatory agricultural production strategy with its simultaneous emphasis on production on the one hand and income and employment on the other? Second: Is the internal design of the project such that the inputs provided by the project will result in outputs which will achieve project goals? The first of these questions is examined in this section. The second is addressed in section IV. The project.

AID Policy on Agricultural Education and Institutional Development

AID agricultural policy is contained in the Agriculture Development Policy Paper, of June 1978. The policy paper recognizes that project proposals aimed at strengthening nation-wide agricultural institutions such as those of research, education or extension tend to be controversial but states that "these kinds of projects appropriately designed and implemented can be a vital step in bringing cost reducing and production increasing technology to farmers and hence higher incomes to the rural poor and more abundant and lower cost food to consumers (p.8). The central issue is therefore not whether such institutions are needed but whether assistance projects to them are appropriately designed so that they will be effective in regards to the twin objectives of production and employment and participation. The AID policy paper also states that "nearly all missions will support some activities in the technology area, perhaps particularly those to strengthen nation-wide agricultural research systems and to train the requisite personnel at the appropriate levels. This reflects recognition that: (1) cost reducing technology is the primary engine of agricultural production growth; (2) effective nation-wide systems for linked agricultural research, education and extension remain very deficient or even non-existent, especially in the lowest income countries... (3) the establishment of effective, self perpetuating systems is a long run proposition requiring a decade or more of sustained highly professional technical assistance; and (4) the U.S. has special competence in these fields as reflected in the Title XII mandate". However, the policy paper goes on that such projects will be supported by AID, "only if they give special emphasis in their policies and programs to the needs of low income producers or consumers. AID will not support strengthening of nation-wide agricultural institutions which lack this emphasis" (pp 18-19).

Specifically in regards to agricultural education the AID policy paper enunciates four important principles which should guide this support:

1) The need effectively to reach and involve low income producers.

2) The need for balance and strong linkages among the three related activities of the research, education and extension system.

3) That this system - the development and diffusion of technology be viewed as a two-way communication system in identifying farmers needs and problems.

4) That although the development and diffusion of technology should be viewed as a key stimulus to agricultural progress the staff of technology related institutions must be sensitive to the broader context (e.g., cultural patterns, ecological setting, asset distribution, other local institutions) which affect the magnitude and direction of the impact of new technology on production and equity (pp 34-36).

In regards to agricultural education - which is a part of the linked development and technology system - the AID policy paper states "Most colleges of agriculture in low income countries are in need of modernization and/or expansion. In some countries there is a need for expansion of undergraduate agricultural education and, for the longer term, graduate training" (p 38). It continues that "support for agricultural education must begin with the identification and development of models and approaches to agricultural education which have as well as a conscious objective, reaching and involving the poor majority more effectively. This should include a focus on the needs of low income farmers in the curricula and orientation of educational programs and an effort to include them as students and trainers at appropriate levels of agricultural education".

In this section a critical analysis is made of the extent to which IAV, is now or, with assistance form this project, will evolve into an institution which has the characteristics outlined above. USAID is convinced that it will. It is for this reason that USAID has considered the past assistance to IAV to be successful and the continuation, to maturity, of support to IAV to be highly desirable.

For the purpose of the following discussion we will use the word "modern" to describe the desired institutional characteristics described in the AID policy paper. Conversely, "traditional" will be used to describe the characteristics of an institution which does not meet these criteria. Thus the question at hand is whether IAV is and will be a "modern" institution or rather a "traditional" one.

IAV as a "Modern" Institution

In this section we discuss some of the attributes of IAV which provide a substantial basis for affirming that IAV, with AID support, is now and will be in the future an appropriate "modern" institution which will play a vital role in the emmergence of a broad based participatory

development of Moroccan agriculture. Eleven different matters are treated. In the summary to this section we conclude that these aspects of IAV, taken individually and collectively, are massive evidence for concluding that continued support by AID to IAV is well placed and that IAV will provide critical inputs to the development of Moroccan agriculture in desired ways.

1. Program of "Stages". Since 1968 the Institute has developed an exciting and original feature in its curriculum - its program of "stages". It is perhaps unique. The IAV is deeply conscious of the need to inculcate in its student the values of rural life and an ability to observe, understand and empathize with Moroccan agriculture and particularly with traditional agriculture. The IAV faces the problem that many of its students have been subjected to an educational and cultural system which, from childhood, has accentuated concepts of modernization and science and which has devalued respect for Moroccan rural society. (a problem incidentally not unique to Morocco and indeed to be found in the U.S.). The Institute has also had to find ways of giving practical experience to students, not only in the laboratory and in field work (IAV has 2 experimental farms) but also in the real world of the village and the countryside. The "Stage" system is an integral part of all four years of the B.S. curriculum and is designed progressively to put students in contact with Moroccan agriculture as it is practised in the field and to test their ability to apply their education to problem solving at the local level.

In essence, it is an "outreach activity in reverse", the rationale being that the student needs to learn from the farmer before he can teach him. But this process is not a one-way street since, after visiting the farmer and learning from him, the student invites him back on campus to show him his world.

The "Stage" system is designed as a diagnostic and prescriptive pedagogical device which parallels the students' advance in technical agriculture. The system is briefly as follows:

First Stage: Discovery of Nature

A. Objectives:

1. to familiarize the student with nature.

2. to teach him how to live with the natural environment while respecting it and without suffering from it.

3. to steel his body away from city and campus life.

4. to develop observation skills of natural and human phenomena.

5. to learn how to use a topographic map and a compass.

6. to identify his major field of interest and study.

B. Method:

450 students are grouped in teams of 10 and travel 70 Km in the countryside using map and compass. 25 staff members check on them regularly. Each of the 45 teams must: (a) solve all the material and logistic problems of their trip, (b) record observations on the geology, botanical, zoological, and human make-up of the region they are visiting. All these observations are then analyzed in a final report which is graded by their advisor and is part of that year's final grade.

Second Stage: Introduction to Rural Life

A. Objectives:

1. to familiarize students with a city background to the peasants' way of life.

2. to encourage students with a rural background to take a second look at a way of life whcih they may have considered hastily as backward, prior to coming to IAV. Both groups are expected to realize that both the modem and traditional rural sectors are worth their scientific enquiries.

3. to develop the ability to organize effective intellectual work away from the comfort of the campus library.

4. to develop their skills in collecting information of the rural environment that will be used to illustrate their course work during the second year.

B. Method:

The 450 students are grouped in teams of 3 and the 150 teams are assigned to live several weeks in 150 villages of less than 1000 people (or less than 200 households). They are provided with a daily allowance to cover their living expenses. They are expected to: (a) make themselves accepted socially, (b) collect data on the traditional technology used, the land tenure system, the marketing of products and inputs, the nutrition status of the village's inhabitants, etc., (c) to record such data in detailed formats that are kept for further investigation and for grading the students efforts.

Third Stage: Agricultural Production Unit

A. Objectives:

1. the student is expected to gain an understanding of agricultural production through his observation of the functioning of an actual traditional small scale dryland production unit (farm).

2. the student must develop a scientific approach to the decoding of a complex real world production process in agriculture.

3. at the end of the stage, the student must be able to unveil the relationships between inputs, the production process and outputs.

B. Method:

The continuing third-year students are grouped in teams of two and the teams are assigned to pre-selected peasant farm households in a chosen area, different each year. Each team spends 45 days on its assigned farm. Each team studies the farm/household operations in depth and records observations in a final report. 16 staff members, grouped in four teams of four different disciplines per team, provide guidance. Final reports contribute to the final third year's grades.

Fourth Stage: The Regional Development Study

A. Objectives:

1. to understand the socio-economic stratification of a region

2. to study critically the official development plans for that region.

3. to create and substantiate with facts and analysis improvements to existing plans or alternative plans.

B. Method:

1. to survey the region in order to understand its socio-economic make-up.

2. to survey the region's farmers to understand their problems.

3. to contact the various administrative services in the region, to listen to their plans and implementation plans.

4. to write a final report, with the help of a staff member, in which each team of two students suggests alternative paths and methods for the development of their region.

5. to defend their suggestions in front of the local administration and to provide each interested service or Ministry with a copy of their final report. Again, such a report contributes to the determination of the students' 4th year final grade.

The stage system, apart from the obvious benefits to the student, has also been of immense benefit to the Institute as a source of understanding, data and diagnosis of Moroccan small farmer development problems. Economic, social and technical data are gathered by students using standardized formats which have created a reservoir of data for use by teachers and researchers. For example, teachers of plant pathology now have data on the incidence of diseases, and farmers knowledge of them, and examples to

use in the classroom derived from Moroccan (not European or U.S.) agriculture.

The program of stage is an important means therefore of ensuring relevance and linkage of students and the curriculum to the real world. It is an outstanding example of the "modern" attributes of IAV.

2. Applied Research. Research within a college of agriculture has a number of critical functions. It is necessary as a teaching device for students. It is through research that students, undergraduates and graduates, learn to identify problems, and find solutions. It is through "research"--in the field, in the library, in the laboratory--that students can put into practice what they have learned in the classroom.

Research is also necessary for the maintenance of competency and currency of the teaching faculty. IAV appreciates that research involvement is one way of building and maintaining professional ability and that a young faculty member cannot be allowed to teach the same course for 35 years (until retirement) without ever updating it through his own professional improvement, reading, etc. Research involvement is one way that teaching is maintained and improved.

Research is also a vehicle for the exchange and stimulation of ideas. Without some research involvement, IAV would quickly become detached from the national and international world of agricultural science not only to the detriment of its teaching program but also to the detriment of professional morale. Much more importantly it is through research that teachers (as well as students) are put in contact with the real world and relevant problems of Moroccan agriculture.

It is not the role of IAV to provide all or even a major part of the research needed for Moroccan agricultural development. (This is the responsibility of the Direction de la Recherche Agronomique with whom AID has another project). However, it is necessary for IAV faculty and students to be involved in research in order for the institution to develop in harmony with Moroccan development needs. Moreover, the human capital that the future faculty of IAV will represent must contribute as widely as possible to Morocco's development needs. To the extent that the faculty has needed research and professional skills, these must be utilized effectively.

IAV has incorporated applied research into both its curriculum and its faculty development program as an essential element of a modernizing college of Agriculture. All 4 year and 6 year students are required to carry out a "senior thesis" or "memoire" research project. The IAV faculty directs the students to applied problems of relevance to Moroccan agricultural development and through publication and presentation of results to professional associations etc. ensures dissemination of findings. Equally importantly this material is incorporated into the course material of instructors.

An interesting part of the applied thesis research is the public defense given by the student of his work. IAV includes on the committee not only faculty members from IAV or skilled researchers from outside the institute but also practitioners who are involved in the field of

application. IAV does not insist that these people have degrees but to the contrary seeks in its own words to open up "the examining board to the world outside the institute" and hence "to project the institute into the domains of research and development".

The prior AID assistance to IAV has given particular emphasis in the last few years to 3rd cycle training and hence to the importance of relevant applied research. One of the major U.S. contributions has been the insistence by University of Minnesota personnel on the field aspects of practical, applied research by students and demonstration that research need not be esoteric or uniquely laboratory-based to provide quality training.

3. In Service Training. In 1973 an In Service Training (IST) section was created in the Ministry of Agriculture, under the Direction of Agricultural Education, but entirely the operational responsibility of IAV. This In Service Training Section is made up of a small staff of 2 Ingenieurs d'Etat (with training in continuing Education), two assistants and a secretary who organize and manage the programs. The actual teaching is done by the faculty of IAV and by other technicians from the Ministry of Agriculture and elsewhere.

IST has three objectives: (1) Updating the basic knowledge and skills of the 10,000 staff and technicians (many of them extension agents) working within the administration of MARA, (2) providing them with specific training sessions on new specialized topics and agricultural techniques; (3) helping agricultural technicians to adapt to new demands in their jobs (e.g. when milk testing was adopted in Morocco as a new responsibility of MARA).

IST now provides three kinds of services at both National and Regional levels: (1) the training of specialists and extension agents; (2) the development and testing of new training programs in close collaboration with extension agents to answer their specific needs and (3) the administrative and logistic organization of the above two activities.

IST provides these services at the National level to re-train technicians and to train small groups of professional specialists (e.g. agricultural statisticians). The instructors in IST's training programs at the national level are usually professors in institutions of higher education, researchers or specialized technicians.

IST regional level programs are designed to: (a) limit the number of participants per session to maintain a low trainee-instructor ratio, (b) adapt their outreach efforts to local conditions, and (c) avoid unnecessary traveling by participants, costly in terms of time and money. At the regional level, the instructors are IAV staff members and other technicians working in regional state and private enterprises and extension services.

A pilot regional program has been conducted, with success, for the last three years at Marrakech. The principal idea behind IAV's regional program is to allow the regional authorities to identify and organize their own programs of in-service training according to the specific needs

of the region. This idea will be further developed with the opening of National Extension Centre in 1980-81 with a plan for IAV to have a continuing education specialist in each regional office.

The IAV has recently published an evaluation report on the activities of the IST over the last three years 1/. This report puts considerable emphasis on the importance of associating continuing education with resident or basic instruction at IAV and on the interaction between in-service training and the identification of research and information needs. IAV sees the IST activities as one means of ensuring linkages between education, research and extension.

The principal beneficiaries of IST activities have been lower level technicians (adjoints and agents) most of whom are engaged in extension activities of MARA. A summary of participation in IST activities is shown in Table 3.

4. Professional Associations. The Institute has been very supportive of the creation of professional associations in an attempt to integrate the Institute and its alumni into the on-going dialogue on Moroccan development programs and to prevent the Institute from becoming an ivory tower. Five professional associations have been created.

- The National Association for the Improvement of Drainage and Irrigation.
- The National Association for the Improvement, Production and Protection of Vegetable Crops.
- The National Association of Animal Production.
- The Moroccan Association of Soil Science.
- The Federation of National Associations for Rural Development

In addition the IAV has an alumni association (Amicales des Ancients de l'IAV).

These associations organize seminars and conferences for the exchange of ideas and experience and for the presentation of research results. This an important means of ensuring the two-way flow ideas between IAV and practitioners in the field. All of the associations are headquerted at IAV. The results of conferences, research, etc. are also reported in the Institute's own Journal Man, Land and Water and the Soil Science association has started (in 1979) the publication of its own journal.

1/ M. Canal, La Formation Permanente: Reflections on Three Years of Progress June 1979.

TABLE 3. Summary of IST's Activities Since 1973

FIELD	Number of Participants			Number of Stage/Days		
	National	Regional	Total	National	Regional	Total
Basic Sciences & Nutrition	195	-	195	544	-	544
Crop Production	140	103	243	586	274	860
Animal Production & Veterinary Sciences	98	12	110	236	36	272
Ag.Engineering & Technology	67	-	67	122	-	122
Ag.Education	66	11	77	117	33	150
Total	566	126	692	1605	343	1948

Source: Rapport d'Activites, 1977-1978 - IAV Rabat

5. Agadir. The IAV is currently completing the construction of a new campus - or centre - for horticulture in Agadir. This centre will provide a site for the training of technicians at all levels - M.S., B.S., 2 year adjoints and in-service training - in horticulture and plant protection. The Agadir Center is a conscious effort by IAV to decentralize and regionalize its training programs. IAV states that an explicit purpose of the centre is to interact with the problems of regional development (through research and outreach to farmers) and to encourage, by training of technicians of different levels at the same site, mutual respect and understanding of each other's roles and to encourage interdisciplinary problem solving.

This kind of activity is clearly modern in its outlook and intent.

6. Student Enrollment. The composition of the student body in terms of its social economic origins and its male/female composition is another indicator of the "modern" trend. A study was carried out by IAV of the incoming first year students in 1977-78.

The study showed that a large proportion of the students admitted to IAV come from humble walks of life. Over 50% of them were sons of farmers, workers, or small traders. In addition, 17% of the students had a father (or guardian) who was unemployed. Less than 6% of the students' fathers were civil servants and less than 2% were from the liberal professions or were high ranking bureaucrats. The statistics displayed in Table 4 suggest that, for the most part, students admitted at IAV in 1976-77 came from modest socio-economic strata.

For the first time in 1976, IAV graduated a female "Ingenieur Agronome". In 1977, a woman obtained the degree of Engineer in Food Technology. For the first time in 1978, a woman obtained the degree of Doctor in Veterinary Medicine. In 1976-77, out of 580 students admitted at IAV, 26 were women (4.4%) and 554 were men (95.6%). This was a slight improvement over 1975-76. But in 1977-78, out of 550 students who passed successfully the entrance examination at IAV, 59 were women, i.e. over 10%.

These statistics are an indication that women are attracted by agricultural careers, compete successfully in the entrance examination at IAV and are being admitted in increasing numbers at the institute (both in absolute and relative terms). This is fairly remarkable in the light of the known deficiencies in access to higher education for women in Morocco and in view of the traditional male dominance of the Ministry of Agriculture. Women have also been trained in the U.S. under the existing project and have both faculty and administrative positions at IAV.

