NATIONAL FORESTS CORPORATION
(NFC)

EVALUATION REPORT OF EL AIN NATURAL FOREST MANAGEMENT PROJECT

(AFMP)

EVALUATION TEAM:

Mohamed O. El Sammani
(Socio-economist)

Mohamed A. M. Abu El Nur
(Forester)

Usama Tag El Sir
(Forester)

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MAPS:

1. Genesis Of The Project.

1.1. General:

Forests in semi-arid zones of Africa are disappearing rapidly. The rate of clearance of these forests was estimated by the FAO 1981 as one million ha / per year.

Underlying reasons may be natural, climatic changes fluctuations; however mainly due to human activities; expansion of cultivation and wood fuel collection. Sudan is not an exception and the situation is even very much alarming as most of its woody formations are cleared, leading to soil erosion and irreversible degradation in some parts.

Although Sudanese foresters have a long and good experience in managing sustainably (for more than 50 yeras) the riverine forest (sunt) in the Blue Nile, their effort in managing the natural forest is limited to protection (guarding).

The SOS project is an attempt for a decentralized form of forest management based on participatory approach. This is supported by the recent developments (mid 1980's) in the Forest National Corporation Policy which enhances peoples' participation in forest management by creation of community forests. This has resulted from the World Bank review of forestry sector 1986, which emphasized that protection of forests may only be possible if local users become actively involved in their management. This new concept in management of natural forests necessitates the collaboration of FNC and local communities and enforced by legislation and incentives to the local communities, to achieve sustained yield from the reserved and community forests.

1.2. Origin Of El Ain Natural Forest Management Project.

Based on the experience of the SOS Sahel (save our soul) in community forestry in the Northern Sudan, SOS own aims and the full support of Sudanese authorities (FNC) El Ain Natural Forest Management Project was initiated.

The section criteria:

El Ain forest was selected among other proposed sites based on the following criteria:

i. An existing forest of not less than 4000 ha.

ii. A forest not so badly degraded as to require a rescue operation rather than a management plan.

iii. The local population must be willing to participate in the management of the forest, and be prepared to reach an agreement in principle with the Regional Forestry Department on utilization.

iv. The National and Regional Forestry Department must be ready to participate in a community based project.

v. The technical, social and economic constraints must not be so great as to minimize the chances of successfully realizing the projects objectives.

1.3. El Ain Forest Reserve.

El Ain Forest reserve is situated about 26 km. South - West of El Obied. It lies between latitudes 12 52' and 13 40' North and longitudes 30 10' and 30 24' East.

The total area is about 18643 ha, of which 11197 ha, the old forest reserve, including the water reservoir, and 7476 ha the new extension.

The whole forest reserve is surrounded by a buffer zone of about 30000 ha in area, dominated by A. mellifera and inhabited by 23 villages practising farming on cultivable soils.

2. The Objectives Of The Project:

2.1. General.

The overall objective of the project is to design and implement a long term strategy and plan (10-20 years) for managing the resources of El - Ain forest and the surrounding buffer zone.

2.2. Specific Objectives Of Phase I (October 1989 - December 1993).

i. Studies and data collection: survey the buffer zone to produce baseline data for planning, monitoring and later evaluation purposes. This is to help in division of responsibilities among the villages and to establish a system for monitoring the exploitation.

ii. Establish the organization structures: to enable the full participation of the local communities in future management plans to take place. This will be through setting of local associations, committees or other bodies to facilitate communication between project staff, the FNC and the inhabitants of the project area.

iii. Trials and demonstration: of a range of forestry and agricultural techniques will be set up to establish the most appropriate and cost effective methods for sustainable exploitation and improvement of the forest, and to investigate the possibilities for improvement of agroforestry practices.

iv. Establish the means whereby: discussion and dialogue can be initiated and maintained. This is the first stage in building up the mutual trust and confidence that is the pre-requisite for success. Special efforts are needed to cover the views of the nomadic groups, and if possible seek their membership in the planning groups by arranging meetings to suit their timetables.

v. To establish an agreement between local people and the FNC: that clearly defines the roles of and responsibilities of each party and the rights of the people with respect to traditional and future use of forest reserve and buffer zone.

vi. To produce a management plan: that will enable the people living in the project area to utilize the woody and other resources in such away that these resources are regenerated rather than depleted, and are enabled to meet the expanding demands of future generations. Such a plan must benefit both the farming communities, the FNC, the nomads and the nearby urban population. To do this, it will be necessary to balance all the interests of the respective parties within the productivity and the carrying capacity of the area.

