

Country: MOROCCO

Project No. 608-11-110-018

Submission Date: July 28, 1969 Original X Revision _____

Project Title: Higher Agricultural Education

U.S. Obligation Span: FY 70 through FY 76

Implementation Span: FY 70 through FY 76 1/

Gross life-of-project financial requirements:

U.S. Dollars:

a. Development Grants	1,368,570
b. Agricultural Sector Loan	160,000

U.S.-owned local currency:

Cooperating country cash contribution:
(in \$ equivalent, current exch. rate)

a. Trust Fund	109,500
b. GOM Budget	493,600 <u>2/</u>

Other Donors:

Canada <u>6/</u>	
Belgium	300,000 <u>3/</u>
France	1,265,700 <u>4/</u>
Ford Foundation	18,000 <u>5/</u>

- 1/ Excludes preliminary survey by prospective university contractor in FY 69.
- 2/ FY 68 and 69 only.
- 3/ For three years only.
- 4/ Construction and equipment only.
- 5/ Not definite. Will be provided under Agricultural Sector Loan if Ford does not participate.
- 6/ Has expressed interest in assisting. No definite commitment yet.

NONCAPITAL PROJECT PAPER:
HIGHER AGRICULTURAL EDUCATION

I. SUMMARY DESCRIPTION

Good land, water, and climatic resources, nearness to European markets, and the size and needs of the population concerned make agriculture the critical sector in Moroccan development prospects. Despite this potential, the classic restraints of a largely traditional society have held agriculture to a growth rate prior to 1968 that was less than that of the population. In a major, comprehensive effort to transform this situation, Morocco has made agriculture its first priority in the new Five-Year Plan 1968-1972, and will devote 45% of its development budget to this sector.

Foremost among the problems that must be solved is that of professional manpower. The Five-Year Plan will require a total of about 600 positions in the Ministry of Agriculture requiring masters degree or higher training. There are only 117 Moroccans now with such training; a maximum of 150 more will return from foreign training at this level in the next four years. Faced with manpower shortages of this magnitude, and conscious of the limited effectiveness of foreign training in preparing students to meet Moroccan priorities, Morocco has determined to develop its own top-level professional agricultural school, the Hassan II Institute of Agronomy. This school opened in October 1968 and will provide training to the equivalent of the masters degree in a six-year program following the secondary baccalaureate. It has

facilities for a total student body of 400, and will graduate 60 to 65 students per year.

The project proposed in this paper would provide assistance by the University of Minnesota to the Institute in planning its overall program and in developing its teaching and research work in the two key fields of soils and plant sciences with particular reference to cereal crops. Activities in soils sciences would be carried out in coordination with the University of Louvain which already has an agreement financed by Belgian technical assistance with the Hassan II Institute in this field. The joint approach with Louvain offers an unparalleled opportunity to adapt the best American and European experience to Moroccan needs in a multilateral framework and to assure the fullest understanding by Minnesota of the cultural and academic setting in which most existing Moroccan educational programs have been developed.

Under the project, Minnesota would provide a four-man team consisting of two doctoral level professors in plant sciences and two in soil sciences. One of the four would also have competence as an advisor in higher agricultural education and would act as team leader. Supplemental assistance would be given in developing the English teaching capacity of the Institute and its English language library facilities in order to support the teaching and research program. Participant training would be provided in all areas.

Necessary laboratory equipment would be provided under the U.S. Agricultural Sector Loan, with small amounts of D.G. commodities for the English teaching program. Library materials would be provided by the Ford Foundation or the Sector Loan. The project would require seven years beginning July 1, 1969, in order to assure replacement of Minnesota teaching staff by Moroccan Ph.D.s. The detailed budget for the project is given below.

This project is considered of the first priority by the GOM and the USAID. The trained agricultural scientists and administrators that it will produce are essential to the effective Moroccanization and long-term functioning of such critical elements of the A.I.D. program as the Increase in Cereals Production project and the Lower Moulouya Irrigation project, as well as to the range of Ministry of Agriculture programs. The expansion of the modern, private agricultural sector likewise requires an expanded flow of highly skilled manpower.

At a later stage consideration will be given to expansion of the project to include assistance to the Agronomic Institute in developing a teaching and research program in agricultural economics.

