DEPARTMENT OF STATE

UNCLASSIFIED

For each address check one ACTION | INFO

B/W TOAID A-134

Agency for International Development
Washington, D.C. 20523

DATE SENT: June 20, 1972

FROM: USAID/Rabat

SUBJECT: End-of-Tour Report - Ralph J. Edwards

REFERENCE: M.O. 326.3

Name: RALPH J. EDWARDS Job Title: Agronomy Advisor

Country of Assignment: Morocco Contract Employer (if applicable): NA

Tour of duty began: 3 October 1966 Prior Country Assignment & Years: None

Tour of duty ended: 28 June 1972

Project Activity on which engaged: Improvement in Cereals Project (60R-11-130-038)

Wheat Improvement in North Africa (60R-11-130-123 - Regional Project)

Since my assignment in Morocco has coincided with and been so closely allied to the Improvement in Cereals Project and the associated Wheat Improvement in North Africa regional project, my activities during that period are largely contained in numerous documents in the official files concerning these projects. Among the many project documents, reports, memoranda and letters which I have helped to prepare the following seem to be the most significant:

1. Project Paper (PROP) Improvement in Cereals - March 20, 1967

2. Project Paper (PROP) Wheat Improvement in North Africa - March 20, 1968

PAGE 1 OF 12

DRAFTED BY	OFFICE	PHONE NO.	DATE	APPROVED BY
RJEdwards:my	Food & Agric	OA	6/22/72	Donald R. Brown, Director

AID AND OTHER CLEARANCES

FSA:CSFergusson FSSE:ACMacArthur A/DIR:HSCutson

UNCLASSIFIED

(Do not type below this line)

7/17 NAN

3. Project Agreement FY 1968 - May 10, 1968

4. High-Yielding Varieties in Morocco - AID Spring Review - March 1969

5. Project Agreement FY 1969 - May 14, 1969

6. Project Appraisal Report - March 24, 1969

7. 1968-69 Annual Report of Project Activities

8. Revised PROP - Wheat Improvement in North Africa - October 17, 1969

9. Project Agreement FY 1970 - June 29, 1970

10. 1969-70 Annual Report of Project Activities - October 1970

11. Project Appraisal Report - November 3, 1970

12. Revised PROP - Improvement in Cereals - December 4, 1970

13. Report of Contractor Performance - Near East Foundation - January 15, 1971

14. Attachments to Letter 144 to Minister of Agriculture containing recommendations for improvements in coordination, training and seed production - March 2, 1971

15. Project Agreement FY 1971 - June 1971

16. 1970-71 Annual Report of Project Activities

17. Logical Framework and Improvement in Cereals - November 1971

18. Project Appraisal Report - December 8, 1971

19. Report of Contractor Performance, NEF - February 23, 1972

20. Report of Contractor Performance, NEF - June 28, 1972

21. Report of Contractor Performance, DIRECTT - June 28, 1972

In view of this large amount of written material on the Cereals project as well as the many other papers not included in the list which are already on record, it would perhaps be superfluous for me to add another report. However, a chronological listing of highlights in the development and progress, a discussion of remaining problems and conclusions and recommendations might be useful.

CHRONOLOGY OF EVENTS

The activities which led to the development of the Cereals Project started early in 1966 when the Mission requested the Tennessee Valley Authority (TVA) to send a two-man team to Morocco to make recommendations for a pilot project to demonstrate improved fertilizer practices on wheat on an initial area of approximately 20,000 hectares. However, when the team of Drs. McCune and McKnight arrived in June of 1966, Morocco was just experiencing the effects of a drought year which plummeted wheat production to low levels. Following discussions with GOM officials, Ambassador Henry Tasca requested the TVA team to change their terms of reference and prepare recommendations for a "crash" program of fertilizer use to increase production by 200,000 MT in 1966-67. Their short report indicated that a program might be feasible and recommended a more complete team study later in the year to prepare recommendations for "Operation Engrais" (Operation Fertilizer) and for a longer-term wheat improvement program.

October 1966. Four-man TVA team arrived in Morocco one week after my arrival at post on October 3.