2.3. Specific Objectives of Phase II (January 1994 - December, 1998).

The implementation of management plan for the whole area: this period may last 10-20 years, and be monitored by the FNC and SOS Sahel. Any modification to the plan deemed appropriate in the light of experience can be programmed at the relevant time.

In Phase II there will be a shift in emphasis away from the government reserve area and the project will become largely extension -oriented.

There are two main reasons for this:

i. The project Phase I commitment towards the forest reserve will be met by the completion of the forest reserve management plan to be implemented by the FNC.

ii. New villages will be further away from the forest reserve and therefore unlikely to perceive any advantages in participating in discussions regarding its management.

3. Project Staff And Organization.

General Manager FNC

Senior Deputy General Manager FNC (HQ)

Deputy General Manager FNC For Kordofan Sector

Director Of Sheikan State Forests

National Project Director (B.Sc. Forestry)

Deputy National Project Director

Forest Management and Research Officer (3 years Diploma in Forestry)

Extension Coordinator

One Forest Overseer

6 Extension Agents
3 Males + 3 Females

13 Forest Guards Nursery Man

4 Car Drivers 6 Casual Labourers
1 Casual Car Driver

4. Social Forestry As A Main Thrust.

4.1. The Social Setting.

Natural conservation of El Ain Forest has been built on strong social forestry approaches, being realized in the design and implementation of the project. Through such approaches two major components of social forestry were promoted: general awareness about El Ain Forest as a reserved natural plantation, and extension of the reservation activity to the villages surrounding the forest. The two components proved to be highly interrelated in enhancing the project objectives.

One of the main findings of this evaluation is that, involvement of the surrounding villages has been a self-propelling mechanism towards achieving natural conservation and sustainable management of the forest resource.

4.2. The Villages Context.

El Ain Forest management project covered a total of 42 surrounding villages under its management programmes (22 in Phase I, and 20 in Phase II) Fig. 1 & Table 6. Based on available baseline data and the general knowledge about the area, those villages could be characterized as follows:

i. Located in the low rainfall belt, annual mean in the order of 300 m.

ii. Mostly on tranculated soils (locally known as ***gradud***) of poor water retention capacity and difficult to cultivate.

iii. Vulnerable to crop failure (2 out of every 5 years) with built-in insufficiency of H/H cereal needs.

iv. Prone to droughts, falling within zone affected by 1984 drought.

v. Vegetation cover heavily depleted, as an environ of El Obeid - Er Rahad towns and of its location on the asphalt road.

vi. Lying on the cross road of ***Baggara*** transhumant coming from the South during the rainy season and the ***Camel*** transhumant during the dry season.

vii. Used as a grazing ground by dairy cattle from El Obeid.

viii. Of recent, witnessing expansion of tractor farming on low land patches.

ix. With scarcity in domestic and livestock water supplies, for wholly lying in the dry Basement Complex geologic formation zone.

x. Witnessing intensive seasonal population out-migration for casual employment.

Portraying the above basic information is essential in furnishing a socio-ecological frame of the area in which project concepts such as management of natural forest, modeling for arid land conservation, involvement of communities, sustainability of activity, etc. have been implemented. The implications of project interacting with this frame need to be considered in evaluating project achievements and be carried through the analysis of project activities into the lessons and recommendations of this evaluation.

5. Project Achievements In Different Activities.

5.1. 7 Main Project Components.

The main objective of natural reservation is to enhance environmental conservation, for :

i The water storage reservoirs in El Ain Forest, form the main source of supply for El Obeid town;

ii. conservation of ***wadis*** to sustain them as important drainage systems, hence check loss of valuable trees; and,

iii. availing of forestry products for home needs and for cash generation.

