

PD-AAP-624
35727

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE Range Management Improvement	2. PROJECT NUMBER 608-0145	3. MISSION/AID/W OFFICE USAID/RABAT
	4. EVALUATION NUMBER (If other than the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 608-84-05	
<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION		

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING \$000	7. PERIOD COVERED BY EVALUATION	
A. First PNO-AG or Equivalent FY <u>81</u>	B. Final Obligation Expected FY <u>85</u>	C. Final Input Delivery FY <u>86</u>		A. Total \$ <u>11.845</u>	From (month/yr.) <u>March 1981</u>
			B. U.S. \$ <u>5.075</u>	Date of Evaluation Review <u>April 9, 1984</u>	

B. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
USAID/Rabat decisions corresponding to the evaluation recommendations on pages 4-5 of the evaluation are noted below.		
1. Undertake a redesign of this project within the current life of project funding levels (See Part II, Section 23).	Banner, USU Chief of Party Karmouni, DE	May 31, 1984
2. Extend the project PACD up to one year, subject to USAID/Rabat acceptance of the redesigned project.	USAID AGR WATTS	July 15, 1984
3. Range/Livestock production and management:		
- Assess the importance of range/livestock production and management to Morocco's agricultural development and productivity under the redesign effort.	Banner, USU	May 31, 1984
- Assess the need for further study of the range/livestock sub-sector within the context of an agricultural sector assessment for the CDSS.	USAID AGR WATTS	July 30, 1984

9. INVENTORY OF DOCUMENTS TO BE REVIEWED PER ABOVE DECISIONS

<input checked="" type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input checked="" type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____
<input checked="" type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A. <input type="checkbox"/> Continue Project Without Change
B. <input checked="" type="checkbox"/> Change Project Design and/or <input checked="" type="checkbox"/> Change Implementation Plan
C. <input type="checkbox"/> Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Name and Title)

Dr. Malcom Purvis, FAO *[Signature]*
 Mr. Doral N. Watts/Mr. Paul Crawford, AGR *[Signature]*
 Mr. John Giusti, PROG/EVAL. OFFICER *[Signature]*

12. Mission/AID/W Office Director Approval

Signature *[Signature]*
 Typed Name Mr. Robert C. Chase, Director
 Date 5/11/84

4. Project management and implementation:

- | | | |
|---|-----------------------------|------------------------------|
| - Replace the USU Campus Coordinator. | Box, USU. Logan | April 1, 1984
(Completed) |
| - Redefine the role of USU project support in the redesigned project. | Box, Banner, USU | May 31, 1984 |
| 5. Maximize Peace Corps Volunteer involvement in the redesigned project. | Banner, USU
Karmouni, DE | May 31, 1984 |
| 6. Study the advisability of converting from a host country contract to a direct AID contract. | USAID AGR
Watts | July 15, 1984 |
| 7. Give priority in the redesigned project to short-term participant training (in-country, in the United States, and in third countries). | Banner, USU
Karmouni, DE | May 31, 1984 |

PES Part II13. Summary:

The evaluation team concluded that the project needs to be redesigned in order to conform with changes in the needs and experience gained since the original design, to broaden the scope of the project, and to define more clearly the project's objectives. The evaluation team questioned the project's failure to take into account the important interactions between livestock and croplands in the Moroccan context. In addition, the team felt that the original project design did not adequately take into account rapid changes underway in the rural livestock-producing areas of Morocco. One major change has been the loss to grazing of the best collective rangelands through cereal cropping. Traditionally, plowing collective land has been recognized as a means of gaining and maintaining private control over it. This trend towards privatization was brought about by the livestock owners' need to ensure access to the land and suspicion that future government actions would limit individual access to it. This appropriation of collective land has increased grazing pressure on the remaining collective rangeland.

Given these factors, the redesigned project will have to shift from its focus on grazing perimeters carved out of common tribal land to a broader concept of managing livestock/agricultural zones. Common land, though still fulfilling a role in the annual feed budget, is but one part of the total production system. Therefore, much greater effort must be directed towards the best livestock/cropping use of the newly privatized lands.

Aside from changes in project design, the evaluation team recommended changes in project management and implementation. Authority to manage the project was not adequately delegated to the Utah State University (USU) representatives in-country. Consequently, USU was not able to coordinate project activities and resolve implementation problems in an effective and timely manner. As a result, personality conflicts arose among the USU team, individual activities were poorly integrated, and project efforts accomplished less than planned.

USU has already undertaken steps to resolve its management problems. These efforts have included the assignment of a new USU Chief of Party with authority to make decisions as the USU representative in-country. In replacing members of its implementation team, USU has strengthened the technical expertise of its in-country staff. These in-country improvements have been supported further by transferring the Campus Coordinator's responsibilities to another USU faculty member. The recommended project redesign should support these USU efforts to improve its management of the project.

Though project redesign and changes in USU management are called for, nevertheless, there have been positive elements and accomplishments that should be highlighted. The training programs arranged by USU have made a marked contribution to strengthening the Service des Parcs (Service of Feeds and Ranges) within the Direction de l'Elevage (Livestock Division) as an institution, and should be continued. The Plant Materials Center (PMC) has been constructed and is producing selected range forage seed under a variety testing program as planned. This Center will be a key contribution to Morocco's institutional capability to produce selected forage seed for its agricultural sector. For the most part, the GOM has assigned the required technical staff in a timely manner and has provided the budget support necessary to carry out these activities at the national level.

14. Evaluation Methodology:

This mid-project evaluation was conducted by specialists drawn from outside of USU, the Direction de l'Elevage (DE), and USAID/Rabat. The purpose was to assess the progress toward, and achievement of, the project's goal, purpose, input delivery, and output. Project hypotheses were to be verified, and recommendations were to be made concerning alternatives for project redesign or its possible early termination. The evaluation team reviewed files, reports, and project documentation at USU, Logan, and in Morocco. The team conducted project staff interviews using a team-on-one approach. Telephone interviews were conducted with former project staff and consultants in the United States. Questions were prepared in English and French which served as the basis for interviews and discussions with DE staff. All project sites were visited during a 14 day tour of the project zone. Discussions were held with beneficiary herders on three of the project perimeters. The evaluation team also held discussions with staff of the following agencies:

- a. INAV (National Agriculture and Veterinary Institute/Rabat)
- b. ENA (National School of Agriculture/Meknes)
- c. Moyen Atlas Development Project (World Bank/Meknes)
- d. ENFI (National School for Forestry Engineers/Sale)
- e. INRA (National Agronomic Research Institute/Sidi El Aydi)
- f. CNERV (National Center for Extension Research/ENA/Meknes)

Prior to the departure of the evaluation team, its findings and conclusions were discussed with the USU in-country Chief of Party, DE officials, and USAID/Rabat staff.

15. External Factors

Three external factors affected project implementation. The first was the rapid change underway in the rural livestock-producing areas of Morocco, especially the privatization of collective rangelands, mentioned above. The conversion of rangeland to cereal cultivation has placed increasing grazing pressure on the shrinking rangeland base in the project areas.

Second, a prolonged drought has reduced agricultural production throughout Morocco. The loss of forage and crop stubble as alternative feed sources has increased the pressure on already overused collective rangelands. At the same time, the numbers of sheep on the range have decreased, as livestock owners sell animals that they can no longer feed, and inadequate nutrition leads to increased livestock deaths. Consequently, while the drought has probably increased the awareness among livestock owners that something has to be done to conserve rangelands, the resources available to the individual and his ability to modify his traditional practices have decreased.

A third external factor which has adversely affected project implementation has been the major financial crisis that Morocco has been undergoing in recent years. The GOM's budgetary difficulties have made it that much more difficult for government agencies, including the Direction de l'Elevage, to hire and support additional staff and to cover operating expenses.

16. Inputs

The evaluation team found that USU, DE, and USAID inputs have been made available in a timely manner. However, the team did note that USU failed to tap its in-depth technical capability to provide an adequate amount of short-term assistance in those technical areas where the in-country USU team was weak. The performance of USU's subcontractor, the California Agricultural Institute, Modesta, California, in advising on the development of the Plant Materials Center (PMC) near El Jadida was excellent. Project commodity procurement was hampered by GOM customs clearance delays. Nevertheless, as soon as these commodities became available, they were successfully employed in project activities.

In light of the budgetary difficulties currently facing the GOM, the DE budget has undergone some reductions. However, these reductions have been less severe than that of other divisions within MARA, indicating that the GOM has placed a high priority on the livestock development and range management improvement activities supported by this project. Though the performance of DE in providing qualified staff was generally commendable, it did have difficulty in providing counterparts for USU personnel in technical areas other than range management and extension.

17. Project Outputs

The project outputs were inadequately specified in the Project Paper's logframe. Among the problems was the failure to specify outputs from the sociological component of the project. This problem was exacerbated by inconsistencies between the Project Paper, the Project Agreement, and the host country contract between USU and DE.

The logframe called for the production of at least 125 tons of forage seed by the end of the project. The PMC is currently producing forage seed on a pilot basis. Until construction is completed, the PMC will not have the facilities to produce more. Once the farm is completely developed it should be able to produce 50 to 100 tons of forage seed per year.

Progress towards long- and short-term training of DE personnel is proceeding more rapidly than planned. Eleven participants are studying towards MS levels in U.S. universities, nine have attended a six-month training course given by USU, and six have attended an administrative shortcourse.

The project was supposed to conduct approximately 50 extension demonstrations (two per perimeter per year). The evaluation team found that, rather than conducting extension demonstrations, the project's range management staff have been engaged primarily in research activities. Research plots can, however, have a demonstration value. Greater progress towards this output objective should be expected in the next two years.

The evaluation team felt that the EOPS output calling for unspecified levels of reseeding and range deferment was not operational. In any case, probably less than 100 hectares have been reseeded under the project, mostly to demonstrate the benefits of reseeding.

The Project Paper logframe called for the completion, on each of the perimeters, of range inventories (the delineation and mapping of the perimeter and its resources). This was to be completed during the first year of the project. To date, none has been completed, though there has been some progress made on inventories of two of the perimeters. However, the evaluation team felt that, at this stage, completing range inventories is far less important than other activities which should be undertaken.

Specific outputs for the anthropological component were not specified in the Project Paper logframe. However, a number of studies were listed in the text of the Project Paper and in the USU/DE contract. Substantive output from the sociological component was considered inadequate by the evaluation team. There were a number of reasons for this, including: the early collapse of team unity; hostility of some team members to the integration of sociological inputs to technical decision making; limitations on freedom to gather information due to control by local authorities; lack of counterparts for the team sociologist; and the distance between project sites. In addition, the methodological approach used was also criticized by the evaluators.

18. Purpose

The project purpose is to strengthen the technical and administrative institutional capability of the Service des Parcours of DE to conduct research in range management, and to implement its range improvement program.

The range management capability of DE has been strengthened through long- and short-term technical assistance, participant training, on-the-job training, and commodity procurement assistance. Further, the activities of the project have changed the traditional role of DE from being strictly a service organization towards a new direction involving research and extension. However, closer attention must be given to how DE activities should be coordinated with other Ministries and government organizations which also have research and extension responsibilities.

The impact of the project's efforts in applied research in range management has, thus far, been limited by the drought. A revised project should give priority to an effective applied research program, one which involves linkages to the activities of other donor projects. The PMC forage selection program has been a successful research effort and should be sustained in a revised project.

Climatic and political factors outside the influence of this project have hindered DE's range improvement program and limited the adoption of improved technologies by local herders. Decisions concerning control and access to collective rangeland need to be resolved before much progress can be made in the management of the collective ranges. Therefore, DE's technological efforts need to be coordinated with the activities of those GOM regulatory agencies that influence local decision making and receptivity to technological change. DE's extension activities should be enhanced under a revised project. A revised project should take into account social and economic constraints in developing technological outreach programs.

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19. Goal:

The project paper goal is to increase the incomes of poor farmers and livestock herders on the arid and semi-arid rangelands. The adoption of improved range management practices by grazing organizations was assumed to translate into increased incomes for farmers and herders in terms of more marketable carcasses and wool from fewer animals. A decrease in stocking rates was assumed to follow which, in turn, would lead to an improvement of range conditions, a decrease in the rate of destruction of plant cover, and less erosion.

Unfortunately, these three elements, namely increasing beneficiary incomes, increasing meat production, and decreasing land degradation, are not necessarily complementary nor compatible. For example, if production costs increase as well, greater meat production may not translate into increased herder income. Further, increased aggregate meat production may be obtained by maintaining larger overall animal populations on the land. This could, however, accelerate rangeland degradation and the destruction of watersheds, especially under drought conditions.

Achievement of this project's goal was based on three assumptions that were not specifically recognized in the Project Paper: (a) that political processes at the national and local level would lead to decreases in the number of animals grazing within the perimeters and surrounding areas; (b) that economic returns to beneficiary herders from a small number of well fed animals would be greater than the income generated from a larger number of less adequately fed animals; and (c) that improved techniques and management practices were available for transfer to collective land situations under the current drought conditions. The validity of these assumptions was questioned by the evaluation team. The team recommended that the project redesign clearly specify and assess the validity of the assumptions on which it is based.

The evaluation team concluded that, given the scope of the project, the number of variables that combine to determine the incomes of poor farmers and herders in Morocco, and the overwhelming impact of climatic factors on livestock production, it is unlikely that one would ever be able to attribute "changes in income levels" to the efforts of this project.

20. Beneficiaries:

The direct project beneficiaries include approximately 25 DE staff directly involved with project implementation, as well as livestock owners and herders with whom the DE project staff work in the course of project activities. In the long run, many of the approximately 200,000 families actively raising livestock in the project zone could become indirect beneficiaries of this project. The general consumers of mutton, beef and animal products should ultimately benefit from improved production in the livestock sector supported by this project. DE staff in general benefit from this project from a strengthened and more effective agency.

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21. Unplanned Effects:

Pressure to secure access to land and suspicion about future GOM actions have caused tribal groups to more extensively plow Morocco's rangeland for cereal cultivation in order to secure title and access to agricultural land. Though this is often the best rangeland, the past three years of drought have demonstrated that this is marginal land for cereal cultivation. The poor yields obtained do not justify the investment of scarce human and capital resources by farmers, nor compensate for the loss of valuable livestock forage. Moreover, when these marginal lands are cultivated, the potential for serious soil erosion increases significantly. To prevent land degradation, this land should be returned to perennial forage and rangeland use as soon as possible. The evaluation team noted that some livestock herders are increasingly aware of this and have pressed for assistance in resolving this dilemma. The demand for seed and advice on reseedling has outstripped the capacity of DE to provide assistance.

22. Lessons Learned:

- A. USAID should assure that project documentation is consistent and that proposed project activities are within the limits of the project authorizations.
- B. Pilot project activities scattered over numerous locations require strong in-country management to address implementation problems effectively. The effort to manage this project from Logan, Utah was a primary factor in its reduced output. Representatives of the contractor residing in-country must be authorized to make decisions on behalf of the contractor in order to resolve project problems as they arise.
- C. Contractor institutions must use their in-depth technical backstopping capability to resolve project problems. Regardless of how capable and experienced an institution may be in an international program area, unless it utilizes this capacity to backstop its contracts, it is no better than, and may not be as good as, a contractor that does not have the back-up competence and thus relies on outside help.
- D. USAID and contractors should use annual technical reviews as a management tool in order to identify and resolve project implementation deficiencies in a timely manner.
- E. Host country contracting can be a hindrance to effective implementation, especially when it directs the burden of such contracting on a host country technical agency that may neither have the expertise nor permanent responsibility for such activities over and beyond the USAID project, per se. In cases where such a capacity needs to be developed, it should be done as a separate, specific action, and not as a side effect of an already difficult-to-implement technical action.
- F. Retaining returned participant trainees is essential for effective institutional development to take place.

- G. Strong linkages between regulatory institutions and technical institutions may be needed to minimize persistent social and political problems that hinder the adoption of technical improvements by project beneficiaries.
- H. Related USAID-financed projects, both within and outside of the country, often have substantial technical expertise that should be tapped during project implementation.
- I. Peace Corps volunteers can provide effective technical assistance in range management and pastoral sociology.

23. Special Comments:

The evaluation recommends, and USAID accepts, that the project undergo redesign. USU and DE are to undertake this redesign and submit a revised project description to USAID prior to May 31, 1984. USAID approval of the revised project could lead to a project paper amendment, a PROAG amendment, and a possible amendment to the USU/DE host country contract. However, an unacceptable revision could result in early termination of this project.

The addition to the project of FY 1984 funding of \$875,000 has been delayed until 1985, subject to the availability of funds and an approved project revision. The current pipeline is adequate to support the project well into FY 1985, if necessary.

The evaluation team notes that acceptance of improved livestock technology by local producers is a slow process. Therefore, the team encourages that due consideration be given to extending the PACD of this project one year to allow adequate time for the impact of the redesigned project efforts to produce the desired effects.

Dr. Del Castillo, the project sociologist, has challenged the evaluation's assessment of the socio-economic component of this project. USAID has decided to make Dr. Del Castillo's memorandum a permanent part of this evaluation, and it is therefore attached to the evaluation report submitted to AID/W with this PES. USAID's response to Dr. Del Castillo's memorandum is likewise appended. Dr. Del Castillo was, in part, concerned that the Evaluation Report may have a negative bearing on the future employment of female professionals to work on AID projects in Morocco. USAID/Rabat does not feel that this Evaluation Report will adversely affect the employment of female professionals on AID projects in this country, and has so informed Dr. Del Castillo. Nevertheless, USAID has deleted sub-paragraph F on page 38 of the draft Evaluation Report (page 33 of the Final Report), particularly because that statement about the constraints facing female professionals in Morocco is not substantiated by specific findings in the evaluation.

NEAR EAST EVALUATION ABSTRACT

PROJECT TITLE(S) AND NUMBER(S) Range Management Improvement Project 608-0145		PROJECT NUMBER(S) USAID/RABAT	
PROJECT DESCRIPTION The purpose of the project is to strengthen the technical and administrative institutional capability of the Service des Parours (Service of Feeds and Ranges) within the Direction de l'Elevage (Livestock Division, DE) to conduct research in range management, and to implement its range improvement program.			
AUTHORIZATION DATE AND U.S. LOP FUNDING AMOUNT June 5, 1980..... \$5,075,000	PES NUMBER 608-84-05	PES DATE April 9, 1984	PES TYPE <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Other (Specify)
ABSTRACT PREPARED BY, DATE John Giusti, Evaluation Officer, Doral Watts/Paul Crawford, AGR71 April 30, 1984	ABSTRACT CLEARED BY, DATE Robert C. Chase, Director USAID/Rabat	<input type="checkbox"/> Special <input type="checkbox"/> Terminal	

BACKGROUND: From its inception in August 1981, this project suffered from management and implementation problems which severely limited project success. Real authority was never delegated to the USU representatives in Morocco. Rather, the project was controlled by the Campus Coordinator from Utah State University, in Logan, Utah. This management structure made it difficult to coordinate project activities in-country and to resolve implementation problems that arose. Interpersonal conflicts erupted among the team members, undermining any cohesive team effort. Developing and implementing a coordinated program with clear cut objectives and well defined activities became almost impossible. Ultimately, the project lapsed into a series of individual activities that, though useful in some respects, failed to achieve the project's overall goal and purpose.

PRESENT STATUS: The evaluation points out that, though the project was initially hindered by basic management problems and by fragmentation of activities, progress has been made in strengthening the institutional capacity of DE. The Service des Parours assigned the required complement of technical staff to the project. Many of these had MS degrees in range management. Short-term technical, managerial, and administrative training for DE staff has been very effective. Eleven MS participants are now in the United States undergoing training. Although the Plant Materials Center (PMC) experienced delays in start-up, it is now rapidly increasing its capability to produce selected forage varieties. Project commodities have also been successfully utilized in project activities. The evaluation noted that, in spite of a budget crisis and a three-year drought, the DE budget has undergone relatively minor reductions. This is an indication that the GOM has placed a high priority on livestock development and range management improvement activities supported by this project.

RECOMMENDATIONS: The evaluation team recommended that the project undergo redesign to conform with changes in the needs and experiences gained since the original design, to broaden the scope of the project, and to define more clearly the project's objectives. Upon AID approval of the redesign, the PACD should be extended to allow the additional time needed for the redesigned project to have a measurable impact. The evaluation recommended that, in the redesign, the project shift from a focus on delimited grazing perimeters to a broader concept of livestock/agricultural zones. The evaluation team also recommended that USU take certain steps to improve its implementation performance. These steps included assigning complete authority for project implementation to an in-country Chief of Party and the replacement of the campus coordinator. The evaluation team noted that USU has already taken steps to resolve its management problems. In particular, in replacing some of the original team members, USU has greatly strengthened the technical expertise of its in-country team. The evaluation noted that project

activities would have greater effect if more closely linked with the numerous other agencies, organizations, and projects concerned with rangeland development. The evaluation recommended that the revised project place greater emphasis on social and economic issues concerned with livestock production, and it recommended greater and more effective use of Peace Corps volunteers in project implementation.

Lessons Learned:

- A. USAID should assure that project documentation is consistent and that proposed project activities are within the limits of the project authorizations.
- B. Pilot project activities scattered over numerous locations require strong in-country management to address implementation problems effectively. The effort to manage this project from Logan, Utah was a primary factor in its reduced output. Representatives of the contractor residing in-country must be authorized to make decisions on behalf of the contractor in order to resolve project problems as they arise.
- C. Contractor institutions must use their in-depth technical backstopping capability to resolve project problems. Regardless of how capable and experienced an institution may be in an international program area, unless it utilizes this capacity to backstop its contracts, it is no better than, and may not be as good as, a contractor that does not have the back-up competence and thus relies on outside help.
- D. USAID and contractors should use annual technical reviews as a management tool in order to identify and resolve project implementation deficiencies in a timely manner.
- E. Host country contracting can be a hindrance to effective implementation, especially when it directs the burden of such contracting on a host country technical agency that may neither have the expertise nor permanent responsibility for such activities over and beyond the USAID project, per se. In cases where such a capacity needs to be developed, it should be done as a separate, specific action, and not as a side effect of an already difficult-to-implement technical action.
- F. Retaining returned participant trainees is essential for effective institutional development to take place.
- G. Strong linkages between regulatory institutions and technical institutions may be needed to minimize persistent social and political problems that hinder the adoption of technical improvements by project beneficiaries.
- H. Related USAID-financed projects, both within and outside of the country, often have substantial technical expertise that should be tapped during project implementation.
- I. Peace Corps volunteers can provide effective technical assistance in range management and pastoral sociology.

RANGELAND MANAGEMENT IMPROVEMENT PROJECT
(608-0145)

MID PROJECT EVALUATION REPORT

JANUARY, 1984

RABAT, MOROCCO

Team Leader : Dr. W. Furtick
Range Management Extension: Dr. W. Krueger
Pastoral Sociologist : Dr. J. Grayzel
Ag. Economist : Mr. P. Crawford

(revised, April 1984)

EXECUTIVE SUMMARY

A. Background

This project is a follow-up to a USAID financed project implemented in 1968 through a contract with the International Voluntary Services (IVS). That project was completed in 1974. It started with large scale expectations and ended with small scale efforts and accomplishments. It helped formulate the Royal proclamation (Dahir No. 1-69-171) that provided for the establishment of grazing associations on range management improvement perimeters. These perimeters became the focal point for the current project, which was designed to provide the extension help required to make several of the perimeters function. In addition, the IVS project led to the establishment of the Service des Parcours (Service of Feeds and Ranges) under the Direction de l'Elevage (DE). The current project's institution-building component was directed toward developing this entity through long and short-term training, technical assistance and management training.

In October, 1975, the GOM requested USAID assistance for a new range management project. USAID contracted with Washington State University (WSU) for a feasibility study for a range forage seed production project. This was to be a follow-up to the emphasis on reseeding research that eventually became the focal point of the IVS project. Their major field research accomplishment was in the identification of some improved forage species that were adapted to reseeding needs. The WSU report was modified by USAID and the GOM and approved in PID form in August, 1979. The project design team was fielded by the Consortium for International Development (CID) in October, 1979, and the project paper produced in July, 1980. The project was contracted as a five year host country contract with Utah State University (USU) in March, 1981. The LOP AID contribution was \$5,075,000 and that of the GOM \$6,770,000.

In August, 1981, the Contractor fielded a four person team, comprised of three range management specialists assigned to different range perimeters and a sociologist/anthropologist to serve the needs of those perimeters. Although one of the team was designated as in-country project coordinator, real authority for the project was never delegated and the project was controlled and operated almost entirely by the campus coordinator in Logan, Utah, with periodic trips to Morocco. As a result of the management mode and interpersonal conflicts that erupted from the very beginning, the team was split into factions. This seriously disrupted the team building effort and undermined attempts to develop a coordinated program with clear cut objectives and activities. The project lapsed into a series of individual activities that resulted in a variety of accomplishments with varying degrees of usefulness.

In December, 1982, seven Peace Corps Volunteers were assigned to the various perimeters. They were trained in either range management or sociology, and worked as two person teams, except on the one perimeter that did not have a sociologist. These PCVs made significant contributions in spite of the limitations caused by a lack of a clear cut program and inadequate assistance from some project staff.

The institution building component was much more successful. The Service of Feeds and Ranges was assigned the full anticipated compliment of technical staff, most with M.S. degrees in Range Management and the required four year graduates to serve as extension technicians. A very effective six-month training program in the U.S. was established by USU to upgrade the training of these technicians. An M.S. program was provided to strengthen the future staff capability. Short-term management training was provided in the U.S. for key DE administrators and those of cooperating agencies. In total, 11 Moroccan participants are studying towards the M.S. degree at U.S. universities, and another nine have received the six month training program. Another six have been sent for short-term Administrative training.

The Plant Materials Center (PMC) component of the project, designed to produce foundation seeds of range species and coordinate variety and species testing trials, has made excellent progress and will provide a significant institution building contribution.

The evaluation team reviewed extensive documentation, interviewed nearly all project participants and cooperators, visited all project sites, interviewed a small sample of beneficiaries and visited the USU headquarters in Logan, Utah, and collaborators at the University of California, Davis. Another sub-contractor and a former USU Team member were interviewed by telephone.

These reviews made it clear that management deficiencies and interpersonal problems were finally resolved after much delay, through the intervention of the USU administrative staff. A new chief of party has been assigned to Morocco with the needed administrative authority and competence. He has received a very competent and experienced replacement for the range management post that had been vacated for medical reasons. This individual also serves as Assistant Chief of Party. The project is rapidly recovering under good management that has pulled a fractured team into a working unit. Unfortunately, this has happened as the project is nearing the end of its third year of a five year contract.