November 1966. "Operation Engrais" started. Goal of 200,000 hectares with 180,000 hectares eventually realized.

December 1966. Planted some 600 experimental lines from CIMMYT.

February 1967. Initial submission of project proposal.

June 1967. Assumed responsibility as Project Manager.

July 1967. Survey of the 1966-67 crop showed 3.7 quintal per hectare increase in "Operation Engrais" fields.

November 1967. Second year - "Operation Engrais" was extended to 343,000 ha. Despite the recommendation of the TVA team that the production program be oriented toward modern farmers and traditional farmers with over 10 hectares in order to make the most rapid gains in production, the GOM directed "Operation Engrais" toward the small farmer. As a result the average size of holding in the program was about 3 hectares.

December 1967. Conference in New York to finalize CIMMYT participation in North Africa regional wheat project.

January-February 1968. Mr. Willard Meinecke and Dr. Francis LeBeau of AID/W and Dr. John Gibler of CIMMYT visited Morocco. Discussions with Prime Minister and Minister of Agriculture led to a verbal agreement for creation of a

semi-autonomous American Wheat Institute to supervise wheat program. Discussions with USAID project personnel led to compromise on 5,000 hectares of improved Mexican varieties for 1968-69 season instead of 10,000 hectares proposed by AID/W and 1,000 hectares suggested by project staff.

March 21, 1968. Official approval of both the bilateral project, Improvement in Cereals, and the Regional Project, Wheat Improvement in North Africa projects.

April 1968. Seventeen GOT technicians and Moroccan farmers taken to Tunisia to see results of large-scale demonstration of Mexican wheat varieties.

May 10, 1968. First Cereals project agreement negotiated with GOT Ministry of Agriculture by Director Samuel C. Adams, Jr. and Ass't Director Philip Abraham. Wheat Institute concept dropped and a Wheat Committee within the Ministry of Agriculture was substituted at the suggestion of the GOT.

May 1968. Seed of five varieties: Nista Correa, Inia, Tobari, Penjamo and Moroceno, ordered to plant 5,000 hectares in 1968-69 season.

Summer 1968. Coordinating Wheat Committee composed of representatives of Ministry of Agriculture Divisions of Planning, Research and Extension and a representative from USAID met weekly to prepare plans for fall program.

Fall 1968. Successfully planted 4,000 hectares to the high-yielding varieties. In addition to myself, project personnel consisted of Frederick-Extension Agronomists Bill Davis (direct-hire AID transfer from Tunisia) and Arlan Rehwinkle of the NRP contract and Francis Ridginger, USDOT Fertilizer Research Agronomist. Herbert Floyd, NRP, was available temporarily during November and December and returned permanently in April. "Operation Engrais" reached a level of 330,000 ha.

April 1969. Group of Tunisian technicians and farmers spent 4 days touring project activities in Morocco.

Spring-Summer 1969. A cold wet spring brought on unexpected problems with Septoria leaf blight in northern part of country. High-yielding varieties, particularly Nista Correa, proved highly susceptible. Yields on some fields plummeted from expected levels of 30-40 qx to 0-4 qx. However, good yields from other varieties, particularly Tobari, and Nista Correa in drier areas demonstrated the value of Mexican varieties under favorable conditions.

Fall 1969. Despite problems with Septoria and lack of official government program encouraging their use, farmers still retained enough confidence in high-yielding Mexican varieties to plant 10,000 hectares. "Operation Engrais"

dropped back to 220,000 hectares. New program called "Operation Assolement" (Operation Crop Rotation) was started on a pilot basis directed at larger farms as originally recommended. Research and extension programs were continued and expanded. Programs were strengthened with arrival of Bill Hall, CIMMYT Production Management Agronomist, and Ariston Acosta, CIMMYT Wheat Breeder in September and November, respectively, and Clyde Searl, NSF Production Agronomist in January 1970.

Spring 1970. Wheat Committee had not been officially established in Ministry of Agriculture but continued to operate successfully on ad hoc basis due to hard work and goodwill of members. However, by late Spring 1970 internal relations in the Ministry of Agriculture and lack of defined authority were preventing effective inter-Divisional planning and coordination of project activities in the Ministry. A series of memoranda to Director Donald Brown outlined the problems. Discussions with GOM officials eventually led to several suggested improvements which were incorporated in the FY 1970 Project Agreement.