To achieve the above, the project implemented 7 programme components, targeting: El Ain Forest, villages and H/Hs:

- Forestry research.
- Villages and H/H nurseries.
- Micro - catchments.
- Reservation of village forests.
- Improved energy conservation stoves.
- Support to ***Gubraka*** farming.
- Environmental enhancement through schools involvement.
- Assistance in village projects.
- Building relationships with pastoralists.

5.2. Extension A Main Vehicle For Project Execution.

Extension was applied as a main vehicle for implementing the various project components. The project extension unit has a staff of 7 persons, comprised of a lady (graduate) as coordinator of unit, and 6 field extensionists, 3 Males and 3 Females. Through its programmes, 1992 to date, extension has applied different approaches and methods. Tables (1, 2, 3 & 4) covering training of extension staff, communities and villagers. The central role of extension programmes could be clearly grasped from the activities displayed by the tables.

In assessing extension viability and impact, the following points could be made :

i. Succeeded in creating an orbit of buffer villages with adequate knowledge of the project objectives.

ii. Establishment of village organizational forums (committees) involving both males and females to lead reservation activities and associated programmes.

iii. Through flexibility of methods used, e.g. involvement of beneficiaries in preparatory work for some extension programmes, and giving consideration to the human dimension in dealing with matters, extension has achieved a day to day working relationship between villagers and the project. All project staff is known to villagers.

iv. Creation of awareness about the importance of conservation of land resources. In a number of meetings with the villagers, people expressed their appreciation of the project for "making them know things they had not thought about before and because of their ignorance in the past they mistreated their resources". Some strongly voiced their interest in the extensionists to continue working with them " to open their minds more".

v. Appreciation of the project, for the assistance it extended to villages in realizing some of their basic needs, such as water provision, through Food for Work.

vi. A strong sense of villagers owning and controlling their land, especially felt in the cases of villages which managed to reserve forests, with a high anticipation of completion of the reservation work.

Of the indicators of achievement of above impacts, we list the following :

i. Participation of the villagers through their representatives in data generation for base-line surveys and monitoring purposes.

ii. Access of villagers to El Ain forest resources to obtain products like dead wood and fruits without preaching set regulations.

iii. Continuous communication between villagers and extension unit to implement different village programmes and to report violations, e.g. encroachment by pastoralists, wood cutters, fire outbreaks etc.

To gauge impacts, the extension unit, has been carrying out monitoring and evaluation investigations, every 3 months, 6 months, and at the end of year. The results of such investigations are available as office data.

5.3. Research On Silviculture Of *Kitir.*

Very little is known about the silvilculture of ***kitir*** (Acacia mellifera). The project has attached a research programme to the ongoing management activities to improve the management of the forest.

The project has employed the following silvicultural treatments for ***kitir*:**

i. Coppicing i.e. cut all stems of each tree at 50 cm above the ground level. This is to provide the local communities with wood fuel and wood for construction.

ii. Removal of one stem from each tree to meet the needs of communities for building material.

iii. Pollarding i.e. cutting all branches of each tree at 150 - 200 cm from the ground level to produce fencing material.

Each of the above silvicultural treatments had either microcatchment dug around each tree, or trees were left without any means of water harvesting (control).

The preliminary results showed that: in ***kitir*** coppices water harvesting increases the chances of coppicing of ***kitir***.

The project has concluded after four months of experimentation that ***kitir*** tree could safely be utilized to a particular level, without destroying it. However, in a following report (1997) it has been stated that ***kitir*** is non-coppicing.

Lesson:

The results so far obtained, are not conclusive and further investigations are needed.

5.4. Village Tree Nurseries.

The village tree nurseries programme was started in February 1991 on a request of the local communities. The objectives cover nursery stock production for home planting and for sale. The project provided the necessary training for establishment of nurseries and tree seedlings production.