Funding Components	1969	1970	1971	1972	1973	1974	1975	1976	TOTAL
<u>A.I.D. - G Funds</u>									
Contract Services									
Implementation schedule		146,630 ^{2/}	139,800	166,100	160,800	179,240	185,000	210,000	1,207,570
Obligation schedule		271,480	159,525	162,125	174,630	183,560	203,750	52,500	1,207,570
Participating Training									
Obligation schedule		30,000	24,000	30,000	48,000	24,000	-	-	156,000
English Language Equip.									
Obligation schedule		4,000	1,000	-	-	-	-	-	5,000
Total (Obligation schedule)		305,480	184,525	192,125	222,630	207,560	203,750	52,500	1,368,570
<u>Agriculture Sector Loan</u>									
Plant Science									
Laboratory Equipment		50,000	30,000	-	-	-	-	-	-
Soils Science									
Laboratory Equipment		50,000	30,000	-	-	-	-	-	-
Library Material (if not met by Ford)		3,000	15,000	-	-	-	-	-	-
Total ...		103,000	75,000	-	-	-	-	-	178,000
Trust Fund		1,500	18,000	18,000	18,000	18,000	18,000	18,000	109,500
Total ...		1,500	18,000	18,000	18,000	18,000	18,000	18,000	109,500
GRAND TOTAL		409,980	277,525	210,125	240,630	225,560	221,750	70,500	1,656,070

1/and : see following page.

- 1/ Excludes funds obligated for pre-contract surveys by University of Minnesota in FY 1969, and GOM operating and development budget support for the Agronomic Institute.
- 2/ Includes funds for financing costs of preliminary Minnesota-Moroccan consultations, technical research, curricula and course development, and other expenses related to advance preparation of the field staff, including language training, if required.

Setting

Well endowed by nature with good soil and climate, with adequate rainfall over an extensive area and substantial irrigation potential, Morocco's greatest development prospects lie in agriculture. Despite this potential, agricultural production has not in past years kept pace with population growth, and a successful agricultural development program is essential if major food shortages are to be avoided. The Five-Year Plan adopted for the 1968-1972 period has accordingly made agriculture its first priority, receiving, with irrigation, some 45% of the entire national investment planned for the period.

As stated in the Five-Year Plan, the failure of prior national plans to achieve a higher rate of agricultural growth reflected four major problems: management and organizational difficulties, lack of trained staff, too great a concern for social rather than economic factors in investment decisions, and the structure and values of the rural population, including the system of land tenure. The Five-Year Plan contains proposals for attacking all of these. The project proposed in this paper would provide assistance to Morocco in developing the Hassan II Institute for Agronomy, its top level professional agricultural school, an essential step in solving the manpower restraints on the transformation of Moroccan agriculture. The project directly supports other A.I.D. agricultural activities, including the

Increase in Cereals Production project which cannot succeed without a flow of highly trained Moroccan plant scientists, and the Lower Moulouya Irrigation project whose long-run success will require continued work by soil scientists. The gravity and magnitude of Morocco's high level agricultural manpower needs are indicated by Five-Year Plan statistics. In 1967 there were 317 ingenieurs d'etat (the level to be produced by the Institute) in the Ministry of Agriculture alone. Of these, about 117 were Moroccans and the remaining 200 foreigners. The fulfillment of Five-Year Plan objectives will require a further 300 positions by 1972. About 150 Moroccans will return from foreign training during that period, leaving some 350 positions, plus attrition from present Moroccan staff, to be filled by foreign recruitment. There are, in addition, extensive needs in other ministries and in the private sector, and all of these will continue to expand.

Within given areas of specialization, the importance of the Institute is even more striking. For example, the single most important USAID project in Morocco is cereals development whose objective is Moroccan wheat self-sufficiency by 1973. To achieve this objective, USAID has to date programmed more than \$19,000,000 in local currency for farm credit, has brought in 500 tons of improved Mexican wheat varieties for multiplication purposes, and is working with the GOM at all levels to develop the necessary extension, wheat and fertilizer research, and managerial expertise. All of these require highly trained Moroccan personnel to develop and carry on the long-range work needed. To meet the needs of the wheat

program alone, at least 11 top-level scientists will be required, in addition to existing staff, to direct a permanent national program to produce the continuing stream of new varieties of wheat needed to replace earlier ones as their disease resistance and other qualities are gradually eroded. There are only three Moroccans now with sufficient theoretical training to do this work independently.

The needs in soil science are equally dramatic. Thirteen professional soil scientists are now employed by the Agricultural Research Division, and there are some thirty vacancies in the Ministry for such personnel. Only two of the thirteen now employed are Moroccans. Against this situation, development requirements for increased use of fertilizer and major expansion of irrigated areas will present tremendous new needs for soils research if these policies are to succeed.