B. General Findings and Conclusions

The project has been the victim of a rural sector in rapid and dynamic change. The original design was based on assumptions that did not fully appreciate the changes underway, their probable impact on the project being designed, nor the degree to which change would accelerate. The project was unable to fully appreciate the implications until recently, due in part to severe internal conflicts. The USU campus coordinator had a key role in the original design of the project and appeared determined to see it implemented as designed. He therefore maintained complete control of the project from Logan, and did not delegate any decision-making authority to the in-country project coordinator. Personality clashes within the team and between the two coordinators further delayed full realization that the original project design was obsolete. However, with the replacement of two of the five project personnel in Morocco and the removal of the direct control over the project by the campus coordinator during 1983, the past difficulties have been overcome and new directions started. Discussions with these

new project staff, and separate discussions with their counterparts and the administrators of DE, made it quite clear that all were fully aware of the changes needed in order to expand the focus and redirect project activities so as to address the realities of the changed environment. Earlier discussions undertaken by the Team Leader of this evaluation with the terminating in-country coordinator found that the latter appreciated the changes needed, but was not able to initiate them under the circumstances.

In individually grappling with the changed environment in which the project operated, each of the project staff had diverged considerably from the project design. This led to considerable shock on the part of the evaluation team, when after being fully briefed on the project and what it was doing and accomplishing during their visit to Logan, they found a completely different project in the field where realities were being faced.

The start of basic changes in the dynamics of the range/livestock rural society were noted in the final evaluation of the earlier IVS implemented project. The pressure on land and the suspicion about future government actions regarding access to land caused the tribal members to start a process, whereby they were able to stake a claim to land by plowing it and utilizing it for crops. This accelerated during the IVS project and became wide-scale during the late 1970's and the period covered by the new project. By the time the evaluation team was fielded, nearly every patch of even the most marginal tillable range land had been plowed and cropped. This has completely changed the dynamics of the livestock industry, which has become heavily dependent on feed from crop land and has placed increasing pressure on the much reduced non-arable ranges that were left. These are primarily the mountain meadows, forest lands and those areas too shallow, stony or arid to crop. Because the best soils were brought under cultivation, it meant much of the higher potential range became marginal crop land.

All parties now fully realize that the project must be focused on a new concept of managing a livestock/agricultural zone rather than on the defined grazing perimeter of common land that is the core of the current project design. The common land still fulfills a role in the annual feed budget of the animals, but it is only one part of the system. Much greater effort must be directed toward the best livestock/cropping use of the new private lands resulting from conversion of common grazing lands to cropland. This is the basis for the primary recommendation of this evaluation that the project be redesigned and restructured. The needs are understood by the new USU leadership of the project and their government counterparts. The performance of the government counterparts, in spite of the earlier USU problems, has been very impressive. Both the demonstrated will and ability to address the critical needs on the government side are rare and offer great opportunity, if given the assistance needed.

The recent plowing of the country's more erodible agricultural land lends urgency to the task. Problems of erosion can be expected to cause enormous problems downstream if much of this land is not returned to perennial cropping. Discussions with Peace Corps Volunteers, project personnel and direct contact by the evaluation team with livestock raisers/farmers indicates a growing realization of this need and a desire for help.

RECOMMENDATIONS

A. Changes in the Project Design

The project needs to be redirected to conform with changes in the needs and experience gained since the original design. This should also eliminate inconsistencies among the basic project documents that are the basis of current lack of clarity as perceived by the parties to the project; USU, AID and GOM. This effort should be undertaken at the earliest possible date. It is recommended that USU take the lead in this effort under Drs. Banner and Gay. They should involve the Director of USU's International Sheep and Goat Institute and other appropriate USU or outside short-term technical assistance. The USAID Mission should make this a priority effort with their full input. Full consultation and participation should be provided with other appropriate USAID projects, particularly Project 0136 - Dryland Agricultural Research and Project 0160 - Agronomic Institute. In addition, the Small Ruminant CRSP and other donor projects, particularly the World Bank financed Moyen Atlas Project, the FAO/WB Project to implement the National Extension Research and Training Center, the GTZ Forage Crops Development Project, and the appropriate national agencies, should be fully involved. Special attention should be given to the role of the Service de Parcours in relation to the effort underway to develop both a National Research and a National Extension Master Plan. Special competence should be included to examine both the macro and micro economic issues. These and other critical factors deemed necessary are addressed in detail in this report and its annexes.

B. Life of Project and Resource Requirements

The problems of the project implementation have delayed, until nearly the end of the third year of a five year project, the necessary restructuring required to compensate for design deficiencies and changes in the realities of the environment in which the project must operate. It is the view of the evaluation team that the scope of the project should be broadened, the purpose more clearly defined, and the time frame extended. Otherwise, significant impact will be minimal during the remainder of the current project. Therefore, it is recommended that the USAID Mission permit the redesign to be based on a three year time frame (one year extension). If the redesigned project proves productive, it will require additional sustained effort and added resources over an extended time frame to fully realize and institutionalize the potential benefits of the redesigned project.

C. Examination of the Importance of Range/Livestock Production and Management to Morocco and the Role USAID can Fill in this Sub-sector

The evaluation team's views on this subject are summarized in this report. Both range and livestock are a major part of the Moroccan agricultural economy. They have a major impact on the potential

sustainability of irrigation and potable water and affect flood control, urbanization and the prevention of civil unrest. Given the number of farms and livestock owned by urban inhabitants, there is perhaps a lack of justification for a complete dichotomy between urban and rural sectors. The USAID Mission is therefore urged to devote adequate resources to a thorough evaluation of the range and livestock sub-sector and to determine how and what USAID might do to support the needs identified and to program resources necessary as part of the future development of its Country Development Strategy Statement. It is the concern of the evaluation team that the USAID Mission may focus too much attention on trying to treat symptoms, rather than adequately addressing major resource problems.

D. Changes in Project Management and Implementation

It is recommended that immediate steps be taken to replace the campus coordinator in Logan and to redefine the role of USU in support of the redesigned project as detailed under the findings and conclusions section of this report. Steps suggested in this section dealing with phase-out of the original contract personnel should be given priority attention. New program initiatives not already being implemented that require new staff and significant resource allocations should be held in abeyance until a decision has been made on the recommendations in this report.

E. New Peace Corps Assignment

The team recommends that maximum use be made of Peace Corps Volunteers during the remainder of the life of the project. They should be fully involved in the planning and implementation of the programs to which they are assigned and provided adequate briefing and appropriate technical training before assignment.

F. Host Country Contract

Because of present and future problems that are inherent in the host country contracting mode, it is recommended that the project be converted to a direct AID contract.

G. Participant Training

The training component of the project has been the most effective element. The six month short-term training should be given priority in any future training in the U.S. The MS participant training program can be reduced as the degree program at IAV is implemented. Much greater future emphasis needs to be placed on in-country short-term training.

H. Use of this Report

Recommendations in this report have been kept limited to ensure maximum attention. Those concerned with the details of the project should pay careful attention to the findings and conclusions section as it contains a wide range of detailed suggestions. In many cases these are more fully elaborated in the appropriate annex. A complete listing of all headings included in the report is contained in the Table of Contents to assist in using the report as a reference document.

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DEFINITION OF ACRONYMS

CDSS	-	Country Development Strategy Statement
CID	-	Consortium for International Development Consortium of Western U.S. Universities dealing with international agriculture, developing contracts and activities. Members include Washington State University; Oregon State University; California State University, Pomona; Arizona State University; New Mexico State University; Utah State University; Colorado State University; and Texas Tech.
CNERV	-	Centre National d'Etudes et de Recherches sur la Vulgarisation (National Center for Studies and Research in Extension), Meknes
CT	-	Centre de Travaux (Work Center)
DE	-	Direction de l'Elevage (Livestock Department)
DPA	-	Direction Provinciale de l'Agriculture (Provincial Agriculture Department)
DPAE	-	Direction de la Planification et des Affaires Economiques (Planning and Economic Affairs Department)
ENA	-	Ecole Nationale d'Agriculture (National Agricultural School).
ENFI	-	Ecole Nationale Forestiere d'Ingenieurs (National School of Forestry Engineers), Sale.
EOP	-	End of Project Status.
GDP	-	Gross Domestic Product.
GOM	-	Government of Morocco.
IAV	-	Institut Agronomique et Veterinaire Hassan II (Hassan II Agronomic and Veterinarian Institute).
PID	-	Project Identification Document. A major document in the AID project development process.
INRA	-	Institute National de la Recherche Agronomique (National Institute of Agronomic Research).
IVS	-	International Voluntary Service. A U.S. non-government organization that functions on the basis of a technically oriented equivalent of the Peace Corps
MIAC	-	Mid America Agricultural Consortium. A consortium composed of the University of Nebraska, Kansas State University, Oklahoma State University, University of Missouri and Iowa State University.
MOA	-	Ministry of Agriculture.
MOA/SR	-	Ministry of Agriculture/Service Rurale
MOA/SV	-	Ministry of Agriculture/Service de Vulgarisation.
MOI	-	Ministry of Interior.
MOI/DAR	-	Ministry of Interior/Direction des Affaires Rurales.
ORMVA	-	Office Regionale pour la Mise en Valeur
PACD	-	Project Assistance Completion Date.
PCV	-	Peace Corps Volunteer.
PMC	-	Plant Materials Center, Khemis M'Touh
RFTP	-	Request for Technical Proposal.

- SR/CRSP - Small Ruminant Collaborative Research Support Project; an AID centrally funded project of the S & T Bureau.
- SONACOS - Societe Nationale de Commercialisation des Semences (National Seed Marketing Company)
- TA - Technical Assistance
- TDY - Temporary Duty.
- USU - Utah State University, Logan, Utah.

BACKGROUND

In 1966, the Government of Morocco, faced with problems of overgrazing on collective lands and the lack of technically qualified personnel, requested assistance from USAID to set up range management perimeters, perform forage adaptability trials, provide technical assistance, and support limited participant training. The project was initiated in 1968, and in September, 1968, four International Voluntary Services (IVS) Volunteers arrived to provide technical assistance. The original plan was to develop twelve range management perimeters covering an area of 325,000 has. over a period of three years. Shortly after it was begun, however, the project was reduced in scope to four perimeters totalling about 95,000 hectares. In December, 1969, it was reduced even further, to two areas covering 70,000 has. (perimeters Plaine de l'Aarid and Tafrata). Moreover, the thrust of the project was changed from the rapid development of range improvement over the entire areas of the two perimeters to more intensive research on selected 3,000 hectare areas in each. By the completion of the project in 1974, one half million dollars had been expended.

The primary problem with this original range management project was its failure to obtain the understanding, consensus, and participation of the local livestock producers and their leaders at the provincial level. The local people became suspicious of the government's intent and effectively resisted the program. For example, one year after the project started, the Governor at Beni Mellal requested that the program planned for Ait Rbaa (near Beni Mellal) be canceled because of opposition from the local people. This problem continued to plague the project even after its scope was reduced to two perimeters. Four of the five IVS volunteers resigned before their contracts were completed. Further, local officials had no authority to make field decisions and no control over a budget to carry out decisions, even if they made them. GOM officials at the national level appeared to be either unwilling or unable to give the logistic and budget support needed.

Nevertheless, the project did achieve several important results. Six Moroccans were sent to the U.S. for five months of training and one was sent for an MS degree. Project personnel assisted the GOM in formulation of a Royal proclamation (Dahir No. 1-69-171), which was passed in 1969. This law provided for the local establishment of grazing organizations on range improvement perimeters and thus gave a legal basis for the management and development of the country's communal grazing land. In the Midelt area, the project demonstrated the feasibility of reseeding and deferred grazing. It also convinced the GOM of the need for range management, and as a result, the Service des Parcours (Service of Feeds and Ranges) was created within the Direction de l'Elevage.

The GOM again requested technical assistance in a range management project in October, 1975. USAID fielded a contract team from Washington State University which completed a feasibility study for a forage seed production project in August, 1977. The proposal was subsequently modified by both USAID and the GOM and approved in PID form by AID/W in August, 1979. In October, 1979, a project design team was fielded by the Consortium for International Development (CID) which outlined a project focusing on range extension and long and short-term training. This second study served as the basis for the authorized Project Paper, which was produced in July, 1980.

The LOP AID contribution to the project was \$5,075,000 million, and the LOP GOM contribution was \$6,770,000. The U.S. contribution funded technical assistance (resident and TDY), participant training (long and short-term), and limited commodity assistance. The purpose of the project was to strengthen the technical and administrative capability of the Service de Parcours to conduct research in range management and to implement its range management program. The original project PACD date of August 31, 1985, was extended by USAID/Morocco to June 4, 1986.

The RFTP was sent out in September, 1980, and Utah State University (USU) was chosen to implement the project. In March, 1981, USU signed a host country contract with DE. Unfortunately, the strategy outlined in this contract differed somewhat from that elaborated in the Project Agreement that AID had signed with DE, as well as from the Project Paper. This led to different interpretations by AID/Morocco and USU as to the objectives and strategy of the project, and contributed to the strain that developed between them (see Special Issues).

A four person team was fielded by USU in August, 1981. It consisted of three range management specialists and a social anthropologist. The three range management specialists were assigned to work in Oujda (Ain Beni Mathar perimeter), Beni Mellal (Ait Rbaa perimeter) and Meknes (Timahdite perimeter). The latter was to serve as Project Coordinator. The sociologist, who was to provide technical assistance to all three perimeters, was also assigned to Meknes. In October, 1982, the fifth team member, a seed production specialist, was assigned to provide technical assistance to the Plant Materials Center. These individuals were supported by seven Peace Corps Volunteers, four of which were to serve as range management specialists and three as sociologists. The PCVs arrived at their respective sites in December, 1982.

From the start, the project was plagued by interpersonal conflicts among the USU staff. The in-country Project Coordinator was not given the authority to serve as Chief of Party. As a result, he came into conflict with the USU campus coordinator at Logan over project direction and control. The team split into factions, with the sociologist supporting the in-country project coordinator and the range management specialist at Oujda supporting the campus coordinator. This division was exacerbated by the decision of the campus coordinator to transfer the Oujda range management specialist to Midelt (Plaine de l'Aarid perimeter) over the objections of the in-country coordinator. In November, 1982, the in-country Project Coordinator was notified that his contract (which was to expire in March, 1983) would not be renewed. In order to ensure that overall direction of the project would not remain in dispute, the in-country coordinator's replacement was given sole authority to serve as Chief of Party. At the same time the campus coordinator's responsibilities were restricted to that of coordinating U.S.-based activities. The new Chief of Party, who needed several months of French language training, immediately extended the employment contract of the former in-country coordinator in order to ensure continuity of project management. In May, 1983, the range management specialist at Beni Mellal left Morocco for medical reasons. His replacement arrived in country in September, 1983.

Under the project, 11 Moroccan participants are studying towards MS degrees at U.S. universities. Another nine have received short-term training in the U.S. in range extension under a program developed by USU. Another six Moroccans have participated in a short-course for administrators in the U.S. In addition, during the first three years of the project, \$415,000 worth of commodities were obtained, including equipment for the Plant Materials Center and the various perimeters. Finally, short term consultant services were obtained in range extension and seed farm development.

EVALUATION METHODOLOGY

A. Review of Documentation

The evaluation team collected and reviewed extensive files, reports and documentation. These included considerable documentation prepared for the evaluation team by the contractor, and provided to them when the team visited Utah State University and the various project sites in Morocco during the course of the evaluation. The documents that were available to the team are included as a bibliography in Annex III.

B. Personal Interviews

The team used a team-on-one interview approach except in a few instances where the team divided interview responsibility. Those interviewed are listed in Annex II. They included the appropriate staff of USAID/Rabat, AID/Washington, D.C., the contractor staff and administrators on the USU campus and in Morocco. In addition, the Peace Corps Volunteers assigned to the project and the PCV administrators in Morocco were individually interviewed. The same approach was used with each of the Moroccan counterpart staff for the USU contract team. Team briefings and discussion of the findings and conclusions were held with the appropriate staff and administration of USAID/Rabat and the Direction de l'Elevage before finalizing the recommendations.

In addition, the management entity staff of the Small Ruminant Collaborative Research Support Project (SR/CRSP) and the staff of the University of California, Davis collaborating in the short-term training component of the project were interviewed by the team leader in Davis, California. Telephone interviews were conducted with the key representative of the California Agricultural Institute, a sub-contractor, and with Dr. Carl Goebel, one of the former contractor staff assigned to Morocco. The former coordinator was not available for interview but had been previously interviewed by the team leader. One of the current MS participant trainees in the U.S. was interviewed. The AID/W backstop officer accompanied the team during the visit to USU in Logan.

C. Interaction with the Administrators of DE and USAID/Rabat

Initial briefing and discussion meetings were held with the staff of USAID/Rabat and of DE administrators headquarters in Rabat. As a result of these discussions, a list of questions was prepared for the DE administrative staff in both English and French. These formed the basis for discussion and debriefing before finalization of the report. There was a two week interval

for the DE staff to study the questions before we discussed their response. These questions are included as Annex 6 of this report. The team met with key USAID Agricultural staff and the Mission Director prior to preparing this report and briefed the USAID Mission on the key elements of the report before its finalization.

D. Field Tour of Project Sites

All project sites were visited and the activities of the project reviewed. The itinerary for these reviews are included as part of the overall evaluation schedule found as Annex 7. The team was accompanied by the USAID/Morocco project manager, the Chief of Party of the USU team, and an observer from the Direction de Planification et Analyse Economique (DPAE).

E. Discussions with Beneficiaries of the Project

Discussions were held with a small sample of the direct beneficiary herders on three of the perimeters.

F. Discussions with the Staff of Moroccan Agencies Interacting with the Project

1 - IAV (National Agriculture and Veterinary Institute)

This organization has several direct relationships to the activities of the project. It was a source for several of the MS level, U.S. trained staff of DE that became the initial counterparts for the project. Various of its bachelariat level graduates are used as counterparts to the PCVs assigned to the project. In addition, it is the counterpart agency for the Small Ruminant CRSP, a potentially important element of research support. Further, research activities in range management are conducted by the staff and students of IAV as part of their regular responsibilities. In the near future, IAV will have an in-country MS level degree program that could provide future staff in range management. The team held discussions with those IAV staff with programs that related to project activities.

2 - ENA (National School of Agriculture, Meknes)

This is a four year agricultural school that trains students with emphasis on terminal degree level skills, although some students are able to qualify for further work at the graduate level. In addition, it has become the agency responsible for the National Agricultural Extension Training and Research Center (CNERV). The Range Management faculty and their students are involved in activities supportive of the project's programs. In addition, a number of the project counterparts were trained at this school.

The programs of this school and of the CNERV were reviewed with the senior school faculty in range management, the administrators and the FAO staff financed by the World Bank at the CNERV.

3 - The Moyen Atlas Development Project (World Bank)

The World Bank has financed several regional development projects in Morocco that have programs related to range management. The only one that

directly overlaps the project's geographic areas of activity is the Moyen Atlas project headquartered in Meknes. It is under the direction of the DPA in Meknes with headquarters in the same office complex as the staff of the project. Because they have direct responsibility for range improvement implementation in the area covered by the Meknes project locations, discussions were held with both the DPA and the regional director of the DE in Meknes.

4 - ENFI (National School for Forestry Engineers)

The Forest Service operates a four year college near Rabat to train foresters. It has range management as part of its curriculum. The senior faculty member in range management has been involved in extensive discussions with this organization.

5 - INRA (National Institute of Agronomic Research)

Part of the team visited INRA Sidi El Aydi experiment stations linked to the Aridoculture Research Center at Settat to see the facilities, equipment and meet with the staff of the INRA/MIAC Dryland Agriculture Applied Research Project.

G. Scope of Work

The scope of work for the evaluation can be found as Annex 4.

THE PROJECT

A. Progress towards Goal

As stated in the Project Paper, the Goal of this project is to:

...increase the incomes of poor farmers and herders on arid rangelands. The adoption of improved range management practices by grazing associations can increase income of farmers and herders in terms of saleable meat and wool from fewer animals. More important, a decrease in stocking rates and improvement of range conditions will slow down the destruction of plant cover, arrest undue erosion and provide protection to watersheds now carrying excessive sediment loads to downstream irrigation developments.

In the Logframe, increasing incomes was listed as the project's Goal, with increased meat production (i.e. increased carcass weights and higher lambing rates) as the Measure of Goal Achievement. The listing of these three different objectives (increasing beneficiary incomes, increasing meat production, and decreasing land degradation) has traditionally been a problem in AID-financed livestock projects. Unfortunately, these three objectives are not necessarily compatible. Increased meat production, for example, may not be translated into increased incomes, if it involves a parallel increase in costs. Similarly, increased meat production may be obtained at the expense of the rangeland ecosystem.

Further, the achievement of the stated project Goal involves three assumptions that were not explicitly recognized in the Project Paper. First, it assumed that political processes at the national and local level would lead to decreases in the number of animals grazing within the perimeters. In other words, it assumed that someone was going to decide who could use each perimeter and how many animals they could place on it. Unless this occurred, rotations and other deferment mechanisms, improved management practices, and reseeding were impossible. Without an effective regulatory agent to solve the 'tragedy of the commons' problem, no individual farmer could reap any economic benefits from cutting back on his use of the common lands. Though strengthening the Direction de l'Elevage could conceivably help in sensitizing various groups to the dangers of the present overgrazing situation and alternative strategies, this was not going to resolve the conflicting claims over the use of common rangeland. Strengthening l'Elevage was a necessary, but not a sufficient condition, to achieving the project's goal.

Secondly, it was implicitly assumed that the returns to the herders from a small number of well fed animals would be greater than that from a larger number of less adequately fed animals. The validity of this assumption, within the context of the current situation in Morocco, has not yet been demonstrated. There is a serious question as to whether the marketing system existing in Morocco would adequately reward the production of heavier animals. Given that 20 percent of the livestock produced in Morocco is sold during Aid el Kebir (a religious festival during which each head of household purchases an animal, preferably a ram, to slaughter) the greatest return may come from maximizing the number of animals sold.

Thirdly, the project focused on extension, assuming that there existed improved technologies or management practices to extend. This turned out not to be true, at least to the extent expected. Though there were technologies and management practices that theoretically could have been utilized, much of this was not viable for collective lands. Partly as a result, the original USU team in Morocco began to drift towards a focus on adaptability trials and other research endeavors. Though there may have been solutions that could have been identified and extended at once, the team fielded by USU (which did not include a range extension specialist) was not successful in identifying them.

Finally, given the scope of the project and the number of variables that combine to determine the incomes of poor farmers and herders in Morocco, together with the overwhelming impact of climatic factors on livestock production, it is unlikely that one would ever be able to attribute changes in income levels to the investments proposed under this project.

1. Other Contributing Projects

Because of the broad nature of the project goal, a number of USAID and other donor projects are contributing to the attainment of the goal. Every effort is needed to ensure adequate interaction and coordination where required. The major contributing projects are outlined as follows:

a. USAID Project 0160 - Agronomic Institute

This project, with the University of Minnesota as contractor, is assisting in the development of the departments of Range Management, Animal Sciences, and Veterinary Sciences of the IAV. These departments provide bacheloriat level students and will soon award MS degrees. Moreover, they are an increasing source of the more basic type research activities. The IAV is also the counterpart for the SR/CRSP that includes research on both range management and herder sociology. The project has also provided the MS training for the initial counterparts for the Range Management Improvement Project.

b. USAID Project 0136 - Dryland Agricultural Applied Research

Implementation of this project, with MIAC as contractor, seeks to help INRA develop its dryland research capability through substantial participant training to the MSc and PhD level plus long and short-term technical assistance. It focuses on research on soil and water management, mechanization, crop production, and crop improvement/management of cereals, pulses, forages, and fodder crops. It should be closely tied into the activities of the Range Management Improvement Project.

c. The Small Ruminant Collaborative Research Support Project (SR/CRSP)

This is a centrally funded AID project with four research components operating in Morocco. These include breeding and genetics, implemented by the University of California/Davis; small ruminant nutrition, implemented by North Carolina State University, Rawley; socioeconomic studies of the small ruminant system, implemented by the University of Missouri; and range research, formerly implemented by Utah State University and currently being reassigned. All of these support the goal of the Range Management Improvement Project.

d. The Moyen Atlas Project (World Bank)

The Moyen Atlas Project has a significant range development and management component that will be backstopped by two expatriate range specialists to be assigned in 1984.

e. The INRA-GTZ Forage Research Project

This German aid project is assisting INRA in forage development and testing with primary emphasis on the coastal areas.

f. The National Extension Research and Training Center (CNERV) at Meknes (FAO and World Bank)

FAO is providing implementation assistance to CNERV in the form of six resident expatriates financed by the World Bank. It is a major resource that should, as it becomes operational, be used by the Range Management Improvement Project.

B. Progress Towards Purpose

The purpose of the project is one of institution building, specifically to strengthen the technical and administrative capability of the Service des Parcours within the Direction de l'Elevage, to conduct research in range management, and to implement its range improvement program. The range improvement program involves primarily technical assistance to the grazing organizations plus extension and demonstration of the benefits of improved range management techniques.

The project is in the process of strengthening the ability of the DE to do range management. Efforts at improving the capabilities of DE staff through long and short-term training are well underway. The project has guided DE in the development of a clear-cut role in the program for the Service des Parcours. Further, the activities of the project have changed the traditional role of DE from being strictly a service organization towards a new direction involving research and extension. Unfortunately, this has been done without adequate consideration and documentation as to how DE activities should coordinate with other ministries and government organizations which also have research and extension responsibilities, especially INRA (the national agricultural research agency), IAV (the agricultural university), and the Service de Vulgarization (the extension service). In essence, the jurisdictional roles have become clouded. Finally, in terms of helping DE develop and implement extension programs, the performance of the project has been less satisfactory. This has been due to limitations in the original terms of reference of the project and to the degree to which the project has diverged from extension and into research.

C. Inputs

1. USAID Inputs

According to the Project Agreement, USAID inputs to this project would amount to \$5,075,000. This would include:

- 21 person years of long-term technical assistance. These were to include 3 range specialists for 5 years each; one pastoral anthropologist for 3 years (beginning in year 1); and one seed specialist for 3 years (beginning in year 2).
- 22 person years of long-term participant training (11 participants for two years each).
- 102 person months of short-term participant training (17 individuals for approximately 6 months each).
- An unspecified amount of short term technical assistance was budgeted in the fields of range management, seed production, anthropology, extension and animal science.
- Funds for participation in an in-country professional meeting or conference by Moroccan and American specialists.

\$660,000 in commodities to equip the Plant Materials Center and the individual perimeters.