Lesson:

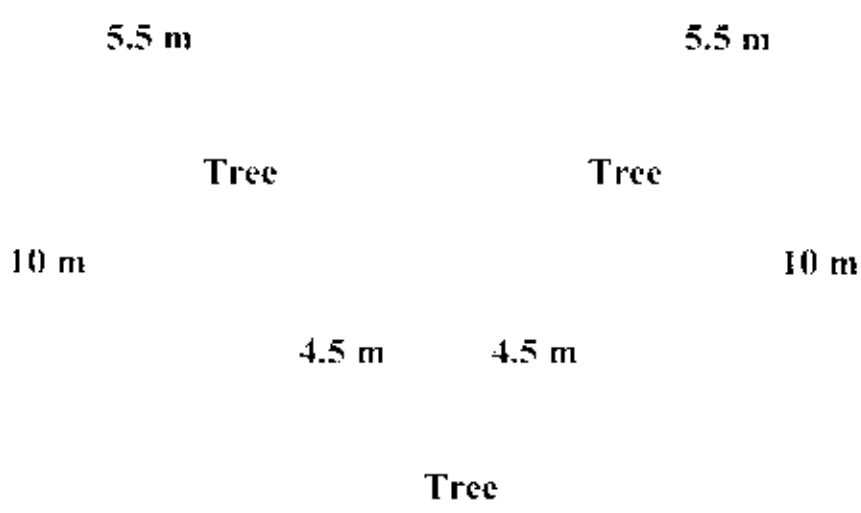
The local communities have gained good experience in establishing nurseries. The activity is now quite popular and it reflects positively on reforestation of the area; life fencing of ***Gubrakas***, home planting and village planting.

5.5. Microcatchments.

The ongoing applied research component of the project has conducted experiments in 1991 season on water harvesting structures. This is to increase the infilteration of water in the heavily compacted invisols. (***Gardud***) predominating the project area, and which experience a run-off of 98%.

The V shape structures of 10x10 m at right angle have proved the best, in-terms of increased water infiltration and biomass production, among other structures tested. Achievements in terms of number of micro-catchments, number of seedlings planted and survival (1991 - 1997) are recorded by the project.

The number of microcatchments constructed each year is limited. The microcatchments are constructed manually by local communities through use of Food for Work. The number of microcatchment per feddan is very low, 20 mc/feddan. Consequently, the tree stocking density is low too, 60 trees/feddan if all survived (3 seedlings /microcatchment).



No cropping is allowed on the microcatchment.

Lessons:

Despite the above cited weaknesses the introduction of micro-catchments and their adoption by villagers have resulted in many benefits, highlighted as follows:

i. The know-how of constructing the micro-catchments and the soil-moisture effects they generate have become a popular practice.

ii. When combined with village forests they establish villagers rights over their land.

iii. Villagers observed the coming of certain species of valued palatable grasses which disappeared for years.

iv. A high preparedness among villagers to continue adding more micro-catchments every year, as an effective means of reclaiming once waste lands.

5.6. Village Forests.

The activity is being implemented in 13 villages, out of which 5 have succeeded in completing the legalities of reservation (3528 feddans) while the remaining (8 villages -2491 feddan) are awaiting final approval. In the case of the first 5 villages the following activities have been carried out:

i. An inventory with participation of villagers;

ii. a utilization survey to assess consumption in terms of fuel wood needs, wood for building and other forest produce;

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iii. analysis of the results of the survey on which work plans were prepared; and,

iv. based on work plans conclusion of agreements between FNC and the concerned villages.

Achievements showed that reservation is being carried out on bare lands out of cultivation cycle. Different methods of working the soil were applied : ridging, ploughing, construction of crescents and micro-catchments, with the latter proving to be very effective. Food for Work was used for establishing the micro catchments, with villagers working as families or through communal labour organized by means of ***nafir***. Guarding the forest is organized by the village committee, with payments made to the guards.

Lessons:

Villagers are enthusiastic about reservation and are projecting benefits from it. Reservation strengthened their control of their land. Immediate benefits cover availing fodder for their livestock and for sale (one village sold hay last year for a value of L.s. 285000) The property right over the forest is enabling villager to exact fines on encroaching parstoralists, being used in paying the guards and to finance the village ***sandug***.

5.7. Energy Conservation Stoves.

The programme targeted training women in the production and use of improved stoves. Training rounds for women were organized on different versions of the stove, being produced for different cooking purposes. The version fully made of clay does not face problems of manufacturing. However, the one with the metal part experiences bottlenecks of regular supplies and rise in price from the producers in El Obeid.