TABLE 4. IAV First Year Student's Father Profession as a Proxy to Socio-Economic Stratum 1976-1977

Father's Profession	No.of Students	%	No.of Students Admitted
Peasant 1/	138	23.7	110
Worker	105	13.0	94
Unemployed	100	17.2	83
Trader	56	9.6	48
Teacher	36	6.2	32
Artisan	31	5.3	27
Civil Servant	31	5.3	25
Clerk	20	3.0	16
Retired	17	2.9	14
Mokhazni (porter)	13	2.2	9
Military	8	1.3	8
Police	5	0.8	5
Liberal Profession	5	0.8	5
High Rank Bureaucrat	3	0.5	3
Religious	3	0.5	2
Undefined and Other	9	-	-

Source: RAPPORT D'ACTIVITES 1976-1977, Institut Agronomique et Veterinaire Hassan II, Rabat

1/ Reported in the study as "Paysan"; students completed questionnaires and used this category although no rigorous definition was given to them.

TABLE 5. Where High School Degree was Granted to IAV 1st Year Students as a Proxy to Regional Origin of Students. (1976-77)

Center of Graduation	# Students	%	No. of Students
Rabat	66	11.5	56
Casablanca	61	10.6	50
Meknes	49	8.4	34
Fes	46	8.0	42
Marrakech	39	6.7	32
Azrou	31	5.3	23
Beni Mellal	26	4.4	23
Agadir	24	4.1	23
Kenitra	23	4.1	18
Oujda	18	3.1	13
Ksar Es Souk	17	2.9	16
Ouarzazate	16	2.7	15
Taza	14	2.4	12
Larache	12	2.0	11
Khemisset	10	1.7	9
Sefrou	9	1.5	8
Midelt	9	1.5	7
Khouribga	8	1.3	7
Errachidia	8	1.3	8
El Jadida	7	1.2	5
Sidi Kacem	7	1.2	5
Tetouan	5	0.8	5
Safi	5	0.8	5
Settat	4	0.6	1
Ouezzane	4	0.6	4
Souk El Arbaa	4	0.6	4
Tanger	4	0.6	4
Nador	3	0.5	2
Berkane	3	0.5	3
Fkih Ben Salah	3	0.5	1
Khenifra	3	0.5	3
Mohammedia	3	0.5	0
Taroudant	3	0.5	3
Essaouira	1	0.1	1
Al Hoceima	1	0.1	1

Source: RAPPORT D'ACTIVITES 1976-1977, IAV, Hassan II, Rabat

TABLE 6. Foreign Students Admissions at IAV - 1976-1977 and 1977-1978

Nationality	# Students Admitted in 76-77	# Students Admitted in 77-78
Algerian	0	1
Gabonese	4	2
Guinean	17	25
Mauritanian	2	9
Senegalese	10	17
Tunisian	1	2
Total	34	56

Source: RAPPORTS D'ACTIVITES 1976-77 et 1977-78, IAV, Hassan II, Rabat

7. Fields of U.S. Support. The current AID assistance to IAV is another indicator of the "modern". The current project has been limited largely to the fields of crop and soil science. It is significant that IAV has partic arly sought from the U.S. not only fields of specialization not as well developed in Europe but also fields which have direct bearing on dryland farming and herding. Moreover, the U.S. technicians have been able to project a concern for those aspects of their discipline which are important to the poor majority. For example:

. Plant Breeding: A plant breeding faculty member has been provided by the current project since 1970. This program has focused entirely or barely improvement. Barley is not only the most important crop in Morocco in terms of area it is also the most important in the arid and semi arid areas and uplands on which most of the small farmers are found.

. Range Management: Under the current project assistance has been given to range management. This is not only a direct recognition by IAV of the pre-eminence of U.S. technology in this area but also of the importance of range management to Morocco's herders who are among the poorest of the rural poor. All of IAV's students and faculty who have specialized in this area have been trained in the U.S.. Indeed, the largest group of faculty are currently in the U.S. for doctoral training are in range management (5). (Moreover, it is because of the trained individuals now in Morocco, as a result of this prior assistance to IAV, that is possible to initiate USAID's new rangeland project which is directly targeted at low income herders).

. Watershed Management and Soil Management: One of the most serious problems affecting small dryland farmers is the problem of erosion. Prior AID assistance has given significant attention to these problems providing 2 team members to IAV to work in this area. It is upland farmers who suffer the greatest problems due to population pressure on the land which is degrading the basic resource on which the live - the soil.

. Plant Pathology: The Plant Pathologist on the present team is working on problems of cereal pathology and disease resistance on barley (and to a lesser extent wheat). Disease losses on cereals are proportional far more significant to small dryland farmers than the large farmers.

These are positive indications of ways that AID has been able to encourage and support the "modern" process at IAV. As a result of the present University of Minnesota contract the proportion of students specializing in 3rd cycle programs in disciplines which relate directly to dryland farming has increased dramatically, from 14% in 1972 to 40% in 1977 (percentage of students in Agronomy, excludes DVM students).

8. In Country Dissertation Research for Faculty Development: IAV is insisting that its faculty members who will go abroad for advanced studies return to Morocco to do their doctoral research. Its reasons are multiple but relate directly to institutional development and IAV desire to see harmonious development of a genuinely Moroccan institution, effectively integrated into and concerned with the needs of Moroccan agriculture. Some of the main reasons for this insistence on in-country dissertation research are:

. Research must be relevant to Morocco agricultural development and contribute to new, useful and extendable information.

. Research for a doctorate degree can lay the foundations for an on-going program.

. Research which "cannot be done" in Morocco must raise questions as to why the faculty member is engaged in it. What will (s)he do upon his/her return?

. IAV wishes to maintain national identity of its faculty by having all doctoral degrees granted by the same mechanism and hence avoid "cliques" of U.S., French, Belgian or other degree holders.

. IAV sees faculty development as part of institution building and not an end in itself.

It is also noteworthy that IAV sees much merit in the U.S. Ph.D. system of training, not only because of the excellence of U.S. agricultural science but because of the applied problem solving focus of U.S. agricultural research and its linkages to extension and agricultural education.

In developing its Moroccan faculty and research program IAV is conscious of the need to develop linkages with the Direction of Agricultural Research (DRA). These linkages have in the past been weak although cooperation at the individual scientist level and in use of DRA personnel with specific skills as teachers at IAV have been steadily increasing. In developing its faculty IAV will also be developing a significant pool of talent which must contribute effectively to Morocco's agricultural research needs. It is expected that both formal and informal linkages will develop as IAV acquires competent staff. It is not without significance that USAID's dryland research project, which is attached to DRA, is being conducted by IAV which has the responsibility for the social, economic and extension analysis of the project (In fact this part of the Dryland Project under IAV direction has been the first to get off the ground). This involvement by IAV in the Dryland project is further evidence of its interest and concern for dryland agriculture and the need for linkages to research and extension.

9. The National Extension Center: IAV is constructing under IBRD funding a National Center of Extension (CNERV). The buildings, which will be completed in March 1980 and operational by late 1980, are adjacent to

the School of Agriculture at Meknes. IBRD is also funding equipment, start up technical assistance (12 person years over 3 years and 1.5 person years of consultants) and participant training for 4 future Moroccan staff members.

In support of the government's new efforts to improve earnings of poorer rural families, the center will be a backstopping facility to develop and expand extension worker in-service training, develop mass instructional materials for farmer training, and improve broad extension methodologies to accelerate rural development through experimentation and new techniques. The center, with tuition and boarding accomodation for 120, will be organized into 3 units corresponding to these functions. First, an in-service training unit will organize short refresher courses, of about 2 weeks each, for some 2,400 extension staff annually. Flexible and varied courses will stress the integration of technical information with extension methods and will increase the capability of field workers to communicate with farmers through personal contact and the use of mass media.

The unit's staff will also develop ways to decentralize in-service training, and with different regional institutions, organize seminars and courses adapted to various geographic, agricultural and seasonal conditions. The second, a technical mass media unit, will produce mass support materials for farmer training, and equipment will be provided to cover the use of radio, television, film, photo and graphics with printing contracted to outside sources. The third, an experimentation, evaluation and testing unit will be action-oriented, addressing particularly on-going extension work, changing farmer attitudes, the interrelationship between extension and other rural services, baseline surveys, and field evaluation. A part of the Center's overall function will be to assist in integrated rural development and the development of new extension methods as part of a system of non-formal education and rural development which interelate agricultural extension with other development inputs (including schools, health, cooperatives, animation rurale).

The center will thus provide a critical linkage between IAV and the extension function of the Ministry of Agriculture and together with its in-service training (IST) program ensure that IAV remains relevant in its teaching and research functions.

IAV does not include extension education as a major part of all its undergraduate curriculum (except to 4 year student at Meknes in the field "Techniques and Development" who are most likely to work in extension related capacities) although the social science courses and the program of "stages" provide extension related course work and experience. IAV considers it far more practical to contribute through the Extension Center (and IST) the appropriate and relevant training to actual field extension staff-many of whom are of sub university training.

IAV faculty will contribute to (and learn from) the programs of the Center (and IST).

The University of Minnesota is already linked to the Center through the IAV and its involvement in the Moulouya evaluation. IAV made available to the Moulouya Evaluation team (which included the director of the IAV-University of Minnesota project) a senior member of its IST staff because of its interest in building case experience of project evaluation and assessment of extension methodologies.

10. Extension Agent Training: The field extension agents of MARA are either adjoints techniques or agents techniques trained in the 11 Schools of Agriculture situated around Morocco (Table 7). Three of these train both levels of technicians and two only the agents techniques. The remaining six are training only adjoints techniques. The training for adjoints is 2 years and agents 1 year. The agents techniques students are taken in after 4 years of secondary education. The future adjoints have completed the full 7 years of secondary education prior to admission. In both cases they are screened for admission by competitive examination.

Thus the IAV makes one direct impact on the extension service through the agricultural graduates of IAV who teach in these schools of agriculture. All the teaching faculty of the schools are graduates of IAV or have other equivalent university diplomas (field and labwork are also supervised by staff with adjoints techniques training).

In 1979 the following graduates of IAV were assigned to the schools of agriculture:

	Total Graduated	Assigned to Schools	Percent
Ingenieur d'Etat-Agronomy	61	8	13
Ingenieur d'Etat -Vet.Medicine	14	4	28
Ingenieur d'Application	273	21	8

Thus a significant percentage of IAV graduates are engaged in training field technicians, many of whom are destined to be agricultural extension agents. It should be noted in passing that GOM is phasing out the training of the lower level agents techniques since it has been found that they lack sufficient training to be useful extension agents and technicians. The 11 schools graduated a total of 445 technicians in 1979.

11. Institutional Philosophy: An important indicator of the "modern" is the extent to which it has a clearly identified and expressed institutional philosophy in terms of mission and goals. There is no question that IAV has such an institutional philosophy. This is expressed by its administration, its faculty and students. Simple facts such as that IAV publishes an annual report, encourages outside participation in its educational program (through associations, National and International Conferences, In Service Training) and has attracted and

TABLE 7. Morocco: Schools of Agriculture Training Extension Agents

School	Place	Field of Specialization
Royal School of Livestock	Kenitra	Animal Science
School of Agr. Engineering	Meknes	Agr. Engineering Topography
School of Horticulture	Meknes	Horticulture
School of Agriculture	Berkane	Irrigation
School of Agriculture	Ellouizia	Dryland Farming
School of Agriculture	Marrakech	Irrigation
School of Farm Machinery	Bouknadel	Farm Machinery
Training Center	Sahel Bouthar	General
Training Center	Tiflet	General
Training Center	Chaouia	General
Section for Lab.Assistants	Rabat (IAV)[1/]	Laboratory Technicians
Royal School of Forestry	Sale	Forest Guards

1/ This is integrated into IAV, Rabat, 5 out of 30 technicians were assigned to schools of agriculture in 1979.

maintained GOM capital and recurrent budget over the last 10 years are evidence of the presence of such philosophy. The IAV has recently published an English language statement on its programs. It concludes:[1/]

> A more universal way of thinking about the problems of communication with the rural world and about the experiences in popularising new agricultural techniques seems to be a necessity if we wish to give development its real meaning: to answer to the actual aspirations of the rural masses concerned and not to apply a certain number of recipes or technocratic formulas for improving techniques or increasing productivity.

Summary

The foregoing items are summarized in Table 8. Each of these activities and dimensions of IAV are indicated as to whether they contribute to the four basic guidelines of "modernity" described in the previous section dealing with AID Policy:

. Reaching effectively and involving low income producers

. Balance and linkages to Research and Extension

. Understanding of two Way Communication

. Understanding of the Broader Context

The display of this information shows that IAV does indeed have or is developing attributes of a "modern" agricultural institution property situated in the development and diffusion of new technology system.

The project that is described in this paper is designed to strengthen and reinforce this institutional development and to provide the final phase of assistance to allow IAV to develop into a "mature" self supporting institution no longer dependent on foreign assistance and teachers.

IV. THE PROJECT

Purpose and Goals

The purpose of this project is to complete the institutional development of a "modern" college of agriculture appropriate to Moroccan agricultural development needs and with appropriate linkages to the rest

1/ M.L.Firdawcy, A System of Integrated Education of Trained Personnel in Agriculture in Morocco, June 1979

TABLE 8. IAV: Indicators of Modernisation and Relationship to AID Guidelines

	Reach effectively and involve low income produces	Balance and linkages to Research and Extension	Understanding of two way Communication	Understanding of Broader Context
1. Applied Stages	x	x	x	x
2. Applied Research	x	x	x	
3. In Service Training		x	x	
4. Professional Associations		x	x	x
5. Agadir	x	x	x	x
6. Student Enrollment	x			
7. Fields of US Support	x	x	x	x
8. In Country Dissertation Research	x	x	x	x
9. National Extension Center	x	x	x	
10. Extension Agent Center	x	x	x	x
11. Institutional Philosophy	x	x	x	x

of the technology delivery system (research and extension) and concern for low income farmers and herders. Such a "modern" institution will provide the trained technicians, managers and scientists required for full development of Morocco's agricultural sector. The primary output of the project is to aid the development of the "missing link" in the process of IAV's continued institutional development into a fully effective modern institution - an appropriately trained Moroccan faculty.

The assistance to be provided by the project is needed not only to ensure the development of a Moroccan faculty but of an appropriately trained faculty. USAID believes that it has a major opportunity through this project to bring about desired development of Moroccan agriculture. Not only has IAV requested this support, it has shown complete understanding and agreement with AID concerns which it takes as it own. This project seeks to re-enforce the substantial achievements of IAV in this direction and to build upon the success of prior AID assistance.

The goals of this activity are to train 50% of the future faculty of IAV over the next decade and within the framework of the 5-year project to initiate doctoral training for 65 Moroccan faculty members. In addition to receiving scientific training the Moroccan faculty will upon their return be aided by the project to contribute to the broader institutional development of IAV by assisting the strengthening of research and extension linkages of IAV.

IAV has made impressive progress over the last decade. Continued AID assistance is needed to enable it to achieve its goals of becoming an authentic, modern Moroccan institution. This it cannot achieve as long as it is dependent on foreign faculty.

The Need for a Moroccan Faculty

The need for a Moroccanized faculty, if IAV is to become a successful modern institution, is perhaps obvious. However, it is important that the full implications of Moroccanization of the faculty be understood in terms of institutional development and of the nature of assistance to be provided.

It will be recalled that at the present time IAV has all of the characteristics of a young but successful institution. It has an infrastructure of buildings, laboratories, classrooms which are moderately well equipped; it has evolved a curriculum which continues to change and develop; it has evolved an administrative structure which has successfully dealt with problems in the past - but as the institution grows in complexity and size it will have to change and develop. However, there is one critical ingredient lacking - a Moroccan faculty.

IAV is heavily dependent on foreign staff - both resident and short term. Of the current faculty of 230 about 100 are Moroccans. However, almost all of these are young professionals who have only recently graduated from IAV. They are young "assistants". Only 5 faculty members have advanced degrees (beyond the 3rd cycle), only one has a U.S. Ph.D.

A Moroccan faculty is needed if the IAV is to become a successful, indigenous institution appropriate to Morocco's development process. Not only can Morocco not afford to depend for ever on external assistance and the use of expensive resident and visiting staff, but much more importantly it is only a Moroccan faculty which can bring about the complex linkages described above, based upon a broad understanding of the development process. Foreign faculty even though they may serve one or more tours in Morocco cannot "interpret" the complex cultural, political, social and economic environment, and its interrelationship with the technical environment, as well as a equivalently trained Moroccan faculty.

Institution building is a complex business. It is the establishment of a process and an institutional capacity to develop necessary linkages to the development needs of Moroccan agriculture, that will be the hallmark of a successful Moroccan college of agriculture.

The process of Moroccan agricultural development and hence its trained manpower needs (in terms of type, quality, distribution, numbers, etc.) creates a continuing need for capacity to understand and interact with the development process (which by definition is dynamic, changing). It is for this reason that a successful institution of agricultural education has not only a teaching but also research and extension linkages (as described above) in order to interact with the development process. A college of agriculture which cannot "perceive" the development needs of the industry it is supposed to serve cannot be successful even though it "dispenses" a rigorous, scientific classroom education. Colleges of Agriculture cannot be ivory towers. The institutional linkages between IAV and the agricultural sector are already impressive and imbedded in institutional philosophy. This philosophy, perhaps differently articulated and differently programmed, is also the hallmark of U.S. land grant colleges. This is one of the reasons that this project is well suited to Title XII U.S. University implementation. The development of a Moroccan faculty will in itself be a major means of strengthening these linkages.

