

**Water Resources Sustainability Project  
(WRS)**

**ASSESSMENT OF PROGRESS  
AND ITEMS NEEDING ATTENTION**

**PILOT PROJECT IN PARTICIPATORY  
DEVELOPMENT  
AND  
EROSION ABATEMENT  
OUED NAKHLA**

**Deliverable for  
United States Agency for International Development**

**Contract No. 608-0222-C-00-6007-00**

**June 21, 1999**

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REPORT TO PROJET PREM

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JUNE 21, 1999

This report to the management of Projet PREM in Morocco, details my impressions from my consultancy in Morocco from June 7 to June 21 st, 1999 In it, I make an assessment of progress to date on the pilot project for participatory development and erosion contrai managed by WRISjPREM in Oued Nakhla in the Rif region of Northern Morocco.

Work on this project began in October and November of 1996, with the Participatory Landscape / Lifescape Appraisal performed by personnel from the SANREM CRSP, ENA Meknes, and the Ministry of Environment of Morocco. From this, a preliminary set of intervention plans was developed and presented at the Stakeholders Workshop held in Ben Karich in May of 1997. The interventions were modified by our experiences at the workshop and developed into a draft proposal for the Pilot Oemonstration Project, submitted to PREM in early June, 1997. The final proposal for the Project was submitted to PREM in July, 1997 and after some modification was approved. Substantive work in the watershed began in February, 1998 and has continued since that time.

Correction of ravines through the construction of check dams and gabions has been done in Zone I, although the work appears to need some improvement in some cases. When completed properly, this work should result in significant reductions in soilloss and subsequent sedimentation in the reservoir. Plans continue for the correction of ravines in Zones II and III.

Olive trees have been planted in Zones I, II and II. Original plans called for the planting of figs and almonds as well, but as the project proceeded it became clear that the local people were interested in olives to the exclusion of ailier trees, so only olives have been planted. In general, this intet;vention has galle well. In some cases, farmers who were promised trees dug haies but were not given trees; in other cases, farmers expected to participate apparently did not; and in some cases trees which were planted have died. Over all, however success has been very good. I estimate that over 75% of the locations designated for the planting of trees were planted and still have living crees. The extent to which this will reduce erosion in the watershed can not be estimated until the data from the erosion plots are analyzed, but we can anticipate that this will result in a substantial reduction. Farmer reaction to this intervention has been very positive. The trees brought into Zone I increased the interest of farmers in Zones II and III, and more area has been planted than was originally planned. Trees are being effectively protected from livestock browsing, but watering of the young crees requires more attention.

The livestock interventions have gotten off to a good start but need to be pu shed forward rapidly. Surveys of the goat management system in the watershed have been completed. Delineation of the grazing lands and mattoral available to herders in Zone I have been completed. Plans for improvement of these are as through inter-seeding have been made and the seeding is planned for this fall. Plans for genetic improvement and expansion of the genetic pool through the importation of male Spanish goats have been made, but the actual importation has been held up. Since the main breeding season for goats is June through August, the goats must arrive soon if they are to have an impact this year. Programs for vaccination against disease and treatment of external and internal parasites have begun. The first round of treatments is currently underway and the second round is planned for September. A workshop on goat management for farmers in the project area was held in May of 1999. Eighteen farmers representing ail 6 of the Douars in the

project area attended this workshop, which covered nutrition, reproduction, genetic improvement and diseases in goats.

Plans have been made for introduction of bee hives in Zone IV, and some discussion with women in the project area about improved stoves has occurred.

In many respects the project is moving forward in a timely fashion and has high visibility and acceptance within the watershed. While the level of acceptance is high the degree to which the local people feel ownership of the program, while difficult to assess, appears to be much lower. There are several areas in which the project could be improved or in which procedures could be changed.

**TREE PLANTING** -This has so far been the area of greatest success;) for the project. The idea of planting crees has been enthusiastically received by most farmers in the watershed. They are asking for plantings in addition to those originally planned, and these are, evidently, planned. The first plantings, in Zone I, which were done in early 1998, were a gamble because this is not the best time of year to do the planting. Little rain could be expected between the time of these plantings and the fall of 1998, making establishment of the trees problematic. Still the plantings were done on the basis that it was important to show some tangible progress as soon after the PLLA and stakeholders workshop as possible. I think this was a very good decision and the gamble

has paid off for PREM. Despite less than optimal weather conditions, survival of these trees seems to be around 75%. More importantly, the appearance of these crees in the watershed created a great deal of interest among other farmers to get involved in the process and generated a lot of good will for PREM. Still there are some issues which need attention in this area.

1 Trees which have died in Zone 1 need to be replaced this fall

In Zones II and III, there are numerous locations where trees were to have been planted but were not. In many of these cases, holes were dug in anticipation of planting, but trees were apparently never received by some farmers and all they have are the holes. Additionally there has been some mortality among the planted trees. Arrangements need to be made to get these zones fully planted this fall.

2. Many of the trees in all of the zones appear to be very dry and in need of water. It was indicated to me that farmers planned to do this as soon as the wheat harvest came to an end. This needs to be followed up on and encouraged. I am not an expert on the drought hardiness of olive crees, but I am certain that if the trees do not get some water fairly soon; their production and growth will certainly be impaired and elevated mortality would not be surprising. There has been some discussion of the development of water points in Zone 1 which could be used as sources of water to irrigate trees by carrying the water to the plantations. This should be begun as soon as possible. PREM should make arrangements for one of the points to be developed as a demonstration project, so that the local farmers can develop the others. Care must be taken that

the appropriate arrangements are made 'to ensure that water from such points is used as intended and not appropriated to the use of single farmers for irrigation of garden crops.