Lessons:

Visits made by the evaluation team to fire places in many houses (picked randomly) in some villages proved that the stoves have been fully adopted by house-wives, with all ladies met being experienced in manufacturing them.

5.8. Support To *Gubraka* Farming.

The homestead garden, **gubraka** is traditionally women's activity. These gardens or plots are cultivated for the production of early maturing crops; okra, hot pepper, melon, cucumber etc. mainly for home consumption.

The project input in this activity is a three-fold one: environmental (by introducing the idea of life -fencing, home gardens, home nurseries, village nurseries and home planting), improvement of family nutrition and income generation. The project provides advice and improved seeds.

The success of the activity depends mainly on the rainy season: amount of rain and distribution. In cases of occurrence of dry spell following a good shower, the ***gubraka*** will fail. The women are either to re-sow, or to give-up and lose the season.

Lessons:

Gubraka farming, being universally practiced in all villages, any improvements of its productivity is appreciable as increasing food production. The examples the team investigated showed the wide range of crops raised: indigenous to the farming system or newly introduced. Apart from filling a gap in H/H food sustenance, ***gubraka*** farming contributes substaintially to family income. We stood on a farmer who made I.s. 85000 from ***gubraka*** crops, with more to sell as the harvest was not yet concluded.

5.9. Environmental Enhancement Through Schools Involvement.

A programme which aims at promoting environmental learning, with emphasis on appreciation of the tree through school teachers and pupils involvement. It involved selection of some village schools, with teachers (males - females) and pupils given awareness courses to extend environmental knowledge to pupils and the village community, coupled with tree planting in schools, and in form of school forests. The achievement is generally poor, for various reasons; such as lack of school fence to protect young seedlings, scarcity of water in some villages for

irrigating seedlings, and weak organization of the activity in relation to community role.

Lessons:

The activity was initiated at individual schools level with no linkages with the provincial educational office for formalization.

5.10. Assistance In Village Projects.

The presence of the (AFMP) in the area attracted support to some of the villages projects, in fields such as provision of water supply, improvement of schools buildings, etc... Food for Work was effectively used for the construction of ***haffirs***, by mobilizing village labour.

Lessons:

There is a high demand on project assistance in supporting village projects. Communities assisted in ***haffir*** construction are looking forward to be assisted in building dykes to conserve ***haffir*** spill water for agricultural purposes. With water provision as a basic activity, people explored with the team prospects of assistance in other community services. Creating income generation opportunities for the village population was also emphasized.

5.11. Building Relationship with Pastoralists.

Both of camel and cattle pastoralists, visiting the project area at different seasons, present a nuisance (Table 5) to project activities in many ways e.g. entering their livestock into El Ain forest, encroaching into village forests, causing damage to range by fire negligence and resulting in mass cutting of trees to build ***zaribas***. The project extension unit started a dialogue with the pastoralists, by organizing awareness campaigns for their ***sheikhs***, which proved to be effective in making them understand the project message. As a follow-up of the awareness activity, the project is planning to implement two components: reseeding of migration routes by the pastoralists through collection and casting of seeds, and

introduction of durable fences made of bamboo and iron wire to reduce the use of trees for construction of ***zaribas.***

Lessons:

Increasing the awareness of the pastoralists about conserving the range resources is a feasible activity that could be pursued, also the reseeding of the stock routes seems to be a reasonable intervention. As to introduction of fences, the proposal looks impractical, especially the way it is envisaged, i.e. to be carried by the pastoralists in course of their movements.

5.12. Summation Of Activities by village.

Table (6) sums-up the above discussed activities by village.

6. Recommendations

As a conclusion to this evaluation report the following recommendations are given by project component following the previous sequence of presentation:

6.1. Project Organization And Staff:

6.1.1. There is a need to strengthen project linkages with NFC offices at El -Obeid and HQS. The evaluation team is under the impression that whatever degree of linkage that exists, it is not operationalized.

6.1.2. Documentation of results is found to be weak, being limited to office file reports. This throws doubt on project achieving one of its main objectives as a model for dry land forest management. The scientific information coming out of the project to show its achievements is inadequate; though it has succeeded in concluding many valuable results.