The USU contract with DE differed somewhat in terms of input levels. In the USU/DE contract, only \$4,975,000 was budgeted. Further, 22 person years of long term TA were planned in the USU/DE contract (an additional year for the seed production specialist). The USU contract specified that up to three person months per year of short-term consultant support for the life of the project (and six months in the first year). Table 1 provides a breakdown of planned and actual expenditures, based on the USU contract budget.

2. GOM Contribution

According to the Project Agreement, the GOM was to provide not less than the equivalent of \$6,770,000 including costs borne on an "in-kind" basis. The bulk of the GOM contribution (over 75%) was comprised of the planned allocation to the Service des Parours under the Interim Three Year Plan (1978-80) invested in the project perimeters. This cost was to include perimeter development, construction of the seed multiplication center, and payment of indemnities for deferred grazing. In terms of personnel, the GOM was to provide 10 professionals (including participants) and 20 extension agents (including participants) for the project.

Table 2 presents planned GOM project investments, as presented in the Project Paper. Table 3 presents actual DE expenditures during the first three years of the project. These estimates were calculated based on figures provided by DE. In addition, DE has distributed, since 1979-80, 1,220 metric tons of soft wheat under its grazing deferrment indemnity program. At current official prices, this wheat would cost 1.8 million DH.

In general, the GOM has done a very good job in fielding counterpart staff and supporting the project, especially given the budgetary difficulties that it is currently undergoing. We have been told that the budget for the Direction de l'Elevage has been cut less than those of Moroccan government agencies in general. This indicates that the Government has placed a high priority on livestock and range management activities such as those supported by the project.

However, there have been some difficulties experienced in mobilizing counterpart resources. Though qualified counterparts were immediately available for each of the three range management members of the USU staff and for the seed production specialist, DE had much more difficulty in fielding qualified and interested staff to work as counterparts to the sociologist and sociology PCVs. An excellent counterpart was available

Table 1

Summary of Project Expenditures
Morocco Range Management Improvement Project

<u>Line Item</u>	<u>Budget (LOP)*</u>	<u>Budget end of yr. 3</u>	<u>Expended to date (11/83)</u>	<u>Expended/ Budgeted**</u>
Long Term TA	\$1,373,032	\$782,847	\$583,214	74.5%
TDY Personnel Costs	92,388	75,192	68,504	91.1%
On-Campus Support	354,003	191,487	141,871	74.0%
TDY Travel + Transport	70,509	49,207	5,921	12.0%
Team Travel + Transport	611,798	426,518	164,219	38.5%
On Campus Travel	39,969	22,344	18,735	83.8%
Team US + Other Trips	63,047	37,687	20,057	53.2%
Commodities	743,903	719,501	415,517	57.8%
Training Costs	700,864	414,417	321,342	77.5%
Other Support Costs	486,965	314,561	210,920	67.1%
Precontract Costs	13,950	10,934	10,934	100.0%
Indirect Costs	<u>438,522</u>	<u>267,703</u>	<u>223,729</u>	<u>83.6%</u>
TOTAL COSTS	\$4,975,000	\$3,301,464	\$2,184,965	66.2%

* Life of Project

** Percentage equals the amount expended to date (column 3) divided by the amount budgeted for expenditure by the end of year 3 (column 2).

In the above table, the TDY budget has been distorted by a significant sub-contract with the California Agricultural Institute to design the Plant Material Center, develop the plans for the variety testing program, and provide seed and other needed backstopping of the PMC. Their travel was included as part of this sub-contract with the result that the line item "TDY personnel costs" has been significantly inflated. The result has been a low expenditure attributed to TDY travel. Other than administrative travel necessitated by the implementation and personnel problems of the project, the only TDY support provided by USU was a single five-week TDY to develop an extension program for the project.

at the Oujda site within three months of the arrival of the sociologist. However, this individual left a year later to undertake studies towards an MS and was not replaced. Counterparts for the sociologist at Beni Mellal and Timahdite were assigned in late 1982, 14 months after the arrival of the sociologist, while at Midelt, a counterpart for the sociologist was not fielded until March 1983, 19 months after the initiation of the project. The individuals nominated as the Beni Mellal and Midelt counterparts simply did not work out. Unfortunately, neither was available during the evaluation to be interviewed. The counterpart at Timahdite was considered to be an excellent choice. The lack of sociology counterparts, however, slowed the implementation of the sociology component of the project.

The range management counterparts and personnel assigned to the project were generally found to be highly motivated and qualified. Unfortunately, they were sometimes spread too thinly. For example, the counterpart to the range management PCV at Oujda was so involved in doing other critical tasks (e.g. sheep vaccinations, coordination of cooperative activities, etc.) that he was only able to dedicate about one fifth of his time to work with the two PCVs.

Office furniture was to have been provided by the GOM for all team Offices in Morocco. By March, 1982, however, very little furniture had been supplied, forcing the project to amend the USU/DE contract to provide office furnishings out of project funds.

In addition, there were delays in the selection of the site for the Plant Materials Center, as well as in the design and letting of the contract for its construction. The design was initiated with TDY assistance from the California Agriculture Institute. However, once construction had begun, it proceeded very rapidly, and it is anticipated that the PMC will be completed by June, 1984.

D. Project Outputs

1. Planned Outputs

According to the Logframe of the project, the End-Of-Project Outputs are to include:

- . At least 125 tons of forage seed produced;
- . At least 6 Ingenieurs d'Etat (MS level) and 8 Adjoints Techniques (BS level) on staff;
- . At least 50 demonstrations (2/year/perimeter) completed;
- . At least 15,00 ha. deferred/seeded (sic); and
- . At least 4 range inventories completed.

The Logframe does not list any outputs from the sociological component of the project.

Table 2

Planned GOM Expenditures

<u>Personnel</u>	DH (1000)	\$US (1000)*
5 MS level (Ingenieurs d'Etat)	2,100	568
5 BS level (Ingenieurs d'Application)	1,800	468
10 Assoc. degree level (Adj. Tech)	1,200	324
10 Bacheloriat (Agents techniques)	750	203
30 workers (main-d'oeuvre)	200	54
	<u>6,050</u>	<u>1,617</u>
Service de Parcours Operating Budget**	<u>19,000</u>	<u>5,135</u>
TOTAL	25,050	6,752

* Using a 1981 exchange rate of \$1 - 3.7DH.

** This figure is comprised of the estimated portion of the annual planned allocation to the Service des Parcours under the Interim Three Year Plan 1978-80 (DH 5.0 million/year) invested in the Phase perimeters. The cost includes perimeter development (construction of shelters, ponds, access roads, brush cleaning, re-seeding, etc); construction of the Plant Materials Center (DH 1.0 million); and payment of indemnities for deferred grazing (DH 3.6 million).

Table 3

Actual GOM Expenditures

According to Direction de l'Elevage figures, DE has made, in the first 3 years of the project (1981-1983) the following project-related expenditures:

<u>Category</u>	Amount (1000 DH)
Personnel **	4,023
Operating Costs	3,090
Vehicles ***	395
Agricultural equipment and other costs****	<u>12,990</u>
TOTAL	20,498

** Includes 18.75 person-years of in-country MS level staff and 11.7 person-years of in-country BS or associate degree level staff. This figure also includes an estimate of the salaries paid by DE to participants studying in the U.S. (11.5 person-years).

*** Provision of 7 autos and 1 truck.

**** In addition to agricultural equipment, this line item includes fencing, reseeding, and the construction of water sources, pumping facilities, and shelters.

2. Actual Outputs

The Plant Materials Center is currently planting forage seed on a pilot basis. Essentially, until construction is completed, the FMC will not have the facilities to handle more. It is expected that three years after the initial seeding, the FMC will reach full production. Once the farm is completely developed it should be able to produce 50 to 100 tons of forage seed per year. A concern is that seed production will actually outstrip the capacity of the DE to use it. Unfortunately, while the selection of El Jadida as the site for the FMC is ideal for the production of warm season forage species, there is some concern that cool season species will not vernalize. If this is the case, an additional seed production site will be needed in order to produce cool season forage species.

Progress towards the long and short-term training of Direction de l'Elevage personnel is proceeding rapidly. In fact, there has been an acceleration of the training schedule. Eleven participants are studying towards MS degrees in U.S. universities, nine have attended a six-month Range Management Short-course given by Utah State, and six have attended Utah State's Administrators Short-courses. Already there are five MS level Moroccan staff members assigned to the project.

Determining how many demonstrations were carried out under the project is problematical because it is difficult to adequately distinguish between a demonstration plot and a research plot. Whether it is a demonstration plot depends upon whether you knew what was going to happen before you started. Using this criterion, it is fair to say that the project has been conducting primarily research. Research plots can, however, have a demonstration value. For example, at present there is a reseeding program involving 17 cooperators at Timahdite which will serve as an effective demonstration effort. There has also been some reseeding done at Midelt which would serve as a demonstration purpose. At least two field days have been held at Midelt since the project began, with livestock owners transported by bus to observe programs at Plaine de l'Aarid. However, no other organized demonstrations were identified at any project location. Greater progress towards this output objective, nevertheless, can be expected in the next two years.

With respect to reseeding, probably less than 100 hectares have been reseeded under the project, mostly to demonstrate its benefits. Assessing progress towards deferment as a project output is difficult. Deferment of grazing land refers to the imposition of grazing restrictions on land for part of the season, for instance until the forage flowers, as a means of conserving the resource. However, there are really no inputs in the project directed towards achieving this particular output. Moreover, deferment is a temporary condition, and it is not necessarily progress to achieve greater and greater levels of deferment. For example, the entire Midelt perimeter (10,000 has.) has been deferred at various times. However, this would have happened whether the project had existed or not. Similarly, the Ain Beni Mathar perimeter was deferred during the first year of the project, but has not been deferred since.

Finally, the Logframe called for range inventories on each of the perimeters. A range inventory is a delineation and mapping of the perimeter, involving an assessment of its current condition, trends, production levels, carrying capacity, and so forth. This was supposed to be completed within the

first year of the project. To date, none have been completed. There has been some progress at completing range inventories at Midelt and Timahdite. However, at this stage, completing range inventories is far less important than other activities which should be undertaken. A range inventory is fine for managing a specific perimeter, and less important when your objective is to develop the livestock and agricultural resources available in a region on an integrated basis.

FINDINGS AND CONCLUSIONS

A. General Findings and Conclusions

These are provided as Section B in the Executive Summary and are not repeated in this Section.

B. Project Management

1. Findings

a. Utah State University (USU)

The implementation of the training programs by USU was outstanding. However, inadequacies in project field performance resulted from unsatisfactory management of that part of the project by USU. These deficiencies included the failure to utilize their significant and widely recognized capability in international range management in support of the project. Only one of their staff was used for TDY technical assistance. The project was designed and negotiated largely through the efforts of the Campus Coordinator, who was assigned sole responsibility for administration of the project, without evidence of significant monitoring. As campus coordinator, he controlled nearly every aspect of the project from Logan. As a result, the major problems the project encountered in the field were his responsibility. Therefore, it is clear that this individual must accept blame for an array of problems that can be traced and readily documented as the result of inadequate and sometimes capricious administration. Part of the problem may have been this individual's personal dedication to his perception of the project objectives and his determination to see them fulfilled. His management style and total control of the project led to, or intensified, the animosities among the contract staff, with USAID/Rabat, with AID/Washington, and with various elements in Morocco. Because of their laxity in failing to heed warnings and take effective action, all levels of administration at USU must share the blame. Fortunately, effective action was finally taken and a very capable Chief of Party assigned to Morocco, with full authority to manage the project. He was supplemented with a very experienced and capable Range Extension Specialist, assigned to replace one of the extension team members who had departed for medical reasons.

b. USAID/Rabat

The problems in the management of the project became fully apparent to USAID staff almost from the time of project initiation. Rather than taking effective corrective action, there was a long tendency to deal in memo exchanges on inappropriate contractor actions, rather than to force a solution with the administration of USU.

c. AID/Washington

Problems with the project were clearly apparent to AID very early. They failed to insure that USAID/Rabat resolved the problems.

2. Conclusions

USU administration, after getting involved in the problems, made positive changes. Further actions are desirable and include the following:

- a. There should be a phase out of all original in-country team members as their current contracts expire. A new team should be built around Drs. Banner and Gay, and Mr. Harding at the Plant Materials Center. Past history will infect the future unless buried. A precedent must be set that team cooperation is a top priority. New team members must be given the message that their jobs are conditional on team results. The inability of individuals to collaborate as team members should be written into individual contracts as a sufficient grounds for termination for cause;
- b. The focus of project management and team leadership must be vested totally with the Chief of Party in Morocco. Logan should only provide logistic support, evaluation and quality control;
- c. The Chief of Party must maintain a highly mobile liaison between areas;
- d. A regular mechanism for communication of substantive ideas must be instituted (e.g. a monthly newsletter), and meetings should be held once every 3 months with prepared agendas;
- e. One full time administrative assistant should be placed in Rabat, fluent in both English and French (S4/R4) and have development experience. This person should have daily responsibility for administration, liaison with AID and the GOM, as well as for communications, translations and material reproduction, budget and finance, and customs clearance of commodities;
- f. Decisions should be made in Morocco for short-term technical assistance requirements and scopes of work, including itinerary and duration; specific training curriculum of trainees, and selection of trainees (jointly with the GOM);
- g. All major administrative/technical materials (e.g. Annual Reports) must be in both English and French, and all extension materials in French and Arabic.

The Campus Coordinator should maintain and further develop the already excellent 6 month training programs and facilitate training, backstopping, fiscal procedures and other needed campus support activities of the project.

C. The Importance of Range Management to Morocco

1. Findings

a. Importance of Range Management as an Economically Valuable Resource

The rangelands of Morocco are an integrated part of the cereal and livestock production systems. In the drier, eastern part of the country, sheep production becomes a primary output from the agricultural land base. This enterprise contributes to the regional economic activity through sales of livestock (primarily sheep) and a variety of products from livestock. Additionally, livestock provides a bank to preserve wealth for conversion to cash in emergencies or for special events. In this way farmers attempt to stabilize family income and reduce risks characteristic of agricultural production in a region which is marked by extremes in annual weather cycles.

Sheep production is a major component of the total agricultural economy in Morocco. In 1975, gross livestock production represented 36 percent of gross agricultural production. Agricultural production, in turn, accounted for 13 percent of Morocco's GDP. In 1981, livestock production provided employment for 330,000 people. Sheep production accounted for 30 percent of total livestock production.

The production of sheep integrates rangeland forages, crop residues, and cultivated forages. The specific contribution of rangelands to the annual forage budget is variable. In the more mountainous regions, rangelands contribute the majority of nutrients consumed, while in highly developed regions the total forage utilized from rangelands may be as low as 20% of the annual forage consumed. However, in all cases, the rangelands are utilized as a key element in the annual livestock production cycle. Availability of rangelands to support livestock during the crop growing season maintains the herds that utilize most of the crop residues, which are an extremely valuable forage resource in the total system. The complementarity of rangeland forage and crop residues increases the value of each in producing farm income.

b. Watershed Protection

In any semi-arid region, preservation and utilization of water is of paramount importance. The vast areas of rangelands and forests are upstream from major impoundments and yield the water held in reservoirs. Deteriorated lands yield water of low quality and accelerate siltation of reservoirs. Water supply from healthy rangelands is more even throughout the year and of higher quality for a variety of uses, including urban and rural needs. Conversely, deteriorated land yields rapid runoff and flooding that increases erosion and loss of productive rangeland and crop land.

Loss of soil and agricultural production due to erosion is clearly a national problem of great magnitude to Morocco. Soil erosion due to questionable land use practices and land use shifts, such as inappropriate expansion of cultivated areas, extensive overgrazing, and

heavy deforestation in recent years have brought increased reservoir siltation. In Morocco, annual erosion rates range from 300 to 5000 tons per square kilometer. The loss of capacity in most reservoirs ranges from 0.5 to 3 percent per year. Some of the major reservoirs constructed before 1960 have lost at least half of their original capacity and most other reservoirs have lost between 7 and 50 percent of their capacity. One reservoir, Mechra Homadi, has lost 75 percent of its capacity due to siltation.

Improvement of the range so that vegetation can serve its role of holding soil in place, will improve quality of water, enhance sustained yield of water, reduce loss of soil to wind and water erosion, preserve productivity of rangeland and crop land, improve supplies of irrigation water, and reduce flooding.

2. Conclusion

The role of U.S. assistance in the protection and improvement of the rangeland resources of Morocco through restoration and management activities should be carefully and thoroughly examined in future USAID CDSS exercises and the current project should be utilized to determine the types and magnitude of assistance that could be effective for this purpose.

D. The Range Management Component of the Project

1. Findings

a. Planning

Until recently, the overall program planning necessary in order to coordinate the efforts of all the project areas was not attempted. As a result, each location has a distinct, separate program and activity schedule. The only activity the projects have had in common has been a series of plant species adaptability plots at each active location. This lack of problem identification, organization, and coordination impinged on all facets of the program and diluted the value of most of the output.

The new Chief of Party and the new range extension specialist at Beni Mellal have begun to elucidate a plan to integrate rangeland and crop land forages into a realistic view of the overall livestock production program. Their comprehensive view and understanding of potential benefits of improving forage utilization practices should result in a new focus to the project that will bear fruit in increasing the profitability of livestock production in the semi-arid regions of their concern. The DE shares this view and a redirection of thinking within the project is underway. The planning deficiencies in the early phase of the project are understood and valuable corrections are being implemented.

b. The Range Extension Program

The original development of a range extension program proceeded in a haphazard direction. Program development is now proceeding steadily, as attention is being given to a re-direction of efforts. The past program

provided some benefits, but the current staff recognizes that a program with a broader focus will have a substantially greater impact. They intend to utilize the positive elements and activities and better organize a program when a redesign of efforts is completed. Up till now, however, the range extension program outputs have been much lower than anticipated.

There are grounds for concern about the social appropriateness of the extension techniques used in the project to date. There has been an inaccurate and potentially dangerous assumption by project extension personnel that project extension activities should be initially directed to, and concentrated on, those individuals who either step forward, or are presented, as "leaders" and/or "open to innovation". The presumption is that such early innovators are a wedge into the larger group. Such an approach may be legitimate. However, it is potentially dangerous if it is the only, or even the major, focus. Such individuals may very well not be a door to the larger population, but may actually be a socially and economically encapsulated minority, whose situation vis-a-vis access to resources (political as well as social and economic) may not only make their situation distinct, but may conflict with the interests of others.

Further, the project has suffered from a basic fallacy in thinking that rangeland extension in the Moroccan context is similar to that in the American context; namely, bringing technical information out to the people. When this is done in the U.S., little or no basic social reorganization is expected. Farmers' co-ops and 4-H clubs are part of, and have been generated out of, the American social context. No one expects American farmers to regroup into tribes. In each perimeter area, structures also exist for community organization, but a true understanding of this organization and the efficacy of using it for project purposes, remains insufficient.

c. Perimeter Selection

The choices made were responsible and the collection of perimeters reflects a broad view of rangeland situations that are integral to the overall livestock production enterprises in the semi-arid region of Morocco. Oujda represents a shrub dominated winter range type. Midelt represents a summer range type dependent on crop aftermath and other rangeland forage. Timahdite has a summer rangeland forage base, supplemented by the use, as feed, of crop residues, cultivated and imported forages. In Beni Mellal the rangelands are used to complement the major forage supply, which comes from croplands.

d. Staff Selection

Utah State University was prompt at fielding a technical assistance team and the project was consequently begun in a timely fashion. However, none of the staff fielded was experienced in range extension, and in-service training was inadequate. The original team identified in the USU proposal appeared to have the experience needed. However, none of these candidates were ultimately fielded. DE, on the other hand, has provided range management staff for the project in a timely fashion. The level of qualifications varied, but all DE counterparts had a basic range/agriculture education and some had extensive experience.

The new additions of Drs. Banner and Gay provide a nucleus for an effective USU team. Coupled with Mr. Harding at the plant materials center, a group knowledge in extension, range management, and plant materials operations is in place. They have had little time to implement the current ideas in planning, but all signs are strongly positive. The original range management technical assistance staff have already left or have nearly completed their tours. In effect, USU is beginning a new phase of their program, building on their early experiences in this project. This reflects substantial progress in establishing a productive range management effort for AID in Morocco.

e. Peace Corps Volunteers

Peace Corps Volunteers were recruited and selected specifically for this project. All of the PCVs were interviewed and in all cases they appeared to be competent, energetic, and dedicated to doing a good job. The lack of a USU technical assistant at Oujda and little help from USU staff from other locations has substantially restricted the performance of the PCVs affiliated with the Ain Beni Mathar perimeter. Generally, the PCVs have integrated into the project and have contributed to success in several areas of applied research and extension.

f. Research Backstopping

This is necessary for the GCM to maintain a progressive extension program in the country. The scientific community has only addressed a few of the range ecosystems and only in an extremely limited fashion. At each project location, programs are developed primarily from general principles, not from specific research. Refinement of goals and focus of activities will ultimately depend on a solid research base. Project personnel have implemented several research studies to address information needs in various locations.

g. Livestock Forage Production

The project region involves varying dependence on range forage and crop residues as major contributions. Discussions with USU project personnel and DE clearly indicate they intend to more completely focus their attention on the forage system in place in the project areas. This reflects a broadening of the initial purview of the project beyond the boundary of the perimeter and should provide the focal point for teaching farmers and DE more profitable methods for livestock forage utilization. As these forage systems are fully analyzed, this program will have identified points for education and demonstration that will help improve the current production system.

h. Extension Activities

The extension program thrust is under development with a different orientation and is not yet operational. Though the extension program of the first two years of the project lacked organization, it has resulted in action by landowners for reseeding private lands in Midelt and Timahdite. Some slide programs have been developed for limited audiences.

1. Collective Lands

Collective lands pose special problems to range managers. One approach is being implemented in Midelt. Understanding of incentives and disincentives to assist range managers in dealing with this special issue is limited. Progress in developing a mechanism to address the problem for the rangeland perimeters has been almost non-existent.

j. Linkages with Important Potential Cooperating Agencies

Efforts at creating linkages with cooperative agencies have been far too limited. The project should illustrate to DE the clear value of cooperating with INRA and IAV for research, ENA for extension, SONICOS for development, the MOI for regulation, and the World Bank's Moyen Atlas Project.

k. Future Changes

The project appears already to be formulating appropriate changes in the plans of Drs. Banner and Gay. Most of the above issues were identified as problematic. The leadership of Dr. Banner has been successful, and the divisive nature of the team has changed to a more cohesive one. The members of the project team are developing their plans and redirecting certain efforts.

2. Conclusions

Planning must be immediately given the highest priority. The problem issues identified should be considered and the project refocused to address forage production and utilization in the project areas. This refocus should include the area of forage production for livestock in the region, including rangelands (perimeters plus associated rangeland), forest land, and crop land, since all of these are required to produce the annual forage supply. This should lead to development of annual feed budgets and the program should address priority needs to help sheep producers learn how to fill those needs. This should lead to a new design and definition of the feasibility and requirements for any future project.

1. The current Chief of Party should take leadership for this planning effort, utilizing help from DE, short-term technical assistance team members, USAID staff, and the staff of other USAID projects in Morocco.
2. New activities should not be implemented until this planning is completed. Current programs at Midelt should be maintained by TDY help upon completion of the tour of the current range management technical assistant.
3. Priority for future project activity should include Midelt and Timahdite (cooperating with the Moyen Atlas project) as the highest priorities. The project at Beni-Mellal is important, especially if the proposed demonstration farm can be established as a part of the program. The Oujda perimeter (Ain Beni Mathar) and associated areas should remain a low priority because of the over-riding social problems.

E. The Sociological Component of the Project

1. Findings

The sociological component of the project both reflects and has fallen victim to the project's lack of any clear demarcation, understanding or mutual agreement on the different demands for research, extension and management policy. All three are necessary components of any complete range management program, but each requires different talents, scopes of work and collaborative ties.

The sociological component, as largely designed and practised, represents a research mode whereby, at the end of an appreciable period of time, a synthesized document is presented as the final end product of the overall effort. Other participants are seen as both gathering information for, and learning from, this component. Research is extended over an appreciable period of time; analysis, and especially synthesis, occurs only after the completion of data collection. Meanwhile, crucial decisions are taken prior to the provision of major recommendations, thus precluding any feedback and reform of the true determinants of project activities.

In contrast to this approach, project technicians and extension activities often expect, appreciate, and need applied action research directed to some immediate task at hand; meaning research focus is defined by the client's (technician's) need and is provided in the form of a precise, practically implementable, action proposal.

The management/policy issues actually exist on two levels. Immediate management of local resources by project personnel and participants should make use of research input and be directly concerned with the results of specific actions. In contrast, national and legal issues involve a separate process, embracing a large number of actions and questions beyond the immediate area of population targeted by the project. Resolving such issues is beyond the competence of project personnel, but those responsible should be encouraged to be concerned with the project as an aid to defining their own policies.

It is in the context of these multiple but ill-defined project purposes that the sociological components of project activities must be placed and judged. The following discussion of the failings of the sociological component of this project are treated (both here and in Annex 2, "Possible Methodologies for Future Social Science Activities"), in detail. This is not because the performance of the sociologist in this case was less adequate than the performances of the other members of the original project team. Rather, the failings in the sociology component are discussed in greater detail because these problems are sufficiently common when social scientists participate as technical advisors on development projects, that it is important that the present circumstances serve as a learning experience, and that careful attention be paid in any future redesign of this project to assuring that the problems identified below are not repeated.

Of the major questions indicated by the PP and Contract to be addressed by the Sociologist such as: the importance of the transhumance; women's role in livestock production; contractual arrangements; membership cooperatives, and distribution of benefits; no evidence was found to indicate any will be addressed and answered to the extent intended or needed.

The causes for the disappointing performance of the project's sociological program, are attributable to a multiplicity of factors and personalities. These include:

- a) The early collapse of any attempt at team unity and inter-disciplinary cooperation;
- b) Positive hostility by some team members to any honest integration of socio-economic inputs to technical decision-making;
- c) Limitations on freedom to gather information due to control by local authorities (see special issues);
- d) Lack of sufficiently trained and motivated GOM counterparts for the team sociologist; and,
- e) Early transportation difficulties and the distance between sites.

All the above represented major hinderances to the proper performance of the social scientist as called for by the contract. In the light of these, some discouragement is understandable. However, despite these difficulties, it is questionable whether the social scientist has exercised to the fullest the level of commitment and creativity in finding alternative solutions that should have accompanied a willingness to continue employment in this crucial role. For example, while the social scientist has more than any other team members, supported the PCVs (e.g. by maintaining communications and through the production of a short methodological guide), the lack of actual time in the field with them and on perimeters other than Timahdite, is inexcusable.