A second characteristic of a successful institution is a capacity to "process" information about the external world and to make internal allocative decisions, i.e. to respond to needs of Moroccan agriculture and hence to design and redesign curriculum and to allocate budget between teaching, research, extension and support services (transportation, clerical), etc. This in turn depends on the development of an internal organizational structure which evolves and adapts to changing needs. Such a structure allows focus on such matters as establishment of incentive systems for faculty and students, cooperative linkages with other institutions, as well as more mundane but necessary services such as reproduction, secretarial support, transportation, etc. Again, it will take a Moroccan faculty to accomplish these aspects of institutional development in the Moroccan context.

IAV has the potential for becoming a first class College of Agriculture and, through its graduates, of having a major impact on the low income rural sector. IAV also has the potential for becoming a model for other institutions in LDCs and a regional center of excellence

(10% of its students are currently from the Sahel francophone countries of W. Africa; it is the current seat of the African Association of Agricultural Faculties).

It is unique in that it has deliberately sought an authentic, national identity and rigorously refused to model itself on any particular country institutional form in the conviction that a successful Moroccan College of Agriculture has to evolve in response to the needs of Moroccan agriculture. It is the purpose of this project to assist in that process.

The outputs of this project are to provide IAV with a significant part (50%) of its fully Moroccanized and effectively functioning faculty. This will involve the training and development of its faculty members in a ten year activity. This project is for the first 5 years of that activity. The project goals have to be set within the context of a long term 10 year commitment to IAV and its faculty development.

In the light of the foregoing, development of a Moroccan faculty means providing more than science competence to IAV. For faculty to play their necessary role in institutional development science competence is necessary. However, young faculty members have to be provided with support (intellectual and physical) to enable them to continue to grow and mature as scientists, as teachers, as researchers and as members of an institution. In other words, the faculty has to be able to contribute to the institutional understanding of the external environment and its internal 'interpretation' within IAV. This means they must have opportunity to conduct research, to contribute to extension functions and to develop administrative skills (planning, curriculum design and teaching improvement, interaction within the system). This project recognizes that attention must be given to this development process. The purpose of the project is one of institution building to serve Moroccan agriculture; although the principal project output is a Moroccan faculty which can bring this about it also necessary that the project ensures that the faculty have appropriate skills and experiences to participate fully in the building of a modern institution.

Thus, the project will seek to provide more than just doctoral training to young faculty. It will support and encourage the young Moroccan faculty not only to develop necessary science skills but also the skills needed to participate in institutional development of a modern college of agriculture. This will be done by a number of means, including:

1) Conducting dissertation research in Morocco. Together with IAV, dissertation proposals will be developed which address significant problems of Moroccan agriculture. The dissertation research will provide opportunity to young faculty to interact with Moroccan agricultural development and provide a base for faculty program development essential to the teaching - research - extension system as well as gaining needed applied science research skills.

2) Providing opportunity for students when in the U.S. to study and understand how U.S. land grant colleges handle the "external" and "internal" relationships. This will be accomplished through seminars on matters such as teaching development, research planning, departmental administration and through interaction between students and senior U.S. faculty who understand both U.S. and Moroccan agricultural development needs and the linkages between research, extension and teaching. It is recognized that these activities will take both student and faculty time over and above regular academic programs.

3) Providing for the creation of enduring linkages to a number of U.S. institutions, and to the international community of agricultural scholars and institutions which will permit continued professional growth as well the institutional growth of IAV.

4) Granting of degrees within the institutional framework of IAV in order to build identity within the Institute of a common faculty, not a faculty split into antagonistic special interests and proponents of Ph.Ds versus Doctorats d'Etat. Not only does this solve the problems of degree equivalency, it provides for development of experience in awarding of degrees and contributes to the development of an institutional structure concerned with the development of its own faculty as an ongoing process.

5) Faculty training of specialists in such areas as extension education, rural sociology and economics as well as in the biological applied sciences of agriculture.

6) Collaboration with IAV in the training needs of staff of the National Extension Center and the In Service Training section of IAV, through short term and long term participant training and provision of TDY support of specialists in these areas (audio visual, extension methodology, program planning, etc.)

7) Encouragement of IAV during training and after its completion to develop linked programs of research-teaching and extension within IAV.

It is for these reasons that this project is conceived of as far more than a participant training project. The project will provide technical assistance and other support to ensure that the goals of institutional development and development of linkages, not just faculty training are met. The prior AID technical assistance to IAV has been effective in this regard and it is vital to future project success to continue this technical assistance support.

The General Strategy for Faculty Training

The first step in developing a faculty is to train sufficient numbers of people with basic scientific skills to permit continuing professional growth in their careers as faculty members. This means bringing faculty through a doctoral program in which they can acquire basic command of their discipline.

The procedure will be as follows:

1. The IAV will nominate young faculty (assistants) who have completed the third cycle or an M.S. program for Ph.D. programs in the U.S. These assistants will normally have served at least 2 years as (teaching) assistants.

2. The project will seek acceptance by the graduate school at appropriate U.S. universities and identify potential senior scientists in the U.S. to become the student's doctoral advisor. The resident staff will be critically involved in this process. Students will not leave Morocco until acceptance by an appropriate graduate school has been obtained.

3. The student will come to the U.S., complete course work and sit for preliminary examinations. Failure to make satisfactory progress toward this objective or to pass the exams will result in the student being dropped from the program in accordance with normal U.S. procedures. It is expected that the completion of these requirements will normally take a minimum of 2 years after his arrival in the U.S.

4. Upon completion of all course work and other examination requirements, the student will return to Morocco to conduct dissertation research.

5. In order to carry out the research the student together with the U.S. advisor and the resident staff in Morocco shall identify and present to IAV a thesis proposal. The thesis proposal shall address not only the scientific interests, training value and its practicality but shall also emphasize the importance to Moroccan agriculture of the research and possibility that research findings could be extended to Moroccan farmers.

6. The student and the U.S. advisor shall establish a budget for the conduct of this research. AID shall provide a research grant not to exceed $10,000 (total) to each doctoral student who returns to Morocco to do research. The grant may be used for any purpose that advances the research (equipment, travel - in country and internationally for the student and his advisor, computer time, secretaries, etc.)

The purpose of the research grant is two-fold:

(1) To provide a mechanism for students to gain experience in budgeting and administration and as a means of ensuing careful planning, reflection and discussion between the student, IAV and the U.S. advisor on the research process, its importance to Moroccan agriculture and the needed inputs necessary to accomplish the research.

(2) To ensure timely completion of the research within the two-year frame. IAV will be providing considerable support to the student (salary, laboratory and office space and equipment, secretarial, laboratory assistants, etc.). However, IAV can be expected to have difficulty in providing small but critical items of research support, particularly those which involve dollar costs, due to budget constraints, foreign exchange availability, etc., and limited in country access to certain needed items of equipment and supplies.

The grant will be justified by a budget (subject to audit, etc. as for any other item of project expenditures). If, say, only $2,000 is needed, this is all that will be granted. A typical budget might include:

Three round trip fares for U.S. advisor 1/	$2,000
In country travel (mileage)	1,500
Equipment (not otherwise available at IAV)	2,500
Field staff (local hire to supervise plots, etc.)	750
Total	$6,750

The cost of doing research in country, consideration apart from its desirability, is no greater than doing the research in the U.S. An advanced doctoral participant in the U.S. would cost at least $14,000 a year (subsistence, fees, and research support) or $28,000 for two years. The research grant proposed (a maximum of $10,000) and the corresponding TDY time of the U.S. advisor is not likely to exceed $28,000 per student. Moreover, a TDY dissertation advisor will, through seminars, etc., serve IAV more broadly than just by working with one student.

7. IAV shall provide sufficient time to the student to conduct the research. The teaching load shall not exceed 25%. IAV shall also provide for necessary laboratory space, transportation and other support needed to complete the research. The objective shall be to complete the research (data collection, analysis and writing) in 2 years.

8. Upon completion of the research the student in consultation with his advisor shall schedule a final oral exam at IAV. The committee will be composed of at least 5 persons. The U.S. dissertation advisor, in accordance with usual practice, shall be the chairman of the thesis defense exam. The committee shall include at least one other holder of a U.S. Ph.D. and include one or more members of the resident staff when appropriate and senior faculty of the IAV with doctoral degrees. The U.S. faculty shall apply the academic standards of their own universities in casting their vote. This dissertation shall be available in and the examination shall be conducted in English unless otherwise agreable to the advisor. (TDY dissertation advisors will rarely have sufficient command of French - see section V).

1/ It is felt desirable that some of the cost of bringing advisors from U.S. should be "felt" by the student out of "his"/"her" research budget. This will prevent exaggerated request for TDY support.

9. Upon successful completion of the examination the candidate shall be awarded by IAV the Doctorat es Sciences Agronomiques, (Doctor of Agricultural Science).

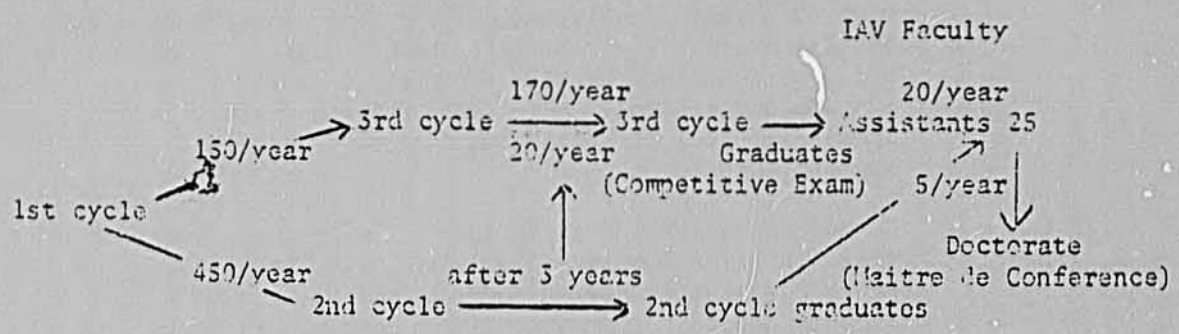
10. IAV shall provide opportunity for the student after completion of the doctorate to return, at project expense, to the United States to prepare, with the U.S. advisor, a scientific publication (it is expected that this will require at least one month and up to three). This will provide necessary incentive to the U.S. faculty members to make the heavy investment of time in the student.

In particular individual cases, depending on circumstances, this procedure will be modified as mutually agreeable. Nevertheless, the above procedure will be followed in the majority of cases.

Faculty Needs of IAV

The projected faculty needs of IAV by 1987 are for 345 faculty members (see Appendix 1). The staffing planning calls for recruitment of young faculty from the pool of graduates of IAV (Chart 1).

Chart 1: Channels for Recruitment of Faculty by IAV



The design team has examined the staffing plan in regard to:

(1) Size of Needed Faculty (and by Department)
(2) Current Status of Staffing
(3) Present and Future Availability of Qualified Candidates for Faculty Positions and Training.

The Institute participated in a national survey of manpower needs in 1977 and projected their faculty needs from the results of the survey.

The number of faculty in major divisions of activity in 1977, the number to be added each year, and the accumulated totals by year (if the annual recruitments are successful) are as follows:

TO BE RECRUITED

ACTIVITY	* NUMBER IN 1977	78	79	80	81	82	83	84	85	86	87	TOTAL
Basic	3	1	2	6	10	10	10	-	-	-	-	42
Agriculture	60	10	12	12	15	15	15	15	15	13	13	195
Veterinary Medecine	17	2	3	3	4	5	4	4	4	4	3	53
Technicians (B.S. Level)	5	5	5	5	3	3	3	3	3	3	3	41
Topography	5	2	2	2	2	1	-	-	-	-	-	14
Total in Year	90	20	24	28	34	34	32	22	22	20	19	345
Total Accumulated	90	110	134	162	196	230	262	284	306	326	345	

After appraisal of LAV needs and capacities it has been included that:

(1) The staffing plan is reasonable. The balance of faculty between departments and within departments (by specialization) can be expected to give LAV the basic faculty it will need to discharge its teaching function in the first, second and third cycle.

(2) The recruitment of staff at an annual average rate of about 25 per year is feasible from the available manpower pool. The IAV will be graduating about 150 ingenieurs agronomes and 450 ingenieurs d'application by 1981. These students and the pool of existing faculty and graduates is sufficiently large to ensure that qualified young faculty can be found by LAV.

(3) The target of training 150 faculty over 10 years under this project is reasonable and if spread over the entire institute will provide an important input into the entire IAV faculty development program. (The subordinate question of the extent of other donors assistance to faculty development at IAV is discussed below).

(4) The intent of IAV to develop faculty by conscious "cross breeding" of people with different training (as against say developing a French trained Department of Agronomy and a U.S. trained Department of Soil Science) is highly desirable.

(5) In order to ensure this appropriate balance an indicative training target, by discipline, is necessary (see V). However, it is recognized that there is a small numbers problem and that in any one year there may not be a qualified person to start U.S. Ph.D. training in a particular discipline. Hence, flexibility within this schedule is necessary.

(6) The staffing and training needs should be periodically re-assessed (see Evaluation Plan).

5. Role of Other Donors in Faculty Training and Institutional Development

The IAV receives much assistance from outside sources, mostly in resident and short term personnel who assist in the daily teaching activities of the Institute. A synopsis from the 1977-1978 Annual Report from IAV shows that 91 of 151 (60%) resident staff members were from countries other than Morocco. (See Appendix 4). In addition to these resident foreign instructors, at least 51 short-term instructors, again mostly foreign, were involved in teaching at IAV. Thus, a majority of the teaching at the IAV is by foreign nationals. As discussed earlier, teaching assistance from other donors is necessary at the present time until a Moroccan faculty can be trained.

The other donors involved in teaching at IAV are from Germany, Canada, Belgium, France, the United States and FAO. Each of these programs provides some financial support of teaching, such as laboratory equipment. Also, there is a third cycle training component to these programs. In addition, there is non-programmed support of persons who wish to study for their doctorate. If outstanding students are identified by other donors, support is available for their training abroad. However, these are not ongoing projects that can be relied on to train the future staff of the IAV and it appears that these foreign nationals are not attempting to train Moroccans in a programmed manner to take their place. An exception is the Canadian project which has systematically sought to establish a Moroccanized Department of Topography (a job which is nearly completed.)

More fundamentally the European donors to the extent they are supporting faculty development are doing so within the framework of the European Doctorat d'Etat. This is a non-coursework approach of self improvement over a long period of years, particularly of personal research. It is IAV's belief, shared by U.S. AID, that the U.S. approach to Ph.D. training is much better suited to institutional needs of IAV.

There is a need for programmed faculty training and development far in excess of support available from other donors - in almost all departments and "blocs". This project will provide this. It is not in conflict with other donor support and there is no duplication of effort. Other donors are making a far more significant input into ongoing 2nd cycle teaching than USAID. USAID support is being confined to 3rd cycle training (in which other donors also participate) and faculty development which is a major unaddressed need.

V. PROJECT DESIGN - INPUTS AND OUTPUTS

This project is an institution building project. It is far more than a participant training project even though participant training is a major part of project activities. Its focus is on faculty development not only faculty training. For this reason the project will also supply resident and TDY staff to IAV, administrative support and limited commodity support.

Staffing Plan:

Resident Staff. The need for resident staff arises from the institution building nature of the project. It is not enough to train young faculty in the U.S. and then to parachute them back into Morocco in the hope that they will develop as professionals and contribute to desired institutional development (particularly if they are to do dissertation research in Morocco as is so desirable from an institution building point of view). The primary purpose of resident staff is to ensure that the project purpose is achieved. The presence of contract staff during prior AID assistance has been a critical element in project success. It is equally critical to this project. It is certain that the resident staff to be provided by this project can have a disproportionate impact on the institution by their presence and daily demonstration of the need for understanding of the larger context of institutional development. Without this input the project will not succeed. Resident staff through their actions and influence within the institution - frequently in subtle and indirect ways - are a means of ensuring the day-to-day understanding of project purpose and goals at IAV. USAID has carefully examined the cost of this technical assistance component and is satisfied that this has been kept to a minimal necessary level.

There are of course other more mundane reasons for maintaining resident staff:

(1) The need to provide ongoing support to IAV, particularly in the next five years, to enable it to carry on its teaching programs when many of its young Moroccan faculty are not yet back on board with advanced training. This need is particularly acute for the development of third cycle programs at IAV. The project will provide limited numbers of faculty (as in the past) to aid in teaching third cycle programs and in "memoire" dissertation supervision. As IAV trains more of its 3rd cycle students (in the 5th year) "at home" the maintenance of a quality third cycle program is particularly important to project success since this program provides a major part of the manpower pool for faculty recruiting.

(2) The need to provide the day-to-day contact with young Moroccan faculty who have returned to Morocco to work on dissertation research. The student's advisor will provide (through TDYs, correspondence, etc.) the particular disciplinary back-stopping. Resident staff are needed to provide wisdom, encouragement and assistance in the general area of research on an ongoing basis. The project cannot provide resident specialists in all disciplines. It should provide a minimum of resident staff in each major area to provide this research support.

(3) The need to maintain continuous, ongoing, daily contact with IAV to ensure proper understanding of the details of IAV programs and development. Short-term TDY cannot provide this continuity.