Summer 1970. Good harvest results from research plots, demonstrations and farmers fields continued to show increasing yields from fertilizer and from high-yielding varieties. Results from research trials began to affect recommendations from Research Division to Extension Service.

September 1970. A Maghreb Cereals Conference was organized in Algeria by Algeria, Morocco, Tunisia and Ford Foundation with participation of national and U.S. project personnel from all three countries plus CIMMYT and FAO staff from various other programs.

Fall 1970. Greatly increased use of fertilizers seen on wheat as well as improvements in production practices. An estimated 60,000 hectares planted to high-yielding varieties of Italian (40,000) and Mexican (20,000) origin. "Operation Engrais" area further reduced to 210,000 hectares and "Operation Assolement" increased to 34,000 hectares. Still lack effective means of coordination in the Ministry. GOM had not yet arranged for technicians for on-the-job training by U.S. project technicians.

December 30, 1970. Letter from Director Brown sent to Ministry of Agriculture concerning coordination and training difficulties.

January 12-13, 1971. Meeting of project personnel to discuss project and develop suggestions for improvements. Recommendations presented to Director Brown and other USAID staff concerning official recognition of Wheat Committee, naming of a Moroccan Project Coordinator and organization of in-country training program patterned after CIMMYT approach centered around one or more existing research stations plus suggestions for improvement in seed multiplication program.

February 12, 1971. Director Brown discussed recommendations and suggestions with Minister of Agriculture Ahmed Lasky.

March 2, 1971. Letter was sent to Minister Lasky summarizing discussions and including short position papers with suggestions for project organization, training and seed multiplication.

May 1971. Louis Harper, NEF Seed Advisor, arrived for one-month TDY during harvest season followed by French training in U.S. and arrival on permanent assignment in fall.

June 1971. Mission agreed to follow lead of Dr. Borlaug, CIMMYT Wheat Director, in a frank straightforward approach to Minister of Agriculture Shihi about concerns for better coordination at top level and for training of Moroccan technicians by project staff. Minister seemed in general agreement and promised to followup on suggestions.

July 3, 1971. Letter from Dr. Borlaug to Minister Shihi summarized discussions and requested indication of GOM intentions before August 13.

July 10, 1971. Attempted coup d'etat at Skirat.

August 1971. CIMMYT agreed to delay action requested by Borlaug until end of next crop season.

September 1971. Project staff attended International Wheat Seminar in Mexico sponsored by CIMMYT. Herb Floyd submitted resignation from position as NEF agronomist at end of tour to accept position under CIMMYT in Algeria.

September 1971. Ministerial action giving official status to a Cereals Committee in the Ministry of Agriculture.

November 1971. Development of logical framework for Cereals Project through a project review which brought out that major purpose of project, although not actually so stated in PRDP, was "to improve Moroccan capability to achieve and sustain higher levels of wheat production" through development of staff and program in research, extension and planning in the Ministry of Agriculture. PAR developed from this review indicated need for considerable improvement in project coordination and training if purpose to be achieved in planned timeframe.

December 1971. Discussions with Ministry of Agriculture officials led to a redefinition of USAID role in Cereals improvement activities in Morocco. Project technicians expected to fill positions as essentially operating technicians within the Ministry programs.

January 1972. Project Manager met once with sub-committee of official Cereals Committee. Committee has not assumed any sort of role in coordination and apparently met only once or twice to discuss cereals aspects of new Five-Year Plan (1973-78) now under preparation.

April 1972. Ministry of Agriculture requested that scheduled AID evaluation team not come to Morocco because Five-Year Plan not yet finalized.