Significant criticism can be leveled at the way numerous methodologies have been applied or largely ignored. For example:

- a) There has been little real participant observation in the true sense of the word. Neither the sociologist nor PCVs live in the concerned communities nor spend significant continual periods of time observing daily activities in such communities, (i.e. a few full days of walking with a herder at different periods of the year or on different terrains; or following particular animals from the culling period to market sale and disposal).
- b) Key informants, both owners, herders, and project personnel have not been systematically interviewed and their opinions procured to assess and record the full gamut of their knowledge of local interaction and adoptive strategies.

- c) Historical information has apparently been gathered, but not synthesized (at least publically), to clarify relevant past practices and trends (including indications of the direction of future developments).
- d) The project has conducted some limited surveys of its own and the social scientist has offered appreciable assistance to surveys and survey analysis done by the Moyen Atlas projects. Concomitantly, the Moyen Atlas survey represents a major GOM contribution to the gathering of the limited social science data by the project. However, almost all of the surveys are open to challenge as to their significance and validity;
- e) Surveys are generally too long and many questions are couched in terms that give little hope for truthful response, due either to ignorance or unwillingness on the part of respondents (e.g. specific breakdown of herds; crop yields, and rights to land). Basically, surveys are being inappropriately used as initial data gathering devices per se, rather than to test hypotheses based on criteria already identified as relevant and reliably retrievable by questionnaires, after careful non-survey inquiry. Many information forays are not properly stratified and, as a result, crucial potential target groups may not be represented. For example, the overwhelming tendency has been to work with immediate or highly probable participants in project activities (e.g. cooperative members, and recipients of vaccines). As a result, crucial questions, like why some people are not or cannot participate in such activities, are not being adequately investigated.

The actual presentation of sociological information is most inadequate, the only exception being data from the GOM Moyen Atlas Project presented in the 1982/83 Annual Report. Much promising information will at best appear in the distant future in some yet to be written report. No continuing effort has been made to make information, even if only in preliminary form, easily retrievable and immediately available for application.

An excellent example is the pastoral lexicon. Individual researchers would generally accumulate new vocabulary over time, and progressively expand their use of such vocabulary as their knowledge grew. However, the lexicon being assembled for the team is not being produced in such a progressive fashion. Knowledge is flowing into the center, but not out from it. As a result, it may be of future use, but it is not being used as it might at present.

As regards the task of assuring the use of culturally appropriate approaches by team technicians, there has been a major contribution by the team sociologist as regards the Timahdite perimeter. In this specific case, the role of the sociologist has been highly appreciated by all other team members and has served to increase their awareness of the need for such inputs. However, such an awareness consists basically of a heightened appreciation of the need for direct communication with the concerned population; general understanding of their situation; and their

active understanding and participation in decision-making. Such a sensitivity is appropriately the hallmark of good extension work, community development, social analyses and democratic decision-making processes. While the project social scientist should be credited for helping engender it in this case, it does not represent the full spectrum of methods and insights social analysis could contribute. Unfortunately, neither in practice nor theory could there be found much evidence that the other particular professional contributions social science can make have occurred to date. In fact, a true understanding of the purpose and possibilities of the project's sociological component was not generally possessed by the majority of the project staff or PCVs interviewed.

The focus on the perimeter concept, rather than on the perimeter as part of a larger livestock production system, has artificially narrowed the project focus. In the case of the social scientist, the result has been an over-emphasis on the question of land tenure and usufruct. There is no question that land tenure issues are a major constraint for all Moroccan agricultural production. However, in the context of this problem, there is little the social scientist or project can contribute to actually resolving this already well identified problem. Rather, the areas to which the social scientist can most contribute range from community organization and cross-cultural communication on the operational level, to analysis of economic strategies and ecological adoptions of socio-economic institutions on the individual group and regional levels.

There is a danger that, in expanding the project from beyond the perimeter to the production sector, the problem of collective land use will be subject to benign neglect. Ultimately, the question of collective land use must be dealt with and, in fact, the most desirable solution is not yet known. Moreover, the project has already trained, or is training people in grazing land management. Therefore, it is important to emphasize that use of the collective lands must remain an important project focus, but that the situation in this regard is still largely in the research stage. Meanwhile, extension of other activities to users of collective lands in areas where technology is well known, should be expanded to both gain user confidence and increase their capacity for adoption of new management practices.

2. Perimeter Specific Findings

As regards sociological activities and the social situation at each perimeter, the following appears to be the situation:

a. Timahdite

The social scientist has focused almost all her efforts on this perimeter, as well as collaborating with the Moyen Atlas Statistical Survey in the area. As a result, probably more is potentially known about Timahdite than the other areas. Unfortunately, the results have not yet been compiled and synthesized, and the opinion was expressed that it would take over a year to finalize an "interesting report" on the zone and its use by local users. Based on material present, it is really impossible to say to what extent such a report will really be useful or

represent any quantum leap in understanding of the area. It might well be very valuable but actual progress to date is not encouraging. Meanwhile, there is no doubt that the presence of the social scientist and PCV has encouraged more direct communication with the population prior to imposition of new development strategies.

b. Oujda

The Peace Corps Volunteer is collecting some useful, thoughtful information. Unfortunately, it is not getting proper dissemination. Much of it apparently will be written for an MS thesis, copies of which will be sent back to DE. This situation is not the responsibility of the PCV, but of the project TA team, i.e. the project has not established, and has actually cut, lines of communication between different sites.

Most worrisome, however, is the extent to which activities are being limited to a very small, select group of users of DE services. Partially, this is due to the PCV's dependence on assistance from DE personnel, who are carrying multiple job loads and are stretched to the breaking point. At the same time, there is good reason to question the de facto highly exclusive nature of the cooperative that is using the perimeter area. (Approx. 54 people on 10,000 has. with possible expansion to 50,000-60,000 has. and with action shares costing 1,000 DH). The actual situation appears to be in direct opposition to the project's intent of helping the needy majority and may well be little more than a thinly disguised land grab. It is an inappropriate extension system, as it will probably only increasingly alienate those pushed off the collective land. Moreover, as the focus of activities, it is receiving numerous subsidized services and it is questionable whether, as a model, it is economically or managerially viable.

c. Midelt

Midelt may well be characterized as a partially eclipsed star. Activities are progressing favorably, but entirely independent of any conscious social science input. Due to the in-depth experience of Mr. Fagouri, who is in charge of activities, a great deal of de facto sophisticated social maneuvering is occurring. However, evaluation of the project's effects in terms of social benefits and benefit distribution is impossible. Moreover, much valuable information is being lost as to the dynamics of using the "local authority enforcement system" in effect at Midelt, its applicability elsewhere, and its ability to sustain itself independently of the existence of an agent such as Mr. Fagouri. The efficacy of extension is being limited by an excessively narrow perspective focused either on the perimeter or clearly identifiable private requestors of services. Had the project functioned as a team, as intended, Midelt might well have become a real showcase of not only a controlled perimeter, but of an expanded concept of assistance to a wide spectrum of livestock producers using the perimeter. In fact, it still can. Midelt is also unrepresentative in that the animal charge on the land is not as unmanageable as some other areas.

d. Beni Mellal

Until recently, activities at Beni Mellal (Ait Rbaa perimeter) have been in a state of paralysis due to the extreme social tensions surrounding use of the collective lands. Basically, there is nowhere near enough land at Beni Mellal to go around. Moreover, it seems questionable that the economic benefit to be derived from arbitrarily parcelling out rights is worth the socio-political costs involved (obviously, to date, the authorities think not). In fact, it might well be best to leave the land at Ait Rbaa to serve as an example of the negative effects of uncontrolled grazing. The present Moroccan/American team (Project & PCV) are positive thinkers and doers and are ready to act. What they seemingly are proposing, in fact, is to largely ignore the perimeter and mainly concentrate on other livestock production activities. This is probably the proper strategy for the area, and should be encouraged. However, because of the extreme pressure on the collective lands at Beni Mellal (which does not exist to the same extent at either Midelt or Timahdite), the area in the long run is probably not a good central focus for project activities, since range management is almost inappropriate there. It could be continued as one spectrum of possibilities (perhaps even the most applicable to Morocco) but unless the project wants to totally change its strategy and very heavily de-emphasize range management, it should not be the leading activity. (However, it might be a good area in which to form a link between the Range Management & Dryland Research Projects).

There were numerous expressions of intent to work as a team on the project documentation. In fact, no mechanism to assure this was built into the project. Experience elsewhere has, for a long time, shown that true interdisciplinary work only thrives when professionals from different backgrounds focus on a specific operational problem (e.g. design a ship) and each willingly compromises some of the parochial ideals of perfection of their own professions. The project, by dividing and sub-dividing responsibility, destroyed all possibility of this occurring.

If this is not to occur again, some clearly defined central conceptual task must be identified, and specific support given, to assure that there is a constant flow of efforts towards completing this task on the part of all team members. This could be achieved by adopting a modeling approach to system analysis and using the skills of human geography, especially as practised by the French, as a mechanism for synthesization of findings and applying them to particular project livestock production zones.

There is a definite need to work with the population, independent of any message, to get them to focus on the fact that a new development effort is occurring and to determine with them their role in it. This has begun to occur at Timahdite in relation to the establishment of test enclosures, but the population contacted remains too limited. Moreover, their action is basically to obtain their concurrence with a decision already taken, not to obtain participation in decision-making.

Despite all the above problems, there exists a general recognition among DE staff of the major and fundamental nature of the social and legal constraints to rangeland management. Moreover, there is a recognition of the continued need for participation of social scientists and the integration of a sociological perspective in both range management generally, and project activities specifically. However, the full potential of such involvement is not well understood. In fact, its focus and methodology must be fully reviewed and reprogrammed, with specific determinations made as to not only what questions are to be addressed, but the precise mechanisms necessary for assuring the answers are obtained, circulated, and applied.

3. Conclusions

a. Socio-economic Component - Immediate Future

The role of the sociologist during the remaining period should be to:

- 1) Pull together all available data on already conducted or in process surveys;
- 2) Finish the lexicon;
- 3) Assemble already collected historical & present social, economic and geographical data on each perimeter in a perimeter-specific "best available information" monograph.

To achieve the above, the project must:

- 1) Get a transition assistant for the lexicon and train him to carry on this task with the PCVs during the one year transition;
- 2) Get a 4-6 month cultural/human geographer (American or French) with strong-proven cartographic/graphic skills to convert the majority of data to graphic form and to correlate with data with spatial coordinates. There should be a simultaneous rolling translation of these documents into French;
- 3) Provide specific TDY help during PCV training and for one month each quarter for PCVs on field methodology and cognitive analysis. Two short-term specialists will be needed. A field method specialist will spend one week in the field each quarter at each perimeter. The cognitive analyst will spend one week each quarter at the time of the quarterly meeting, reviewing material and establishing next quarter's work plan;
- 4) Funds should be provided to permit PCVs to employ local community members (e.g. some young people) to assist them in field interviews. This would have the added benefit of assisting the PCV to develop better relations with, and understanding by, the community.

b. Socio-economic Component - Long Term

- 1) For future project redesign purpose, the entire sociological component must be rethought to reflect the proper breakdown of project activities into research, extension and management/policy issues (both local and national). Each will require different personnel, skills, foci and scopes of work. Equally important to problem identification will be the mechanism incorporated into a redesign of the project to assure information is rapidly circulated and applied.

Table 4 presents an illustrative outline of one possible breakdown of tasks and personnel.

- 2) There is no question that the Moroccan agro/pastoral system is composed of many highly inter-dependent variables and that numerous sub-systems exist, based on access to resources and knowledge. At this point in time, no definitive model or models exist, but a basic generalized prototype can be outlined. From this, initial strategies for limited intervention could be drawn, as well as specific areas of investigation earmarked for determination and evaluation of strategy efficacy. The evaluation of these actions would feed back to a change in the model and a readjustment of project activities.

The situation is dynamic and ever-changing as more is learned and as change, including change in local people's attitudes, occurs. One is both learning what to extend and how to extend, at the same time as actually extending. What makes the team a team would be the mutual development and acceptance of the same model. In fact, one of the major tasks of the redesign should be to develop the first model from which to identify initial interventions and applied research concerns.

It should be noted that the model is not meant to be some complex mathematical computer design, but a very simple graphic portrayal of basic elements and organization. (The DNA/RNA model, which revolutionized biology, is simple enough to teach junior high school children, and is constructable with tinker toys).

- 3) The basic concept of a perimeter should be expanded to that of a Livestock Production Zone. Such a zone encompasses the human, animal and natural resources that interact over an annual cycle. A major activity of the team should be to develop together simple models of the different livestock production systems and sub-systems and, on a continual basis, to refine such models in terms of their growing technical (including social) understanding of crucial areas of inter-dependence, production constraints, and targets of opportunity for intervention.

Table 4. Outline of the role of social science personnel in a reoriented livestock production zone project (based on four production zones)

	<u>Research</u>	<u>Extension</u>	<u>Management/Policy</u>
Moroccan Institutional Base	IAV/Meknés School	MOA/Meknés School	MOI/MOA
<u>Activities</u>	<ul style="list-style-type: none"> -Joint and collaborative research by Moroccan/U.S. staff and students. -Onground assistance information gathering to project team. -Analysis of project findings. -Long term evaluation of research. 	<ul style="list-style-type: none"> -Identification of audiences, needs and perceptions. -Establishment of two-way communication between project and audiences. -Assist in transmission/training of new technologies. -Organization of project participation groups. -Ongoing evaluation of project activities. -Collection of base data. 	<ul style="list-style-type: none"> -Establishment of perimeter use policy. -Determination of rights and right users. -Enforcement of use policy. -Regulation of conflicts. -Policy research. -Nationwide dissemination of results.
<u>Problem Focus</u>	<ul style="list-style-type: none"> -Local system analysis: social, economic, geographic interdependencies, resources and constraints. -Variations in production systems and management strategies. 	<ul style="list-style-type: none"> -Nature of immediate use and users. -Effective communications technologies. 	<ul style="list-style-type: none"> -Long term national, political, social, and economic consequences of specific policies. -Realistic sustainable regulatory mechanisms.

Table 4 (cont.)

	<u>Research</u>	<u>Extension</u>	<u>Management/Policy</u>
Moroccan Institutional Base	IAV/Meknés School	MOA/Meknés School	MOI/MOA
<u>Problem focus (cont.)</u>	-Charting of spatial, resource, activity, population coordinates.	-Positive and negative factors to general participation.	-Viability and desirability of implementation of technical recommendations on land use.
	-Present and future beneficiaries.	-Organization of new common purpose activity groups.	-Possible mechanisms for enforcement of regulations, and user redress.
	-Economic, social, environmental tradeoffs.		-Need for flexibility in policies to local needs and overtime.
<u>Action Agents</u>	-GOM: 1 Social Scientist 1 Human Geographer	-GOM: 4 Range Extension Agents per production zone 1 Applied Social Scientist	-GOM: MOA/MOI Rural Affairs (precise role not yet identified)
	-AID: 1 Social Scientist 1 Human Geographer	-AID: 1 Social Scientist 1 Community Development Expert 1 Cognitive Analyst Specialist plus a Graduate Student.	AID: Possible short term TDY expert in resource regulations (Major task being to arrange short-term training in sophisticated regulation of resources for legal/admin. personnel).
	-Others: Moroccan students	-Others: 1 PCV community organizer/research assistant on each perimeter.	

Table 4 (cont.)

	<u>Research</u>	<u>Extension</u>	<u>Management/Policy</u>
Moroccan Institutional Base	IAV/Meknés School	MOA/Meknés School	MOI/MOA
<u>Disciplinary orientation/ Area Expertise</u>	-Applied anthropology: adaptive strategies; economic anthropology; agricultural production systems.	-Social scientist: cross-cultural communication; rural development social organization and decision processes.	-Resource management and administration.
	-Human (Fr.) or cultural (Eng.) geography: cartography/graphics.	-Community developer: rural development in North Africa.	-Local regulation of land rights, law and development.
<u>Misc. Needs</u>	-Funds for transportation, supplies, per diem, salaries, temporary local research assistants and material preparation.	-Funds for transportation, supplies, per diem, salaries, temporary local research assistants and material preparation.	-Funds for U.S. or third country visits, short-term training.

Comment: The presumption is that there are four production zones. A research team would have responsibility for macro-analysis and data synthesis on all perimeters. Extension social scientists would each have implementation responsibilities for two perimeters and temporary technical assistance responsibilities on all four perimeters and assistance to PCVs.

- 4) A concerted effort must be made by project social science and extension personnel to identify all potential audiences and the causal factors behind any apparent unwillingness or inability of particular audiences to be open to proposed innovations. Thereafter, specific strategies must be evolved and operations undertaken to establish direct communications with such audiences and to design programs appropriate to their needs.
- 5) A new element, in association with, but independent of other project social science and extension activities, should be introduced in the form of a specialized community organization capacity. This job could be done in several ways, such as using PCVs with different objectives or involving an associated PVO like Save The Children Federation, with specific expertise in a community-based integrated rural development approach. This activity could act in conjunction with either the Ministry of Agriculture's Extension Service or Ministry of Interior's Direction of Rural Affairs. One of two social scientists assigned to the project must have personal expertise in the area of applied community organization and function to refine what is largely an "art" into specifically replicable actions, adaptive to the Moroccan micro-milieus. This social scientist would be part of the action team and not an independent researcher/evaluator.

F. The Plant Materials Center

1. Findings

Although there were delays in the selection of the site for the PMC and in the release of funds for its construction, these have not seriously delayed the implementation of the seed production program. The site selected would appear satisfactory for the production of warm season grasses and legumes under irrigated seed production conditions. It is too early to determine whether or not the cool season grasses needed for reseeding higher elevation ranges will receive the required level of cool temperature necessary to induce seed head formation (vernalization) to a sufficient degree for adequate levels of seed production. If adequate seed production of these species is not dependable, then higher elevation increase fields will be required.

The experience, skill, and management capability of the USU resident advisor has been a critical element in the rapid and successful development of the Center. The assistance of a Peace Corps Volunteer has been of significant benefit. The skill of the counterpart staff in ensuring the timely availability of construction funds, contracting, and construction supervision has expedited the development of the center and its facilities, which should be completed during the summer of 1984.

It would appear that the development of the Center is progressing well in relation to plans. There are a number of issues relating to the purpose, emphasis, future role, and organizational linkages of the center that are of concern. These are of immediate importance in relationship to the purchase of rather extensive seed cleaning equipment allocated in the contract for the Center.

The farm is served by an irrigation system, but not all areas can be adequately served, and delivery of water and its scheduling create problems of dependability and timing. It is therefore planned to supplement this gravity fed system with portable irrigation pipes, portable pumps, and a well with reservoir capacity. This is a prudent plan and should function satisfactorily.

The fields are extremely weedy and the heavy clay soils present some stand establishment problems through poor percolation and soil crusting, but these are being satisfactorily resolved. Weed control will be a continuing problem and will need constant attention to prevent excessive competition and contamination of the crop seed with those of weeds.

2. Conclusions

The Center is developing more rapidly than the programs designed to utilize its output. In addition, the Plant Materials Center was designed to serve three functions. These are (1) species and variety introduction and evaluation, (2) foundation seed production, and (3) large-scale production of specialty seeds. The relative emphasis to be given to these alternative functions has not clearly been delineated. To some degree, each is duplicating the activities of other government organizations. These concerns are enumerated below:

a. Species and Variety Introduction and Evaluation

The Center is designated as the coordinator for the introduction, distribution, and evaluation of plantings on a coordinated basis, as well as for data collection on range grass, legumes, and shrub varieties and species. This is a major function and would require staff with specialized training, adequate mobility and support facilities. This duplicates to some extent activities underway or planned by INRA through the MIAC and GTZ forage crop donor-assisted programs. In addition, the Forest Service has a similar testing program underway. These activities should be brought together in a coordinated way and the role of each participant clearly defined.

b. Foundation Seed Production

The intent is for the Center to be the repository for the production and distribution of foundation or basic seed stock as part of a seed multiplication system. The Center would produce this high quality seed for distribution to growers, who would, in turn, increase it for commercial sale. This is a desirable effort, but the level of quality control proposed may be more than is either needed or justified to fill the needs in Morocco, where fields to be seeded are already contaminated anyway. In addition, INRA already has a seed multiplication system and handles seed certification. Consequently, more thought and coordination is needed in this program.

c. Specialty Seed Production

The PMC is also designed to produce significant quantities of seed for species and varieties in limited demand that would not be attractive to the private sector. The relative cost of this operation in relation to

importation of this seed is currently undetermined. The main reason for this function is to ensure timely availability and quality, which has been a past problem when relying on imports. It might be more cost effective to solve the import problems.

The relationship of the production functions that involve seed multiplication for ultimate large scale production by the private sector and specialty production for limited demand seeds has not been adequately investigated. Determination is needed of future demand, price and/or subsidy requirements, the potential for export markets for both high quality and specialty seed, and the rate of market growth.

The PMC could act as anything from a primarily research and development facility to a national specialty seed company. These options need to be carefully examined and decisions made soon. There is the danger that the center may soon be churning out a large quantity of seed that cannot be used because it is ahead of the utilization system.

d. Seed Cleaning Facilities

The Center is being designed as a substantial commercial-scale, high quality, seed cleaning facility. The equipment for this facility was specified with the help of outside consultants and is in the budget. An urgent need is present for a decision on the future role of the Center. If extremely high quality (foundation) seed must be provided by the PMC in quantity, the equipment is needed. If lower quality seed may be satisfactory for Morocco's needs, the facility might be better used as a warehouse. Moreover, keeping this equipment functioning will require training of skilled personnel.

G. Training

1. Findings

The production of trained personnel and timely entry of trainees into training programs has been a major accomplishment of the project. This reflects generally good cooperation between DE and USU.

a. MS Training

All participants are in the process of completing MS degrees concurrently. Participants were intentionally sent to a variety of institutions with the objective of having only one or two participants at each university. Each participant is studying a specific major and this division is consistent with the contractual agreement. Morocco now has a limited capability to provide MS (3rd cycle) education in range management. Future developments at IAV should reduce the heavy dependence on U.S. institutions for these programs. However, since IAV has, as do all faculties, a limited view of each specialty, a long time exposure of students to U.S. education in a variety of institutions should maintain the diversity of opinion necessary for progress.

b. Short-term Training

In all aspects the six month training program in the U.S. has been an unqualified success. All participants have felt it to be of real value and a source of inspiration when they returned to their respective positions.

c. Administrative Training

Our view of this program is less clear than the others. It seems to have fulfilled its purpose as a one-time effort to orient key administrators with no range management background to the purposes of the range management program. The program was initially provided in French and later in English. Consideration to giving the program in French in the future would allow expansion of the potential audience.

d. General

There exists in all areas of education, the need for detailed and intensive educational programs. This ultimately leads to graduates with a narrow focus, which poses a different set of problems for project managers. Range managers must be involved in both research and extension, while sociologists must be cognizant of the special problems in agricultural extension. Principles from the science as taught in the U.S. transfer directly to Morocco, but certain technologies will not directly transfer.

e. English Language Training

Originally, the project attempted to minimize the investment in time and resources devoted to English language training for short and long-term participants. This was done through the development of a "home study" program that candidates could follow while at their posts, in order to prepare themselves to take English language proficiency tests. This effort failed. Ultimately, it was found necessary to enroll candidates at the American Language Center in Rabat for up to six months of intensive English language training. It was felt that the improved performance of the students in their studies in the U.S. more than compensated for the time and resources initially invested in teaching them English.

2. Conclusions

a. MS Training

Future MS training should include both IAV and U.S. universities.

b. Short-Term Training

This program should be continued in order to help fill unmet needs.

c. Ph.D. Training

A future program designed for DE personnel that will ultimately move to administrative positions should be considered. This should provide individuals that can compete with veterinarians for decision-making positions in DE.

d. In-Service Training

In-service training should be a regular part of all DE and American technical personnel activities. A staff exchange program with the AID-financed range management program in Tunisia would be particularly worthwhile.

e. The Resident Faculty in Morocco

Resident faculty in Morocco should provide advice to U.S. universities before students matriculate. The role they are expected to fill upon their return should be clear. A suggested core course of study and supplementary activities will help various graduate committees design a course of study. It is clear that all Moroccan students should study extension techniques, applied social sciences, and international agricultural development as well as the appropriate technical field.

f. Breadth of Training

More training is needed, especially in terms of short-term, in-service courses. However, the future direction needed for this project demonstrated the danger of training Moroccans with too narrow a professional focus. For example, the range management people are really being called upon to be both applied research and extension personnel, while the sociologist role must include the ability to perform in an agricultural extension context. The dominance of U.S. capacity in range management also tends to obscure the need to evolve different techniques for different non-U.S. environments and largely ignores past problems in international range management projects. As a result, there should be established a core curriculum needed for future trainees. Prior to assigning responsibility for training to any U.S. institution, there should be assurances of their capacity to fill those needs or supplement their curriculum (e.g. a semester at another school or summer field trips abroad). All technical personnel should have exposure to appropriate applied social science and everyone should have some exposure to problems of agriculture in international development projects.

H. Economic Aspects of the Project

1. Findings

No economic analysis of the range/livestock sector has been undertaken under the project. Moreover, no economic analysis has been undertaken of the project itself, nor of any of its components. The project has not improved on the economic knowledge base that was available for the original project design. None of the economic assumptions implicit in the project design have been reexamined. Some economic data has been collected via the souk (market) studies carried out by Peace Corps sociology volunteers at Oujda, Timahdite, and Beni Mellal. However, there has been no overall analytical framework within which this work has been undertaken. The data was collected because it was assumed that such data would be needed "someday". The PCVs have received little guidance concerning how the data collected will eventually be used or how it will ultimately be analyzed. Alternative methods of collecting economic data, especially qualitative economic data, have not been explored.

While some economic data has been collected through informal interviews undertaken by the Peace Corps volunteer in Oujda, and a small household economic survey is planned for Timahdite, no method has been developed to facilitate the dissemination and use of such information in project decision-making.

In order to evaluate the ultimate effect on beneficiary income of changes in technology or management practices introduced by the project, it is important to understand the marketing strategy of these livestock producers. The project hoped to identify livestock sales and price cycles which could be used for this purpose. The approach used by the project was to have PCVs collect volume and price data at local souks on a weekly or bi-weekly basis. However, the objective sought cannot be reached simply by collecting quantitative information via souk studies. The price and sales figures collected will be both time and location-specific. This is due in part to the impact on the livestock market of Moslem festivals, such as Aid el Kebir, which occur at different calendar periods each year. Aid el Kebir alone accounts for 20 to 25 percent of annual sheep demand and has a very important impact on livestock sales, prices, and producer marketing strategies. Since Aid el Kebir will occur at different periods in the annual agricultural cycle, its impact on livestock prices and sales will vary from year to year. Moreover, the market effect of the Moslem festivals will overlay the effects of climatic conditions, which will vary both from year to year and from region to region within a given year. The interaction of these two factors will make it impossible to develop a simple model of livestock sales and prices that will have any predictive value, or even relevance, for later periods of time and other areas.