The Hassan II Institute for Agronomy will be the only Moroccan institution capable of training the specialized professional personnel required for the above purposes. It will thus complete the educational structure for the agricultural sector, which includes eight secondary level schools in various specialties and the National Agricultural School at Meknes which provides the equivalent of U.S. bachelors degree level training.

Strategy

For the short term, Morocco will have to rely on recruitment of foreign specialists, principally from France, to meet essential manpower needs. For the longer run, however, it has the chance of continuing to

rely substantially on foreign personnel, or of developing her own. The latter approach in turn requires the further decision of whether to train Moroccan specialists at home or abroad. The decision to develop the Hassan II Institute for Agronomy reflects the conclusion by the GOM that she must develop her own top level professionals and that, for the most part, they should be educated at home. A variety of considerations have led to this conclusion.

First, the heavy reliance on foreign technicians in the years since independence have clearly demonstrated the limitations of this approach. The top professional guidance and leadership for national programs simply cannot be effectively given by personnel trained in countries having soils, climate and crops different from those in Morocco, and radically different social and economic conditions. Not speaking Arabic, such personnel have been largely cut off from communication with the great majority of Moroccan farmers. Research programs have been technically competent, but limited and not selected on the basis of a rigorous review of priority practical problems. Secondly, dependence on foreign experts has also been costly relative to Moroccan salaries and in foreign exchange, and recruitment uncertainties have made organizational and program planning extremely difficult. Last, but not least, dependence on foreign personnel inevitably results in a degree of dependence on foreign decisions in planning, funding, recruitment, and use of personnel.

The decision to develop local training institutions similarly reflects both economic and substantive concerns. Foreign institutions have been developed to meet the needs of the countries concerned, not Morocco. While basic knowledge in a given field is the same, its practical application must reflect local needs and conditions. Extended foreign training has thus frequently produced students not equipped to face Moroccan priorities, or who have developed roots and aspirations elsewhere. Unless given on a grant basis by donors, it also requires foreign exchange and, when student numbers reach a given point, is more expensive than training by a Moroccan faculty. Weighing these factors, the Government concluded that its training requirements justified a major, high priority effort to develop a modern professional school of agriculture. Further, the Minister of Agriculture has made it a matter of policy that this institution not reflect any specific past educational patterns but that it be open to innovation and to practical, problem-solving approaches that could be adapted to the Moroccan situation. The product should be a flow of skilled scientists and engineers sufficient to staff agricultural research, teaching, planning and management positions.

USAID has shared the GOM's concern with agricultural development, concurring fully in the priority given this sector and in the need to expand trained manpower. Given these facts, and subject to a detailed study, A.I.D. experience and policy suggested technical assistance through a university contract as being the most effective instrument for developing the institutional

capacities required. Consideration of potential universities to take on this task focused on the University of Minnesota for several reasons. First, the University, through its experience in Tunisia, has a major interest in agricultural problems of the Maghreb region. Second, Minnesota has had a continuing exchange of faculty in soil science with the University of Louvain in Belgium for several years. The latter, in turn, already has an agreement with the Hassan II Institute. A coordinated approach by the two universities would provide a unique opportunity for the joint introduction of applicable U.S. and European experience to Moroccan needs.

At the invitation of USAID, the Director of International Agricultural Programs of the University of Minnesota visited Morocco twice in 1968 and again in January 1969 to explore possibilities of assistance in agricultural education and planning. Two of these visits were coordinated with visits by the director of the Louvain project. The January visit included five additional staff from the University of Minnesota to study specialized aspects of the problem. This project proposal is an outgrowth of those visits, and would be part of a joint effort with the University of Louvain which would make it possible to introduce a strong science-based, problem-oriented type of higher professional training within the framework of the language and educational traditions of Morocco.

Planned Targets, Results and Outputs

In accordance with its decision to move forward with higher agricultural education, the GOM, with French financial assistance, has established in Rabat a national institute of agronomy (Institute Agronomique Hassan II) under the Ministry of Agriculture. Building construction is now largely complete, with facilities for 400 students including classrooms, laboratory space, an experimental farm, a student center, and some dormitories. The French grants have consisted of the equivalent of \$932,100 for building construction, \$198,000 for general equipment, and \$135,000 for hydraulic equipment. Additional funds have been provided by the Moroccan Government from its own resources, with a total of \$540,000 earmarked for the Institute in the Five-Year Plan. No specific agreement was negotiated with the French for the development of the academic program of the Institute, but it was understood that the GOM could request assignment of teachers under one or more of the French technical assistance (OPEX) programs.