May 28-31, 1972. Dr. Keith Finlay, CIMMYT Deputy Director General, and Dr. Glenn Anderson, Deputy Director of Wheat Program, held discussions with USAID and project staff and GOM Research Director Hocein Faraj concerning CIMMYT's present and future roles in Moroccan Cereals improvement activities. Mr. Faraj stated that his present needs were for technicians to staff his program and that he would not consider assigning "ingenieur" level Moroccan technicians to positions where they would be trained by project staff. As soon as a Moroccan had theoretical and perhaps a little practical training he preferred that the foreign technician leave and the Moroccan technician "sink or swim" on his own. Dr. Finlay stated that this was counter to CIMMYT's policy for placing technicians into a country program which [illegible] job training of replacements as an essential element. Since the CIMMYT contract is due to expire June 30, 1973 agreement was reached that Mr. Bidinger would not be replaced after his departure in August 1972, while Drs. Acosta and Hall would remain through the 1972-73 crop season. Mr. Faraj agreed to compromise on his position regarding training and assign at least one qualified Moroccan technician to be trained by Dr. Acosta during his last year. CIMMYT indicated their willingness to supply consultants, improved genetic materials and training to the Moroccan program in the future which Mr. Faraj indicated he would like to have continue.

PROGRESS INDICATORS

As already discussed in various reports and evaluations, there are many indications of progress that have been made under the project. Probably the most apparent and easily measured is that of total wheat production which climbed from a pre-project average of 1.23 million metric tons to an average of 1.74 million for the period 1969-71. The average for 1970-72 is expected to climb to 2.01 million metric tons with the record-breaking wheat crop currently being harvested (estimated at 2.33 million MT).

To be sure, much of this increase has been due to favorable weather conditions, but production has also been influenced by the increased use of fertiliser, use of higher-yielding varieties and the generally wider use of improved production practices, including chemical herbicides. The so-called high-yielding varieties, more properly short-strawed fertiliser-responsive varieties, were grown on some 85-95,000 hectares during the 1971-72 crop season. Although difficult to estimate accurately, since much of

the seed used moves from farmer to farmer and not through certified channels, areas of 30-35,000 hectares planted to the high-yielding varieties of Mexican origin and 30-60,000 hectares for the varieties of Italian origin are probably about right. None of these varieties were grown commercially before the project started although the Italian-origin varieties were in the testing program. The Mexican-origin varieties were first tested in 1966-67 and were imported in quantity under the project in 1968.

The two types of varieties have made their major impacts in different areas. For example, in the Souss Valley above Agadir where virtually no wheat was grown four years ago, there were some 12,000 hectares in 1971-72, virtually all the Mexican variety, Siete Cerros. There has also been a considerable upturn in wheat production in the Marrakech area where the Mexican varieties perform well, particularly under irrigation. The Italian varieties are widely grown in the northern part of the country from Kenitra to Meknes and Fes where their Septoria resistance has proven of value.

The greatest single factor which has held back and will continue to slow wide acceptance of short-strawed fertiliser-responsive varieties has been the lack of a good durum variety. Since over two-thirds of the area seeded to wheat is in durum, it is obvious that there is great need for varieties of this type.

There have also been considerable improvements in the Moroccan research program, particularly in cultural practices research. There is now an extensive program of off-station fertiliser trials, in the major cereals growing areas, which is developing fertiliser recommendations for actual farm conditions.

There are also greatly improved research programs in most other aspects of wheat production practices although relatively little progress has been made in weed control research programs.

In varietal development and plant breeding, the project can point to a greatly expanded genetic base which is now available in the Moroccan program. There is also much wider testing of genetic materials in early generations under varying agro-climatolgoical conditions. This allows for early concentration on the best potential varieties and increases the probability of locating the best adapted material more quickly. The use of summer nurseries at high altitudes to speed progress by allowing two generations per year was introduced through the project. At the present time several promising varieties, specifically adapted to local conditions are nearing release as Moroccan or North African varieties.

In the extension program the greatest gain has probably been made in bringing about a greater awareness of what needs to be done but not as much improvement has been made in programs as in research. The demonstration program has been considerably improved since the start of the project, but it is still too large and (in far too many cases) does not demonstrate what is desired. The extension-information program for providing information to farmers through printed material, radio and audio-visual has hardly been touched. There is greatly increased use of farmer tours, particularly to research stations where farmers can see some of the newer techniques which are being developed. The project can also point to greatly increased visits of extension agents to research stations which was seldom done only 3 or 4 years ago.