6.1.3. NFC Khartoum is not utilizing the project results to promote social forestry for replication in other parts for the country. Documentation, and dessimination of results through workshops / seminars that involve Forests staff are the national level are essential mechanisms to bring out projects achievement to light.

6.1.4. The project also lacks scientific back- stopping mostly felt in areas of Forest research and agriculture (Soil water conservation Techniques).

6.1.5. Further to the above, there is a need to institutionalize the project at the provincial level as one of the important linkages to be created. As anticipated "giving the locals the authority of enacting the Forests Law" for sustainability, would not achieve its targets, unless supported by the local councils and the provincial bodies.

6.2. Extension.

6.2.1. Lack of documentation goes for all project components. It appeared as a clear weakness of extension work, for data is available in raw form, with documentation being limited to the purpose of some office technical reports.

6.2.2. The monitoring of extension activities though regularly carried out , it is more of a mechanical exercise expressed in aggregates of activities carried out. Limited attempts have been made to assess extension impact on beneficiaries. Both documentation and gauging of project impacts need to be improved upon.

6.3. Forests Research.

6.3.1. There is a need to include the time of application of treatment with other silvicultural treatments employed; coppicing, pollarding or removal of one or many stems form each tree. It is worthy to know that the results and conclusions drawn (1997) are based on trials conducted in July only.

6.3.2. The project may need to investigate the possibility of promoting the natural regeneration and artificial regeneration by direct seeding.

6.3.3. There is an evident need for the involvement of a capable researcher in a back-stopping capacity to assist in project research activities.

6.4. Village And H/H Nurseries.

The activity is income-generating and can therefore be consolidated and improved upon by:

6.4.1. Constructing cemented water basins or ditches to store water of heavy showers for irrigation during the dry spells.

6.4.2. Provide the nursery beds by underlined plastic sheets to conserve water from percolation in sandy soils.

6.5. Micro-Catchments.

6.5.1. As Food for Work in not expected to continue indefinitely, its suggested to explore the possibility of cropping with planting trees on the microcatements (agroforestry). The system can involve, besides planting trees and cropping, cut and carry practice ie. hay collection. With this arrangement the system can be long term income-generating, hence building on the sustainability of the project.

6.5.2. Use mechanical means to construct the microcatchments by tractor-mounted implements. This will increase the number of microcatchments each year.

6.5.3. Increase the number of microcatchments per feddan to increase the cropping area and the number of trees / feddan.

6.5.4. Monitor, evaluate and document for the crop yields and the performance of the different tree species planted.

6.6. Reservation Of Village Forests.

6.6.1. Hasten the legal work required for completing the reservation process.

6.6.2. Fix poles at corners of the reserved forest , carrying a distinctive label to be seen from a distance, telling outsiders about the village forest as " a new reality in the area"

6.6.3. Promote integrated uses of the land and water resources of the forest, that combine rain-fed farming (especially vegetables) hay collection and restocking on the conserved land; using same micro-catchments, or special ones to increase the chances of income generation and to tie villagers with the forest.

6.7. Improved Energy Stoves.

Sustaining the activity requires solving the problem of manufacturing the metal part of the stove. Provision of a credit fund for purchasing the iron material and training of apprentances from the villagers would guarantee access to the needed part at affordable price, besides generating income for some villagers.

6.8. *Gubraka* Farming.

6.1.8. The project may investigate the possibility of constructing cemented basins or ditches to store the water of good showers or run-off to bridge by irrigation during the dry

spell. It is worthy to note that the cemented basins are quite popular in these villages of the project area as used in cooling of grain mills.

6.8.2. The ongoing activities of distribution of crop seeds to grow and seedlings for establishing the life -fences need to be strengthened by attributing more effort to agriculture extension to improve on farming practices of land preparation, use of animal manure, pest control, etc. The team observed mal - practices like poor spacing of plants, intensive mixing of different crops, etc. which could be solved through more effective extension work.