(4) The need to provide "backstopping" for TDY faculty to ensure maximum effectiveness of short term assignments.

(5) The opening of the Agadir campus creates a special need for "start up" support in terms of staff in the area of horticulture.

The foregoing implies that there is a need for both minimum number and quality of resident staff. The major disciplinary areas have to be covered. The resident staff must have strong research skills and experience in order to provide the wisdom described above.

It is highly desirable that resident faculty be tenured or tenure track faculty at U.S. universities. This is important in providing the knowledge, at IAV, of U.S. graduate programs. Staff with needed research skills are also likely to be tenured (or on tenure track). Tenure also provides the psychological support and identity with the U.S. university. However, in staffing the project the primary importance is quality - the fact of tenure is subordinate. In recruiting new resident staff under this project the presumption shall be that staff will be associated with U.S. universities through the tenure system.

In developing the staffing plan consideration has also been given to the orderly and rational phasing out or maintenance of existing staff in order to maintain ongoing program thrust and to avoid loss of returns on prior investments by premature withdrawal of staff. A further consideration has been the availability of skills under other planned projects (Dryland, Rangeland) and from other donors.

The resident staffing plan is made up of two categories:

1. Senior Scientists who will provide the research support in a broad area of crop and animal science to returned Moroccan doctoral students, and will provide ongoing support to the third cycle program, fill in for departed Moroccan faculty members (in the U.S. for doctoral training) and maintain current program thrust.

2. Junior Scientists - These will be young U.S. doctoral students or post doctoral students who, at moderate cost, can provide peer support to Moroccan faculty engaged in dissertation research, teach courses in 2nd cycle and/or 3rd cycle and provide support to the scientists. They will also and most importantly, provide for linkages and continuity to TDY personnel.

Junior scientists will be recruited from advanced doctoral candidates or post doctoral students with strong interests in Moroccan agriculture. (They may have had prior Peace Corps experience, etc.) An additional benefit, but not the purpose of the project, is that this will create a pool of experienced young scientists useful to future U.S. AID

agricultural programs. They will not receive the level of salary and allowances paid to other scientists. They will cost the project less than half that of a senior scientist yet can provide enormously useful services.

In putting together the staffing plan, a predominant consideration has been the high cost of providing resident staff, particularly in the senior scientist category (estimated at $90,000 per person, per year, exclusive of a share in administration and support costs). The innovative but untested feature of this project is the in-country conduct of research which is an essential part of the institution building focus of the project. The staffing plan, shown in Table V.1, calls for a graduated phase-down of senior scientists from 5 persons to 3 by FY 84, for a total of 20 person years (This is 2 person year less than called for in the PID). There is a corresponding offset through the introduction of the junior scientists - up to 3 by 1981. (The junior scientists will make considerably less claim on administrative support and on high cost of allowances, etc. They will be provided an "all found" salary inclusive of allowances).

The principal function of resident staff, particularly in the latter years of the project, is to provide for support of the in-country doctoral dissertation. By 1983, there will be some 30 Moroccan faculty members workings on dissertation research at IAV. It is critically important to project success that a sufficient resident "presence" at IAV is maintained to ensure quality and timely achievement of dissertation research. Although at the time of PP project preparation the resident staffing plan is judged to be adequate for this purpose, this will be evaluated in year 3 of the project (see Evaluation Plan). If limited but further resident senior scientist personnel are found to be indispensable, AID will need to make corresponding adjustment to this staffing plan (and budget) in order for project success to be assured. Junior scientists, through peer relationships with Moroccan students can provide some of the needed support but cannot be expected to provide the maturity and experience in research of a senior scientist. It is anticipated that the junior scientists in conjunction with 3 senior scientists can provide the needed support in the broad disciplinary categories shown in the staffing plan.

TDY Staff: The purpose of TDY staff is two-fold:

(1) To provide support to individual students from his/her advisor whilst working on his/her dissertation.

(2) To provide support to the development of faculty in Department by participating in 3rd cycle teaching, offering of advanced seminars and providing assistance to development of research programs, curriculum, etc. of other IAV faculty apart from the advisors own student.

TABLE V.1: In-Country Staffing Plan, FY 80-84

	FY 80	FY 81	FY 82	FY 83	FY 84	Total
RESIDENT STAFF			(Person Year)			
1. Senior Scientists						
Natural Resources (1)	1	1	1	-	-	3
Crop Production (2)	2	1	1	1	1	6
Horticulture (3)	1	2	2	1	1	7
Animal Science (4)	-	1	1	1	1	4
Total	4	5	5	3	3	20
2. Junior Scientists	-	2	2	2	3	9
TDYs (person months)	5	10	15	20	25	75

(1) To be chosen from fields of Rangeland, Watershed Management, Soils and Forestry.

(2) To be chosen from fields of Plant Breeding, Agronomy, Plant Pathology and Protection.

(3) To cover Crop Production and Crop Protection - both at Agadir, once open.

(4) To cover Animal Science (ruminants, non-ruminants) and Veterinary Medicine.

It is envisioned that each doctoral student will need up to 3 months of TDY advisor time to design research, assist in its implementation, in data analysis and for participation in the final thesis defense. Short-time staffing will also seek to provide continuity by involvement of U.S. based scientists over a period of several years to assist in the second objective above. These staff members will also assist in selection of students and their placement in U.S. graduate programs.

The TDY staffing is shown in Table V.1.

On-Campus and In-Country Support Staff. The on-campus support staff needed by this project are 0.5 Project Director, 0.5 Training Officer, 1 Accounts Specialist and 1 Secretary. The participant training component of this project, the development of the partnership (see below) and the complexities of host country contracting will require this level of support.

The resident staff and TDY personnel will need the following administrative staffing in Morocco:

1 Project Coordinator
1 Accounts Specialist
1 Secretary (English language)

in addition to services provided by IAV. These needs arise, in part, from the intended mode of host country contracting.

These needs are summarized in Table V.2.

Staffing Plan and French Language Competency. IAV is currently using three languages. French is the language of classroom instruction; English is taught to all students to permit access to English language publications and is the common language of much but not all professional dialogue, particularly with visiting scientists, Arabic (Moroccan dialectic) is the language of casual conversation amongst students and faculty. The quality of French language competence in Morocco (in high schools, etc.) is on the decline. IAV faculty complain that students are not always facile in their use of written and spoken French. The GOM policy of arabization is also weakening the place of French throughout government and educational institutions. The surge of interest in English in Morocco in recent years has been remarkable. It is evident that at IAV more faculty (returned participants) will have increased English competency in the future.

For this reason it is felt that French competence is not essential for TDY personnel - many of whom will be working directly with an English speaking Moroccan faculty member (participant) engaged in dissertation research, etc. In order to facilitate TDY effectiveness short-term TDY staff will be strongly encouraged to participate in ongoing French training programs back on campus as part of their preparation for the TDY assignments. The project will provide for such training (the University of Minnesota has been successfully running such a program for the last 5 years).

Table V.2: Project Support Staffing Plan, FY 80-84

	FY 80	FY 81	FY 82	FY 83	FY 84
			(Person Years)		
On-Campus					
Project Director	0.5	0.5	0.5	0.5	0.5
Participant Training Officer	0.5	0.5	0.5	0.5	0.5
Senior A/cs Specialist	1.0	1.0	1.0	1.0	1.0
Secretary	1.0	1.0	1.0	1.0	1.0
In-Country					
Project Coordinator	-	1.0	1.0	1.0	1.0
Administrative Asst. (Account Spec.)	1.0	1.0	1.0	1.0	1.0
Secretary (English Language)	0.5	1.0	1.0	1.0	1.0

For resident staff French competence is necessary. It is essential at the FSI 3 level in order to enable resident staff to participate in 2nd and 3rd cycle teaching, in faculty affairs and also for participation in every day "social" life of IAV and Morocco. French language training and competence to this level will therefore be required by USAID for resident staff. In exceptional circumstances the University of Minnesota, upon request from IAV, may lower this requirement after appropriate formal consideration by a designated body at Minnesota.

Staffing and Agadir. The new campus at Agadir, which will house 150 students (second and third cycle) in Horticulture and Crop Protection, was planned to open in 1978. The GOM has invested $10 million in the buildings which are nearing completion. It was originally planned to open the doors of the Agadir campus in September 1978. It is certain that it will not in fact be ready until the start of the 1980 academic year (September 1980) and may further slip beyond this date. The principal difficulty faced by IAV, apart from the physical completion of the building, is to equip the campus as an operational teaching/research/service center. IAV is not likely to have sufficient budget for this purpose for the next two years. The campus needs teaching and research laboratory equipment. Field equipment (greenhouses, irrigation material, machinery) as well as transportation for student field trips (micro buses). The project includes a $300,000 line item for start-up equipment for the Agadir campus. The nature of this commodity support is shown in Annex 7.2. The purpose of this commodity assistance is to permit the use of the impressive new facility and to ensure that resident staff assigned to Agadir can effectively be utilized in the teaching program there. Clearly, resident faculty with buildings and students and no equipment cannot do an adequate job. Resident staff furnished under the project will not be assigned to Agadir until the Agadir campus is adequately operational. On the other hand, it is not desirable to allow further delay for the lack of basic equipment described above.

Participant Training

Participant training will be of three kinds:

(1) Third cycle (5th year) training
(2) Doctoral training
(3) Short-term participants

Third Cycle Training. Until IAV develops its faculty there will be a continuing need to provide the third cycle training abroad. The basic format is to provide 12-13 months of graduate level training in the U.S. and to return students to Morocco for 6th year memoire research. The University of Minnesota having trained 75 students is already very familiar with this program. The program has undergone steady improvement. There have been two principal but interrelated problems: the early identification and selection of students and preparation for departure notably in English language training. These problems are largely resolved. IAV is committed to early identification of students and is strengthening its English teaching ability with new staff and facilities (audiovisual labs, etc.).

The third cycle program needs to be continued as a means of building understanding at U.S. universities of IAV and the project. These students will create a pool of students with proven performance at the graduate level from which the project can identify the best students for faculty recruitment by IAV and eventual training in the doctoral program. This is particularly important for those areas and disciplines at IAV which have not previously received U.S. assistance.

In July 1979 third cycle participants in fields of Animal Science, Human Nutrition, Agricultural Engineering and Agricultural Economics will be departing for the U.S. This is the first time these fields have been represented - in the past students were only from the Crop and Soil Science areas. In addition two faculty members of IAV in the English Department will be going to the U.S. for ESL training.

The third cycle participant schedule is shown in Table V.3.

Doctoral Training

The Doctoral training program has been described above. The participant training costs will include normal in-U.S. charges (maintenance, fees, research support, etc.). The unusual features of this program are in the in-country dissertation. Budget allowance is made for the research grant and, in TDYs, the costs of visiting professors (advisors). The participant training is still cost effective. It costs 15,000/year to maintain a Ph.D. student in the U.S. for completion of dissertation research. In Morocco the student (faculty members) salary will be paid by IAV and the cost of completing the research, including TDY, will not exceed $ 10,000/year. An indicative doctoral training target by specialization is shown in Table V.4. The number of departures per year is shown in Table V.3.

It should be pointed out that for this 5-year project the number of completed doctorates will be quite small (12). However 40 faculty members will be back in Morocco at the end of the project and a further 25 in the U.S. doing course work. This "pipeline" if continued for the full 10 years of the planned activity will make it possible to have trained 150 faculty by FY 90. Considerable investment under this project will pay off in subsequent years.

Short-Term Participants

Provision is made for short-term participant programs in the U.S. by existing IAV faculty and administrators (Table V.2). From time to time it will be desirable for IAV faculty, particularly those not being trained under the project doctoral program, to visit U.S. universities, attend scientific meetings, meetings of the Partnership and the like to assist in further developing understanding in IAV of U.S. agricultural science. IAV administrators will also be encouraged to visit U.S. agricultural universities to study educational administration.

TABLE V.3: Participant Training Schedule

(Number)

	FY 80	FY 81	FY 82	FY 83	FY 84	Total
Third Cycle (1)	20	20	15	10	5	70
Faculty						
Departures	0	12	15	15	15	65
Return to Morocco for Dissertation Research	-	5	8	12	15	40
Completed Doctorates	-	-	-	5	8	12
Short-Term (2)	2	3	4	4	4	17

(1) Third Cycle Students depart in July and return in December of following year (budgeted at 1.5 person years each)

(2) One month each

12
6
2
40

Table V-4

INDICATIVE DOCTORAL TRAINING TARGET BY SPECIALIZATION

Specialization	Programmed 1980[1/]	Target
Soils	1	3
Agronomy	1	4
Plant Breeding	2	3
Range Management	3	4
Watershed Management	2	4
Plant Pathology	2	5
Animal Science and Vet. Med.	1	10
Agricultural Engineering	1	3
Food Technology	-	4
Forestry	-	4
Nutrition	1	3
Horticulture	3	6
Other	-	12
Total	17	65

1/ Currently in U.S. or planned to depart before July 1980

Lead Role of University of Minnesota

The project will be training large numbers of IAV faculty in the U.S. It is not desirable that all of those faculty be trained at any one U.S. institution. It is important to avoid in-breeding and to provide for maximum exposure to agricultural science at different universities. Moreover, no single U.S. university has all of the needed disciplinary skills. Problems of citrus production, dryland farming and rangeland management, for example, are not equally developed at all universities. IAV desires linkages with those U.S. institutions which can best meet its needs for training and access to U.S. technology. There is a need, therefore, to provide for multi-university input into this project.

In order to bring this about it will be necessary to ensure active participation and collaboration and understanding of project purpose by other U.S. universities. Especially important is the need to explain the proposed faculty development program to be carried out under this project - particularly the in-country dissertation research - to ensure admission of students to doctoral programs and the support of appropriate institutions and individuals (advisors).

The University of Minnesota will seek to involve those institutions which have particular needed disciplinary strengths and to which participants will be sent.

In the financial plan, $10,000 per year has been committed to the establishment of these linkages. This is sufficient to maintain contact between the number of universities involved in the project and to ensure proper understanding of project purpose, goals and procedures at universities participating in the project other than the lead University (Minnesota).

Commodities. Commodities is supplied under this project are described in detail in Annex 7.2. They are for "start up" equipment of Agadir, transportation (vehicles) for resident and TDY staff and for other equipment (library, laboratory, etc.). The value of commodities to be supplied under this project is $520,000.

Summary

The physical inputs and outputs of this project are described above and are summarized in the Log Frame. The cost of these inputs is detailed in the attached Financial Plan.

VI. PROJECT IMPLEMENTATION AND MANAGEMENT

This contract will be implemented as a Host Country Contract between the University of Minnesota and IAV. Host Country contracting will bring about desired direct collaboration between the University of Minnesota and IAV. The existence of the current contract (NE-C-1279) and of resident personnel in-country will require that USAID

provide some exceptional support in making this transition.* The University of Minnesota is willing to enter into negotiation of a host country contract but recognizes that it will not be without difficulties or cost. The University of Minnesota will need to be fully satisfied that the host country contract gives it necessary flexibility and assurance that it can effectively implement the contract, particularly in regard to in-country operation and the well-being of personnel in Morocco. USAID and AID/W will need to provide support and assistance in this process.

This 5-year project is designed within the framework of a 10-year activity. In years 3 and 5 of this project a major evaluation and reassessment will be made of the project in order to provide information for a decision to renew the project at that time for a further 5 years. (See Evaluation Plan). This procedure will allow for orderly forward planning of the activity. It is proposed that the project will be implemented with 3 year work plans revised annually. This will allow for necessary lead time in project planning which has long forward requirements in regard to doctoral training, resident staffing, etc.

The major item for which full documentation is not available at PP preparation are details and specifications of commodities for Agadir and library development. The case for some commodity support under this project is strong. It is proposed that exact specifications will be developed during host country contract negotiations (by May 1980; see Annex 7.2.).

*As one element of such support, AID will continue to fund NE-C-1279 project agreement is signed with the GOM in an amount of up to $332,000 for the period April 1, 1980 until as late as June 30, 1980 with funds from this project. This funding will permit the University of Minnesota to continue its work while the Host Country Contract is being negotiated.