In general, this is an intervention which should be farmer accomplished. They need to be given some instruction or demonstration to jump start the process, but they should be doing the work. Instead, they are waiting for this to happen. To me, this indicates a lack of "ownership" of the project by the local people, and a failure in the development of a truly participatory process.

3. Cuvettes for concentrating water around the young trees have not been properly installed. Some have been dug, but most of them are not very good. Many trees have none. A demonstration of how to do this should be clone and the farmers encouraged to continue with this. Again, this suggests legs than complete buy-in by the local people.

4. The original plan for the tree planting included the planting of a strip of grass along the contour between trees in each row. This has not been clone to date and should be accomplished this fall.

***CORRECTION OF RA VINES*** -This is also an area of substantial success for the project. The correction measures are obvious and impressive to the local farmers. Some follow up work is necessary to make the se part of the project maximally effective.

1. Some of the check dams do not appear to have been built to specification. They have very small volumes associated with them for the trapping of sediments and in some cases, the sediment traps were created by digging out a hale on the upstream gicle of the dam, and the earth removed is piled loosely around the hale, waiting to wash back in and fill it up with the first major rainfall event. I understand that the contractor who did this work has not been paid and will not be until the work is done to PREM's satisfaction. Plans should be made to get these corrections done as soon as possible.

2. It is not clear to me what plans if any have been made to maintain the check dams and gabions in these ravines. It seems likely that some maintenance of the construction will be required. Attention should be given to these issues.

3. Local farmers are complaining that only the small ravines have had work done in them and that they would like to see the big -ravines corrected. Dr. Tayaa gays fuis can not be done. I assume they are talking about weil developed tributaries of Oued Nakhla, which are not gullies in the normal sense but stream channels. The distinction should be explained to the farmers so that they understand that PREM's work in fuis area is appropriate.

***EROSION PLOTS*** -Maintenance work is required on the erosion plots. The concrete collecting area at the bottom of most of them is cracked, and collection of water and sediment will be incomplete. Additionally, while the Peace Corps volunteer who is working with the erosion plots seem~ to understand very weil what she is supposed to do as regards collection and handling of samples and data; she is less clear as to the over-all picture -what are the raie and responsibilities of the cafe owner in the lower reaches who

is working with the erosion plots there; what is the nature of the precipitation gage near her erosion plots; who is responsible for those data, etc. If she were read into the problem a little better, she would feel more comfortable with what she is doing and could be counted on to observe and report problems.

**LIVESTOCK INTERVENTIONS** -Good progress in the area of goat management has been made but this area needs continued attention. Some of it, such as the goat health program, involves the participation of at least three agencies (ENA, DPA, AduN) , and there appears to have been some lack of communication among these groups that has resulted in the farmers' waiting for the inoculation team to arrive when they were not coming. Specific attention should be paid to the following

- 1 Proceed with the range surveys in the other zones.

2. Make sure that the grass and clover plantings planned for Zone 1 this fall proceed on schedule. There is some uncertainty about who will actually do this work. The farmers claim they can not because the time for that planting conflicts with their planting of wheat. This needs to be clarified at once.

3. Make every effort to get the Spanish goats into the country and through quarantine as rapidly as possible so that the main breeding season will not be missed.

4. Plan and execute more workshops on goat management. The one held appears to have been useful, but it touched only 18 farmers in the project area directly. Perhaps a series of shorter (1 day) workshops would be appropriate.

5. Consider expanding the livestock program to include sheep and cattle.

**OTHER INDIRECT INTERVENTIONS** -The indirect interventions have fallen very far behind the direct interventions. In particular there have been complaints about the management of the women's interventions. This appears to be because most of the indirect interventions are very consumptive of time and effort, and involve several agencies simultaneously (DPA, Agence du Nord, ENA, etc.). They need more continuous attention than do the direct interventions which can be accomplished by brief spates of very intensive work. They also require more in the way of continuous management and coordination. Specifically I suggest the following:

1. Speed up the implementation of the "women's activities". Little progress has been made with the improved stoves and, as far as I can tell, nothing has been done with rabbit or chicken husbandry. Given that the PLLA suggested that the intake of animal protein in the project area was very low, encouraging the raising of such small animals seems very promising.

2. Efforts should be made to get the Village Committees more involved in the project. They should have more to say about the planning and implementation of interventions -who gets the trees and how many and so on. Increasing the importance of their role would assist with efforts to get greater local buy-in or ownership of the project.

3. Efforts should be made to get greater involvement of women in parts of the project beyond the traditional "women's activities". I would not know how to go about this or what the likelihood of success is, but it should be attempted.

4 Efforts should be made to increase the involvement of local NGO's. These appear to be an underutilized resource in the pilot project.

***LOCAL PROGRAM COORDINATION AND MANAGEMENT*** -There is not nearly enough of this. It is understood that program management teams from Rabat have come to the site fairly frequently to participate in various events such as the initiation of the goat inoculation program and other project efforts, and this is appreciated. Likewise, collaborators from Meknes come up often, when they are working on some aspect of the problem. What is lacking is some sort of continuous presence which could better coordinate all of the efforts within the watershed, apprise program management of problems, and better oversee and monitor work within the watershed. The project in Oued Nakhla would benefit greatly from the presence of a full time person in the watershed to continuously push on the project and coordinate its various aspects. Such a person would not be very expensive to hire and maintain there, and would par considerable dividends. I urge you to hire and field such a local project manager.

The work plan originally submitted for this project included the insertion of a student from the Agricultural College at Meknes into each of the zones to act as an extension or change agent and to represent the project and assist with its management, but this was not included in the final work plan. Some of the problems of project coordination, particularly in the area of indirect interventions, can be traced to the absence of a person or people of this sort.