6.9. Environmental Enhancement Through School Involvement.

6.9.1. More survey work needs to be done to select schools that have conducive conditions for implementing the activity. Villages like El -Gefeil which has a chronic problem of water supply should not have been included. Food for Work is to be availed for the chosen villages to facilitate involvement of communities in the establishment of schools forests. Tree species, especially those for shade and beautification, are to be recommended at fenced schools only.

6.9.2. Dialoguing with the state Ministry of Education on the programme content and purposes is to be made to ensure its ratification and inclusion in the school circulum for sustainability of the activity.

6.10. Assistance In Village Projects.

The current concern about village projects is to be maintained. AFMP is to act as a facilitator in identification of projects and as an essential link between villagers and the departments at El Obeid. Food for Work has an important role to play in the realization of village projects.

6.11. Building Relationship with Partoralists.

The main focus of the programme 'awareness' is to continue. Tree seeds collection and casting has prospects of success. As to manufactured

fences, as an alternative to ***zaribas,*** the proposals needs to be re-examined.

7. Issues Related To Project Sustainability.

The evaluation team dialogued the question of project sustainability at end of its life time and reached a conclusion that it can be hardly sustainable. Aspects taken into consideration in reaching this conclusion are the following:

7.1 Condition of buffer villages of project area, being revealed under previously given characterization: as poor, of unstable economies, brone to desertification, suffering from food shortage, experiencing a high rate of male out- migration, etc...

7.2. Project has so far failed to achieve one of its major objectives i.e. through effective management of the forest resources, provides adequate fuel wood supplies for El Obeid town and the interacting villages. All cooking places visited by the team had wood supplies in form of wood of old ***kiter, guwava*** trees obtained from El Ban Gadeid gardens, or poor quality shrubs and crop left-over.

7.3. The vegetation cover of the area is heavily devastated for three main reasons : severely beaten by the pastoralists especially the camel nomads watering their livestock at Er Rahad ***Turda*** (whereby the camel drinks at an interval of 11 days) the extensive wood cutting for sale at El Obeid; and of recent, the appearance of " tractor" agriculture which is increasingly taking away large acreage of the forests cover.

7.4. Definitely extension has played its designed role in organizing villagers, building awareness in them about the importance of the forest and mobilizing them under different activities, major among which is reservation. However, they are the same villagers dialogued as poor and economically vulnerable. More than that, they are the ones who relied fully during the last decades on the forests of the area, cutting them for fuel wood and charcoal-making to sell at El Obeid or on the trunk road.

7.5. The NFC has so far not fully benefited from the results achieved by the project for the weak linkages with it at both regional and central levels. Hence project can not be held as serving the purpose of replication. Some of the reasons behind that relate to a prevalence of a 'relaxed attitude' towards the project, lack of adopting the project message to promote dry land forests management and poor documentation.

7.6. Documentation is in fact failing project achievements. For example, the tables annexed to this report were put together by the evaluation team on request of raw data available at the project offices. Except for the different missions, little technical writing is coming out of the project. Monitoring of valuable achievements is limited to stock-taking of activities and not reflecting impacts. Few and simple indicators could have been examined and measured. Much of this goes back to poor relationships with NFC and lack of scientific back-stopping.

7.7. On the unmeasured sides, the project has really achieved a substantial input in the area of 'indigenous soil water conservation' through micro-catchments and the other methods used. 'Indigenous' because by now the technique has been fully adopted by villagers, for they mastered its construction, saw its benefits in growing trees and crops. This is taken by the evaluation team as a real break- through in the reclamation of ***gardud*** soils. The results attained, being reflected against the experimentation by the Kordofan Special Fund Project 1962 - 1967, trying different methods to farm the same soils, are marvelous.

7.8. On all of the above considerations, a re-ordering of project objectives under a new scenario needs to be examined if project is to achieve sustainability. The ongoing order was natural management of El Ain Forest and reservation in the buffer villages. The proposed order is revitilization of the village economic bases with natural forest reservation. In case this scenario is accepted, the requisites towards that are:

i. Documentation of project results for national and international dessimination.

ii. Holding of a workshop on project results with strong involvement of NFC staff, the concerned Kordofan state departments, and beneficiaries to discuss and endorse new plans that integrate natural reservation with people's basic needs.

iii. Maximization of income generation opportunities of villagers, through different kinds of projects, most important among which is expansion of "indigenous soil conservation techniques" developed by the project to increase the cultivated acreage for food production and for cash generation.

iv. The Forests Law 'given to the villagers' is to be ratified by the local councils and the provinces to acquire the strengths that support its enactment.

v. Intensification of use of Food for Work in support of different village basic needs.