The current approach by both the project staff and the GOM to collecting economic data has involved a reliance on surveys. However, surveys rarely provide information on a timely basis. They do not assist in management decision-making and the development of project activities in the near term. Moreover, it appears to be difficult to get permission from the Ministry of Interior to conduct surveys. Alternative "non-quantitative" methods for collecting and analyzing economic data have not been explored by the project staff. The methodology elaborated in the evaluation of the project's sociology component is applicable to the economic analysis as well. An economic analysis should not begin with a survey. Rather, the first step is to develop a simple picture or model of how the economic system works. This can be done using qualitative information gathered through informal interviews with project staff, local officials, livestock owners, and farmers. This model can then be used to form hypotheses which are then tested using more quantitative techniques, such as surveys. However, it is important that, prior to undertaking a survey, you know what information you need and how you will analyze it. This was not the case in this project. Another advantage of using qualitative data (or quantitative data from secondary sources) is that it can more readily be made available to assist other project personnel in developing strategies and evaluating the results of activities.

GOM economic and analysis capabilities are very limited and, with respect to agriculture, GOM microeconomic data is sparse. The need for a better economic data base is evident.

The original cost/benefit analysis of the project has little in common with subsequent project experience. Among the problems identified with the analysis were:

- a) The cost/benefit analysis was based on the benefits expected from planned GOM investments which were part of the GOM's three year plan, some of which would have taken place whether the project existed or not.
- b) The analysis was based on calculations of production returns to reseeding and deferment which rested on extremely tenuous agronomic research. The cost/benefit analysis essentially extrapolated the results of a single, small-scale, six-month, controlled experiment to the entire project area (100,000 has.). The methodology used in the study was critiqued in the 1977 Washington State proposal. It is significant to note that even the economist conducting the analysis did not take the results of the study (e.g. a 500 percent increase in liveweight meat production on range seeded to crested wheatgrass) seriously. He arbitrarily lowered the figure to only 100 percent, a figure for which there is no empirical justification.
- c) The cost/benefit analysis was done twice, once based on a reseeding of all 100,000 hectares in the project area, and again with deferred grazing of all 100,000 has. However, much of the rangeland in the project area is not amenable to reseeding, and many areas simply would not respond to deferred grazing in a single year, as assumed in the cost/benefit analysis. Consequently, the assumption that personnel and infrastructure costs could be prorated over the entire 100,000 has. is dubious, at best.
- d) While the analysis included the operating costs of the Plant Material Center, it did not include its construction cost.
- e) Wool production was assumed to double under range reseeding and increase by 50 percent under rotational grazing. However, improved nutrition has only marginal effect on wool production. Generally, the biological fulfillment of wool production needs takes priority over milk and meat production in sheep. Since neither of these approaches would succeed unless the grazing intensity were reduced (i.e. there were a fewer number of sheep on the range), it is difficult to see where the extra wool would come from.
- f) The activities on which the analysis was entirely based (e.g. reseeding and deferment of grazing lands) were not within the "extension" thrust of the project as subsequently interpreted in the USU contract with DE.

2. Conclusions

Since major project design modifications are necessary, a new economic analysis will also be needed. This new analysis should look at the costs and benefits of improving the livestock/cropping system. However, a more substantial economic data base must be developed (in order to avoid having to once again pull figures from thin air for the cost/benefit analysis).

Peace Corps Volunteers with agricultural economics expertise should also be considered for "sociologist" slots at each project site. These individuals should receive some guidance in formulating a data collection and analysis strategy from the current Chief of Party, Roger Banner, an individual with extensive experience in the economics of range management. They should also be able to draw upon the resources of the economist fielded by the AID-financed Dryland Agriculture Project (0136).

TDY assistance by an economic anthropologist is needed to develop alternative approaches to collecting economic data. This person should precede the PCVs in order to develop methodological approaches and, once they have arrived, provide them with technical assistance in various facets of participant observation, the use of key informations, and other data collection approaches. Methods should also be developed to minimize the level of effort involved in collecting data via household economic surveys and market studies. Additional short term technical assistance in various aspects of economic analysis should be sought when needed by the Chief of Party.

One of the PCVs selected should be given the responsibility, on a part-time basis, for collecting, evaluating, and synthesizing relevant economic data from secondary sources. Such sources might include disaggregated national statistics and census data, economic analyses from AID, World Bank, FAO, other donor and GOM projects, IAV memoires and research, DPAE research and survey efforts, and individual research efforts. This information should then be disseminated to other members of the project team as a means of assisting them in their analyses. The Chief of Party should be able to offer guidance as to the type of information that should be sought. This PCV should have some economics or agricultural economics training and should speak and read French.

The following is a preliminary list of economic analyses which could (and in several cases, must) be undertaken during the design and implementation of any follow-on project:

- a) Economic analyses of the comparative returns to various livestock/cropping mixes (involving dryland and irrigated crop systems).
- b) An economic analysis of the improved cereal grain production methods and an analysis of the implications of these new methods for livestock production. For example, is there technology available that would permit Moroccan farmers to double not only their cereal production, but also their production of straw? What are the economic implications of this for the livestock sector?
- c) An analysis of the cost effectiveness of alternative livestock management systems. Is it, in fact, possible to get greater returns with a smaller number of better nourished animals (assuming that the "tragedy of the commons" problem can be resolved)?
- d) A comparative economic analysis of the returns to livestock that are grazed on collective lands versus the returns to livestock that are grazed at least part of the year within the perimeter. For example,

is it more profitable for rights-users to purchase lambs, put them on the perimeter to gain weight, and then sell them, rather than to keep both ewes and lambs on the perimeter? In addition, at what age is it most profitable to sell lambs?

- e) A comparative economic analysis of producing forage from one's own land (under either dryland or irrigated conditions) versus the cost of purchasing supplements. This would involve analyzing the forage value of cereal crops using new technologies available for dryland cereal production. An economic analysis is needed to identify when it is most cost effective to use supplementary feed.
- f) An analysis of the cost effectiveness of reseeding various forages by the government on collective lands, and by private livestock owners on their own land.
- g) A cost benefit analysis of established perimeters, such as Plaine de l'Aarid, where there have been significant expenditures on land improvement (e.g. fencing, water development, reseeding, and operational costs).
- h) An economic analysis of the grazing indemnity system. Is it a necessary subsidy or does it simply ensure that a larger number of animals will remain on the range?
- i) An economic analysis of the operation of the Plant Materials Center (PMC). This will involve determining the actual cost of producing seed. The data for such a study is currently being collected by Mr. Harding, the expatriate advisor to the PMC. However, the PMC does not yet have the necessary yield figures. It is also necessary to examine the economics of distributing the seed produced to the farmers. The staff at the PMC are finding that the costs of producing seed are higher than originally expected and probably higher than an individual farmer can afford. This means that the economic benefit of continuing to subsidize seed production will have to be explored.

To complete many of these economic analyses, certain agronomic and livestock research efforts may first need to be undertaken in order to develop production functions with which to work. Examples would include studies to determine the yields from reseeding forages, the development of an annual feed budget, cereal crop production yields under improved technology, and so forth. A range of precipitation levels will also need to be taken into account. For this reason, the individuals in the project conducting the economic analyses will have to be kept informed of agronomic and livestock research that is being undertaken.

Long-term participant training in livestock and range economics should be considered. USU, itself, has a very good range economics program. However, in selecting a school, emphasis should be placed on finding a curriculum which is relevant to the needs and level of analysis possible in the developing country setting.

I. Commodities and Revolving Funds

1. Findings

The planning of project personnel has been impeded by the failure of the Logan office to acknowledge receipt of procurement requests, and to indicate whether they were being approved, rejected, expedited or delayed. This, combined with the practice of consolidating procurement shipments, has meant that in-country staff have no clear indication of what is in any given shipment until it comes out of customs. Currently, for example, the project has both a sea and air shipment delayed in customs and the in-country staff do not know for certain just what they contain. A second problem with the consolidation of shipments is that the invoices sometimes do not match the contents of the shipment. When this occurs, it results in severe delays in customs. Finally, the Department de l'Elevage has not been able to effectively handle the clearance of procurement orders through customs. As a result of these combined problems, it takes roughly nine months from the time a requisition is made until the the time in-country staff receive it.

The procurement of project vehicles presented an additional problem. The vehicles were not released from Moroccan customs until January 1982, five months after the arrival of the team. However, they were usable only temporarily since USAID determined that a road tax that the project had paid to release the vehicles from customs could not be authorized. This meant that either the GOM would have to pay the tax or the vehicles would have to be registered with Moroccan government license plates. The vehicles were therefore grounded and not available until April 1982, seven months after the team arrived in country.

The project also ran into problems when its U.S.-based shipping agent ran into financial difficulties, eventually going bankrupt. Their failure to pay a Moroccan-based shipping agent for services rendered led to a further disruption of commodity procurement activities. Ultimately, new U.S. and Moroccan shipping agents were found and the problem was resolved.

Finally, the revolving fund created to cover project expenses is not large enough to cover delays in expenditure approval. Both DE and Logan must approve expenditures. Receipts flow through DE prior to going to Logan. This has led to significant delays in the replenishment of the revolving fund. Consequently, there is often insufficient funds to meet in-country project expenses. This has especially been a problem for the Plant Materials Center. As a result, project personnel have had to use funds from personal bank accounts to cover project expenses, never knowing whether they will be reimbursed. Expenditures, unless specifically authorized in the contract, may be disallowed by Logan. If so, then any reimbursement would have to come from the GOM. DE has been unwilling to increase the size of the revolving fund, preferring to minimize the possibility that funds would be spent which have not been clearly obligated. Logan and DE have never come to an agreement on a resolution of the problem.

I. Peace Corps Participation

1. Findings

The performance of the Peace Corps Volunteers deserves the highest praise. While the results of their efforts have been limited, this has stemmed largely from poor support from project staff. The best case of collaboration between volunteer and staff appears to be at Midelt, El Jadida and Timahdite. The volunteers at Oujda have been surviving largely on Moroccan support alone with occasional communication with the project sociologist. The volunteers at Beni Mellal, until the arrival of Dr. Gay, were basically left to tread water. Surprisingly, none of the eight volunteers assigned to the project has terminated from Peace Corps/Morocco, though the Beni Mellal PCV sociologist transferred to another program.

A major reason for the high quality of PCVs appears to have been the manner in which they were recruited. Basically, the Campus Coordinator sent notices to promising schools, soliciting the interest of qualified students in range management. This procedure, however, apparently upset the Peace Corps/Washington recruitment bureaucracy, and is not being repeated. As a result, the next group of volunteers for the project may be less technically competent and less motivated to work within the framework of a range management project.

Despite the selective recruitment procedures followed, most of the sociology volunteers were not really academically prepared for the task they were called on to perform. A bachelor's degree in social sciences is really indicative of interest, not expertise.

Further, the multiple language situation severely hinders volunteer performance. The volunteers need Moroccan Arabic to communicate with local people, but, because of their lack of French capability, can neither read relevant documents nor participate effectively in official meetings. Neither is it realistic to think that beginning Arabic speakers can ask the type of deep, probing questions necessary for research or to understand the subtleties of the answers received.

The volunteers presently do not live in the communities of project beneficiaries. Especially in the case of the social researchers, this definitely hampers their job performance. While some difference in opinion existed among volunteers, it is a myth that the difference between the softer living of most other volunteers and that of one placed in a community would be a major problem. The evaluators did not find the possible lack of material comfort a major concern of the PCVs interviewed. In fact, the major problems seemed to be finding a suitable house, and obtaining the understanding and permission of GOM's representatives. Some reservations were, however, expressed because of the lack of privacy such living would entail, and the fact that some communities might be especially inappropriate for single female volunteers (such as Kasba Tadla, which is near a military facility).

2. Conclusions

The volunteers need much better training and support in order to carry out the tasks assigned to them. Field support in the early months of their tours

should include either project staff or TDY in-field work with volunteers to refine their knowledge of field methods. For the social research volunteers, orientation training in field methodology, including field work, should be provided by a TDY field researcher who has already worked in Morocco. PCVs must also be provided translating facilities, including the occasional services of an English-Arabic interpreter, so they might have in-depth interviews with local project participants. GOM counterparts are sometimes not available to satisfactorily fulfill this role, due to their other multiple responsibilities.

A concerted effort should be made to place at least the social research volunteers in a local community. In some areas (i.e. Kasba Tadla, near Beni Mellal) this might require specifically fielding a male volunteer for this role. Unfortunately, since there is generally no "rental" housing in a douar, this option may well only be possible if the project is willing to finance the construction of a local house. No decision to this effect, however, should be taken without the full participation and advice of the present PCVs.

Peace Corps/Washington should be informed that the unorthodox approach used to recruit the current group of PCVs provided excellent results, to the credit of the Peace Corps, and that perhaps it is an approach which should be encouraged rather than rejected out-of-hand.

Depending on the decision as to the future orientation of the project, reconsideration should be given as to whether the PCV sociologist role should not be either converted to, or supplemented by, a PCV community development position.

K. Special Issues

1. Inconsistencies Among Project Documentation

One problem for the project has been inconsistencies with respect to the objectives and strategy among some of the key project documents. The objectives and strategy as outlined in the host country contract between USU and DE did not totally conform to the Project Agreement (ProAg) and the Project Paper. The use of a host country contract was apparently suggested by AID/W as a means of strengthening the GOM's capacity to plan and implement donor-assisted development projects. Unfortunately, it appears that AID/Morocco did not at the time have experience in the use of host country contracts. Thus, the USU contract was approved without an adequate review by the Mission to ensure that the terms of reference and output objectives conformed to those of the ProAg and the Project Paper.

In the Project Paper, the entire economic justification of the project (i.e. the financial internal rate of return) was based on the benefits derived from reseeding and rangeland deferment. The Logframe, in turn, lists "rangeland deferred/seeded" as a major output of the project. Similarly, the ProAg states that "Improvement of range conditions is to be brought about by improved range management methods such as reseeding, and by the development of a range extension program". Unfortunately, the text of the Project Paper does not clearly detail the Outputs expected from the project and, indeed, is somewhat inconsistent with respect to just what the objectives were.

According to the USU/DE contract, the project was limited to range extension and participant training. As stated in the contract, "The project will center around the extension demonstration programs at five range perimeters. All project activities, including the establishment of a seed multiplication center will focus on support of these demonstrations and use them to advance the progress of range management improvement in Morocco..." Significantly, there is no mention in the USU contract of range reseeding or grazing deferment as project-supported activities. In this the USU/DE contract conforms with the original CID design of the project, which USAID had subsequently modified in developing the Project Paper.

The lack of precision and consistency in the project documentation made it that much more difficult for those individuals involved in project implementation (from the USU team, USAID, and the GOM) to agree what activities should be undertaken under the project. This, in turn, contributed to the lack of integration that the project experienced. In the end, the responsibility for the failure rests with USAID, which should have more carefully monitored the process to ensure that the terms of reference as stated in the project paper and Logframe were followed. It might be that range deferment and reseeding were not viable objectives for the project. However, if that was so, changes in the terms of reference should have been made through a no cost amendment issued by the Contracts Office.

2. Weaknesses in Specifying Outputs in the Logframe

It appears that the Logframe for this project was an ex post facto addition to the Project Paper. It was not used as intended, that is, as a tool for conceptualizing the project, but rather it was completed to fulfill a bureaucratic requirement. This is evident from the carelessness at which the output objectives for this project were formulated in the Logframe. One EOP output was "At least 6 Ingenieurs d'Etat (MS-level) and 8 Adjoints Techniques on staff". DE was able to field this sized cadre even before the project began. There are now, for example, 6 MS-level personnel assigned directly to the project, none of whom have been trained under it.

A second Logframe output was "At least 50 demonstrations (2/year/perimeter) completed". There is nowhere in the project paper an explanation of just what constitutes a 'demonstration'. Moreover, this output objective assumes that the project had technologies available for immediate demonstration in the first year of the project. An assumption which was not stated in the Logframe and which, in fact, was not true.

In addition, there is a typographical error in the Logframe which lists under Magnitude of Outputs, "at least 15,00 ha. deferred/seeded". Since this output objective does not appear anywhere else in the project documentation, it makes it somewhat difficult to hold the contractor liable for failing to achieve it. Even if one assumed that the true figure were 15,000 hectares, the evaluator runs into problems of deciding whether the output was to be 15,000 hectares either deferred or seeded, or 15,000 has. deferred and 15,000 hectares seeded. The distinction is important since reseeding costs money and involves a significant expenditure of time and resources, while deferment involves only an administrative decision and no significant resource expenditure. Finally, in trying to evaluate the achievement of this output, one runs into problems of defining what is meant by 'deferment' of grazing

land. Deferment is a temporary condition involving restricting access to a given grazing area. Any rotational grazing system involves deferring certain parts of the perimeter from grazing each year. Greater and greater levels of deferment on the five perimeters in question is not necessarily a viable project objective.

Finally, the lack of care given to specifying the outputs in the Logframe can be demonstrated by considering what outputs were not included. For example, there were no outputs listed for the anthropologist.

These problems raise difficulties for evaluating a project, especially when, as is the case here, there is a host country contract where the terms of reference are different. In designing a project, more attention needs to be given to ensuring that the Logframe conforms to the text of the Project Paper. The Project Paper must explain precisely what constitutes project inputs, outputs, purpose and goals, in order to guide subsequent project evaluators. Limiting the description of expected project outputs, for example, to whatever could be squeezed into a one inch-by-one inch Logframe cell is not adequate.

3. Language

The project has need for an integrated French and Arabic language capability. Excessive reliance on English due to the ability of American-trained Moroccan range technicians has adversely affected extension of project ideas to other Moroccans and the misdirection of project activities to English-speaking audiences (e.g. a slide show designed for an international audience may not be appropriate for local livestock owners, even if translated into Arabic or Berber). Due to the difficulty of finding American technicians fluent in French, the project needs to have a permanent language translation capacity, to ensure that all professional documentation can simultaneously be put into French and all local extension programs in French and Arabic.

Sociological research has the added problem of needing to deal with French documents, French-speaking professional counterparts, and Arabic-speaking local populations. To demand fluency in both from the start would probably excessively limit recruitment of truly professionally appropriate personnel. Therefore, the sociologist should be fluent in at least French, and if not in Arabic, then receive limited Arabic training. Sufficient funds must be provided to employ local non-GOM research assistants/interpreters. PCVs should have Arabic, but be able to call on project translation services for French documents and also have the periodic services of project English-Arabic interpreters for in-depth interviews.

4. Academic Research in a Project Context

Several of the members and activities of the project have or are directly contributing to academic research or presentations beyond immediate project activities. Several papers have been presented at professional meetings. A major presentation is planned at the International Rangeland Conference in Australia. At least one volunteer is using his work for a Master's thesis. Past team members have indicated that they plan to write future publications, and the same may be the intent of some present project participants.

All this is potentially to the good, as it can provide an intellectual discipline to project work, give valuable exposure to project activities, and increase the professional respect accorded to project participants.

However, presentations to an academic audience are not necessarily an effective means of conveying information to in-country users. The fact that DE is sent a copy (in English) at some late date is meaningless. This is a common problem of research in development contexts.

AID management must make clear to people that information gathered in this project is the property of the GOM, and that means leaving it behind in a usable form. The first repository of information is the project itself, and all other audiences are secondary.

5. Staff Retention

Retention of staff by DE is tenuous, since their salaries are low and benefits do not compensate for the low salaries. Participants in long-term training programs are committed to work for DE for eight years after completion of their education programs. Unless DE is able to correct this difficulty, they can expect to maintain a relatively high loss of trained and experienced technicians once their eight-year commitment ends. This is exacerbated by generally inadequate office space and limited availability of vehicles.

6. Operational Costs

Items such as per diem are widely different among DE, PCV, and TA staff. The per diem paid by DE is totally inadequate to cover reasonable expenses associated with their positions. This makes DE staff reluctant to travel and creates different classes within the same team.

7. Demonstration Farm

The proposal for the development of a demonstration farm at Beni Mellal may provide a unique opportunity to develop an effective education program. Care should be taken so that the farm is used as part of an extension program and does not become the primary program objective in Beni Mellal.

8. The Team Leader

This position must be stationed in Rabat. His primary role is to maintain a smooth functioning of the total project, which necessitates frequent contact with DE and AID in Rabat. It is not realistic to expect him to assume a primary technical role for a project area. If he is able to acquire an administrative assistant (fluent in French and familiar with AID and DE protocol) to reduce much of the tedious work, he can make project decisions and, in addition, provide necessary technical guidance in the economic analysis component of the project. Though the team leader lives in Rabat, he must be prepared to make regular visits to each project area to maintain coordination of efforts.

9. AID

The USAID staff should become more integrally involved in the project and participate as an action agency. They should keep in mind the role of the USU/DE/PCV/AID team is to accomplish a particular job and each group has a specific role. Each participant should be expected to perform his role adequately.

10. Direction de l'Elevage

The administration of DE is dominated by veterinarians, and promotions frequently are based upon attainment of the "Doctoral" level of education. Consequently, the future of range scientists in the hierarchy of DE is limited. Providing PhD level educational opportunities for range scientists should develop equivalence and allow a group of staff members educated in range science the same career potential as the staff educated in animal/veterinary sciences.

11. Linkages with the Small Ruminant CRSP

No effective linkage with the CRSP program in Morocco has been developed beyond the range program which was managed by USU. The de facto principal investigator of the range management CRSP program was the Range Management Improvement Project's Campus Coordinator. The campus coordinator operated the research program within the confines of the USU institutional structure and made minimal use of Moroccan range scientists. There is general dissatisfaction among the Moroccans because of lack of involvement and within the USU Range Science Department because of limited funds. The Range Management CRSP program in Morocco has been eliminated at the request of USU. No written output from the program has been developed as of this date. Two graduate student theses are in preparation at USU.

There is considerable potential for a new range management CRSP component to provide research support to the project if adequately funded and coordinated. If the project is restructured in line with recommendations in this report, the other components of the CRSP, particularly the small ruminant nutrition and rural sociology research components should be fully explored for direct support capabilities.

12. Host Country Contract

Although the host country contracting mechanism has worked reasonably well up to this point, it has created problems in the revolving fund that has, in turn, created hardships on the field staff and has slowed custom clearance of commodities. Further, it has made it more difficult for USAID to exercise its oversight responsibility. If the project is restructured as recommended to broaden its focus and develop closer collaboration with other projects and organizations, the host country contract mechanism will become increasingly constraining and should be changed.

13. The Interior Ministry Role

Within the project context, the important (or at least potentially important) role of the GOM Ministry of the Interior in rangeland management

occurs on two divergent levels. On the local level of the perimeter communities themselves, MOI officials (the Caid and the Khalifa) are basically responsible for all activities from a political perspective. This includes everything from conflict resolution (e.g. land disputes) to permission to conduct surveys. On the national level, it is with the MOI that final authority rests for the use of the collective lands. Moreover, since MOI works on a top down approach to power distribution, even such questions as permission to do a local survey seem to depend largely on higher authorities and the policies they want enforced regarding the extent of local political control over daily activities. Therefore, contact and concurrence at higher MOI levels is the proper beginning point for resolving even grass root problems regarding MOI-project interactions. Unfortunately, such contacts have never been officially made, and it is at the higher echelons that a start should begin. Regrettably, because of both time constraints and the immediate political events that were preoccupying MOI, the team itself was not able to actually make such contacts in Rabat. No redesign effort, however, should occur without such discussions. The best starting place would probably be the Direction of Rural Affairs.

As regards the local level problem of obtaining MOI permission for research, some attempt might be made to see if the central Ministry cannot provide such authorization in a way that would relieve team members from excessive limitations on their movement due to the need to get local level clearance for each specific foray. At the same time, project personnel should be ready to acknowledge the need of authorities to be aware of what is going on. A concerted attempt should be made to get local MOI personnel "on-board" by not only clearly explaining to them the purpose of various activities but actually asking their advice. The inability of almost all project and PCVs to be able to give a clear, concise explanation of the immediate, practical importance of the social research component of the project probably does not help allay peoples' suspicions as to what is going on.

The more important relevance of MOI to project objectives is that ultimately the laws and regulations concerning collective grazing land use and their enforcement must come from MOI directly or through their delegation of this power to others. Several paradigms of how this does or should occur exist:

- a) The facile stereotype explanation of MOI often heard is that all they care about is maintaining law and order, and do so by imposing decisions from above. Examples are given such as their refusal to deal with the problem of overgrazing of collective lands. While not totally inaccurate, this characterization, and especially its negative connotation, is somewhat unfair. First, there is nothing wrong with law and order, and it is certainly as socially important a concern as overgrazing.

Second, by not wanting to shake the boat, MOI is not imposing policy from the top, but actually acceding to the wishes of the populace in the form of local political pressures. On close examination, one discovers that what the critics really want is for MOI to impose the critics' idea of a solution on a local population which refuses to voluntarily institute their recommendations.

- b) The second characterization advanced is that it is the technical services that suggest and draw up policies and recommendations and then, with the assistance of MOI legal/administrative staff, convert them into specific proposed laws and regulations. This explanation may be mechanically correct, but it ignores the real gyrations of the various political pressures that occur in the actual process of turning a proposal into a law. More serious is the extent to which this perspective is totally oblivious to any technical input the MOI could and should provide. Use of rangelands is seen as an agricultural issue of managing animal and natural resources. The managing of the human resources, in which MOA has no technical expertise, is dismissed as a non-technical issue. An example of this is the 1969 Dahir (Law) on range use, which forbids grazing right holders from making contractual arrangements with people without grazing rights, to herd their animals. (This practice is called "association" and is often confused with a collective group activity). The prohibition on such contractual agreements theoretically appeals to technicians but, in fact, such arrangements are fundamental to the present economic strategy of most livestock producers. The only reason the seriousness of this contradiction has not surfaced as a major problem is that the prohibition is basically ignored by all concerned parties.
- c) The third view of the role of the MOI, expressed by a small group, is that the entire land tenure issue is one that must be resolved on a national level in a fairly encompassing reform; but that it is the responsibility of the technical people to convincingly demonstrate the viability of any of their suggestions in practice, before a sufficient constituency will exist to push for their acceptance. This approach is probably the most desirable, but it belittles the question of the ability of political authorities to really assess the viability of a technical proposal on all but the most superficial grounds.