In terms of numbers, there has also been considerable training of extension technicians. A total of twenty-seven extension and research (mainly extension) technicians have attended the four-month fertilizer course in the U.S. conducted by IVA. Although the program was not entirely adapted to their needs in Morocco, it served to greatly increase the technician's awareness of the problems to be faced in increasing wheat production and their possible solutions and to introduce them to new methods and approaches.

Fourteen Moroccans have completed the nine-month training course at CIMMYT, nine in breeding and five in production. However, only two of these trainees were of the "ingenieur" level and thus able to qualify for positions at a high enough level to influence programs. One of these "ingenieurs" is chief of a principal research station as is one other returned "non-ingenieur" trainee and both consequently have been of great assistance to the program. The second CIMMYT "ingenieur" trainee will soon be leaving Morocco again for advanced training in the U.S. in plant breeding. Six other trainees, all "Adjoints Techniques", are working in cereal research programs (five in plant breeding and the other in the fertilizer research program). Four of the remaining five CIMMYT trainees are assigned to the economic affairs divisions of the Ministry of Agriculture where they have only a minimal input into the project while the fifth left government service for personal reasons.

In terms of higher-level training, there are to date, three candidates for advanced degrees. One, referred to above, will soon enroll at the University of Minnesota to work toward the Ph.D. degree in Plant Breeding. The other two are already enrolled at Kansas State University and the University of Arizona, both studying for the M.S. degree in cereal production.

In less formal training courses, over 200 extension agents have received varying amounts of in-service training in short (1-3 day) courses covering all aspects of wheat production and extension. Another 30 Moroccan trainees have been sent for training visits and/or participation in conferences in Turkey, Lebanon, Tunisia, Algeria and Mexico.

[illegible]

Despite these major accomplishments it is obvious that the project has not been able to generate an adequate awareness at the higher levels in the [illegible] of the need for greater efforts in their program for cereals improvement. Admittedly, the relatively good harvests during the last five years have lessened some of the urgency, particularly when wheat is readily available from the U.S. under P.L. 480 or other easy terms to meet any shortages. Although improved cereal production is given top priority in all GOM plans this priority has not actually been demonstrated in terms of assignments of adequate technical personnel, funds, equipment and attention of the top levels of the Ministry.

As a consequence there is little of the high-level coordination which has been a hallmark of the successful programs which have been put into effect in other countries. A start was made in this direction earlier in the project with coordination through the Wheat Committee. However, its power was gradually worked away until it became non-functional during the last year despite finally receiving official status in September 1971.

It can be argued that there are many ways to organize and implement programs of this type and that the Moroccans should be able to organize and conduct their programs as best fits their needs. This is certainly true and all efforts have been and should be pointed toward developing a truly Moroccan program. What should not be forgotten, however, is that while there are many approaches toward solving a problem some ways are efficient and effective and others are not. And as long as Morocco does not truly give top priority to assigning their best technicians to cereals improvement, and ensuring that they have the means available to get the job accomplished, it is doubtful that they will be able to make the progress which is needed.

This is most apparent in the development of Moroccan staff in cereals improvement programs. There is little long-term planning for the development of specific staff requirements - instead their planning seems to be largely in terms of total numbers of technicians needed without any particular regard to the specialities and quantities of each which might be required. To be sure, there is a definite shortage of trained Moroccan technicians but very

[illegible] have been assigned to work with the various aspects of cereals improvement. Further, there has been a distinct tendency on the part of the GOM to consider that as long as they had competent foreign technicians doing the necessary work they could assign their own technicians to other positions. While this may work well in the short term it does nothing toward the long-term objective of developing a Moroccan staff capable of continuing and expanding the program.