The immediate goal of the new Institute is to train a Moroccan faculty for itself, to provide a more highly professional faculty for the School of Agriculture in Meknes, the secondary agricultural schools and to provide a professional staff for the Agricultural Research Division (DRA), other divisions of the Ministry of Agriculture and other ministries. The private sector is also expected to take a number of the Institute's graduates, but for many years the first priority for graduates will be the government itself.

The full capacity of 400 students will permit a maximum annual output of approximately 60 students per year. Overall, therefore, and assuming

(1) a 5% a year attrition rate among Moroccan staff, (2) the reaching of full graduating classes by 1975, and (3) substantial elimination of foreign training after 1972, the Institute would graduate sufficient students to fully Moroccanize the 600 plus Government "Ingenieur d'etat" positions planned for 1972 by 1982. Private sector needs and the planned growth in the agricultural economy are such, however, that an expansion of the Institute plus some continued foreign training will be essential for substantial Moroccanization of all agricultural areas by 1982.

The program of study requires six years, divided into three two-year cycles and with the secondary baccalaureate in science and mathematics required for entrance. Students at the Institute receive very adequate scholarships, and in turn are obligated to serve the Government for eight years after graduation. The Institute will produce graduates with training roughly the equivalent of the U.S. Master of Science degree.

They will receive the degree of "Ingenieur Agronome", and the Institute plans that this degree will be professionally at the same level as that given in France. Standards will be determined independently by the Moroccan Government, however, and the academic requirements for the degree have not yet been established. The Minister of Agriculture has stated that Morocco must develop its own system of agricultural education, adapting applicable elements from others where it can and devising new ones where it cannot. He has insisted that Morocco not be a prisoner of prior patterns of education. As the first group of students will enter the third

cycle in October, 1970, the year preceding that date will be critical in planning courses and other requirements. USAID/Morocco considers it of the highest importance that an experienced American university assist in this process.

The first cycle of basic scientific and mathematical training is provided in the Faculty of Science of the Mohamed V University. The second cycle, offered in the Institute's own faculties, provides training at the introductory level in general agriculture disciplines. The third cycle will provide training at an advanced level, including specific research projects, with the object of creating specialists in soil and plant science, agricultural economics, and other priority fields. The director of the Institute has listed seven major fields and eighteen specializations to be eventually offered in the third cycle. Implementation of this plan will be geared to manpower requirements, costs and the possibilities of foreign training. The most urgent specialties will be initiated first, with those for which smaller numbers are now needed being delayed until needs have expanded.

This project proposes AID-supported assistance by the University of Minnesota in conjunction with the University of Louvain to advise on the overall planning of the third cycle to develop the program and curriculum, instructional and research programs required for the effective training of soil and plant scientists. This includes provision of interim teaching and research staff until Moroccans can be trained, advice to the GOM on the equipment of the necessary laboratories, and assistance in developing the English language instruction and library facilities needed to support the other

teaching and research activities. Each of the above tasks constitutes sub-targets of the project; the basic overall objective being the graduation of well-trained students in these two disciplines beginning in 1972, the reaching of full-sized graduating classes by 1975, and complete Moroccanization of the Institute in the areas concerned by 1976.

In addition to assistance from Louvain and Minnesota, the Institute plans to fill other faculty requirements by recruitment under French OPEX programs or by direct contract with qualified foreigners. As suggested in the University of Minnesota report, the Agricultural Research Division should be able to provide specialized instruction in certain areas. Faculty requirements will obviously be a reflection of third cycle course requirements. With a maximum of fourteen students in the 1970-71 academic year, initial staffing should not be too difficult. It is essential, however, that Minnesota be in a position as soon as possible to advise the institute in faculty planning, and begin participant training for this purpose.

The Canadian External Assistance Program has also expressed an interest in the development of the Institute. The director for North Africa of Canadian external assistance will visit Rabat in September 1969 to discuss Canada's possible role with the Director of the Agronomic Institute and the USAID. Meanwhile, AID plans to take up discussions with Ottawa.