APPENDICES TO PROJECT DESCRIPTION

1. IAV Projected Staffing Plan by Department and Specialization, 1987

2. IAV and Other Donors

Appendix 1

IAV Projected Staffing Plan by Department and Specialization, 1987

Department & Specialization	Number of Positions	Remarks
BASIC SCIENCES		
Mathematics	1	
Biometrics	4	
Physics	3	
Chemistry & Biochemistry	8	
Geology & Geomorphology	6	
Animal Biology & Physiology	6	
Plant Biology & Physiology	6	
Genetics	3	
Drafting	3	
TOTAL	45	
ENVIRONMENTAL SCIENCES		
Soil Sciences	3	
Soil Conservation	3	
Watershed Management	3	
Soils Physical Chemistry	3	
Soils Microbiology	3	
Ecology	3	
Pasture Management	3	
Forestry	5	
Mapping	2	
TOTAL	28	
PLANT PRODUCTION		
Plant Improvement	4	
Crop Science	8	
Plant Pathology	9	Rabat 4, Agadir 5
Entomology	9	Rabat 4, Agadir 5
Virology	4	Rabat 3, Agadir 1
TOTAL	34	
ANIMAL PRODUCTION		
Genetic Improvement	1	
Feeds & Feeding	4	
Production, by type of animal	4	
Range Management	1	
TOTAL	16	

Appendix 1

Department & Specialization	Number of Positions	Remarks
HORTICULTURE		
Tree Crop Production	6	In Agadir
Vegetable Production	6	"
Flower Production	2	"
Horticultural Techniques	4	"
Landscape Architecture	2	"
Seeds Nursery	3	"
TOTAL	23	
HYDRAULICS & INFRASTRUCTURE		
Agricultural Machinery	7	
Hydraulics & Infrastructure	5	
Civil Engineering - Farm Buildings	3	
Soils Mechanics	3	
Hydrology	3	
Technical Planning of Projects	2	
TOTAL	23	
TOPOGRAPHY SCIENCES		
Geodesics	4	
Topography	4	
Photogrammetry	4	
Land Registration	2	
TOTAL	14	
FOOD TECHNOLOGY		
Chemical Engineering	3	
Analytical Chemistry	4	
Sugar Technology	3	
Fat & Oil Technology	3	
Canning Technology & Preserves	3	
Quality Controls & Standards	2	
Technical Laboratory Assistants	6	
TOTAL	24	
HUMAN NUTRITION		
Human Nutrition	4	
Home Economics	4	
TOTAL	8	

Appendix 1

Department & Specialization	Number of Positions	Remarks
VETERINARY SCIENCES		
Anatomy	3	
Physiology	4	
Pharmacology & Toxicology	4	
Microbiology: Contagious Diseases	7	
TOTAL	18	
VETERINARY MEDICINE		
Parasitology	5	
Reproduction	7	
Internal Medicine & Surgery	8	
Fowl Pest Treatment	4	
TOTAL	24	
HYGIENE & INSPECTION OF ANIMAL PRODUCTS		
Histology & Pathological Anatomy	4	
Meat Inspection	6	
	10	
SOCIAL SCIENCES		
Economics & Development	3	
Accounting & Management	3	
Rural Institutions	2	
Rural Sociology	2	
Economic Geography	3	
TOTAL	13	
"STAGES"		
English Training	6	
Other	4	
TOTAL	10	
ECOLE NATIONALE D'AGRICULTURE DE MEKNES		
Basic Sciences	2	
Environmental Sciences	6	
Crop Production	14	
Animal Production	7	
Infrastructure & Technology	3	
Social Sciences & Stages	8	
TOTAL	40	
IAV TOTAL	291	
EMA + ENFI	60	
GRAND TOTAL	351	

Appendix 2

TABLE 2.1: IAV AND OTHER DONORS

IAV THIRD CYCLE STUDENTS PRESENTLY IN TRAINING IN FOREIGN UNIVERSITIES

FIELD OF STUDY	# of Students Abroad 1977	1978	Host Country	Institution
Agronomy	4	5	France	Institut National Agronomique Paris - Grignon (INAPG)
Zootechnics	4	8	"	"
Agri.Econ.	4	4	"	"
Genetics	-	1	"	"
Soil Sciences	-	1	"	"
		1	"	Ecole Nationale Superieure Agronomique de Montpellier
Plant Pathology	1	-	"	INAPG
		1	Belgium	Faculte des Sciences Agronomiques de Louvain
	1	4	U.S.A.	Uni. of Minnesota
Plant Improvement	1	1	"	"
Pastoralism	1	2	"	"
Horticulture	-	3	"	"
Tree Crop Prod.	-	1	"	"
	2	2	France	ENSA Montpellier
Vegetable Prod.	1	-	"	ENSA Versailles
	1	-	U.S.A.	Uni. of Minnesota
Ag.Engineering	2	2	France	Ecole Nationale du Genie Rural - Eaux et Forets
	2	7	Belgium	Faculte des Sciences Agronomiques de Gembloux
Hydraulics	-	3	France	Ecole Nationale Superieure d'Hydraulique de Grenoble
"Halieutique"	1	1	"	ENSA - Rennes
Geography	3	1		Institut National des Sciences Geographiques
Forestry	1	1		ENSA - Aix-Marseilles
	1	1		ENSA - Montpellier
	-	2	Belgium	FSA - Gembloux
	2	1	U.S.A.	Uni. of Minnesota

Appendix 2

Field Study	# of Students Abroad 1977	1978	Host Country	Institution
Food Industries	1	2	Belgium	FSA - Gembloux
Biometrics	2	2	"	"
Hydro-Biology	1	-	France	ENSA - Toulouse
Topography	-	1	Canada	University de Laval
Dryland Agri.	1	-	U.S.A.	Kansas State University
Soil Conserv.	2	2	"	Uni. of Minnesota
Soil Fertility	1	-	"	"
Soil Physics	1	-	"	"
TOTAL	42	60		

Source: RAPPORT D'ACTIVITES 1977-1978, Institut Agronomique et Veterinaire Hassan II, Rabat.

Appendix 2

TABLE 2.2: SYNOPSIS OF FOREIGN FACULTY MEMBERS WHO TAUGHT IN SECOND CYCLE PROGRAM AT IAV IN 1978

Department by "Bloc"	Number of Foreign Instructors: Resident: Ratio of Foreign to Total # Instructors	# of Short-Term Foreign Instructors
BASIC SCIENCES		
Plant & Cell Biology	5/7	
Zoology	5/7	
Animal Physiology	1/3 - 1 FAO	3 F
Geology	5/5	
Applied Mathematics & Biometrics	3/3 - 3 B	2 B
ENVIRONMENTAL SCIENCE		
Soil Science	10/14 - 2 B, 6 F, 2 U.S.	
Ecology/Pastoralism	2/4 - 1 FAO, 1 F	1 F
Entomology & Rodent.	3/4	
Hydrology	1/1	
Phytopharmacology	1/1	
CROP PRODUCTION		
Agronomy	4/7 - 4 F	3 F
Plant Pathology		
Mycology	3/4 - 3 F	3 F
Nematology	1/1 - 1 F	1 F
Horticulture		
Vegetable Prod.	2/4	
Tree Crops	1/4	
ANIMAL PRODUCTION	2/5	1 B, 7 F

Appendix 2

Department by "Bloc"	Number of Foreign Instructors	
	Resident : Ratio of Foreign to Total # of Instructors	Number of Short Term Foreign Inst.
VETERINARY SCIENCES		
Anatomy	0/1	1 F
Physiology	0/1	2 F, 1 B
Pharmacology & Toxicology	0/2	2 F
Microbiology & Immunology	2/4 - 2 FAO	4 F
VETERINARY MEDICINE		
Parasitology	3/5 - 1 FAO, 2 F	
Reproduction	4/5 - 2 G, 1 F, 1 B	1 F
Pathology	0/1	3 F
Clinical Methods	5/8 - 2 G, 3 B	
HYGIENE & FEEDS CONTROL		
Hystology	0/3	3 F
Hygiene	0/3	6 F
SOCIAL SCIENCES		
Agricultural Econ.	1/4 - 1 F	
Rural Sociology	0/3	
Economic Geography	1/3 - 2 F	
Agricultural Law	0/1	
FOOD TECHNOLOGY		
Agricultural & Food Industries	6/11	
Human Nutrition	3/6 - 2 FAO, 3 F	

Appendix 2

TABLE 2.3: CONTRIBUTIONS OF FOREIGN DONORS TO IAV IN 1978

Project # Project Title Donor	Funds Committed 78 (Total Project Funds) In U.S. Dollars	Time Span of Project	Nature of aid given and recipient institution
MOR/68/519 Forestry Ed. PNUD - FAO	61,000 (1,925,000)	12/68-12/78	2 consultants 2 Scholarships Ecole Nationale Forestiere d'Ingenieurs de Sale
MOR/75/012 Aid to IAV PNUD - FAO	107,163 (478,400)	10/75-8/78	7 professors IAV - Rabat
MOR/78/005 Aid to IAV PNUD - FAO	296,632 (606,165)	9/78-7/80	8 professors, consultants, scholarships, scientific equipment - IAV - Rabat
6/MOR/03/T 3rd cycle Forestry pro. FAO	60,000 (180,000)	8/77-12/78	2 experts, consultants at IAV - Rabat
Agri.Enginee. France	?	?	1 professor - Ecole de Mecanique agricole - Sale-Bouknadel
Agriculture France	?	?	1 professor - Ecole d'Agriculture de Souille Marrakech
Horticulture France	?	?	1 professor-Ecole d'horticulture de Meknes
Agriculture France	?	?	1 professor-Ecole d'Agriculture de Zraich-Bettana
Topography France	?	?	1 professor-Ecole de Genie Rural et Topographie
IAV aid France	?	?	25 professors, 10 V.S.N.A., 65 missions IAV-Rabat
Agriculture France	?	?	1 professor, 1 VSNA = Ecole Nationale d'Agriculture de Meknes
Forestry France	?	?	1 professor, Ecole Forestiere de Sale

Appendix 2

TABLE 2.5: CONTRIBUTIONS OF FOREIGN DONORS TO IAV IN 1978

Project # Project Title	Funds Committed 78 (Total Project Funds) in US Dollars	Time Span of Project	Nature of aid given and recipient institution
608-0134 Agronomy	500,000 in 1978 1,575,000 in 1979 (3,300,000)	1976-1981	Teaching and research in soil science & plant pa-tology, 6 advisors & 15 Moroccan students in the U.S. - IAV - Rabat
Agriculture Canada	145,000 (1,612,000)	1973-8/78	15 man/month in 1978 Ecole Nationale d'Agri-culture a Meknes
Agriculture Canada	550,000 (4,875,000)	1972-1982	100 man/month teaching in 78, 7 Moroccan students in Canada in 78, specialised equipment
Vet.Med. W. Germany	400,000 (1,516,000)	1975-79	4 experts + equipment IAVH11 - Rabat
Ag.Techn. training W. Germany	320,000 (2,419,000)	1970-79	5 experts + equipment for training Ag.Technicians at Sidi Bouknadel for MARA.
Ag.Technolo. W. Germany	?	Fall 79	experts + equipment IAV - Rabat
Horticulture Plant Protec. W.Germany	?	Fall 79	experts + equipment - Agadir
Aid to IAV Belgium	2,515,257 77,670 5,895 87,379 221,914 131,761	End in 81	39 experts in Rabat + 1 Meknes , 14 scholarships 3"Stage"scholarships 20 missions (210 days) logistic support equipment - IAV Rabat
Staff Train. Belgium	825,243	?	14 experts, 4 Meknes, 3 Souilha 4 Fouarat, 3 Zraieb
TOTAL AID	6,394,914 (17,001,573		

Source: RAPPORT ANNUEL SUR L'ASSISTANCE AU DEVELOPPEMENT POUR L'ANNEE 1978 - MAROC
PNUD - RABAT 3/31/1979

3. PROJECT SPECIFIC ANALYSIS

a. Economic Feasibility

The cost of this project, $ 9.7 m., can be estimated with reasonable precision since it is built on prior project experience and has rather normal components of a technical assistance project. A large part of the total cost is made up of participant training faculty salaries, etc. which are also reasonably well understood.

Two elements of cost are less certain. These are:

(a) effects of inflation
(b) costs associated with host country contracting.

Inflation has been arbitrarily allowed for by use of an 8% annual rate over 1979 cost base. The costs of host country contracting, which include costs previously supported by USAID (e.g. Peace) but which will now be included in the contract and the costs of additional time, effort and support staff, to administer the contract, will depend on the outcome of contract negotiation. However, these are relatively minor parts of the total budget and appropriate allowances have been made.

On the benefit side there are far greater difficulties. Conceptually the returns to investment in human capital can be estimated and measured. Practically there are many problems (education in Morocco is a non-market good, allocation of fixed costs, contributions of GOM and other donors which are different in nature, etc.). If the project purpose is realised, the returns should be extremely high. Not only are returns to education and agricultural research empirically very high on a world-wide basis but this project is targeted at a strategic bottleneck of Moroccan agricultural development - trained manpower. If successful, benefits from other prior and future investments in agriculture and for the rural poor will be greatly increased.

b. Social Soundness Analysis

The project description develops in great depth the social soundness of an authentic Moroccanized College of Agriculture appropriately linked to the development process. No further analysis is needed.

c. Technical Feasibility

There is one major innovative feature in Project design - the in-country conduct of dissertation research. There is no question that it would be "simpler" to complete Ph.D.s in the US - however, institutional development would not be served. The feasibility of conducting acceptable dissertation research with advisors making occasional visits, the support available from IRV (particularly transportation) plus [illegible]. The value of making this effort is undeniable. The

IAV is strongly committed to making it work. It will be subject to careful evaluation during project implementation.

d. Administrative Feasibility

The principal concern is in regards to Host Country Contracting. Neither USAID nor Minnesota have experience in the implementation (and limited experience as yet in negotiation) of a Host Country Contract. This will require careful monitoring in negotiation and early stages of implementation to ensure that feasibility is not compromised. USAID believes Minnesota has appropriate resources and personnel to administer this contract. IAV administrative capacity and procedures relative to host country contracting are, as yet, untested. However, IAV successfully administers other contracts with other donors - each with their specific exigencies, peculiarities and bureaucratic obscurities; that IAV can accommodate to USAID's seems reasonable.

e. Environmental Concerns

There are none. The project is directed at appropriately training technicians for a renewable resource industry (agriculture) which in the absence of such persons will continue to suffer from environmental degradation (e.g. erosion) and the impacts of careless technology. This project will help reverse that process.

4. FINANCIAL PLAN

AID Costs

AID costs have been estimated on the basis of data on number of staff, participants and commodities contained in the description of the project and in Annex 7.2 (Commodities). The costs are summarized in Table 4.1.

The total cost of the project is $8.3 million (in 1979 prices) or $9.7 million after allowance for inflation. The details of costs are shown in Tables 4.2 through 4.7.

The principal items in the budget are technical assistance (44%) and participant training (46%). Commodities and "other" account for 6% and 4% respectively. The T.A. and participant training components have been fully discussed in the description as well as in section 7.2 below. For the commodity items "Agadir start up" ($300,000) and "Library Development" ($50,000) it is proposed to reserve these funds subject to development of necessary detailed specifications during contract negotiation. (The in-country transportation and resident research support items are firm, see section 7.2).

Some further explanation is needed of the $323,000 contained in the "other" line item:

1. French Language Training ($168,000). USAID insists on French language competency for resident staff. The cost of French trainng is, however, not insignificant since it includes both salary while in training as well as direct training fees (details are shown in Table 4.7).

TABLE 1.1: FINANCIAL PLAN AND COST ESTIMATES 1/

	80	81	82	83	84	Total
Technical Assistance	549	792	832	692	766	3631
Resident Staff 2/ Senior	360	450	450	270	270	1980
Junior	-	68	68	68	102	306
TDY Staff 3/	40	80	120	160	200	600
Support Staff 4/	149	194	194	194	194	925
Participant Training	589	739	780	812	872	3792
Third Cycle 5/	360	360	270	180	190	1360
Faculty 6/	224	372	500	622	672	2390
Short Term 7/	5	7	10	10	10	42
Commodities	380	50	40	30	20	520
In Country Transportation 8/	10	30	20	10	-	70
Agadir Start Up 9/	300	-	-	-	-	300
Library Development 10/	50	-	-	-	-	50
Resident Staff Research Support 11/	20	20	20	20	20	100
Other	60	86	82	25	70	
French Language Training 12/	60	51	47	20	20	218
Evaluation	-	35	45	15	60	155
TOTAL	1578	1667	1734	1559	1728	8266
Inflation Factor (8% annually)	1.00	1.08	1.17	1.26	1.36	-
TOTAL WITH INFLATION	1578	1800	2029	1964	2350	9721
	====	====	====	====	====	====

FOOTNOTES TO TABLE 4.1

1/ Physical flows of staff participants, etc. from Description of the Project (Section V)

2/ At average annual cost of $90,000 per year for senior scientist and $34,000 for junior scientist (Table 4.2 and 4.3)

3/ At per month cost of $8,000 (Table 4.4)

4/ For details on support staff see Table 4.5

5/ 1.5 person years per participant at $12,000/year = $18,000 each.

6/ For details see Table 4.6

7/ 1 month each at $2,400 (30 days at $40 plus travel $ 1,200). For numbers of short-term participants see Description of Project, Section V.

8/ See Section 8.2 (firm).

9/ Provisional - See 8.2

10/ Provisional - see 8.2

11/ See section 8.2 (firm)

12/ See Table 4.7

TABLE 4.2: ANALYSIS OF RESIDENT STAFF COSTS - SENIOR SCIENTISTS 1/

	$ Person Year	
Salary		
Base Salary 2/	33,000	
Fringes -22%	7.260	
Overhead 25.3%	8,349	48,609
Allowances		
Post Allowances & Differentials 3/	4,000	
Housing	12,000	
Education	7,500	
Educational Travel	2,000	25,500
Others		
Storage, travel to and from post, shipping HHE., etc...	10,000	10,000
In-Country Travel and Per Diem	5,000	5,000
TOTAL		89,109 ≅ 90,000

1/ Excludes initial language training (see other)

2/ Base salary is slightly higher than under present contract because of increased tax obligations of contract personnel overseas.