For project purposes, the question boils down to what extent the project should get involved in any part of the above scenarios. The answer may be three-fold. First, the project should get involved where it cannot avoid getting involved. This means it must make contact with MOI representatives to ensure that they have a minimally sufficient understanding of its activities, and to obtain their local collaboration to allow effective on-the-ground activities. Secondly, it should not get involved in higher level issues where it does not know the game or the answers, or even have a recognized position on the team. This means it is completely inappropriate and irresponsible for project personnel to even suggest the adoption of anything but a local project-specific experimental policy. They should avoid suggesting any national law or policy reform. (The 1969 Dahir being a case in point). Thirdly, the project should be concerned that those assessing the viability of its actions for the MOI on a national policy level have the maximum understanding of the situation and all the options available. To achieve this, the project might be able to offer to upgrade the capacity of the MOI through specialized short-term training of some of their personnel in sophisticated alternatives, as well as the existing international experience in administering the use and distribution of national resources such as

grazing and forest lands. To cite one possible example, USAID might urge (and help finance) a short-term (2 week) international training program by an organization such as IDLI (International Development Law Institute) in Rome on resource/land use regulation in development programs.

14. Cross Cultural Training for Team Members and Spouses

Instances were cited by several parties, of both cultural insensitivity by some project personnel, and the difficulty of adjusting to Moroccan life by some team members and their spouses. For a good number of people, the project was apparently their first experience of immersion in another culture. Moroccan culture, like all others, has aspects that are inviting and others that are rebuffing to outsiders; as well as culturally defined appropriate behaviors in such circumstances.

For the sake of both individual happiness and on-the-job effectiveness, it would be advisable to provide some cross-cultural training to the entire family of project technicians. Some materials and programs to this effect are available at FSI and these could be supplemented with a few days of in-country orientation. Perhaps the Peace Corps, which provides such training to volunteers, could give advice both on the contents of such an orientation and possibly program personnel. The Project budget should include funds for the above purposes.

EXTERNAL EFFECTS

Two major external factors have adversely affected the implementation of this project. First, a prolonged drought has reduced agricultural production throughout the country. The current drought began in the agricultural year of 1980-81 (September-August) with precipitation being near normal in southern agricultural areas, but 40 to 60 percent below normal in the central sections. The second drought year, 1981-1982, brought a shift, with the greatest precipitation deficiency in the north. The third year (1982-1983) had deficient amounts nationwide, with 40 to 80 percent below normal precipitation over wide areas. The three year cumulative precipitation deficiency shows over 100 percent below normal; equivalent to the loss of the normal precipitation for an entire year.

With the failure of agricultural crops throughout the country, an increasing burden has been placed on the range resources, as livestock has increased in importance as a source of rural income. In some areas, the loss of forage and crop stubble as alternative feed sources may have increased the pressure on the already overused collective rangelands. At the same time, however, the numbers of sheep on the range have decreased substantially, as livestock owners sell animals that they can no longer feed, and inadequate nutrition leads to increased livestock deaths. Many traditional livestock producers have been pushed to the margin of subsistence. Consequently, while the drought has probably increased the awareness among livestock owners that something has to be done to conserve the collective rangelands, the resources available to the individual and consequently his ability to modify his traditional practices have decreased.

A second major external factor which has adversely affected the implementation of this project has been the major financial crisis that Morocco has been undergoing in recent years. This crisis has been the result of the drought, a deterioration of the export performance of both phosphates and agriculture, growing oil imports, and increased defense expenditures. These factors led in the 1970's to a widening of Morocco's trade deficit and a precipitous increase in the GOM budget deficit. Faced with a high and growing level of debt service and shortages in foreign exchange, the GOM has undertaken a number of austerity measures designed to restrain demand, limit imports, and curb public spending. The GOM's budgetary difficulties have made it that much more difficult for the Department de l'Elevage to hire and support its staff and to cover their operating expenses.

UNEXPECTED OUTCOMES

The rapid conversion of rangelands into private farm holdings has changed the focus of extension activities toward helping private cultivators to seed perennial forages identified by the project, and away from activities with the herders on the perimeters. In addition, more effort has been directed toward herd management extension in some perimeters. The demand for seed and advice on seeding has outstripped the capacity to provide help.

LESSONS LEARNED

1. USAID should assure that project documentation is consistent and that proposed project activities are within the limits of the project authorizations. USAID must have, and must exercise, authority to technically review project agreements for both direct and host country contracts.

2. Host country contracting can be a hindrance to effective implementation, especially when it directs the burden of such contracting on a host country technical service that may neither have the expertise nor permanent responsibility for such activities over and beyond the USAID project, per se. In cases where such a capacity needs to be developed, it should be done as a separate, specific action and not as a side effect of an already difficult-to-implement technical action.

3. USAID should have annual technical evaluations of projects, beginning in year one. The purpose would not be to determine results, but to assure contract teams are working up to professional levels and are either following agreed upon scopes of work, or have adequate justifications for divergence. When deficiencies are apparent, these should be resolved with the contractor immediately.

4. Pilot project activities scattered over numerous locations require strong in-country management to address problems effectively. It is not possible to operate a complex project without local management being responsible for the day-to-day requirements. The effort to manage this project from Logan, Utah was a primary factor in its reduced output. Representatives of the Contractor residing in-country must be authorized to make decisions on behalf of the Contractor in order to resolve project problems as they arise.

5. Contractors must use their in-depth technical backstopping capability to resolve project problems. Regardless of how capable and experienced an institution may be in an international program area, unless it utilizes this capacity to backstop its contracts, it is no better than, and may not be as good as, a contractor that does not have the back-up competence and thus uses outside help.

6. The long AID contract process and the tendency of those competing for contracts to be overly optimistic in their indicated staffing intentions repeatedly results in the staff proposed not being fielded once the contract is awarded. This was the case in this project. As a result, AID should not give much weight in award decisions to this element, but put more emphasis on past performance.

7. Retaining returned participant trainees is essential for effective institutional development to take place.

8. Strong linkages between regulatory institutions and technical institutions may be needed in order to alleviate persistent social and political problems that hinder the adoption of technical improvements by project beneficiaries.

9. Related USAID-financed projects, both within and outside of the country, often have substantial technical and social experience that should be tapped during project implementation.

ANNEX I

RANGE MANAGEMENT

Development of an extension program with a focus on Moroccan rangelands cannot be successfully completed without consideration of the economic, agricultural and ecological systems, within which these rangelands are found. Each system is dynamic, and consequently the types of actions that ultimately result in a desired product will need to change as internal adjustments are made in each system. A rangeland extension program developed from an analysis of these interacting systems can lead to increased incomes and well-being of livestock owners, and improved stability of the land resources. Development of such an educational program should be sensitive and responsive to the driving forces in each system. The principal objectives of the project are to provide benefits in terms of profit from livestock production and economically valuable benefits from watershed stability. The following analysis should provide insight into one way the planning could develop to design programs focused on these objectives.

1. Livestock Production

Deriving a profit from livestock is obviously a function of value versus cost of production. All actions have some cost and benefit and need full consideration in assessing alternative production systems. The production system itself will yield a profit that will occur in one or more farms. For example, profit may be defined as cash or reserves. Once the profit is reduced to cash, it has no bearing on the production system, except as reinvestment. If the profit is maintained as reserves in the form of retained livestock and held until cash is needed, a maintenance cost is incurred that reduces the potential productivity of the system for new animals. The nature then of the "profit" from the livestock enterprise can strongly influence the forage budget. So the marketing systems and programs need to be evaluated in terms of impact on the potential productivity of the agricultural/ecological systems.

Production of livestock derives strongly from the forage resources, availability of water and husbandry practices. All of these are heavily influenced by the weather. Alternative strategies to react to normal extremes in the weather should be another focal point for developing extension programs. Water availability and quality of water may be a primary restriction of any grazing program and, unless corrected, will limit livestock production regardless of other actions taken. Animal husbandry includes animal management programs, physical facilities, health, nutrition, and breeding programs. Some of these, especially nutrition, interact with the forage producing systems. Others are more or less independent. Again, any of these facets of livestock production can be the primary restriction to production and need to be evaluated with respect to their importance in each livestock enterprise, so that potential from improving the forage resources can be realized.

Once the above factors are understood and evaluated, the focus on forage production can be placed in a realistic framework. Recognizing that forage

availability and quality change seasonally, and sometimes erratically, in response to weather extremes, it is necessary to design alternative forage budgeting programs that can be implemented in response to foreseen and unforeseen changes. Livestock forage in Morocco comes from cereal crops, irrigated forage, other crops and rangeland. Cereals are raised to sell grain, and the aftermath and residual material are used for livestock feed. Some cereals are planted specifically for forage purposes. In many areas, cereal crops are a major source of livestock forage even though of low quality. Their contribution to the annual forage budget can be assessed for good years and poor years, in terms of quantity, quality, dependability, and season of availability, etc. Irrigated forage crops and crop residues may also be available to contribute to livestock production. Their place in the annual forage budget may be evaluated similarly.

Rangeland forages may be a dominant factor in the annual forage budget of Eastern Moroccan livestock enterprises. Effects of annual weather problems may be less extreme if the ranges are dominated by perennial forages or more extreme if the ranges are dominated by annual forages. Potential forage yields and quality will vary by range types and condition. Native forages may predominate or introduced forages may have replaced the natives. Plants are grazed rather than harvested, and individual soils may have specific problems, e.g. poisonous plants. The strategy of grazing and intensity of grazing will influence not only nutrients consumed at the time of grazing, but yield and quality of nutrients in the future, e.g. grazing practices in the Spring will affect forage quality and availability in the Fall. All of these factors will interact to influence the real contribution of rangelands to the forage budget.

Through use of available research information, general principles, knowledge of the local situations and experience, several management strategies can be developed to optimally harvest nutrients and maximize profit in the form it is acceptable. Supplementation is a common practice under current management. This is the most expensive forage and optimization of supplements fed should have a high economic value.

Once the best probable approach is designed for a given type of year in an area, the constraints should be examined for feasibility of implementation. It may be that a collective range is best deferred for a month beyond the normal grazing period. It is not realistic to do this, so an alternative that may be less productive could yield the optimum solution. As the program of extension develops, and livestock owners' understanding of the benefits to planned management mature, it may be possible to solve currently unsolvable problems. But for the present, concentration should be in areas of forage management that can be successful. This will mean expanding the purview of the project beyond the specific focus of each perimeter and blending management of each perimeter into a total system.

2. The Relationship of the Management and Lambing System to Feed Requirements and Lamb Offtake

A number of livestock management factors influence the potential lamb offtake in relationship to the number of ewes in the flock. These include adequate health protection measures, particularly vaccination against diseases

and control of internal and external parasites. Some of the most important management practices, aside from proper nutrition, are regular culling of the ewe flock to get rid of older ewes that have lost most of their teeth, those with bad udders that prevent adequate milk production, those prone to respiratory and vaginal infections, along with those that do not raise a lamb, unless this is due to unavoidable circumstances. The hooves of ewes and rams should be kept trimmed to prevent lameness. Where animals show signs of lameness, they should be promptly checked for condition of the hoof, and any necessary trimming performed, or infections treated.

Aside from these general management practices, an understanding of nutritional needs of ewes in relation to the lambing cycle is the major factor in the lamb crop dropped and their survival. One of the most important factors that determines if a ewe conceives and how many lambs she drops, is her nutrition during the 30-45 days prior to ovulation. It is a well-known fact that ewes should not be overly fat at the start of the period leading up to the breeding season, so they can be given good nutrition including an adequate energy component, protein and mineral nutrition to cause an "inclining plane of condition". This induces proper ovulation and increases the number of ovum produced so the number of lambs dropped is maximized. After the ewes are pregnant, they can be placed on a maintenance nutritional level until about the end of the third month of pregnancy. At this time, the foetus starts rapid growth and the ewes need an increased level of nutrition to accommodate the needs of the foetus and to store fat to be utilized to sustain a high level of milk production during the lactation period. This will ensure healthy lambs that survive and make rapid growth. After weaning, the ewes can be returned to maintenance level of nutrition and the non-producers culled. This means about 5-6 months of high nutrition and 6-7 months of maintenance level are desired for maximum offtake.

The current management practices in Morocco are inefficient from the standpoint of maximizing offtake. For example, because of traditional management practices and the indeterminate breeding season of Moroccan breeds of sheep, lambs arrive throughout the year. (There are, however, two peaks in lambing, one in November-December and another in February-March). Many herders are satisfied with this system, as it means that lambs are always available to sell in time of need or when prices are favorable. From the standpoint of number of surviving lambs and total weight of offtake, this is a poor system.

The management practices that impede offtake maximization are partly due to historical risk aversion factors and partly to cultural traditions. For example, traditionally, lambs are not castrated in Morocco. This is due to a cultural preference in this country for meat from male animals (which is reflected in retail meat prices). Thus, the scrotum is left on the animal by the butcher to prove to the consumer that the meat being bought is from a male animal. Moreover, an "excess" number of males are retained in the herd due to the annual demand (and consequent favorable prices) for rams at Aid el Kebir.

As a result of these factors, the only way to control the breeding season is to separate the rams from the ewes. This, however, makes it more difficult for the livestock owner to manage his operation. Moreover, even if rams are

removed from the ewe flock, breeding season may be hard to control because of the very early sexual capability of male lambs. They often become sexually active and potentially fertile shortly after weaning age.

Under this naturally controlled breeding system, the lambs produced in November and December may be weak, due to poor nutrition. This is because the critical part of gestation has occurred during the hot, dry period of summer, when feed for the pregnant ewe was limited to straw and whatever could be obtained from scavenging dried up ranges. These lambs are born of ewes that have lost the fat reserve necessary to ensure adequate lactation. This becomes even more serious if the Fall rains arrive late and there is little new vegetation. Those ewes that lamb in the Spring, as a result of the improved nutrition with the Fall rains, wean lambs during a period of low nutritional possibilities of summer, so lambs enter the period of high growth potential with an inadequate nutrient supply. This results in permanent stunting and high mortality.

Based on the feed resources available, breeding should be timed when feed can be available for flushing, during the last months of gestation, during lactation and after weaning, even if this requires the use of pen fattening. Because of the various alternatives, sources of feed and their season of availability, the exact breeding system must be based on analysis of feed in relation to the criteria required. To ensure lambing as scheduled by this system, all rams should be removed before lambing and ram lambs either castrated or removed at weaning time.

3. The Role of Cereal Straw and the Potential for Increased Quantity and Quality

Cereal improvement research throughout the Near East region has demonstrated that, through the use of improved, high yielding, pest resistant varieties, along with adequate weed control, improved tillage and seeding methods and the judicious use of the proper fertilizer, cereal yields can be doubled or tripled over traditional practices, even in drought years. What is not generally recognized in calculating cost/benefit ratios of these practices is that very little change occurs in the straw to grain ratio, even by using semi-dwarf varieties. Therefore, if grain yield doubles, so does straw yield. This, in turn, increases the quantity of straw available for livestock feed.

Straw is considered a low quality feed, even for maintenance level nutrition of ruminants, but chemical treatment can greatly upgrade its quality. It tends to be low, as a net energy source, because of the energy required to digest it, and is very low in protein. By treating it with sodium hydroxide, it can be chemically pre-digested. Also, by adding ammonia, poultry manure or urea under proper conditions, the nitrogen can be made available for the production of the needed protein. These methods are being utilized to an increasing extent in North America, Europe and Australia. They have recently been introduced into the Near East. They are now a component in the USAID Tunisia Range Management Project, and should be considered for incorporation into the Morocco Project.

4. Watershed

Improved management of rangeland or livestock production and utilization and farming practices of forage crops should also be integrated with important and economically valuable watershed protection as another focus of the project. Practices that are implemented on range lands, cereal producing lands and irrigated lands will all influence watershed parameters that need correction to preserve productivity and protect existing structures. In addition, annual weather cycles will also strongly affect erosion with all of its ramifications. Watershed benefits are more difficult to sell upstream landowners when the benefits may accrue largely to those "downstream". Some attention should thus be given to who pays the bill. This is a major reason for the Agricultural Conservation Program (ACP) in the U.S. Farmers are given incentives so that they are willing to implement practices for the general good. In total, a watershed management program can only be successful if it is integrated into the overall forage management strategy of the watershed.

It should be productive for the GOM, with technical assistance from AID/USU, to develop the kind of analysis and planning for use of their lands. The major control rests in the hands of the landowner and his needs and objectives must be met to succeed.

5. Extension

Once the problem is understood and feasible solutions are defined, the extension program can begin. With objectives in mind, the extension staff can define the audience, why they can benefit from the program, and package the program in a way that the client will be able to implement his program. Small farmers, large farmers, agency employees, agency chiefs, the general public, etc. may all need to receive attention in the total program. The program presented to each should be tailored to them to meet their needs for information and to stimulate a desired action.

6. Research Needs

Implementation of an extension program can begin without new research. Enough is known in fact and in principle to allow experienced personnel to make significant progress towards project goals. However, many gaps in knowledge exist that will hamper progress at times and that will retard application of principles. Development of a research program to fill these knowledge gaps should accelerate progress and improve ultimate results.

Within the project, several studies are currently in place. These include fertilization, species adaptability, utilization of the rangeland drill, interseeding and exclosures. These should be continued, as the major investments of getting the study on the ground have been made. Each will yield information that will enhance decision-making for management application.

It is not realistic to immediately implement a full-scale research effort to answer all of the questions that will puzzle extension specialists as they structure a program to meet the project's objectives. Although many of the answers to questions relating to the following areas of needed research were not answered during this tour, many of the answers may be in the literature and it should be synthesized by project staff. Much of this has already been done by Berkat, Narjisse and Ibnatty.

Research information on the following topics will relate to current needs for determining specific actions in management that can improve extension programs oriented towards forage and watershed management.

- 1) Nutritional studies - to assist development of annual feed budgets
 - a) Vegetation characteristics as affected by site, weather, grazing. This should include both cropland and rangeland forages.
 - b) Animal performance in relation to vegetation characteristics for gestation and lactation periods in relation to season and annual weather cycles.
 - c) Supplementation.
- 2) Autecology of Key Plants
 - a) Population dynamics, competitive ability, e.g. resistance to interseeding, ability to withstand grazing, drought, etc.
- 3) Grazing Management of Native and Introduced Plant Communities
 - a) Rate of change in community structure & production
 - b) Interspecific competition
 - c) Effects of weather patterns.
- 4) Seeding Technology
 - a) Mechanized
 - b) Hand or draft labor.
- 5) Soils
 - a) Fertility
 - b) Erosion - watershed stability.
- 6) Crop Management
 - a) Grain yield
 - b) Straw yield and quality.

ANNEX 2

POSSIBLE METHODOLOGIES FOR FUTURE SOCIAL SCIENCE ACTIVITIES

This evaluation makes a recommendation for a fundamental reorientation of the project's social science component. In assessing the performance to date, problems were seen to be not on the macro-analytical level, but in terms of: (1) not focusing on operational issues that were more pertinent to project activities; (2) the excessively limited use of alternative information retrieval methods; and (3) the lack of a direct connection between information and action.

The recommendations contained in the body of the evaluation detail the new type of personnel and skills needed and proposed areas of focus. Ultimately, it is these individuals who must decide which of their professional skills are most applicable to the task at hand. It has, however, been disconcerting to see to date how few standard approaches to anthropological field work have either not been tried, or tried half-heartedly. It is for illustrative purposes, therefore, that the following is presented. It outlines some approaches that can be used, or better used than they were, as well as some comments on the resources necessary to use them effectively, and some specific questions on which they might be focused.

A. Methodology

1. Survey.

The project has conducted surveys, both in conjunction with the Moyen Atlas Project and on its own. Surveys are attractive because they come up with a bundle of data that can be analyzed and quantified irrespective of validity.

People generally tire quickly when responding to a large questionnaire, and are tiring of being surveyed in general. Preferably, one should not do a survey unless one knows clearly why one is doing it, and even then one shouldn't ask any unnecessary questions (i.e. a question whose response will not somehow affect the decision-making process). In this sense, surveys are best used to test specific hypotheses evolved through other means. If a sufficient random sample is not practical, careful stratification is needed. Obviously, questions must be pre-tested. If surveys are going to be done in different areas, they must be standardized to be of comparative value.

All of these points are elementary, and almost all were violated by the project. The general grazing users survey is extremely long; asks questions of dubious implementation value (e.g. marital status of family members); asks people to quantify in non-local terms (e.g. quintels - a weight measure instead of moueds - a volume measure); and could not be adequately analyzed in a reasonable time frame without a computer, for which it has not been coded. The far less complex market studies being done by the volunteers are more manageable but unstandardized, both in method of sample selection, time frame (weekly or monthly) and questions asked (asking or selling price). One of the fundamental questions apparently rarely asked was: "What level of information do I really need? Do I really need to know the average or mean level of education of the population, or just whether people can generally read or write?"

Other non-structural surveys are being conducted as adjuncts to other activities (e.g. vaccination campaigns, coop membership) which, without some minimal control group, probably provide highly biased responses.

Basically, surveys are definitely a valuable tool, but should neither be the first nor primary means of information retrieval.

2. Naturalistic Observation

The best starting point is to look around in a systematic fashion and explicitly record initial perceptions. There is actually a training manual in French put out by Prof. Fascon of INAV for student field work in Morocco that provides a structural framework for this.

3. Key Informants

In most situations, there exist perceptive, knowledgeable people, who are vast storehouses of information. These range from local inhabitants to government agents, such as Mr. Fagouri at Midelt and Mr. Atiqi at Timahdite. Long and repeated periods of time should be spent with such individuals, interviewing them and recording their perceptions and explanations (something apparently never done in the cases in point). Each perspective will be limited and biased, but each represents one part of a puzzle. What is crucial is to keep the pieces clearly delineated, so they can later be pieced together. Unless clear, easily retrievable records are kept, the information turns to mush and you end up trying to build a house of oozing mud instead of bricks.

4. Participant Observation

This has always been, and will remain the bedrock of good anthropological fieldwork. Participant observation means using oneself as the basic research tool, and discovering a slice of reality by personally participating in it and experiencing it. It doesn't mean asking a herder to explain how he herds, it means going around with him and seeing what he really does, rather than what he thinks he does or tells you he does. It doesn't mean asking the price of animals, but going through the entire process with someone of selecting an animal, bringing it to market, and completing the transaction. It doesn't mean just asking people how they decide matters as a community, it means actually assisting in a decision procedure.

Unfortunately, real participant observation is only possible once you've gained people's confidence, and generally requires spending a great deal of time just associating with them on a daily basis. In this project, neither the anthropologist nor PCVs live intimately enough with the concerned population to make this objective easily obtainable.

5. Historical Reconstruction

If you want to get somewhere, you have to know not only where you are going, but also the direction in which you're moving. While the past does not necessarily indicate the future, one can usually identify major socioeconomic trends.

For example, there is a definite trend towards increased mechanization in Moroccan agriculture. There has also been a definite trend over the last half century of continued reduction of collective resources and privatization of collective lands. Historical reconstruction of past events and changes within the recent past should be obtained, both from written records and oral interviews.

Oral interviews are especially important because, while they reflect more how people view the past than what actually occurred, it is the individual's personal understanding of reality that affects his behavior. If people see past events as indicative that new governmental structures are fairly permanent, they will be more inclined to adapt to them than if they see the political situation as inherently unstable. If they see privatization of the collective lands as inevitable, then they will adapt a personnel strategy based on obtaining the best possible position for when the final fragmentation occurs, rather than honestly seek to reinforce a viable system of community management.

Lastly, discussing things in the historic past can be a good device to get people to focus more objectively on general phenomena, such as distribution of land rights and conflict resolution, than by asking them to describe a present situation in which they have a personal stake.

6. Cognitive Analysis

Language is one of the fundamental, if not the most fundamental way humans structure their world. Very often, knowing the mental category in which people place an idea is equally important as knowing the word they use to describe it. In this way, linguistic research can lead to a better understanding of basic social and psychological phenomena.

For example, Westerners repeatedly assume rights in land are equitable with a geographically definable area (e.g. Mr. X or Group X owns this piece of land). However, among many pastoral groups, land rights do not represent rights in any particular piece because the systems have long ago adapted to the fact that group control over specific areas can vary with the political as well as geophysical climate. Rather, land rights are social rights, meaning any group member has a right to use any group land now or in the future. As a result, when the land redistribution agent says he is reassigning "Parcel 1 to Mr. X", and "Parcel 2 to Mr. Y", the people hear that "Parcel 1 is for Mr. X's Group" and "Parcel 2 is for Mr. Y's Group".

A totally different type of cognitive category involves qualitative similarities. The PCV at Oujda mentioned the local use of the concept of "mergud" for a good resting spot for sheep. Apparently, the determinant of what is "mergud" is whether the sheep respond by being restless or not. Probably, there are a lot of other characteristics that determine if a spot is "mergud", the secret is to entice them from the herder. At Beni Mellal (where the team members apparently had never been told of this concept), the local guardian, when asked if the land was "mergud", commented on how the sheep's teeth would turn black if they grazed too long there. This is apparently a symptom of excess fluoride intake. Such information could not have been obtained by directly asking if there was too much fluoride in the soil.

Yet another cognitive category of great relevance is risk. Moroccan traditional agriculture is often characterized as "risk avoidance". However, how actually do Moroccans view the risks of alternative courses of behavior? In terms of behavior, most Americans still act as though air transportation is more dangerous than auto transportation, while the opposite is statistically true.

Unfortunately, the effort at building the project lexicon seems to have concentrated on vocabulary rather than concepts. PCVs have been collecting words from ground one, when various published sources already exist with lists of agricultural terms in both Arabic and Berber. It probably would have been more efficient to have assembled from such works an initial list of such words and then have refined them in the field, not only for purposes of constructing a pastoral dictionary, but also for purposes of determining what conceptual categories already exist around which one could package extension messages, and where a special effort might have to be made to educate people to new ways of viewing phenomenae.

The above noted task is not at all easy, but it is fundamental to effective communication across cultural and sub-cultural lines. Cognitive analysis, however, is a true speciality. To do it well, the project probably should have used the TDY services of an ethno-linguist who might have provided concrete methodological guidance beyond the capabilities of social scientists not expert in this particular sub-field. The other thing the researcher needs is either to speak the informants' language well, or use a very good interpreter. Even if one understands a language slightly, it is better to work with a native speaker who also speaks the researcher's language than to risk general misunderstanding as well as loss of important nuances.

7. Comparative Analysis

From a single occurrence of a complex phenomenon, it is difficult to say which factors are really causal. In basic science, one isolates causal factors through controlled experimentation. Since controlled experiments are generally impossible in social sciences, one attempts something similar by seeking out conflicting situations. In surveys, you stratify your sample to try and assure picking up the exceptional case that may reveal that the causal factor identified may not be the causal factor at all.