Course of Action

Present enrollment at the Institute is approximately 119 which includes: 14 in the third year; 25 in the second year; and 80 in the beginning year. With normal attrition, the first full graduating class should complete the six-year curriculum in 1975. The critical need in the development of the Institute's instruction program is

for third-cycle specialized instruction programs. First-cycle needs are now well met by the Faculty of Science of the Mohamed V University. Second-cycle needs are being met on a satisfactory interim basis by the employment of European instructors, many of whom come for four to six weeks per year from their home universities. The third-cycle training will require resident instructors qualified to provide advanced-level specialized training, including the direction of student research.

The plan proposed by this project to reach those objectives contains the following major elements:

1. The work to be carried out by the University of Minnesota will be closely coordinated with that by the University of Louvain, and will be implemented under an AID contract. The GOM will provide support under the existing Trust Fund arrangement, plus necessary secretarial and clerical assistance. The governments of Belgium and Morocco have already approved a plan under which the University of Louvain is cooperating with the new Institute in developing a program of research relating to soil salinity problems and a part of the third-cycle instruction program in soil science. A budget equal to U.S. \$300,000 has been made available by the Government of Belgium for an initial three-year period. A professor of soils at Louvain will provide leadership for the research and teaching of advanced soil science courses.

2. In addition to advice on the overall planning of the Institute's program, University of Minnesota assistance will be directed to research

and teaching in the third cycle of the Institute's program, as follows:

a. Soil Sciences. An instruction and research program will be developed in cooperation with Louvain. Minnesota will cover soil chemistry and soil microbiology, while Louvain will be concerned with soil physics. Minnesota will develop a research program in soil fertility, concentrating initially on soil nitrogen problems, to complement the Louvain work. The research program, as in the other fields below, is to be developed in close coordination with the work of the Agricultural Research Division of the Ministry of Agriculture and will be directed to practical problems of strategic importance in Moroccan agricultural development. It will be designed to provide a framework for research experience for third-cycle students. Minnesota will make detailed recommendations to the GOM on equipment needs for laboratories, with the equipment to be financed under the Agricultural Sector Loan. The overall program will be under the supervision of a Project Leader resident in Minnesota. He will be a senior professor, and will visit Morocco at least once annually for a sufficient period to direct and evaluate the teaching and research work and possibly to conduct special seminars. The day-to-day teaching and research program will be carried out by two doctoral level professors from Minnesota who will be resident in Rabat. They will be specialized in chemistry and microbiology, respectively, and must have adequate French for lecturing. Specialist consultants will be provided on a short-term basis as required in coordination with Louvain to cover particular problems or other areas such as soil morphology and classification.

b. Plant Sciences. Minnesota will have responsibility for developing the entire instruction and research program at the third cycle in this field. Again under a senior professor as project director resident in Minnestoa, two French-speaking doctoral level professors will be assigned in Rabat. They will be specialized in plant breeding and plant pathology, and will be supplemented as necessary by short-term consultants for the sixth year program in such areas as grain crop and forage crop production. The research program will be developed with the same considerations in mind as in soil sciences. Cereals breeding and cereals pathology and later forage production are expected areas of research. Equipment requirements will likewise be identified for the GOM.

c. English Teaching. English is now a regular part of the curriculum for students at the Institute. Assistance will be given to the Institute to develop this English teaching program to the point of providing students with a reading capability by the end of the fourth year and a listening capability by the end of the fifth year. To achieve this, (1) a Peace Corps Volunteer will continue, as at present, to be assigned to the Institute until a Moroccan English teacher can be trained; (2) Minnesota will provide advanced training to a candidate for this position who has demonstrated interest and ability. It is planned that one of the Moroccans graduating in 1969 from the American University of Beirut in English teaching will be assigned to the Institute for this purpose; (3) tapes, tape recorders and reading texts will be provided under the project to develop the teaching program. Ability levels have been set as indicated above to permit all third-cycle students to use English reference and

research materials from the beginning of the cycle in view of the importance of English language contributions in these fields. Sixth year students should be able to comprehend lectures in English so that English speaking TDY personnel can be utilized by Minnesota in specialized areas. Intensive six to eight week summer programs will be developed to give speaking competence to those students selected for advanced training at Minnesota.

d. Library Development. Minnesota will provide training at its Library School and work experience in its agricultural library for a candidate tentatively selected by the Institute to become its librarian. In addition, the project leader in each of the two subject matter fields will develop lists of books and research materials required to support the third-cycle teaching and research program. The Ford Foundation has agreed to consider financing these. Otherwise, procurement will be by the GOM using Agricultural Sector Loan funds.

e. U.S. Training. Capable Moroccan students will be jointly selected by the Director of the Institute and Minnesota for doctoral training in the U.S. to become permanent faculty of the Institute. Training will begin as soon as possible. It is expected that most of these participants will come from the student body of the Institute itself. The first of these would thus be ready to begin doctoral level training in September 1972, with greater numbers becoming available in the following years. It is planned that the Institute will also be able to select some potential faculty from students returning to Morocco from European or such universities as A.U.B. These will begin advanced training at Minnesota by September 1969.