3/ Cost of living allowance (COLA) and costs of exclusion from post privileges available to direct hire personnel

TABLE 4.3

Analysis of Resident Staff Costs - Junior Scientist 1/

	$ Person year	
Salary	15,000	
Fringe (22%)	3,300	
Overhead (25.3)	3,795	
Allowances	10,000	
Other	2,000	
TOTAL		34,095 ≅ 34,000

1/ Excludes language training.

TABLE 4.4

Analysis of TIY Costs

	$ Person Month	
Salary	3,000	
Fringe 22%	660	
Overhead 53%	1,590	
Intn'l Travel	1,000	
Per Diem 30x60	1,800	
	8,050	≅ 8,000

TABLE 4.5: ANALYSIS OF SUPPORT STAFF COSTS

University - on-campus (22% fringe, 53% overhead)	Base	Gross
0.5 Project Director	20,000	35,000
0.5 Participant Training Officer	13,000	22,750
1.0 Senior Accounts Specialist	14,000	24,500
1.0 Secretary	11,000	19,250
		101,500
Resident		
1 Project Coordinator (22% fringe, 25.3% Overhead)	20,000	29,500
1 Admin. Assistant (local hire)	10,000	10,000
1 Secretary (English Language: Local hire)	7,500	7,500
		47,000
Other		
Supplies and Expenses	-	15,000
U.S. Travel 2/	-	15,000
Allowances (Project Coordinator)	-	15,000
		45,000
TOTAL 1/		193,500

1/ Shown on Financial Plan as 194,000; in year one reduced by 44,500 (no Project Coordinator) = 149,000

2/ Includes $10,000 for lead university role and collaboration with other universities involved in project.

TABLE 4.6.

Analysis of Faculty Participants' Training Costs

	1980	1981	1982	1983	1984	TOTAL
			Number			
Departures[1/]	8	12	15	15	15	65
Returns to Morocco (no)	-	5	8	12	15	40
Completed Doctorates (no)	-	-	-	8	12	20
Number in US per year	16[2/]	23	30	33	33	-
			$ Thousand			
In US Costs (at $14,000/year	224	322	420	462	462	1,890
Research Grants (at $10,000)	-	50	60	120	150	400
Return to US (publication at 5,000 each)	-	-	-	40	60	100
TOTAL	224	372	500	622	672	2,390

1/ Departures actually in July or September of previous year.

2/ Includes 6 faculty currently in U.S. (July 1979).

TABLE 4.7 ANALYSIS OF FRENCH LANGUAGE TRAINING COSTS.

	80	81	82	83	84	TOTAL
Resident Staff (Mos. in training)						
Senior	2	2	1	-	-	5
Junior 1/	2	1	1	-	-	4
Costs (Thousand $)						
Resident 2/	53	44	27	-	-	124
TDY 3/	7	7	10	10	10	44
TOTAL	60	51	37	10	10	168

1/ Others assumed to have French (from on campus program Peace Corps etc.)

2/ Estimated assuming 16 weeks of training as follows

	Senior	Junior
On campus salary & fringes	12,500	4,000
Trainning Fee	5,000	5,000
Total	17,500	9,000

3/ On campus, on going French program (note that annual cost of current U of M program is in excess of $ 20,000). This line provides for some expansion at Minnesota and at other Universities.

2) Evaluation ($135,000) See section 6 - Evaluation Plan

GOM Costs and Other Donors

It is estimated that the GOM's contribution to the cost of operating the IAV in FY 1979 is $7,000,000. It is believed that with some increase in activities and expansion at Agadir, the annual cost to the GOM will be $8,000,000 by 1984.

Therefore, the estimated total GOM contribution to IAV for the Five Year life of the project is $38,000,000. Obviously most of the GOM financial support to IAV is for the regular annual budget and would continue with or without AID's assistance.

The Other Donor contribution to IAV is running about $6,000,000 in FY 1979. It is anticipated that this level of input will decline toward the end of the project as foreign teachers are replaced by Moroccans. We therefore estimate the five year contribution by other donors at $25,000,000.

An estimate of GOM contribution to direct costs of the project is $3,009,000 for the five year life of the project. This has been estimated from salaries paid by IAV to its faculty, provision of office space to IAV faculty and T.A. personnel, general services (heat, light, etc.), support services (typing, transportation) and direct cost of research by students. This is felt to be a conservative estimate (Table 4.8).

5. IMPLEMENTATION PLAN

Implementation of this project is relatively straight-forward since the University of Minnesota which will implement this project is currently engaged in many of the activities to be carried out under the new project: it has a resident staff of five in place, is training some 34 third cycle participants and already has 8 IAV faculty currently in training in the U.S.

The implementation plan is outlined in the following schedule (for number of participants, etc. see Section V of the Project Design):

(a) Planning Schedule

Date	Action
January 1, 1980	PP to NE Bureau
January 25, 1980	PP Review
April 1, 1980	Host Country Contracting Process Initiated. NE-C-1279 extended until no later than June 30, 1980.

TABLE 4.3: IAV CONTRIBUTION

	Thousands Dollars Life of Project
Salaries to IAV Faculty 1/	2,465
Direct Support to IAV Faculty Research 2/	805
Direct Support to Technical Assistance Personnel 3/	537
International Travel for Participants	167
	3,974

1/ Includes faculty salaries paid while engaged in course work and conducting research estimated at $14,500 per year including fringes.

2/ For two year after return from U.S. at $7,000/year

3/ Estimated at $20,000 per year for resident staff ($3,000 per year for Junior staff and $1,000 per month of TDY staff).

Date	Action
June 1, 1980	Host Country Contract Signed
July 1, 1980	Old Contract Phased Out. New Contract Enters into Effect
	Third Cycle Participants Identified for July Departure. Commodity Specifications complete.
July 30, 1980	2-year Work Plan and Budget agreed for FY 81. Third Cycle and Faculty Participants depart for U.S. New Resident staff identified and in French language training. First faculty participants return to Morocco.
Sept. 15, 1980	New Resident Staff at Post. Participants in academic programs in U.S. (English language training terminated).
Oct.1, 1980	Faculty participants for 1981 nominated by IAV. Process of seeking admission to U.S. graduate schools initiated. English language training started in Morocco.
Nov.15, 1980	First Annual Report Due and Termination report of old contract NE-C-1270. Partnership annual meeting in U.S.
Dec. 1980	20 Third Cycle participants (departed July 1979) return to Morocco for Memoire Research
Jan. 1981	New Third Cycle participants identified by IAV and in English training.
Apr. 1981	First Evaluation (Tracer Study/Support Services)
Apr. 1981	Faculty Participants accepted at U.S. universities
July 1981	Third Cycle and Faculty participants depart for U.S. Two Resident faculty end tour/or home leave. New Resident faculty recruited and in French language training.

	Second two year work plan and budget agreed for FY 1982. Faculty participants return to Morocco (those departed Jul.79)
Sept. 15, 1981	New Resident Staff at Post. Participants in academic programs in U.S. (English language training program terminated).
Oct.1981	Faculty Participants for 1982 nominated by IAV. Admission to U.S. graduate schools initiated. English language training started in Morocco.
Nov. 1981	Second Annual Report Due.
Nov. 1981	Second Evaluation (Linkages/Training Program)
Dec. 1981	Third Cycle Participants (departed Jul.80) return to Morocco for memoire research.
Jan.1982	New Third Cycle participants identified by IAV and in English training.
Apr. 1982	New Faculty Participants accepted by U.S. universities
Jul. 1982	Third Cycle and Faculty participants depart for U.S. First Doctorate degree completed. New Resident faculty recruited and in French language training.
	Third two year work plan and budget agreed for FY 1983. Faculty participants return to Morocco (those departed Jul.79)
Sept. 1982	New Resident Staff at Post. Participants in academic programs in U.S. (English language training terminated).
Oct. 1982	New faculty participants nominated by IAV. Admission to U.S. graduate schools initiated. English language training started in Morocco.

Nov. 1982	Third Annual Report Due. Second (major) Evaluation being made.
	Third Evaluation (Support Services)
Dec. 1982	Third Cycle Participants return to Morocco (Departed Jul.80) for memoire research.
Jan. 1983	New Third Cycle Participants nominated by IAV and in English training.
Apr. 1983	New Faculty Participants accepted by U.S. universities.
Jul.1983	Third Cycle and Faculty Participants depart for U.S. Second doctorate degrees completed. Fourth 2 year work plan and budget agreed (for FY 84). Faculty participants return to Morocco.
Sept. 1983	Participants in academic programs in U.S. (English language training terminated).
Oct. 1983	New faculty participants nominated by IAV. Admission to U.S. graduate schools initiated. English language training started.
Nov. 1983	Fourth Annual Report Due. (Linkages/Manpower Needs/Repeat Tracer Study/Institutional Development)
Dec. 1983	Third Cycle Participants return to Morocco (Departed Jul.81) for memoire research.
Jan. 1984	New Third Cycle Participants nominated by IAV and in English Training.
Apr. 1984	New Faculty Participants admitted at U.S. universities. Manpower and Project Re-Design Evaluation (if project extended).
Jul. 1984	Third cycle and faculty participants depart for U.S. Doctorate degrees conferred. Faculty participants return to Morocco.
Sept. 1984	Participants in academic programs in U.S.. Project extension or termination actions completed.

MONITORING

Monitoring will be provided for by the following:

1. Annual Report (November)
2. Two Year Work Plans and Budgets Reviewed Annually (July)
3. Participant Reports

   1. Quarterly Progress Reports
   2. Academic Programs filed with LAV.

4. Other (Audit, etc.) as needed.

6. Project Evaluation Plan

The project will be monitored continually during implementation - see Implementation Plan.

Planning for activities to be conducted under the project will be within the context of a 10-year time frame for broad problem identification and for conceptualization and operation of remedial programs. The initial 5-year project will operate with 2-year work plans (and budgets) which will be updated and revised annually.

Evaluation activities will be timed, in the context of the implementation plan, so as to provide evaluative material when needed for project modification, renewal or termination. Of particular importance is the need for comprehensive evaluation when continuation (or non-continuation) of work beyond the life of the 5-year project must be considered.

The evaluation plan described below has the following broad objectives:

(a) to determine that project purpose is being achieved.
(b) to determine the appropriateness of project mechanisms in achieving the purpose.
(c) to identify obstacles to achievements of project purpose and suggest remedial actions.

AID shall seek in all evaluation activities the collaboration and participation of other donors to IAV, as appropriate and feasible.

Project Evaluation Activities. The project purpose is the creation of a modern college of agriculture appropriate to Moroccan agricultural development needs with appropriate linkages to the rest of the technology delivery system and concern for low-income farmers and herders. The outputs of the project will be 65 trained Moroccan faculty members of IAV who will teach technicians required for Morocco's agricultural development.

Evaluation activities will be aimed at determining (1) the degree of achievement of training goals via academic and research training in the U.S. and the research experience of participants in Morocco, (2) the effectiveness and timeliness with which trained faculty participants become operational in their professional assignments at IAV and develop linkages with extension and research (3) the extent to which project purpose has been achieved and, consequently, whether or not the project, or a modification of it, should be extended beyond its current 5-year life span.

Specifically the following evaluations will be carried out:

1. Tracer Study of IAV Graduates:

A critical measure of project success is the extent to which IAV students are contributing to Moroccan agricultural development,

particularly with regard to low-income farmers and herders. In year 2 of the project IAV will conduct a tracer study of all its graduates since the first graduating class of 1972 to determine what activities they are now engaged in and the appropriateness of their training at IAV. This tracer study will be repeated in year 5.

2. Linkages Evaluation:

An evaluation will be made of the extent to which IAV faculty are engaged in activities which relate to applied research and extension activities, the manner in which this enhances the two way flow of information, and assessment of its impact on low-income farmers and herders. This will be done by evaluation of IAV faculty activities outside the classroom and participation in In-Service Training, the National Extension Center and other functions which relate to applied research and extension. Attention will also be focussed on the linkages created with other agricultural research and the extent to which IAV dissertation and other research is concerned with problems faced by dryland and low income farmers and herders.

3. Evaluation of Support Services for Participants and Faculty:

A major assumption in project design is that the GOM will give sufficient support to IAV, and IAV in turn to faculty, to allow for faculty development and completion of training. Evaluation will be made of the adequacy of these support services (see Log Frame).

4. Institutional Development:

Since project purpose is institutional development, evaluation shall be made of institutional changes (and thus maturity) brought about by project activities. This shall include:

1) evaluation of curriculum development.

2) evaluation of faculty participation in administration and organisation of departmental decision making.

Information from other evaluations described above shall also be used.

5. Training Program:

In addition to continuing monitoring, an in-depth evaluation will be initiated in the 3rd year of the project to determine the effectiveness with which participants are receiving designated academic and research training.

The evaluation will be aimed at determining (1) effectiveness of the U.S. training component (both content and delivery system), (2) effectiveness of Ph.D. research experience in Morocco and (3) needed adjustments, if any, in total training experience.

Specific information on effectiveness of the Ph.D.-level training program will be systematically acquired from all participants up to the date of the evaluation and from a sample of faculty members (University of Minnesota and Partnership Institutions) involved in training program delivery. In addition, other faculty members at IAV will be interviewed re the contribution(s) of the U.S.-trained participants to the IAV.

6. Future Manpower Needs:

By early in the 5th project year, decisions will have been made to continue or terminate the project at the end of the 5th year. An evaluation whose [illegible] will be on future project direction will be made in year 5. [illegible]luation will focus on:

(a) the future [illegible]d manpower needs in Moroccan agriculture.
(b) the capabil[illegible]f IAV to provide the training for these future manpower requirements.
(c) the socio-economic status of the rural population in Morocco, and
(d) the future faculty training and development needs of IAV, including the future role of other donors.

Of the above items, information on socio-economic status can be drawn mainly from existing data and/or other studies (including those conducted by IAV faculty). Some systematic evaluation will be required, however, of the future needs for trained manpower in Moroccan agriculture and of the role of IAV in meeting these requirements. One component of the latter evaluation process will be to track the post-IAV employment location and professional performance of a sample of recent IAV graduates (Tracer Study - see 1 above).

These evaluation activities are designed not only to provide project specific evaluations on key matters of project design and implementation but also to provide an historical record of the process of institution-building. They are linked through the life time of the project in order to provide a flow of related information. The timing of the evaluations is shown in Table 6.

Evaluation Scopes of Work and Staffing

Evaluation activities will be carried out by selected AID, IAV, contractor and independent personnel as specifically needed for each activity. Involvement of other donors to IAV will be sought. Scopes of work will be developed by AID in collaboration with IAV and the

Contractor.

Where possible, IAV and the Contractor will undertake basic data collection needed for evaluation as part of IAV on-going activities. It is believed that this evaluation plan will provide useful data and analysis to the process of Institution-building and help to internalise this capacity within IAV, as well as a "case study" of institutional development useful to other AID Title XII activities.

TABLE 6: Evaluation Plan: Timing of Activities

Year	Evaluation Activities	Cost
2	Tracer Study/Support Services	35,000
3	Linkages Evaluation/Training Program	45,000
4	Support Services	15,000
5	Linkages Evaluation/Future Manpower Needs/Repeat Tracer Study/ Institutional Development	60,000
	TOTAL	155,000 1/

1/ Cost of evaluation in (inflated) current prices is $192,000

7. ANNEXES

7.1 AID/W Message Approving PID

7.2 Commodities

7.3 Log Frame

7.4 Statutory Criteria Check List

7.5 Request for Assistance

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DEPARTMENT OF STATE

TELEGRAM

Annex 7.1

PROJECT 608-0134

STATE 091929

ACTION: AG due 4/17

UNCLASSIFIED
Classification

RECD: 130700Z APR 79

P 130045Z APR 79
FM SECSTATE WASHDC
TO AMEMBASSY RABAT PRIORITY 1009/10
ST
UNCLAS STATE 091929

AIDAC

AID E.O. 12065 N/A

AMB
DCM
ECON
JAO
CHRN

TAGS:

SUBJECT: HIGHER AGRICULTURE EDUCATION PID (608-0134)

REF: RABAT 0728

5
DIR
A/DIR
PROG
CHRN
RP

1. NEAC MET MARCH 29 AND APPROVED ABOVE PID IN AMOUNT OF DOLLARS 7.5 MILLION WITH PROVISION FOR ADDITION OF INFLATION FACTOR TO PP BUDGET. AMOUNT APPROVED INCLUDES ORIGINAL REQUEST DOLLARS 7.3 MILLION PLUS ADDITIONAL PRESENT DOLLARS 200 THOUSAND FOR EVALUATION NEEDS. PP SHOULD INCLUDE EVALUATION PLAN DESCRIBING OBJECTIVES AND FOCUS OF EVALUATION, CRITERIA TO BE EVALUATED, AND TIMING AND RESPONSIBILITIES FOR DETAILED DESIGN AND IMPLEMENTATION OF EVALUATION(S).