On the macro-analysis level, for example, where you are studying a particular region, you look at some alternative areas and attempt some gross comparisons. If limited resources force a majority of the research to be focused on one perimeter, a fair amount of short-term exploratory research in other areas is still probably called for on a periodic basis. Perhaps the simplest solution is to assure that researchers doing similar work, not only compare notes on a regular basis, but specifically identify areas of apparently divergent practices. In the case in point, some interesting research on grazing practices is being done under the Small Ruminant CRSP, but there is little exchange of ideas on an ongoing basis with the Moroccan INAV researcher, Dr. Hammoudi.

8. Modeling

As part of the recommendations to be found in the body of this evaluation, is the suggestion of how the team might focus on building and updating a simple conceptual model of the livestock production system as they see it. Without repeating this discussion, let it simply be said that the same technique is applicable to social science analysis per se. The point should be clearly understood, however, that there is a difference between some highly complex system analysis that represents the finale of an analytical effort, and a simple, heuristic model that is used regularly to demonstrate present understanding, to help focus immediate activities and to serve as a continual reminder of necessary associate phenomenae.

9. Action - Intervention

Many social scientists actually believe that their only proper role is to analyze and advise, and that it is in fact unethical for them to take a position and actually apply their findings themselves. The reality of development work, however, is the conscious attempt to induce change, and participation in a development project means becoming part of this process. For development purposes, useful analyses are those that are prescriptions for action, not prescriptions for paralysis, and the ultimate value of any prescription is how it works in practice. The social scientists should not only have the courage to put their theories in practice, but welcome this test of their validity and be ready to change them if they prove unimplementable.

One problem, however, is the way the other technical people incorporate social science recommendations into their own programs. Very often, only lip service is given. To help avoid this, the social scientist can actually help implement the activity in question.

For example, herders are an important element in the grazing system. If, after spending many days walking with and interviewing herders, the social scientist feels he has enough understanding to recommend giving some specific training to selected herders on how to properly use the perimeter, he, along with the range technicians, could give the course. The social scientist could participate as one of the instructors, to help assure that meaningful communication is passing between the other parties. The social scientist could also assume responsibilities for finalizing communication instrumentalities, such as slide shows, or organizing group discussions.

What is ultimately important is not the specific area of activity, but the concretization of ideas and analyses into action. For development project purposes, one could easily dispense with any one of the above methods but action - intervention, the final translation of thoughts into deeds.

ANNEX 3

THE WHAT AND WHY OF HUMAN GEOGRAPHY

One of the important recommendations of this evaluation, in terms of the project's sociological activities, is both the short and long-term need for what in America is generally called "cultural geography" and "human geography" in France. The field is far more generally recognized in the French context, and probably more perfected. Because of the marginal understanding prevalent in the U.S., some further explanation seems advisable.

Three major problems of this project have been identified as: First, lack of communication between team members; second, lack of synthesis of findings from the various technical fields; and third, poor (almost non-existent) recording and presentation of data.

What the project is really concerned about is an area (i.e. a grazing perimeter, a collective grazing area of a geographic farming region, including range, farm land and forest). The question is how the material, animal and human resources of such an area can best be fitted together to achieve maximum production at minimum cost, (including the cost of an increasingly degraded environmental and resource base).

Human geographers, except as regards visible topographic characteristics, are generally not primary data gatherers. Rather, they assemble the data of others - vegetation, population, climate, etc. and put them together to show how they interrelate within the spatial area under investigation. The ability to do this well is due more to the possession of highly practical presentational mapping and graphics, than analytical skills, per se.

Human geographers have several things to offer that other technicians cannot. They are professionally oriented to the synthesis of various perspectives and are not emotionally attached to any one. They are judged on a final work product, based equally on its presentability and its accuracy. If done well, the type of models they create are easily understandable by others and easily manipulated as new data is obtained.

The problem with the human geography approach is that the human geographer is a bit like a graphic computer. As a result, the adage "garbage in, garbage out" applies. If the technical data is poor, the human geographer will present an impressive synthesis of misinformation. Therefore, quality control of data input must remain the responsibility of the various technicians. The human geographer, in the push to synthesize, also tends to generalize to the point of erasing crucial micro-variables that explain the reality of human decision-making. Again, the solution to this is that the technicians must maintain final responsibility for determining the accuracy of categories and interrelationships portrayed. In the end, human geography and the human geographer can be a powerful tool if used properly by people who can control it.

Besides the above functional benefits that would be obtained by incorporating a human geographer into the project, there is an institution benefit in that, given the French structural organization of Moroccan institutions, human geography is probably one of the more developed "hinges"

on which to hand an effort for interdisciplinary analysis of resource use. As an example, two articles from the Moroccan Geographic Review are listed in the bibliography, one deals precisely with the improvement of pastoral resources on forest land in Northwestern Morocco, and the other presents the correlation of population growth to cereal production over the last four decades. (Neither of these articles are the result of an extensive search of documentation, but were randomly bought off the shelf of a local bookstore).

For its purposes, the project would need, both in the short and long-term, a very capable, proven individual. Several potential sources exist among individuals retired from university positions or young unemployed candidates. These might be found in the U.S., France or even possibly Morocco. One might get a university geographer for the long-term position, but it is doubtful this could be done for the immediately needed short-term TDY. However, one could most likely get a competent experienced U.S. geographer for a 10 day consultancy to refine the scope of work and to identify and help select the candidate.

ANNEX 4

RANGELAND MANAGEMENT IMPROVEMENT PROJECT (608-0145)
MID PROJECT OUTSIDE EVALUATION: SCOPE OF WORK

- I - THE PROJECT
- II - PURPOSE OF EVALUATION
- III - METHODS
- IV - TIMETABLE AND BUDGET

RANGELAND MANAGEMENT IMPROVEMENT PROJECT (608-0145)

MID PROJECT OUTSIDE EVALUATION: SCOPE OF WORK

I - THE PROJECT

The Range Management Improvement Project was authorized in June 1980. Its PACD is 6/4/1986. It is being implemented by Utah State University under Host Country Contract with the Direction de l'Elevage*, Ministry of Agriculture and Agrarian Reform. The LOP AID contribution is \$5,075,000 and LOP GOM contribution \$6,770,000.

The U.S. contribution funded Technical Assistance (resident and TDY) participant training (long-term and short-term) and limited commodity assistance. The project is described in detail in the Project Paper and other project documents (Annual Reports, etc.) available in AID/W, Rabat, Logan and Project HQ in Meknes.

The project's purpose is "to strengthen the technical and administrative capability of the Service of Feeds and Ranges of the GOM Livestock Service to conduct research in range management and to implement its range improvement program. The range improvement program is primarily a program of technical assistance to the grazing associations, and extension and demonstrations of the benefits of improved range management techniques on their perimeters, in the effort to get other tribal groups interested in forming grazing associations".

II - PURPOSE OF EVALUATION

This is a scheduled Mid Project Evaluation. The Project Paper Evaluation Plan calls for an outside evaluation with the primary purpose of evaluating "project results to that time and making recommendations to USAID as to whether the project should be continued into a second five year phase."

General Concerns and Issues

The project has had implementation difficulties. These difficulties have been primarily centered on the T.A. component of the project and to a much lesser extent the commodity and participant training. Amongst the causes or reasons for the implementation difficulties, the following are frequently suggested:

1. GOM, AID and Contractor have divergent understanding of project goals and purpose.
2. The Host Country Contract mechanism is inappropriate.
3. The locus of decision-making by the Contractor has been excessively centered on its home campus.

4. The staffing of the T.A. has been weak (technical qualifications, communication skills, timeliness, location, management skills, etc.).

There may be other principal causes.

The evaluation, in light of past implementation difficulties, shall therefore primarily:

1. Assess the nature and causes of implementation difficulties encountered to date.
2. Determine whether the Project Purpose is commonly understood and properly stated in Project Documentation.
3. Determine the overall appropriateness of the Project Design to realisation of project objectives.
4. Determine validity of project assumptions and suggest necessary changes.

USAID will use the findings of the evaluation to assist it in making necessary mid-term corrections to the project to ensure the project's success. The evaluation should examine in some detail the structure and history of project implementation to date and make specific recommendations on possible changes in design and implementations in order for project goals to be realised. USAID believes the improved management of Morocco's rangeland can make a significant contribution to Morocco's rural poor through better use of a major national resource. USAID continues to desire to assist Morocco in this area, provided it is possible to deliver meaningful project aid with economy and efficiency. However, the evaluation team should be aware that USAID will not shrink from the alternative of project termination, should the evaluation suggest that project purpose and goals are unattainable.

Linkages to and Coordination with Title XII Small Ruminant CRSP

The project presents an unusual opportunity to assess the interaction between a CRSP and a country project. There is an important Rangeland research activity under the Morocco-Small Ruminant CRSP Program. However, since Utah State University has been the lead institution for both the project and the rangeland CRSP activities in Morocco, there has been some confusion, at least to some outside observers, as to the linkages between the two activities and as to who was doing what for whom, on whose budget. The evaluation shall examine the linkages between the two projects, evaluate the substance of the benefits of the CRSP to the Project, and ascertain whether the responsibilities of the two projects have been sufficiently clear and appropriately managed.

Specific Evaluation Tasks

1. Determine the effectiveness of the project activities by assessing the degree to which the project has achieved project goals and purposes (as stated in the project paper and the project agreement) and by evaluating to what extent the project has succeeded in implementing strategy (as stated in the project paper) and project components (as stated in the project agreement). Such an assessment and evaluation should be based on, but not be limited to the objectively verifiable indicators provided in the Log frame of the Project Paper.
2. Analyze financial and economic data available through the project and from other sources to determine if the estimates of economic and financial feasibility provided in the project paper were on target, too high, or too low.
3. Review contractor and sub-contractor performance, e.g. language capabilities; appropriateness/acceptability of workplans vis-a-vis contract terms; degree of contractor team integration and collaboration; and Utah State contract management and logistical support capability.
4. Appraise the progress and timely procurement of appropriate project commodities and evaluate the overall project procurement plan.
5. Assess the project's participant training program and initial impact, e.g. availability, feasibility, and appropriateness for MARA/DE candidates.
6. Analyze the progress of incorporation of the sociological research findings into the planning for rangeland development in Morocco.
7. Review the degree of coordination and linkages among GOM institutions, e.g. Plant Material Center and the INRA forage research program, related to the project.
8. Assess Direction de l'Elevage overall institutional capacity and past effectiveness in implementing range management research/extension programs, including timely provision of qualified counterpart staff.
9. Appraise the impact of other donor interventions and their projects on the achievement of this project's objectives, including areas where this project complements other donor activities.

III - METHODS

An evaluation team of four persons shall conduct the evaluation. The team should be independent of the MARA/DE and Utah State

University. It should be made up, if possible, of the following professional skills:

1. Team Leader (preferably with knowledge of Range Management, including Seed Production)
2. Rural Sociologist
3. Rangeland Extension Specialist
4. Agricultural Economist.

French language skills and past Moroccan and overseas experience are desirable, but not essential for all team members. The team, however, must have sufficient French language skills for it to operate as a team with non-English speakers, since USAID cannot provide translator services. It should be noted that many Moroccan counterparts on the project speak English.

It is also envisioned that, if possible, a Moroccan evaluator from the MARA/DPAE will be attached to the Team with Observer status, in order to provide opportunity for the DPAE to acquire experience in AID project evaluation and to build linkages for development at a later date of GOM institutional capacity under Project 608-0182.

The evaluation will be conducted by reading of project documentation, through personal interviews with key persons at Utah State University in Logan, Utah, and by telephone interviews with former field team members not at Logan and participants in the U.S. at other universities. In-depth personal interviews shall also be conducted in Morocco with the USAID Staff, Utah State's Field Team, Peace Corps Volunteers, MARA/DE Staff (in Rabat and field locations) and personnel who have been involved with the project from other GOM Organizations. The evaluation team will formulate sets of basic questions around which to focus these interviews.

A list of principal individuals who have been involved in the project is attached for the evaluation team's guidance as Appendix 1.

The evaluation team shall visit each of the project sites in Morocco.

IV - TIMETABLE AND BUDGET

Timetable

January	2 - 4	Washington D.C. Briefing
January	5 - 7	Travel to Logan, Utah and conduct on-Campus interviews
January	8 - 24	In Morocco - Rabat and Field Sites

January 25 - Feb. 4 Final report writing and debriefing in Rabat. Team disbands, leaving final report with USAID/Rabat. Team leader debriefs AID/W upon return.

Budget

2 Consultants for 1 work month at \$12,000 each (\$400/day includes salary, travel, per diem and indirect cost)	\$24,000
2 TDY Travel, per diem at \$5,000 each	\$10,000
Miscellaneous: Photocopying, telephone calls, temporary typing assistance if needed, etc.	\$ 3,000
	<u>\$37,000</u>

LIST OF PERSONS AND ORGANIZATIONS
WHO CAN BE HELPFUL TO THE EVALUATION OF THE
RANGE MANAGEMENT IMPROVEMENT PROJECT 608-0145

1. IN THE UNITED STATES

a) At Utah State University

- Dr. Thadis Box, Dean, College of Natural Resources
- Dr. Donald Dwyer, Head of Dept. of Range Science
- Dr. James O'Rourke, Campus Coordinator
- Dr. Richard Aro, in-Country Project Coordinator (4/81-12/83)
- Ms. Lois Kelley, Project Secretary/Accountant
- Dr. Morris Whitaker, International Programs Director
- Mr. Val Anderson, Graduate Student (6/1/82 - 3/19/83) under SR-CRSP)
- Mr. Neal Artz, Graduate Student (6/81 - 6/83 under SR-CRSP)
- Dr. Ben Norton, Professor (Coordinator of 1 month Administrators Short Course)
- Dr. Kendall Johnson, Range Extension

b) In the U.S. at Other Locations

- | | | |
|-------------------------|---|---|
| - Mr. Carl Goebel, | Washington State University,
Pullman, Washington 99164 | Subcontract
81-014/(4/1/81-
8/1/83) |
| - Dr. Mel George, | Consultant, University of
California, Davis,
California | No
Subcontract |
| - Mr. Carl P. Spiva | Consultant, California
Agricultural Institute
Modesta, California 95350 | Subcontract
81-50 |
| - Dr. William Amen | Consultant, California
Agricultural Institute
Modesta, California 95350 | Subcontract
81-50 |
| - Dr. Ron Chastain | University of Minnesota
St. Paul, Minnesota 55108 | Subcontract
81-048 |
| - Dr. David Robinson | University of California,
Davis, Small Ruminant CRSP | |
| - Mr. Rahal Kouriri | Participant, Humbolt State
University | |
| - Mr. Boujemaa Bourass | Participant, Texas Tech.
University, Dept. of Range
Management, Lubbock,
Texas 79409.
Phone 806 742-28-42 | |
| - Mr. Mohamed El Abassi | Participant, Montana State
University Dept. of Range Science
Bozeman, Montana 59717
Phone 406 994-37-21 | |
| - Mr. Akka Oulahboub | Participant, University of Arizona
Dept. of Range Science, | |

Tucson, Arizona 85719
Phone 792 31-54

II. IN MOROCCO

a) Direction de l'Elevage Staff/MARA

- Dr. Abbes Marsile, Director, Rabat
- Mr. Korcha Bensouda, Rabat
- Mr. Abdelouahad El Gharbaoui, Rabat
- Mr. Essenghini Laraisse, Oujda
- Mr. Mohamed Tazi, El Jadida FMC
- Mr. Mohamed Harkousse, Beni-Mellal
- Mr. Mohamed Atiqi, Meknes
- Mr. M'Barek Fagouri, Midelt
- Mr. Mohamed Aissi, Meknes
- Mr. Mohamed Somoue, Beni-Mellal
- Mr. Ali Nourredine, Beni-Mellal
- Mr. Boujemaa Mejrabi, Taza
- Mr. Brahim Kabdi, Oujda
- Mr. Salah Dghoughi, Azrou
- Mr. Abderrahmane Aminar, Meknes
- Mr. Lakdar Rahmani, Oujda
- Mr. Mohamed Driouch, Beni-Mellal
- Mr. Oumay Hssain, Midelt
- Mr. Chouki Salah, Midelt
- Mr. Kibi Mustapha, Boulmane
- Mr. Hassan Dhassi, Meknes
- Mr. Mesbah Abdelouahab, El Jadida FMC
- Dr. Daoudi, DPA, Oujda
- Dr. Himeur, DPA, Meknes
- Dr. Zouagui, DPA/Missour

c) Utah State University Contract Staff

- Dr. Roger Banner, Chief of Party
- Dr. C. Del Castillo, Meknes
- Dr. Alan Gray, Midelt
- Mr. John Harding, El Jadida
- Mr. Charles Gay, Beni-Mellal

d) Peace Corps Volunteers

- Ms. Lori Blodgett, Beni-Mellal
- Ms. Cindy Visness, Beni-Mellal
- Mr. Dale Nolte, Midelt
- Mr. Craig Brengle, Meknes
- Ms. Janet Stein, Meknes
- Ms. Kay Landbert, Oujda
- Mr. Paul Bartel, Oujda

e) USAID Staff

- Dr. Malcolm Purvis, FAO
- Mr. Arlan McSwain, AGR
- Mr. Doral Watts, AGR
- Mr. John Dorman, AGR
- Mr. M'Hamed Hanafi, AGR
- Monique Bidaoui, Training Officer

f) Other Organizations in Morocco

- Sonacos
- Institute National Agronomique et Veterinaire Hassan II/Rabat
- Institute Nationale de Recherche Agronomique/Rabat and numerous locations
- Direction Provinciale de l'Agriculture/numerous locations
- Ecole Nationale d'Agriculture/Meknes
- Moyen Atlas Project/Meknes
- ORMVAT/numerous locations - Office Regionale de Mise en Valeur Agricole
- Ranch Adrouche/Meknes
- Societe Nationale de Developpement et d'Elevage (SNDE)
- Association Nationale pour la Production Animale (ANPA)/Rabat
- Eaux et Forets/Rabat and numerous locations
- Association Nationale Ovin et Caprin (ANOC)
- Compagnie Marocaine de Gestion des Exploitations Agricoles (COMAGRI)

ANNEX 5

INDIVIDUALS CONTACTED

- I. Utah State University
Dr. Thadis Box, Dean, College of Natural Resources *
- Dr. Donald Dwyer, Head, Department of Range Resources *
- Dr. James O'Rourke, Project Campus Coordinator *
- Dr. Kendall Johnson, Professor, Range Extension *
- Mr. Val Jo Anderson, graduate student
- Ms. Kathryn Whitney, project secretary/accountant
- Ms. Lois Kelley, former project secretary/accountant *
- Ms. Sue Melcher, administrative assistant
- Mr. Neal Artz, graduate student
- Dr. Bartel Jenson, Vice President for Research
- Mr. Adila Abelkader, Moroccan graduate student *
- II. Direction de l'Elevage
Dr. Abbes Marsile, Director, Direction de L'Elevage, Rabat
- Mr. Abdelouahab Karmouni, Chief, Division of Animal Products, Rabat
- Mr. Abdelouahad El Gharbaoui, Project Coordinator, Service des Parcours, Rabat *
- Mr. Ahmed Yamani, Service des Parcours, Rabat
- Mr. Boutouba Abderrachid, Service des Parcours, Rabat
- Mr. Brahim Kabdi, Adjoint Technique, Oujda (Ain Beni Mather Perimeter) *
- Mr. Esserghini Laraisse, Regional Director, Oujda *
- Mr. Bashir Ben Mohamed, Goutittir Station
- Mr. M'Barek Fagouri, Director, Midelt (Plaine de l'Aarid perimeter) *
- Mr. Oumay Hussain, Adjoint Technique, Midelt *
- Mr. Chouki Salah, Adjoint Technique, Midelt *
- Dr. Glaoui, Regional Director, Kenifra
- Mr. Mohamed Atiqi, former Director, Azrou (Timahdite perimeter) *
- Mr. Hassan Dhassi, Adjoint Technique (Timahdite) *
- Mr. Mustafa El Youssoufi, Adjoint Technique (Timahdite)
- Mr. Abdul-Aziz Chergaoui, Acting Director, Azrou *
- Dr. Zouaghi, Director, Direction de l'Elevage, Meknes
- Mr. Mohammed Harkousse, Chief, Service des Parcours, Beni Mellal
- Dr. Mohamed Amouzig, Director, Direction de l'Elevage, Beni Mellal
- Mr. Ali Nourredine, Adjoint Technique, Beni Mellal
- Mr. Ahmen Soussi, Guardian, Ait Rbaa perimeter
- Mr. Mohammed Tazi, Chief, Plant Materials Center *
- Mr. Mesbah Abdelouahab, Farm Manager, Plant Materials Center
- Mr. Brahim Hammouda, Plant Materials Center

* Interviewed privately

- III. USU Technical Assistance Team
Dr. Roger Banner, Chief of Party
Dr. Concepcion Del Castillo, Sociologist, Meknès
Dr. Alan Gray, Range Management Specialist, Midelt (Plaine de l'Aarid) *
Mr. Charles Gay, Range Management Specialist, Beni Mellal (Ait Rbaa) *
Mr. John Harding, Seed Production Specialist, El Jadida (Plant Materials Center). *
Dr. Carl Goebel, former Range Management Specialist, Beni Mellal (by telephone) *
Dr. Richard Aro, former In-country Coordinator/Range Management Specialist, Meknes (interviewed by team leader prior to the start of the evaluation)
- IV. Peace Corps Volunteers and Staff
Mr. George Schaffenburg, Assistant Director
Mr. Mark Orlic, Natural Resources Coordinator
Ms. Kay Landberg, range management, Oudja (Ain Beni Mathar perimeter) *
Mr. Paul Bartel, sociologist, Oujda (Ain Beni Mathar perimeter) *
Mr. Dale Nolte, range management, Midelt (Plaine de l'Aarid perimeter) *
Ms. Janet Stein, sociologist, Meknès (Timahdite perimeter)
Mr. Craig Brengle, range management, Meknès (Timahdite perimeter) *
Ms. Lori Blodgett, range management, Beni Mellal (Ait Rbaa perimeter) *
Ms. Cindy Visness, former sociologist, Beni Mellal (Ait Rbaa perimeter) *
Mr. Matthew Mullin, Plant Material Center
- V. USAID/Morocco Staff
Dr. Malcolm Purvis, Agriculture Development Officer
Mr. Doral Watts, Project Manager
Mr. Arlan McSwain, Agriculture Officer
Mr. M'Hamed Hanafi, Agriculture Officer
Mr. John Dorman, Agriculture Officer
Mr. Robert Chase, Mission Director
Mr. Harry Petrequin, Deputy Mission Director
Mr. Stacy Rhodes, Program Officer
- VI. AID/Washington Staff
Mr. Leeland Voth, Near East Bureau Agriculture Technical Support Officer for Morocco
- VII. Technical Advisors to the Project
Mr. Mel George, Range Extension Specialist, Univ. of California/Davis

Interviewed privately

- Mr. William Amen, Seed Specialist, California Agricultural Institute (telephone interview) *
- Mr. William Clausen, Range Extension Specialist, UC-Davis *
- VIII. Small Ruminant Collaborative Research Support Program (SR-CRSP)
- Dr. David W. Robinson, Program Director, SR-CRSP, University of California, Davis *
- Dr. William Weir, Deputy Program Director, SR-CRSP, UC Davis *
- Mr. Charles Haines, Project Director, SR-CRSP, AID/Washington *
- Dr. John Malechek, SR-CRSP Principal Investigator, USU *
- IX. Institute Agronomique et Veterinaire Hassan II
- Dr. Fouad Guessous, Head, Animal Science Department
- Dr. Omar Berkat, Professor, Range Ecology
- Dr. Abdellah Hammoudi, Professor, Sociology
- Mr. Abdelhai Ibnastya, Professor, Range Management*
- Dr. Donald Johnson, Coordinator, Agronomic Institute Project
- X. Centre National d'Etudes et de Recherches sur la Vulgarization
- Dr. Ahmed Abouyoub, Director
- Dr. Joseph Colaris, Chief Technical Advisor (FAO team)
- Mr. Lakjaa Abdurazak, Agricultural and Rural Economist
- Mr. Hechmi Braham, Agricultural and Rural Economist (FAO team)
- Mr. Said Oubahamou, Rural Sociologist
- Mr. Rene Grojen, Rural Sociologist (FAO team)
- Ms. Latifa Benikhis, Women in Development Specialist
- Ms. Bethany Singer, Women in Development Specialist (FAO team)
- Mr. Michel Dedina, Video Specialist (FAO team)
- Mr. Ben Moussa, Audio Visual Specialist
- Mr. Yves Clemencet, Audio-visual Specialist
- XI. Others
- Mr. Lachen Jad, Direction de Planification et Analysis Economique
- Dr. Kaballi, Professor, Animal Science, Ecole Nationale d'Agriculture *
- The Caid of Ain Beni Mathar
- Mr. Bengalah, Chef du Centre du Travaux, Ain Beni Mather
- Mr. Ben Akka, livestock owner, Midelt
- Mr. Benacer, livestock owner, Midelt
- Mr. Alibu Mohammed, livestock owner, Midelt
- Mr. Kbaj, Director, Direction Provinciale de l'Agriculture, Meknes

* Interviewed privately.

ANNEX 6

QUESTIONS SUBMITTED TO THE DIRECTION DE L'ELEVAGE

January 16, 1984

Memorandum

To: Service de L'Elevage

From: USAID Mid-term Evaluation Team for Project 608-0145, Morocco Range Management Improvement

Subject: Questions to form the basis for discussions with the officials and staff of the Service de L'Elevage.

1. What are the training needs and the probable numbers of trainees that would be available in each of the following categories: (a) short term training for administration; (b) six month short term training for staff, and (c) U.S. participant degree training at the MS level. The answers to this question should be based on requirements for the remainder of the current project and what might be included in a Phase II five year addition, should it be recommended and approved.
2. What types of additional training in Morocco or the U.S. is planned or needed including degree training? Indicate the time table for implementation and the support needs that might be provided by USAID or other donors. What other agencies need to be included in such training (e.g. the Ministry of Interior). Is current training in the U.S. relevant to Morocco or should more emphasis be placed on training programs in Morocco?
3. Because one importance of training is the creation of common bonds of understanding between professionals, do you favor the present practice of spreading U.S. degree trainees among different universities to diversify the types of training experiences, or would you prefer them to be grouped to a greater degree in a common program to increase the common bond?
4. What are the most important benefits to the Service de l'Elevage derived from the USAID project? Will there be sufficient need or benefit to justify a follow-up Phase II project? If so, does this have strong support throughout the Service de l'Elevage? What duration (up to a maximum of five years) would be preferred?
5. Under the present project, do you recommend any changes in the perimeters included in the project area? Should they be reduced, expanded, or remain the same? What changes would you recommend in the staffing pattern provided by both the GOM and USU? What short term TDY technical assistance do you feel would be beneficial? What programmatic or procedural changes would you recommend?