Nor has the GOM been willing to put their "Ingenieur" level technicians into a situation where they could be trained by the U.S. technician for eventual assumption of the responsibility. Rather the GOM has always seemed to consider that the new Moroccan "Ingenieurs" are fully capable of handling their own program without any further training, experience or even guidance by more experienced technicians. This rejection of the so-called "counterpart" approach and the on-the-job training method was never really openly expressed by a GOM administrator until it was done so in very clear terms by Research Director Faraj in his meeting with Mr. Finlay as previously reported. Moreover, it is a virtual certainty that most other Directors, at least in the Ministry of Agriculture, share this viewpoint. This point of view must be an important point of consideration in future project plans.

CONCLUSIONS AND RECOMMENDATIONS

It would seem that the future direction for the research portion has already been largely determined. As presently agreed, pending approval by CIMMYT's Board of Directors and AID/W, the presence of full-time CIMMYT technicians will terminate at the end of the 1972-73 crop season. However, CIMMYT has offered to continue to supply consultants, training and genetic materials to Morocco and this was accepted by Mr. Faraj. While no one concerned with the project, least of all myself, believe that the GOM will be able to carry on the research work as it should be done, I fully support the decision to withdraw the CIMMYT technicians at the end of the 1972-73 crop season and not to replace them from some other source. Otherwise, I am convinced that the GOM will never take the difficult step of attempting to do the work with their own technical resources. I also strongly endorse the direct contractual relationship between the GOM and CIMMYT with financial support from AID in an indirect manner to CIMMYT which is proposed to replace the present contract arrangement. In this way I think there is a far better chance of developing the long-range working relationships required for Morocco to develop its own research program. I am also persuaded that once Morocco has gone on its own for a while, the GOM will become willing to use foreign assistance more realistically and may request additional technical assistance on CIMMYT's terms. After all, in both

Tunisia and Algeria have been able to profit from this approach, Morocco should also eventually be persuaded as well.

As regards to the NEF input into the extension and seed improvement aspects of the project, I believe that it must be accepted that there is little chance of these technicians assuming a much greater role than their present role of essentially operating technicians. It appears from the progress that has been made since the change of their relationship within the DCN last December that they have a viable role and are influencing the direction of the extension program. What must be kept in mind is that this type of indirect role is necessarily slower and takes longer to make an effect.

This being the case, and on the assumption that AID will wish to continue its involvement in helping Morocco move away from dependency on wheat imports, a decision must be reached as to the form this assistance should take beyond the presently scheduled project termination of June 30, 1974. I would recommend that an attempt be made to develop a direct contractual relationship between the GOM and the Near East Foundation similar to what has been proposed for CIMMYT with AID financing through NEF. Provision should be made in this contract to allow NEF to insure logistical support of their technicians, including hiring of a local administrative assistant and should also provide for any necessary commodities and for training of Moroccan technicians.

However, as long as the improvements in the GOM Cereals program are to be made indirectly through the influence made on those GOM technicians who are working in varying degrees with the U.S. specialists it must be remembered that progress will be slower and the time required to attain the objectives necessarily longer (but perhaps in the long run more useful and effective). I am still optimistic about the eventual attainment of the objectives of the Improvement in Cereals Project but it is clear that the time table must be revised. These objectives can still be reached but the method of attaining them is somewhat different than we originally planned and the date for completing them will be later. Otherwise, it seems to me that what we started out to do is still realistic and the basic procedure is still sound, only the approach and time table require revision.

PARKER

Director's Comments:

Dr. Schurle's End of Tour Report is an excellent and perceptively written history of the "Improvement in Cereals" project with which he was identified as Project Manager throughout his 5 year tour in Morocco. In the "Remaining Problems" and "Evaluation and Recommendation" sections, Dr. Schurle points out correctly, I believe, that notwithstanding the very real accomplishments of the project - two factors have to date slowed down the realization of the full potential of our assistance to this project: 1) a certain lack by the GOM in according the project, in practice, the same top priority that it has stated and restated in public pronouncements and 2) a definite difference between the GOM's OPEX-oriented concept of foreign assistance and AID's classical definition of "upgrading and transference of technical knowledge through demonstration and training with emphasis on the multiplier effect. Dr. Schurle's recommendations for specific future types of relationships between US contractors and the GOM are probably well taken but will have to be considered in the perspective of the over-all AID program and relationships when the present contracts expire.