2. EXTENSION: THE PP SHOULD MAKE EXTENSION EDUCATION A MAJOR COMPONENT OF PROJECT ACTIVITIES. THIS CHANGE IN IAV CURRICULUM WILL IMPLY CHANGES IN THE KIND OF TRAINING GIVEN TO FUTURE IAV FACULTY IN U.S. AND THE SKILLS AND ACTIVITIES OF U.S. EDUCATORS AT IAV. PP SHOULD FULLY DEVELOP THE EXTENT AND NATURE OF PLANNED EXTENSION EDUCATION. PP SHOULD ALSO DEMONSTRATE THAT THERE IS SUFFICIENT GOM COMMITMENT AND ABILITY TO UTILIZE THESE EXTENSION WORKERS IN POVERTY AREAS TO JUSTIFY PROPOSED TRAINING. MISSION SHOULD BEAR IN MIND THAT CDSS REVIEW UNDERLINED THE IMPORTANCE OF INCREASED GOM COMMITMENT TO MEETING NEEDS OF THE POOR AS KEY TO OVERALL FUTURE OF U.S./AID PROGRAM IN MOROCCO.

3. OTHER ISSUES TO BE ADDRESSED IN THE PROJECT PAPER: (A) HOW DOES THE DEVELOPMENT OF IAV, AND THE DEVELOPMENT OF U.S. UNIVERSITY LINKAGES RELATE TO MOROCCO'S RURAL DEVELOPMENT PROBLEMS? THE COMMITTEE RECOGNIZES THAT PROJECT CANNOT, AND SHOULD NOT BE DIRECTED SOLELY TO AREA RURAL DEVELOPMENT AND NEEDS OF SMALL FARMERS. GIVEN PRESENT GOM LACK OF EMPHASIS ON RURAL POOR, PP SHOULD

UNCLASSIFIED
Classification

OPTIONAL FORM 161 (4-67)
GSA FPMR (41 CFR) 101-11.6
5010-108

SHOW HOW IAV'S PROGRAM ADEQUATELY ADDRESSES THE NEEDS OF RURAL DEVELOPMENT INCLUDING DRYLAND AREAS AND, IN PARTICULAR, SMALL FARMERS. THIS NEED NOT BE LIMITED TO DIRECT IAV ACTIVITIES. (NOTE: NEAC VIEWS EXTENSION OUTREACH AS A KEY ELEMENT FOR RURAL DEVELOPMENT AND SMALL FARMER PROBLEMS. PROJECTED IMPACT OF PROJECT ON IMPROVED EXTENSION SERVICES RAISED AS MAJOR ISSUE FOR PP.) PROJECT PAPER SHOULD IDENTIFY AREAS WHICH INDICATE RELATIONSHIPS OF THE PROJECT TO RURAL DEVELOPMENT PROBLEMS, AND DESCRIBE THESE RELATIONSHIPS. EXAMPLES OF AREAS WHERE PROJECT SHOULD RELATE TO PRIORITY DEVELOPMENT PROBLEMS INCLUDE BUT NOT LIMITED TO:

(1) RELEVANCE OF ADVANCED TRAINING AND RESEARCH - PID NOTES THAT SIGNIFICANT NUMBER OF MOROCCAN AGRICULTURAL SCIENTISTS WILL STUDY AT PH.D LEVEL IN SELECTED U.S. UNIVERSITY(IES). PROJECT PAPER SHOULD IDENTIFY WHAT STRATEGIES WILL BE USED TO ASSURE THAT ADVANCED TRAINING, ESPECIALLY RESEARCH COMPONENT, ADDRESSES BOTH NEEDS OF MOROCCAN FARMERS IN GENERAL, AND RURAL DEVELOPMENT AND NEEDS OF SMALL AND DRYLAND FARMERS IN PARTICULAR.

(2) DEVELOPMENT OF IAV CURRICULA AND RELATED STAFFING PATTERN - PP SHOULD DESCRIBE PLANS FOR DEVELOPMENT IAV CURRICULA, AND SHOULD SHOW HOW CURRICULA RELATE TO MOROCCAN AGRICULTURAL DEVELOPMENT NEEDS IN GENERAL, AND AID CONCERNS IN PARTICULAR. SHOW HOW PLANS FOR CONTRACT STAFFING, AND STAFFING PATTERN AND TRAINING FOR IAV INDIGENOUS FACULTY RELATE TO CURRICULA FOCUSES IDENTIFIED FOR PP.

(3) PRACTICAL FIELD WORK EXPERIENCE AS REQUIREMENT FOR DEGREE. TO WHAT EXTENT IS SUCH FIELD WORK GENERALLY OR SPECIFICALLY RELEVANT TO PROBLEMS OF RURAL DEVELOPMENT AND SMALL FARMERS? PP SHOULD IDENTIFY STEPS THAT WILL BE TAKEN TO MAXIMIZE RELEVANCE OF PRACTICAL TRAINING.

(4) ADMISSION AND TRAINING SECTION - EVALUATION STATES "TWENTY-FOUR PERCENT ARE SONS AND DAUGHTERS OF PEASANTS... FIVE PERCENT OF ENTERING CLASS IN 1977 WERE WOMEN." GIVEN LACK OF PRIMARY EDUCATION FOR MANY OF THE RURAL POOR, THIS IS SURPRISING. HOW IS THE TERM "PEASANT" BEING USED. DOES MISSION VOUCH FOR THE ACCURACY OF THESE STATISTICS? PROJECT SHOULD BE DESIGNED SO AS TO MAINTAIN/IMPROVE THIS PATTERN. PROJECT SHOULD PROVIDE MEANS FOR QUALIFYING WOMEN FOR HIGHER LEVEL TRAINING IN U.S.

(5) SERVICES AND LINKAGES TO USERS - PP MUST DEMONSTRATE THAT THE SERVICES PROVIDED BY IAV, E.G., IN RESEARCH, DEVELOPMENT NEW TECHNOLOGIES, INFORMATION, TRAINING, WILL BE APPLIED TO MEETING NEEDS OF RURAL DEVELOPMENT AND SMALL FARMERS; WHAT LINKAGES WILL IAV MAKE WITHIN MOROCCO TO ASSURE THAT SERVICES IMPACT ON DEVELOPMENT?

(6) EMPLOYMENT OF FACULTY AND GRADUATES

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(1) A MAJOR PROJECT OUTPUT IS TRAINING OF 65 PARTICIPANTS FOR PH.D PROGRAMS IN U.S., 40 OF WHOM WILL HAVE RETURNED TO MOROCCO FOR DISSERTATION RESEARCH AND 20 OF WHOM WILL HAVE COMPLETED DEGREES BY END OF PROJECT. PID MAKES NO REFERENCE, HOWEVER, TO ANY COMMITMENT TRAINEES HAVE TO GOM. PROJECT PAPER SHOULD DISCUSS POSSIBILITY OF TRAINEES LEAVING PUBLIC SECTOR FOR EMPLOYMENT IN PRIVATE AGRO-INDUSTRY OR FOR EMIGRATION, THEREBY RESULTING IN LOSS OF VALUABLE RESOURCE TO IAV. IF THIS IS POTENTIALLY SERIOUS PROBLEM, WHAT STRATEGIES WILL BE TAKEN TO COUNTERACT IT? ALSO, TO WHAT EXTENT ARE THERE PRIVATE SECTOR NEEDS WITH RESPECT MOROCCAN AGRICULTURAL DEVELOPMENT, AND HOW WILL PROJECT ULTIMATELY IMPACT ON THESE?
(2) HAVE DEGREE EQUIVALENCY ISSUES FOR U.S. TRAINED PH.D'S BEEN FULLY RESOLVED?
(3) PID INDICATES THAT WHEN FULLY OPERATIONAL, IAV AND CENTER IN AGADIR WILL BE TRAINING STUDENTS IN 2ND, 3RD CYCLES, AS WELL AS OFFERING NON-DEGREE TRAINING AND SHORT COURSES. PROJECT PAPER SHOULD DISCUSS EMPLOYMENT POSSIBILITIES FOR GRADUATES OF THE VARIOUS LEVEL TRAINING EFFORTS, AND LONG-TERM IMPACT EMPLOYMENT SITUATION ON SUCCESS OF IAV AND TRAINING CENTERS. INCLUDE, IN PARTICULAR, DISCUSSION OF EMPLOYMENT POTENTIAL IN MIN AG EXTENSION SERVICE. IN UNDERTAKING THIS ANALYSIS IT WOULD BE ADVISABLE TO EXAMINE ACTUAL EMPLOYMENT EXPERIENCE OF GRADUATES. PP SHOULD CONSIDER THE ESTABLISHMENT INSIDE IAV OF MECHANISM FOR IAV TO

CARRY OUT TRACER STUDIES OF ITS GRADUATES TO HELP IT IN ITS ACADEMIC AND CURRICULA PLANNING.
(C) CRITERIA OF INSTITUTIONAL DEVELOPMENT - PID FOCUSES PRIMARILY ON FACULTY ACADEMIC TRAINING AND LINKAGES WITH U.S. PP SHOULD BE MORE SPECIFIC AS TO OTHER FOCUSES AND INDICATORS OF INSTITUTIONAL DEVELOPMENT, E.G., ADMINISTRATIVE ORGANIZATION, FINANCIAL PLANNING, DECISION MAKING PATTERNS, ETC., AND INDICATE HOW PROJECT WILL ADDRESS THESE.
(D) PID POINTS TO SIGNIFICANT OTHER DONOR CONTRIBUTION TO IAV AND INDICATES THIS PRIMARILY IN FORM OF SCHOLARSHIPS AND PROVISION EXPATRIATE PERSONNEL WITH NO INSTITION-BUILDING ORIENTATION. QUESTION ARISES WHETHER OTHER MAJOR DONORS (E.G., FRANCE AND BELGIUM) SHARE AID VIEWS WITH RESPECT TO MOROCCANIZATION OF FACULTY, FOCUS OF COURSE CONTENT AND RESEARCH, AND OTHER ELEMENTS OF INSITITUTION BUILDING WHICH PROJECT CONTEMPLATES. PP SHOULD ADDRESS THIS CONCERN. SPECIFICALLY, EVALUATION AND PID INDICATE IAV DESIRES BROAD U.S. SPONSORED TRAINING AND INSTITUTION-BUILDING INPUT. IS IT VALID MAKE ASSUMPTION CONDITIONS EXIST TO PERMIT PROGRAM OF SUFFICIENTLY BROAD SCOPE; WILL OTHER MAJOR DONORS GIVE SUPPORT/COOPERATION, OR DOES PROJECT FACE SATURATION

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INTERESTS WHICH MAY COMPROMISE AID OBJECTIVES? WILL OTHER DONORS MAKE ANY DIRECT CONTRIBUTION TO PROJECT; WILL THEY PARTICIPATE IN PROJECT DESIGN? GD AND HC CONTRIBUTIONS IDENTIFIED IN PP SHOULD RELATE TO PROJECT ACTIVITIES RATHER THAN IAV AS WHOLE.

4. PP SHOULD PROVIDE DETAILED BREAKDOWN OF PROPOSED BUDGET FOR U.S. FACULTY IN MOROCCO.

5. PID PROPOSES TO LIMIT RESIDENT U.S. FACULTY TO TENURED FACULTY MEMBERS. THIS GOES BEYOND RECOMMENDATION IN EVALUATION REPORT THAT "A SENIOR FACULTY MEMBER OF THE UNIVERSITY OF MINNESOTA SERVE AS TEAM LEADER IN MOROCCO." LIMITING ALL RESIDENT FACULTY TO TENURED MEMBERS MAY EXCLUDE JUNIOR FACULTY WITH ESPECIALLY IMPORTANT SKILLS. MISSION SHOULD CONSIDER THIS IN WRITING PP.

6. COMMITTEE AGREES UNIVERSITY MINNESOTA SHOULD BE ENGAGED DESIGN PROJECT UNDER COLLABORATIVE ASSISTANCE CONTRACTUAL MODE, AND THAT U. MINN. SHOULD CARRY -OUT PROJECT WHEN APPROVED, PROVIDING NECESSARY WAIVERS CAN BE OBTAINED FROM NON-COMPETITIVE BOARD. RECOMMEND AID DIRECT CONTRACT FOR DESIGN PHASE. TO EXPEDITE PROCESSING PIO/T AND WAIVER, AND TO TAKE ADVANTAGE TITLE XII AND

OTHER RELEVANT EXPERTISE AVAILABLE AID/W, SUGGEST MISSION PROVIDE BY CABLE, SCOPE, DESIGN GUIDELINES ANDOTHER RELEVANT INFORMATION AND INSTRUCTIONS TO BE INCORPORATED IN PIO/T. WILL RELY ON REFTEL FOR JUSTIFICATIONWAIVER. BUREAU WILL REVIEW, CONSULT EXPERTISE, AND COMMUNICATE WITH MISSION IN FINALIZING DOCUMENTATION. SUBSTANTIAL LEAD TIME REQUIRED TO PREPARE PIO/T AND PROCESS WAIVER, TITLE XII APPROVALS, AND CONTRACT. NEED MISSION INPUT ASAP IN ORDER TO ATTEMPT POSSIBLE DESIGN TEAM DEPARTURE LATTER PART MAY OR EARLY JUNE. NOTE: GIVEN COST, DURATION AND COMPLEXITY PROPOSED PROJECT, DESIGN ISSUES RAISED, AND DESIRABILITY MAXIMUM INVOLVEMENT CONTRACT UNIVERSITY STAFF AT DESIGN STAGE, VIEW DESIGN PHASE AS SUBSTANTIAL EFFORT REQUIRING GREATER INPUT ON CONTRACTOR'S PART THAN DOLLARS 5 THOUSAND EFFORT CONTEMPLATED PID. WE PLAN TO REVIEW THE PP IN AID/W. VANCE

ANNEX

7.2. Commodities

Commodities are a minor part of this project. There are four categories of commodities:

1. In-Country Transportation	$ 70,000
2. Agadir Start Up Equipment	300,000
3. Library Development	50,000
4. Resident Staff Research Support	100,000
Total	$520,000

Details are given below. Exact specifications and disbursement schedules will be developed in Year 1 of the Project (see Project Implementation and the Financial Plan above) for the Agadir start-up equipment cost and for the $50,000 of Library Development support.

1) In-Country Transportation

In-country transportation is needed for resident staff, for TDYs and to provide limited supplementary support to IAV for dissertation research.

	1980	1981	1982	1983	1984
Pintos (existing) 1/	3	2	1	-	-
Acquisitions 2/	1	3	2	1	0
Total cars in service	4	6	7	7	7

Hence 7 stations wagons at $10,000 each = $70,000. It is possible that a waiver on U.S. procurement may be required for some of these vehicles. (Waiver for some other commodities may also be needed).

1/ Pintos acquired under old project in 1978: to be phased out by 1982

2/ Two in Agadir for 1981 on.

2) Agadir Start-up Equipment Costs

Summary:

1. Plant Pathology Lab.	$ 35,000
2. Leaf and Soil Analysis Lab.	30,000
3. Student Lab.	80,000
4. Field Equipment	80,000
5. Irrigation and Greenhouse Equipment	45,000
6. Transportation and Misc.	30,000
	$300,000

It is proposed that the U.S. will finance up to $300,000 of start-up equpment cost for Agadir. At PP preparation time it is not possible to specify precisely what equipment is needed (future contribution of other donors not known, buildings not yet completed, etc.). For purpose of AID/W forward planning a $300,000 commodity line is seen as a maximum U.S. contribution. A preliminary listing of proposed commodities under this head is attached. Proposed procedures for developing this aspect of the project are contained in the sections in Project Implementation and in the Financial Plan.

3) Library Development. IAV is completing the construction of a library at the Rabat campus. This will have not only acquisitions (stacks) but also reading rooms, an audio visual center for English language training and a research library for faculty and third-cycle students. In view of the planned in-country dissertation research, it is essential to ensure availability of minimum documentation needs and to make some contribution to the development of library acquisitions - particularly professional journals. (Specifications and disbursements will be developed in year 1 of this project.)

4) Resident Staff Research Support. Twenty-two person years of senior scientists are to be provided under this project. The line item for resident staff research support will provide approximately $5,000/person year (senior scientists) for miscellaneous equipment items as needs arise. The current project has been providing this level of commodity support to resident staff. It is a small cost to ensure effective use of the expensive time of resident staff.