Educational Planning and Other Activities

The field activities of the Minnesota team will be coordinated by a chief of party. He will be an experienced agricultural educator scientist who can provide effective leadership for the Minnesota program, act as an overall advisor in agricultural education planning to the Institute for Agronomy, and also carry out the duties of one of the four teaching/research positions described above. Given the critical importance of the Institute, the formative stage it is now in with regard to the development of its program, the identification of priorities and the establishment of plans and schedules for teaching in areas other than those met directly by Minnesota and Louvain, it is essential that this position be filled as soon as possible. Further, the nature of the assignment is such that it can only be filled by someone who has fluent French as well as the necessary professional qualifications.

Training at Minnesota will be given for some future Moroccan staff in areas other than Minnesota's main concentration, as well as for faculty of the National Agricultural School at Meknes. Minnesota staff and visiting consultants will also organize seminars for and consult on research work with DRA staff, and provide training at Minnesota for Moroccan staff of the DRA.

Potential Expansion of Project

It is clear that the Agronomic Institute will have to move shortly to the training of highly qualified personnel in areas beyond the two to be covered by Minnesota under this project as described above.

Among these expected fields are agricultural economics, probably including production, marketing and planning specializations, agricultural engineering, animal sciences, and further specializations within the soil and plant sciences. Once these priorities have become clear, and the success of the University of Minnesota in implementing the soils and plant science and advisory program has been demonstrated, AID should be prepared to consider, with the GOM and Minnesota, the expansion of this project to include the development of teaching and research programs in other agricultural disciplines. Because of its contingency nature, plans and costs of such an expansion are not included in the present paper.

Implementation Schedule

- September 1, 1969. Minnesota contract signed.
- September, 1969. Minnesota prepares language tapes; USAID procures six tape recorders; soils and plant science project leaders visit Rabat to develop detailed equipment list for laboratories and submit laboratory lay-out and construction plans to GOM; and prepare library requirements.
- October, 1969. Minnesota begins orientation, and intensive language training program, if required, for professors proposed as Rabat staff in soils and plant science. Future Institute librarian and one other participant begin training at Minnesota.
- February, 1970. Chief of Party arrives in Rabat.
- March, 1970. Site visit by soils and plant science project leaders to review status laboratory construction and equipment and library procurement and plan instruction and research programs.
- July 1, 1970. Three professors arrive Rabat to prepare research program, develop course material and curriculum within the context of the overall school program. Library requirements in place. Moroccan librarian returns from Minnesota.
- September, 1970. Two Moroccans begin training at Minnesota (English teaching, soil or plant sciences).

- October, 1970. First students enter first year of third-cycle program at Institute. Minnesota staff begin teaching.
- July 1, 1971. Moroccan English teacher returns from Minnesota.
- September, 1971. Two additional Moroccans begin training at Minnesota.
- October, 1971. Last year of third cycle training begins in soils and plant science for first graduating class.
- June, 1972. First class graduates (approximately 10).
- September, 1972. Two Moroccans from first graduating class begin Ph.D. training at Minnesota in soils and plant science
- July 1973. Second graduating class (approximately 20).
- September, 1973. Four Moroccans from second graduating class begin Ph.D. training at Minnesota.
- June, 1974. Third graduating class (approximately 40). Four Moroccans receive Ph.D.s from Minnesota and return to Rabat.
- June, 1975. First full graduating class (approximately 60). Final four Moroccans receive Ph.D.s from Minnesota and return.
- September, 1975. Last year of project begins with at least two Moroccan Ph.D.s assigned as faculty in each of two fields and working with support and guidance of the professors from Minnesota whom they will

replace at the end of the school year.

June, 1976.

Project completed.

Program Office
John Wayles Kennedy
March 28, 1969

Clearances:
PROG:AMoore AM
F&A:GWalker GW
D/DIR:UJames UJ

MA
Revised: AFR/NA:AGMacArthur:AFR/ID/AG:LSPeek:rm:7/30/69