6. What programmatic changes would you recommend if there were to be a follow-on Phase II project? Would you prefer the current host country contracting method, or would a change to a Utah State University contract with USAID (as used in most other USAID projects in Morocco) be preferred? Outline any changes in GOM level of support (in the form of personnel, operating budget, trainees, commodities, and capital facilities) that might occur in a Phase II project.
7. Although the present project includes some applied research, it is primarily extension oriented. What are the longer term needs for research to backstop these extension efforts? Where should this research be provided, from the standpoint of institutional responsibility, and how should it be coordinated with the extension effort?
8. What are the current relationships between the extension programs of DE and the Directorate of Extension? What future changes, if any, do you foresee in this relationship? What changes do you consider desirable?
9. The emphasis and primary purpose of the project is extension education aimed at future large scale development of the rangelands in Morocco to substantially improve small ruminant production, and stabilize rangeland resources (including water yield, etc.). Has there been a master plan developed yet for this purpose? In such a master plan, are locations, methods, time frame, direct and indirect beneficiaries, and related requirements adequately identified? If such a plan has not been developed, how will these be identified? Will such a plan reduce the quality of life for any segment of the Moroccan people? How are (or will) the Moroccan people be involved in this land use planning?
10. Given that range management ultimately involves setting rules and regulations and enforcing these rules, to what extent should and can these tasks be delegated to the Ministry of Agriculture? If so, what division? If not, to what GOM entity? If to another entity, then should some specialized training be given to selected members of that entity in range use regulations.
11. How do you ultimately see the relationships between individual herders, communities, DE and other government services in terms of deciding how rangeland will be used and who should have the final decision?

12. What, if any, permanent role do you see for sociologists in range management? Include their role in research, implementation, evaluation, or other functions. Is it possible or desirable to develop a range sociologist specialty dealing with such things as social engineering, legislation, and liaison with other agencies (such as the Department of Interior)? If such a specialty or sociological impact is deemed either necessary or desirable in the long term, what should be its institutional base?
13. What level of support does a healthy productive range and its economic and esthetic benefits have among the Moroccan people/government: Is the GOM willing to subsidize development of private and collective rangelands to bring them up to this productive capacity? If so, how much and what would be the nature of the subsidy?
14. Outline the current assistance being provided to the Service de l'Elevage or other GOM entities by donors other than USAID that involve range programs. What new support from other donors do you anticipate in the foreseeable future?
15. The DE has made major gains in trained staff, dealing with their range program. These are currently being retained through their legal commitment as a result of their training. What does DE intend to do to help retain these staff after their completion of this legal commitment?
16. How much money has DE expended, to date, on the Range Management Improvement Project? Are there figures available that will show how much was expended by budgetary line item? Of particular interest are expenditures by the GOM for the salaries of staff associated with the project (which individuals, for what periods of time, etc.), how much went to cover operating costs, and how much was contributed in the form of commodities? What other GOM expenditures have gone into making up the GOM counterpart commitment to this project?
17. Morocco is currently experiencing severe fiscal problems due to defense commitments, the drought, and the poor health of the international economy. What affect has this financial crisis had on the project? How do the salaries and operational budgets of the Department de l'Elevage compare with other Departments in the Ministry of Agriculture?
18. Are there GOM price policies governing the sales of livestock products? Are the macroeconomic policies of the government generally favorable to livestock production? Does the GOM provide support to livestock owners through the subsidization of input costs (feeds, veterinary supplies, etc.). How great are these subsidies in terms of dirhams/year, quantities of supplies, etc.?
19. How much supplementary feed is distributed to livestock owners to compensate them for deferring rangeland from production?

20. What components of the project does DE view as the most important? What do they view as the objectives of the project?
21. Have any recent studies been done by DE staff or others (since the project began):
 - a. Comparing the costs and returns of various livestock production systems;
 - b. Comparing the costs and returns of livestock production relative to agricultural crop production;
 - c. Estimating the increased production of meat/ha. to be realized from "improved practices". Is the assumption that a livestock owner can earn a greater return from a smaller number of healthy, well fed animals, rather than a large number of inadequately fed animals, valid?;
 - d. Estimating how much it will cost to reseed a hectare of rangeland.
 - e. Determining the source of income of the beneficiaries of the project, i.e. how much of their income comes from livestock production, how much from agriculture, and how much from non-agricultural sources.
 - f. Examining labor use in the regions. Does the availability of labor limit livestock production?
 - g. Studying livestock production levels, numbers of animals, and livestock marketing in the regions.
 - h. Identifying who owns the larger herds of livestock in the regions.
22. How much reseeding has the government done since 1978?
23. How much does it cost the GOM to import seeds each year (aggregate costs as well as cost/kg)?
24. The goal of the project is to improve the rangeland in the perimeters (roughly 100,000 hectares), as a demonstration. Ultimately, much of the 5 million hectares of rangeland in Morocco will need to be improved. How many hectares (and how many livestock owners) can a Department de l'Elevage technician cover? How large will the staff of DE need to be to adequately cover the 100,000 hectares covered by this project? How much will it cost to ensure that these staff have the equipment and supplies that they need? Will the financial problems Morocco is now experiencing limit further rangeland development?
25. Are there any studies done by DE or the Ministry of Agriculture which examine the relationship between livestock production and agricultural crop production in the regions covered by this project? Would it be desirable and possible to expand the present project into a more integrated project that would deal with the mixed production systems of farmer/herders.

ANNEX 7

EVALUATION TEAM SCHEDULE AND ITINERARY

- Jan. 5-6 Furtick in Davis, California, interviewing staff at Small Ruminant CRSP and collaborators in USU training program.
- 8-10 Team and Leeland Voth of AID/W in Logan, Utah to interview USU staff associated with project.
- 13 Rabat, Morocco - briefings with USAID staff
- 14 Briefing session with DE staff
- 15 Review of documentation
- 16 Meetings with USAID staff, Peace Corps staff, and documentation review
- 17 Travel to Oujda
- 18 Visit to Beni Mathar perimeter, lunch with beneficiaries and interview GOM officials at DE, MI project counterparts and PCVs.
- 19 Travel to Midelt via Missour.
- 20 Visit Plaine de l'Aarid perimeter and interview project counterparts, staff and PCVs. Lunch with beneficiaries.
- 21 Travel to Meknes via Timahdite perimeter and review perennial grass seeding on land of cooperators.
- 22 Interviews with project staff, counterparts, PCVs and documentation review.
- 23 Interviews with DE staff, DPA and visit with ENA range management staff, administration and visit the CNERV center and hold discussions with the FAO staff assigned to this center.
- 24 Travel to Beni Mellal and interview with project staff.
- 25 Visit Ait Rbaa perimeter and site of proposed demonstration farm, accompanied by Mission Director, Robert Chase; Ag. Officer, Malcolm Purvis; and Program Officer, Stacy Rhodes. Interviews with DE staff, project counterparts and PCVs. Team members Grayzel and Crawford return to Rabat to begin report preparation.

- 26 Furtick and Krueger travel to Plant Materials Center at El Jadida via a stop at the interim Aridoculture Center at Sidi el Aidi.
- 27 Interview FMC project staff and counterparts. Return to Rabat in afternoon.
- 28 Report Preparation.
- 29 Report Preparation.
- 30 Debriefing and substantive discussions with DE staff.
- 31 Preliminary debriefing of USAID Mission staff prior to departure of Grayzel and Krueger.
- Feb. 1 Final report preparation and editing.
- 2 Final debriefing of USAID Mission.
- 3 Finalization of report and work with USU Chief of Party and Assistant Chief of Party on following requirements, prepare draft scope of work for project redesign and outline of the redesign for the project. Final discussions with individual USAID staff and Peace Corps administrative staff.
- 4 Departure.

ANNEX 8

RANGE MANAGEMENT PROJECT EVALUATION
BIBLIOGRAPHY

PROJECT DESIGN DOCUMENTATION

Consortium for International Development (CID), Moroccan Range Management Education and Extension, USAID Project 608-0145, December 1979.

Washington State University, Evaluation of Range Management Practices and Technical and Economic Feasibility of Commercial Range Forage Seed Production in Morocco, August 1977.

Agency for International Development, Project Paper: Range Management Improvement (608-0145), July 1980.

Agency for International Development, "Project Grant Agreement between the Kingdom of Morocco and the United States of America for Range Management Improvement, AID. Project Number 608-0145."

Contract Between the Livestock Department of the Ministry of Agriculture of Morocco and Utah State University/University of California, Davis.

Utah State University and University of California, Davis. "Proposal: Range Management Improvement Project No. 608-0145 Morocco", September 30, 1980.

WORK PLANS AND ACTIVITY REPORTS

Anthropologist

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MEMORANDUM

TO: Mr. Robert Chase, Director, USAID Rabat

FROM: Dr. Concepcion del Castillo *Concepcion del Castillo*

SUBJECT: Evaluation Report: Anthropological Component

DATE: April 2, 1984

This memorandum addresses the anthropological component of the evaluation report. While that section of the report begins (p.36) by placing the anthropological component in the context of the entire project, it quickly shifts to an uninformed, unprofessional, and unfounded personal attack (pp.38-40, 75-80). This is both unfair and unwarranted since the anthropologist was neither intended nor permitted to conduct her activities independently of the project.

More importantly, in their analysis the evaluation team misrepresents information that was given to them; ignore other documentary information that was available to them; and they refused to discuss the substantive aspects of the anthropological work that has been accomplished.

In brief, their behavior was inexcusable, unprofessional, and indeed, incompetent. I recognize that these are serious accusations, however, I believe that the balance of this memorandum documents these facts.



I. Evaluation Team Procedures

A. Meetings Held. The evaluation team's visit to Timahdite and Meknes consisted of:

1. a brief review of adaptability trials at the Touna Experimental Research Station and a quick look at two reseeded plots in Timahdite. Further briefing which had been requested by the team was subsequently cancelled because they were cold;
2. a presentation by myself focusing on the institutional aspects of the project at the request of the team;
3. a private interview with me which examined interpersonal relations in the project and the effect of Logan's mismanagement on the field personnel.

B. Lack of Discussion of Anthropological Work. The above was the full extent of their discussion with me, and in neither situation were there any questions asked, nor an opportunity presented to discuss any aspect of the actual work I have been carrying out. The team also intended to leave Meknes without an interview with Mr. Dhassi, the Engineer assigned as my counterpart. Only at my insistence did they agree to alter their schedule to meet with him. Mr. Grayzel would have missed the meeting entirely were it not for a chance encounter on the street where he was shopping during which I informed him that Mr. Dhassi's interview was in progress. In as much as none of the other team members were capable of effectively communicating with Mr. Dhassi, it was nice that Mr. Grayzel was able to at least attend part of the interview. Subsequently I requested an opportunity to discuss the substantive aspects of my work. Mr. Grayzel responded that the team's mind was made up, a draft of the report completed, and that further discussion would not change their opinion (telephone: Jan30,1984).

C. Lack of Contact with Dr. Aro. The one factor which most discredits the procedures followed by the evaluation team was their failure to meet with Dr. Aro. The fact that Mr. Furtick had spoken with Dr. Aro ten months earlier does not dismiss this omission. More negligent is that three out of the four team members on the evaluation never spoke to Dr. Aro at all. I do not understand how professional persons can sign their names to a document evaluating a project when they have never spoken to the person who managed the project in the field for two years.

A meeting with Dr. Aro would not only have presented a different view of the entire project, but would have permitted a better understanding of the anthropological component of the project since Dr. Aro was the only USU team member who was interested in integrating such work into the rest of the project and who took the time to understand what this component involved. The failure to obtain Dr. Aro's input in the evaluation casts doubt on the reliability and credibility of the report and it indicates a lack of courtesy and common sense on the part of the team.

D. Role of Female Professionals. One of the most troubling allegations in the report is that a female professional cannot effectively work alongside Moroccan males. This is an insult to the Moroccans with whom I have worked closely and who have never evinced any difficulty in working with me either in the field or in the office. Indeed, the first reaction of Moroccan staff members who have read the report was to comment on the falsity of this point. Their willingness to frankly broach this subject with me is a further indication of the falsehood of this statement. This claim also specifically contradicts

my own statement to the evaluation team, to the effect that the only evidence of sexism has been on the part of some of the American range scientists. One wonders if this statement of the evaluation team is only an expression of their own prejudices.

This statement is of particular concern because it affects the future recruitment and employment of other female professionals in Morocco. As such it should be formally disavowed by USAID in a fashion which indicates that this was not the experience of this project.

II. Specific Responses to the Evaluation Report's Criticisms

As previously stated, the wording of the findings of the anthropological component of this project shifts (p.38) to a line of personal attack and accusation, therefore I feel compelled to respond. I do so by citing several specific examples. There are many more which I have not addressed here for the sake of brevity, but which can be similarly shown to be false.

A. The Pastoral Lexicon. The report states that the lexicon is an example of inadequate presentation of sociological information and that such information has not been readily available (p.39). This is an example of the un-informed and facilely arrogant approach of the evaluation team.

1. They claim (p.79) that published lexicons already exist and that the pastoral lexicon should have started by using such materials. In fact, the lexicon was conceived of and requested by Moroccan range scientists precisely because such lexicons do not exist (see Oujda Program of Work, October, 1982). The limited and incomplete published information which is available was indeed included as a basis for the lexicon.

- 2. They claim (p.39) that the information compiled in this lexicon has been flowing into the center but not out from it. This is false: in less than one year between one and two hundred terms have been accumulated, cross checked and verified. All entries have been circulated to all project members for comments after verification. Problem terms have been circulated separately to the perimeter of origin asking for clarification and comments. The lexicon has been discussed at two team meetings where input was requested and all team members informed as to what was in progress.
- 3. They claim (p.79) that the lexicon focuses on vocabulary rather than concepts. This is false. The whole lexicon effort has been the opposite: the collection of terms and concepts situated in their ethnolinguistic context.

One might ask how come there is such a discrepancy between the evaluation report and reality. The answer is simple: the team never bothered to ask the person whom they later blame for the imagined shortcomings of the lexicon anything about it. All of these points, procedures, and objectives, could have been clarified had they been responsible enough to ask to see the lexicon.

I have mentioned this example because the team (p.39) cites it as an excellent example of what is wrong with my work. Rather, it is an excellent example of the incompetence with which they approached their task.

B. Survey Research. A great deal of space was occupied in the evaluation report (see pp. 36,37,38,48,76,78,79,80) criticizing the approach and methodology which I have used. In particular they say surveys should not be generalized inquiries

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but should follow some well defined hypotheses.

1. Had the team taken the trouble to read some of the documentation I have prepared ¹ they would have found that none of their criticisms were new. All have been addressed in the documents cited. Indeed most of their criticisms are of the level of a beginning course in sociology.
2. All inquiries leading to the formulation of a social data base have been guided by a set of hypotheses. I have had previous experience with Maghrebi pastoral societies, which has included survey research. In the process of this previous research I have developed a model and a set of hypotheses from which I proceed. In this case, I went to considerable effort to discuss these hypotheses and their suitability in the Moroccan context with individuals who have had substantial experience with the populations involved: Messrs. Atiqi, Laraisse, Aissi, Assal, and the Agents and Adjoints at various perimeters (a procedure which the team suggests as if no one had thought of it before).
3. These hypotheses and the general approach were presented to the team in January 1982 and again in July 1982 (see also Quarterly Report # 3 and 4). If the evaluation team wished to criticize the underlying hypotheses and approach that would have been refreshing, but they prefer to ignore the substance and rely on vague critiques which are useless for improving the work that has been done.

1. See: "Composantes socio-culturelles de l'aménagement des parcours." Oujda Jan 1982 (appears in Annual Report 81-82, appendix "C"); Anthropologist's Progress Report, April 1983; Program of Work July 83 - March 84; Training Module for PCV (Annual Report 82-83, appendix BB); Anthro. for Cowboys (Annual Report 82-83, appendix CC); Household Economy and Resource Management -Timahdite: Summary of Progress, Jan 84, p.6

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- 4. The evaluation criticizes the conduct of the Middle Atlas Project's socio-economic survey (p.76). This survey was not a USU effort and therefore served other goals with which either the evaluators or I might disagree, nevertheless, and contrary to the assumptions of the evaluators, my input stressed the manner in which the most valid information could be collected (local nomenclature, local systems of measures, spatial measures, etc. as well as behavior of implementors. See Surveyor's Seminar, Azrou, May 2-3, 1982).
- 5. The evaluators criticize the lack of randomness of sample in Ain Bni Mathar. There, practical as well as institutional constraints have prevented us from having the ideal sample the evaluators would have liked to see. We adopted the type of creative and flexible approach they recommend. In this case we are well aware of the strata of population reflected in the sample and its overall bias; it is still better than no data at all. Apparently those in Washington understand better which situations require flexibility and adaptability, than the Moroccans working in the field.

In general, the team's critique of the survey methodology reflects an uninformed textbook approach instead of the realities and compromises involved in field work. Again, these issues were never raised in any discussion with me. They recommend flexibility and adaptability and then criticize the use of these same concepts; it is the arrogance of the TDY.

C. Other Methodologies. Substantial portions of the report (pp.38,39,42,76,78) criticize the lack of variety of methodological approaches. Once again, had the team responsibility of professionalism to inquire, or the ability to read the

available documentation, they would have found that many of the methodologies they suggest have been discussed, explained, and applied ². Here I will mention but a few.

1. They stress the need for participant observation.

I agree completely. I would have been happy to live on any of the perimeters but I was assigned to Meknes. I saw the arrival of the Peace corps Volunteers as an opportunity to partially remedy this situation. In Ain Bni Mathar, contrary to the statement of the team, the PCVs do live in the community they are working with. If the team failed to comprehend this basic fact one wonders how much else they missed. I encouraged the PCVs assigned to Ait Rbaa to live in one of the communities adjacent to the perimeter, and they did so. They were asked by the Chef de Service to return to Beni Mellal to be in the office rather than in the field.

Personally, participant observation has been a continual part of my working procedures. Because of the limits and restrictions on getting into the field I have tried to do this in a creative and flexible manner. To this end, opportunities such as the exclosure investigations, the bour reseeding project, the feedlot cooperative, and informal meetings conducted during the Middle Atlas Project's survey have been used as opportunities for participant observation. These observations have been

2. Memorandum to Team Members: Jan 26, 1982; Brief Manual of Anthropological Case Study Methodology; Quarterly Reports # 3,4,5; Guide to Exclosure Investigations, July, 1983; Souk Studies Memoranda of May 13, and July 5, 1983; Training Module for PCV (Annual Report 82-83, appendix BB).

incorporated into documentation prepared for this project and have been used to further refine and correct both observation techniques and initial hypotheses. The fact that the results of such observations have not been incorporated into a single ethnographic study is a reflection of my desire not to have the methodology of this project be focused on a "research mode whereby at the end of an appreciable period of time a synthesized document is presented as the final end product of the overall effort." (p.36). Again, much of the misunderstanding could have been avoided if the team would have read and asked questions.

2. They criticize the lack of naturalistic observation (p.77). I presented thumbnail sketches of the perimeters as an early reconnaissance effort. These were published in the Annual Report 81-82.
3. They criticize the lack of historical research and reconstruction (p.77). This has been done on my own time and with my own funds. This was so, and this work was not presented in Annual Reports because Dr. O'Rourke did not believe such research was pertinent (meeting of April 1982). Again, had the team inquired, the subject could have been discussed.
4. They criticize the lack of proper record keeping (p.77) All data from all methodologies is recorded and discussed with the personnel working on specific perimeters. It is available and used by those team members interested in incorporating such information into their work. The assertion by the evaluation team that this is not

so (p.77) is one more example of their mis-statements.

Similar comments can be made about most their methodological criticisms. Once again, they failed to read, to inquire, and to carry out a professionally conducted evaluation.

D. Allocation of Time. As a general statement I am criticized both for not spending more time in the field (p.38), and not writing more reports (p.39). I am also criticized for not spreading my work evenly over all four perimeters (implying a shallower analysis) and not doing more in depth studies (implying a focus on one perimeter). The evaluators are so busy trying to discredit the whole anthropological effort that they cannot even criticize in a consistent fashion. I would observe that as to reports, I have produced more substantive written material than anybody else associated with this project (see appendix). I do not claim that all this material is perfect or of equal importance. I would only observe that it would have been a pleasant change if I had been criticized on the substance of the material instead of saddled with having to waste time rebutting uninformed, impressionistic attacks. In every one of the above examples the evaluators relied on hearsay and rumor, without once personally confronting me with their critique.

As to time in the field. The report recognizes some of the constraints and then goes on to ignore them when it comes time to analyzing the work involved. I would make the following points.

1. I was asked by the Moroccan administration not to go to those perimeters where I had no counterparts.
2. I was asked by Dean Rox, Professor Dwyer, and Mr. McSwain to concentrate my work at Timahdite.

- 3. I was faced, on one perimeter with a range scientist who publicly stated that he had no use for my work, and was subsequently told by O'Rourke not to go to perimeters without the agreement of the range scientists.

Given this situation, as well as the prevailing obstacles alluded to before, I thought it not only productive, but agreed upon by many of the administrators concerned with the project, that much of my work be concentrated in Timahdite. Nevertheless, contact and communication with other perimeters was not stopped, notably in the case of Ain Bni Mathar where there is an active effort to pursue social investigations. It must be remembered that the Peace Corps Volunteers are under the supervision and control of the Moroccan staff and that my role in guiding or monitoring activities must, by necessity, be an indirect one. Again, these issues were not broached by the evaluation team.

E. Understanding of Social Component of Project by Other Staff

The evaluation team implies that I am responsible for a lack of understanding of the social component of the project amongst project personnel (p.39-40). I have presented two seminars to the project staff on the role of the social component in this project. I have discussed the social component individually with all staff members. All the documentation has been available. I have requested their cooperation and participation on numerous occasions. In the majority of cases they have failed to respond. I do not believe that it is fair to hold me responsible for the fact that individuals with Ph.D. degrees in range science cannot see the relevance of the social component in their work; nor that USU hired such individuals and AID approves their continuation. Had the evaluation talked with Dr. Aro they would have found a different perspective. This is not to imply that Dr. Aro agreed with all aspects of my approach.

but merely to state that he was aware and informed of this work and could well have provided a corrective view.

III. Conclusion.

One could expand further on the shortcomings and the negligence of the evaluators. The crux of the problem lies in their unwillingness to read the documentation and take the time to ask me questions about my work.

There are those who will say I have over-reacted to the comments of this report or that I cannot take criticism. I do not suggest that what I have accomplished could not have been done better by someone else, but I would say that if criticism is to be constructive and productive of a better range management project in the future it should be based on open discussion among colleagues and peers; an opportunity to present one's approach and results; and an honest attempt on the part of those who have the responsibility for the evaluation report to explore available documentation and talk to all of the personnel involved. This evaluation failed on all of these counts, and as such it deserves, at least in reference to the anthropological component, to be seriously questioned and completely re-examined. Some of these points, particularly the unsupported statement about the role of female professionals in Morocco must be contradicted by AID.

The evaluation team originally stated that there would be an opportunity for team member discussion of the findings and recommendations of the report. This was not done. They left without having to face the consequences of their work. Further, although the report was completed prior to their departure from Morocco, I did not receive a copy of the report until March 21.

1984. In the meantime, its contents had been publicly discussed in USAID and with the Moroccan administration. I do not feel this is a proper procedure on the part of those concerned.

One must conclude that the evaluation of the social component was incompetently and irresponsibly handled, and ultimately worthless.

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AUTHORED BY

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✓ Program of Work: July 1982 - March 1984 (September, 1982)

✓ Progress Report: April 1982 - April 1983 (April, 1983)

✓ Program of Work: September 1983 - August 1984 (September, 1983)

IV. Pertinent Memoranda

January 26, 1982: Observations on Perimeters of Help in Socio-Cultural Analysis

IV. Pertinent Memoranda (Continued)

March 18, 1983: Pastoral Lexicon: Procedures and Structure

May 13, 1983: Souk Observations: Reactions to Material Received

July 5, 1983: Souk Observations: Clarification of Purpose

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Dr. Concepcion Del Castillo
Direction Provinciale de l'Agriculture
Marrakech

Dear Dr. Del Castillo:

I wish to thank you for your memorandum of April 2, 1984, assessing the recent evaluation report on the Range Management Improvement Project 608-0145. On the matter of the role of female professionals and their future under AID programs in Morocco, let me categorically assure you that USAID is firmly committed to recruitment and employment of female professionals on all of its projects. In this respect, USAID does not consider that the report has any negative implications for the role of the female professionals in Morocco. Moreover, USAID has deleted sub paragraph F on page 38 of the draft report prepared by the Evaluation Team since USAID finds the statement to be unsubstantiated by any specific evaluation findings.

Thank you for your detailed comments on various parts of the Evaluation. I have transmitted a copy of your memorandum to the Evaluation team, and it has become a permanent part of the USAID record on the Project Evaluation.

You refer in your memorandum "to the arrogance of the ~~over~~". There is indeed a fundamental difficulty in any evaluation when outsiders try to capture the essence of a project in a brief period of time. It is clearly impossible that they can acquire and assimilate every last detail and nuance of the project. Rather, they must paint with a broad brush. As in any matter, there is also room for legitimate differences of opinion.

The purpose of the evaluation was to provide USAID management with an outside overview of the project - a project which has been both considerable difficulties and successes. USAID interprets the evaluation report's comments on the anthropological component in the broad context of overall project design and implementation. The evaluation team was not asked to undertake (and USAID does not consider the report to be) an individual performance review. We consider the remarks on the anthropological components not as criticisms directed at your professional competence but as an assessment of concerns about the proper understanding, use, overall management of the sociological inputs of the project.

Lastly, the report was not available for distribution until the second week in March. I am pleased to know that you received a copy of the Report as soon as Direction d'Elevage, USU and USAID staff. The report has been discussed and has been commented upon by numerous individuals. As you know we have agreed to proceed with a project redesign on the basis of the evaluation report's firm conviction that the project can be brought to a successful conclusion.

Many thanks for your helpful comments.

Yours sincerely,

Mulcom J. Purvis

cc: Dr. Roger Banner, USU Chief of Party

Clearance: RIA:Williams (Draft)
D/DIR: HJPetrequin

Draft: FAO: MJPurvis:wb:4/25/84