7.2 Attachment 1

Preliminary Specifications for Agadir

Start-up Equipment

Quantity	Description	Price
1	Drying Oven	
1	Mettler Balance	
1	Centrifuge	
1	Colormeter	
1	PH meter	
2	Refractometer	
1	Conductivity Meter	
10	Thermometer	
2	Homogeniser	
1	Water Bath w/agitator	
1	Refrigerator	
1	Freezer	
1	Microscope	
1	Binocular	
1	Growth Chamber	
1	Microtome	

Annex 7.2

1. Plant Physiology Lab. (cont'd)

Quantity	Description	Price
1	Autoclave	
1	Pipette washer	
1	U.V. Lamp	
1	Light Meter	
1	Chromotography Cabinets	
1	Transfer Chamber	
1	Lyophilizer & Pump	
	Sub-Total	$ 35,000

2. Leaf and Soil analysis Lab.

Quantity	Description	Price
1	Misc. Glassware	
1	PH Meter	
1	Shaker	
1	Color meter	
1	Atomic Absorption	
1	Muffle Furnace	
1	Drying Oven	
1	Anal. Balance	
1	Student Balance	
1	Refrigerator	
1	Freezer	
1	Centrifuge	
1	Soil Grinder	
	Sub-Total	$ 30,000

3. Student Lab.

Quantity	Description	Price
5	Cold Chambers, 2 m3	
1	Freezer	
1	Refrigerator	
1	Forced Draft Oven	
1	Autoclave	
1	Balance Anal.	
1	Balance Student	
1	Balance Platform	
1	Student Binocular	
1	PH Meter	
1	Still & Tank	
1	Deminiralizer	
1	Paraffin Oven	
1	Water Bath	
1	Microtome	
1	Blender	
1	Hot Plate	
2	Colorimeters	
1	Vacuum Pump	
1	Sohxlet Extractor	
1	Misc. Equipment for Fruits	
1	Misc. Glassware	
	Sub-Total	$ 30,000

4. Field Equipment

Quantity	Description	Price
1	Tractor w/equipment	
2	Tractor, Garden, w/equipment	
1	Pick-up Truck	
1	Hand Tools	
1	Planter Precision	
2	High Speed Sprayer	
1	Soil Sterilizer	
1	Field Tools	
	Sub-Total	$ 80,000

5. Irrigation and Greenhouse Equipment

Quantity	Description	Price
	Glass and Plastic Greenhouse and Hothouse Equipment, Pumps and Pipes.	
	Sub-Total	$45,000

6. Transportation and Miscellaneous

(for student field trip transportation)

Quantity	Description	Price
2	Minibuses at $15,000 (to transport students)	$30,000

AID 1020-28 (1-72)

Annex 7.3

PROJECT DES
LOGICAL F

Project Title & Number: Agronomic Institute

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS
Program or Sector Goal: The broader objective to which this project contributes: Increase in trained managers, technicians and scientists to staff programs and projects and formulate development policy to aid Moroccan agriculture in the implementation of a broad based participatory agricultural development program and aimed at increased output and employment.	Measures of Goal Achievement: 1. IAV graduates in action jobs in public and private sectors, effective and with necessary job skills. 2. IAV research and outreach effectively related to Moroccan ag. development problems.
Project Purpose: Creation of a "modern" college of agriculture appropriate to Moroccan agricultural development needs, with appropriate linkages to the rest of the technology delivery system and involving low-income farmers and herders.	Conditions that will indicate purpose has been achieved: End of project status. 1. Development of "modern" curriculum and departmental research programs under way. 2. IAV students on "firing line" with appropriate training. 3. IAV doctoral system working. 4. Limited reliance on foreign technicians and faculty (U.S. and other donors) in teaching. 5. Trained faculty engaged in teaching, research and extension.
Outputs: 1. Trained faculty members. 2. Linkages to U.S. agricultural science established. 3. Linkages to GOM research and extension programs by faculty.	Magnitude of Outputs: 1. Forty (40) faculty members returned to Morocco. 2. Fifteen (15) faculty members completed the Doctorate. 3. Thirty (30) faculty in U.S. for training. 4. Seventy (70) 3rd cycle participants sent to U.S.
Inputs: 1. Resident and TDY staff aiding development of Institute. 2. Participants identified and placed in U.S. universities through partnership.	Implementation Target (Type and Quantity) 1. Resident staff of 5 senior scientists and 3 junior scientists engaged in 3rd cycle and dissertation programs. 2. Establishment of partnership. 3. 90 person-months provided on TDY. 4. 65 faculty departed for training. 5. 2 resident staff and equipment operating at Agadir. 6. Specialized training programs for faculty offered.

IN SUMMARY
AMEWORK

Life of Project:
From FY 80 to FY 84
Total U.S. Funding $10.4 million
Date Prepared: 7/10/79

MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
1. Tracer study of IAV graduates (positions held, appropriateness of training received at IAV). 2. Analysis of IAV research programs and extension activities (Annual Reports of IAV).	Assumptions for achieving goal targets: 1. GOM provides incentives and jobs-related support to agricultural sector personnel.
1. Changes since 1979 in curriculum (study). 2. Number of 3rd cycle programs and students fully handled in Morocco. 3. Decreased number of Moroccans going abroad for 5th year (IAV Annual Report). 4. Numbers of visiting/resident foreigners on faculty at IAV reduced (IAV Annual Report).	Assumptions for achieving purpose: 1. Maintained support of IAV by GOM (operating and capital budget). 2. IAV continues development of management and incentive systems and retains trained faculty.
1. Head count of number of participants in U.S. for PH.D. training, working on dissertation and completed degrees. 2. Dissertation research completed and under way with U.S. advisors. 3. Survey of returned participants contributions to extension research linkages of IAV.	Assumptions for achieving outputs: 1. Training in U.S. can be completed in 2 years (average) 2. Doctoral dissertation in Morocco of quality expected and completed in 2 years (average). 3. IAV supplied release time and other resources to do research on dissertation.
1. Research team in place (head count). 2. Departure of participants (records). 3. Admissions obtained to U.S. graduate programs for IAV candidates (Annual Reports). 4. TDY reports. 5. Survey of students and U.S. advisors.	Assumptions for providing inputs: 1. IAV recruiting and retaining young faculty members. 2. U of M able to mobilize appropriate faculty in U.S. universities for resident and TDY assignments with necessary professional and language skills.

MOROCCO
Agronomic Institute Project
(608-0160)
5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE?
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PRODUCT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 653 (b); Sec. 634A. (a) Describe how Committees on Appropriations 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 figure)?	1. (a) The Appropriation Commitees will be notified in accordance with normal agency procedures. (b) Yes.
2. FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	2. (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?	3. No further legislative action is required.
4. FAA Sec. 611(b); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?	N/A
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?	N/A
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.	N/A

MOROCCO
Agronomic Institute Project
(608-0160)

A.

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; (c) encourage development and use of cooperatives, 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.

7. By increasing the supply of trained agriculturalists, the project will increase the flow of international trade and improve technical efficiency in agriculture.

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).

8. U.S. land grant universities will furnish out-of-country training, technical assistance and non-local commodities.

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

9. The project agreement will so provide.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

10. Morocco is not an excess currency country.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

11. Yes.

12. FY 79 App. Act Sec. 608. 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?

12. N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 281a. 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

1.(a) The project provides for the assistance in the development of an agricultural training institution by U.S. land grant universities. The appropriate training of college level graduates in agriculture is indispensable to the development of the Moroccan rural sector.

3.I.a.

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?

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available? (Include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small-farmers;

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

(3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal 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;

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

1. (b) N/A (c) As the development and training of Moroccan faculty and the consequent reduction of expatriate faculty is a principal activity, the project will assist the GOM to develop its own self-help capability in the agricultural sector. (d) As the number of Moroccan women enrolled in the IAV is increasing dramatically each year, the project will promote the participation of women in the agricultural economy. (e) The IAV is a regional center for the African Asso.of Agricultural Faculties and about ten percent of its enrolled students are from other African countries.

b. 103. Upgrading and expansion of IAV faculty may be expected over the long run to increase the production of the agricultural sector and thereby generate increased income for the rural poor, as well as slow down rural-urban migration through expansion of employment in the farm input and farm product related sectors.

B.1.b.(4).

(v) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. [107] Is appropriate effort placed on use of appropriate technology? — Yes.

d. FAA Sec. 110(a). Will the recipient country 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.

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

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government. — f. The project's primary purpose is to enable the IAV to train needed agricultural scientists, managers and technicians appropriate to Morocco's agricultural development needs.

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

2. Development Assistance Project Criteria (Loans Only) — N/A

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

S.

3. Project Criteria Solely for Economic Support Fund — N/A

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

MOROCCO
Agronomic Institute Project
(608-0160)
5C(3) - STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed?

A. Part of procurement will be made on basis of sole source negotiation with University of Minn. as provided in project paper. Other procurement for project will permit equibable participation of U.S. small businesses.

2. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him?

2. Yes.

3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the United States on commodities financed?

3. Yes.

4. FAA Sec. 604(e). 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?

4. N/A

5. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items?

5. Yes.

6. FAA Sec. 603. (a) 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.

6. Contract will so provide.

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the

7. Yes.

A.7.

facilities of other Federal agencies will be utilized, are they paritcularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? — 7. N/A

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available? — 8. Contract will so provide.

9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States? — 9. Contract will so provide.

B. Construction — B.

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest? — 1. N/A

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? — 2. N/A

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the United States not exceed $100 million? — 3. N/A

C. Other Restrictions — C.

1. FAA Sec. 122 (e). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? — 1. N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? — 2. N/A

3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foriegn aid projects or activities of Communist-bloc countries, contrary to the best interests of the United States? — 3. Yes.

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or guaranty of such transaction? — 4. Yes

C.

5. Will arrangements preclude use of financing:

a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization?

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property?

c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs?

d. FAA Sec. 662. For CIA activities?

e. FY 79 App. Act Sec. 104. To pay pensions, etc., for military personnel?

f. FY 79 App. Act Sec. 105. To pay U.N. assessments?

g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 209(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending.)

h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields?

i. FY 79 App. Act Sec. 601. To be used for publicity on propaganda purposes within United States not authorized by the Congress?

5.

a. Yes.

b. Yes.

c. Yes.

d. Yes.

e. Yes.

f. Yes.

g. Yes.

h. Yes.

i. Yes.

7.5.

DEPARTMENT OF STATE
DIVISION OF LANGUAGE SERVICES

(TRANSLATION)

LS NO. 91605
JF/MM
French

Kingdom of Morocco

Hassan II Institute of Agronomy and
Veterinary Studies

No. 2563/SG

Dr. Fleming
Director, USAID
Rabat

Dear Dr. Fleming:

The project for cooperation with USAID and the University of Minnesota has proved highly satisfactory and has permitted scientific exchanges with American institutions by bringing American professors to Morocco and sending Moroccan students to the United States.

I am therefore requesting you to help obtain a five-year extension and increased support for this project, which is of great importance in order to develop our Institute's capabilities, conduct a 10-year teacher-training program, and expand scientific exchanges with American universities.

Confident of your support and collaboration, I am,

Sincerely yours,

[Signature]

Abdallah Sekkali
Director, Hassan II Institute of
Agronomy and Veterinary Studies

[Institute stamp]

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RABAT, le

معهد الحسن الثاني
الزراعة والبيطرة

ROYAUME DU MAROC

INSTITUT AGRONOMIQUE
ET VETERINAIRE HASSAN II

B.P. 704 Rabat-Agdal

2062 /SG

/E DIRECTEUR DE L'INSTITUT AGRONOMIQUE
ET VETERINAIRE HASSAN II

A

/Monsieur le Docteur FLEMING
Directeur de l'U.S.A.I.D.

- RABAT -

Le projet de coopération avec l'USAID et Université du Minnesota ayant donné toute satisfaction et permis le démarrage des relations scientifiques avec les institutions américaines par la venue des professeurs américains et par l'envoi d'étudiants marocains, j'ai l'honneur de vous demander de bien vouloir oeuvrer pour la prolongation pour une phase de 5 années et le renforcement de ce projet qui revêt une grande importance pour le développement des capacités de l'Institut, pour la formation de ses enseignants programmée sur une période de 10 années et pour le développement des échanges scientifiques avec les universités américaines.

Assuré de votre appui et de votre collaboration, je vous prie d'agréer, Monsieur le Directeur, l'expression de mes meilleurs sentiments.

REQUEST FOR WAIVER FOR NEGOTIATION WITH A SINGLE SOURCE

Problem: A waiver is required from the Administrator to permit a sole-source negotiation for a host country contract in excess of $9 million between the Kingdom of Morocco and the University of Minnesota for the Project.

Discussion: The Project was designed in substantial part by the University of Minnesota pursuant to a "collaborative assistance" contract, consistent with the mandate of Title XII of the Foreign Assistance Act of 1961, as amended. That title includes a congressional declaration which provides, inter alia, that the United States "should strengthen the capacities of the United States land-grant and other eligible universities in program-related agricultural institutional development" and "improve their participation in the United States Government's international efforts" in agriculture (Section 296(a)).

The University of Minnesota was selected by USAID/Rabat, with the concurrence of the Near East Bureau and the BIFAD staff, as the collaborating university to undertake the design activity. The selection was made on a non-competitive basis, which procedure was approved unanimously by the A.I.D. Non-Competitive Review Board on May 22, 1979. The authority for that approval was Section 7-3.101-50(b)(3) of the A.I.D. Procurement Regulations (41 C.F.R. Part 7): "predominant capability by reason of experience, specialized facilities or technical competence to perform the work within the time

required and at reasonable prices." The facts the Board considered in making its "predominant capability" determination related in large part to the ten years of work of the University of Minnesota on A.I.D. Project 608-0134, Higher Agricultural Education, which is the predecessor to this project. That work consisted of providing technical assistance to the Hassan II Agronomy and Veterinary Institute (IAV). Specifically, the facts were:

"A. The University of Minnesota has established strong and effective institutional and personal linkages with IAV. Building this relationship has involved a heavy investment of time and effort on the part of both University of Minnesota and IAV. While the new project will have several innovative and first-time features, it is also a continuation of present institution building efforts. Were we to change contractors, the institution building effort would be seriously interrupted, with no certainty that another University, even with a substantial duplication of time and effort, could recreate the same relationship. In the interest of efficiency, economy and continuity, University of Minnesota therefore stands in a unique place.

"B. There is more knowledge about Morocco, Moroccan agriculture, and IAV at University of Minnesota than at any other University in the U.S. Through involvement with IAV, University of Minnesota has built up a formidable knowledge of Moroccan institutions and culture in general, and the agriculture sector in particular. In addition to its involvement with IAV, University of Minnesota has, under a separate contract with the Department of Political Science, also been responsible for a major evaluation of the socio-economic impacts of irrigation in Morocco. The evaluation team was jointly constituted with faculty from the College of Agriculture. This work has given UMINN an indepth and interdisciplinary knowledge of Moroccan agriculture policy, institutional motivations and practices, and the behavior and characteristics of small farmers and agricultural laborers.

"C. Retention of UMINN is a stated desire of the host government. The mission proposes to use Host Country contract for the implementation phase.

"D. UMINN is interested in continuing its efforts and is prepared to make special arrangements with its faculty for long-term involvement and tenure for team members.

"E. An outside evaluation of the project carried out in November 1978 strongly recommends a continuation of this project with UMINN as the lead university.

"F. UMINN is willing to establish partnership already referred to.

"G. UMINN has shown genuine and high level interest in the project and in Morocco. This interest has included personal involvement in the project of the university president and vice president both in the U.S. and in Morocco.

"H. The project has been well managed by UMINN and resonably well staffed. UMINN has few overseas agricultural activities other than this project and is therefore able to devote considerable thought and effort to this activity.

"I. Last, and not least, the effect of changing the contractor would be extremely disruptive in time and in substance of education for students and could not be easily explained on any substantive grounds." (Emphasis added; Memorandum, B.J. Jadwin and R. Olson, NE/TECH/AD, to F. Moulton, CM/ROD/NE (May 9, 1979).)

Upon reviewing these facts, the Board decided to approve non-competitive negotiation with the University of Minnesota not only for the design work, but also for implementation of the Project. However, since the Project is to be implemented pursuant to a host country contract (for the most part), the Board's decision with respect to implementation is not binding--although the reasoning is persuasive.

The applicable standard governing waivers of competition for sole-source negotiation of host country contracts for technical services such as those in the Project is Section

2.4.2.(e), Chapter 1 of Handbook 11. That section provides:

> "The Borrower/Grantee desires to utilize a contractor previously engaged in the project for follow-on work and the contractor clearly has special capability by virtue of previous experience in the work but the contractor was either not initially selected on a competitive basis or the Contracting Agency did not advise all competing firms that a follow-on contract might result. A waiver on these grounds should be granted only after careful review of all pertinent facts."

The facts described above provide a compelling argument that the University of Minnesota has "special capability by virtue of previous experience" to carry out the Project. It is the one university which is highly qualified to continue the development of IAV into a first-class teaching, research and service institute appropriate to the needs of Moroccan agriculture, which is the goal of the Project.

Two other items are also of note. First, Policy Determination No. 65 (Jan. 16, 1976 Handbook 1) indicates that once a collaborative assistance method is chosen it is generally anticipated that the contractor selected for design work will, provided its performance is adequate, participate in all subsequent phases of the project (p. 5). This policy is an important element of collaborative assistance, which attempts to create a continuous relationship between the contractor and the host country institution. Second, the University of Minnesota has also had extensive experience in Tunisia relevant to work it would conduct under the Project. That

experience consisted of work under A.I.D. Project 664-0237 during the late 1960's and early 1970's, assisting in the development of a central institutional capacity for applied agricultural economic research analysis and planning in the Tunisian Ministry of Agriculture.

A careful review of all the facts of this matter, in particular the extensive experience of the University of Minnesota in Morocco under A.I.D. Project 608-0134 and the prior determination of the Non-Competitive Review Board, justifies a waiver for single-source negotiation of a host country contract with the University of Minnesota for the Project.

The authority for granting the waiver (in excess of $500,000) rests with the Administrator (Handbook 11, Chapter 1, Section 2.4.2).

Determination to Waive Host Country Contract

USAID Director, Harold S. Fleming, signed following memorandum to NE/NENA, Mary Huntington, March 18, 1980: Quote: In order to provide continuity between this project and its predecessor and to provide funds for the project during the negotiations of a substantial host country contract, I have determined that the existing direct contract with the University of Minnesota (NE-C-1279) should be funded in an amount up to dols 335 thousand for the period April 1, 1980 to June 30, 1980 and that Policy Determination 68, the presumption in favor of host country contracting, should be waived to that extent. Unquote. Rabat 1926