In a nutshell, a reversing of project priorities of building natural reservation on satisfying people's felt needs looks to be the most feasible way for project achieving its objectives and instilling some measures of sustainability.

Table (1) TRAINING OF EXTENSION STAFF

No	COURSE	YEAR	PARTICIPANTS		POSITION
			MALES	FAMALES	
1.	Fruit Tree Production	1992	3	2	Extension Coordinat Extension Agents
2.	Rural Extension for Foresters (Reading University)	1993	1	-	Extension Coordinator
3.	Forests Extension	1993	-	1	Extension Agents
4.	PRA	1993	1	-	Extension Coordinator
5.	Poster Design and Production	1993	2	2	Extension Agents
6.	Extension Tools	1994	1	1	Extension Agents
7.	Extension Methodology	1994	-	1	Extension Agents
8.	Extension Methodology	1994	2	2	Extension Agent s
9.	Puppet Theatre Design and Puppet Production	1994	2	-	Extension Agents
10.	Vegetable Production	1995	3	3	Extension Agents
11.	Integrated Pest Management	1995	3	3	Extension Coordinator + Extension Agents
12.	PLA	1996	-	2	Extension Agents
13.	Gender and Development	1996	-	1	Extension Coordinator
14.	CROSS visit To SOS SAHEL Projects AT SHENDI	1996	4	2	Extension Coordinator + Extension Agents
15.	Panoramic Photography	1997	3	3	Extension Coordinator + Extension Coordinator

SOURCE : EXTENSION UNIT FILES

Table (2) EXTENSION TRAINING SESSIONS AT VILLAGE LEVEL

No.	Extension Activity	Year	Number of Participants		
			Males	Females	Total
1.	Four Courses on Improved Stoves (Wood Stoves & Fuel Charcoal -Making)	1992	32	-	32
2.	Sustainable Nurseries Course	1993	20	20	40
3.	Three Courses in Improved Stoves	1993	57	-	57
4.	Community Forests Course	1993	20	50	70
5.	Fruit Trees Production Course	1993	26	25	51
6.	***Sheikhs*** and Leaders Course	1993	12	46	58
7.	Reserved Forests Guard Course (With Some Nursery Labour)	1993	20	-	20
8.	Three Improved Stoves Courses	1993	35	25*	60
9.	***Sheikhs*** and Leaders Course	1994	20	49	69
10.	School Teachers Course	1995	11	19	30
11.	Community Forests Local Leaders (Inventory Training)	1995	28	9	37
12.	Two Improved Stoves Courses	1995	35	-	35
13.	Land Preparation for Vegetable Production Training	1995	40	-	40
14.	***Sheikhs*** and Leader Course	1993	25	24	49
15.	School Students Workshop	1996	35	45	80
16.	Three Improved Stoves Course	1996	65 **		65
17.	***Sheikhs*** and Leaders Course	1996	27	50	77
18.	Panoramic Photography	1997	2	7	9
19	Women and Desertification (Workshop at El Obeid)	1997	-	1	1
20.	Community Forests Reservation and Management	1997	2	9	11

NOTES: * From ADS Project ** 40 From ADS Project SOURCE: EXTENSION UNIT FILES, 1997

Table (3) Number Of Extensionists Visits To Villages For Different Activities (January - September 1997).

Village	Number Of Visits
1. Abu Tarboush	11
2. Gaghrour	21
3. Warshal (Haffir)	17
4. Gadeim	13
5. Ireidibo	9
6. Umm Laota	10
7. El Niweila Hineteir	6
8. Mago	7
9. Gahwat Suleiman	11
10. Abu Urug	2
11. El Mulbas	14
12. Abu Nanaa	13
13. Umm Kitera	14
14. Gafla	9
15. Nadaa	24
16. El Ain	5
17. El Yafta	8
18. El Ban Gadeid	2
19. Warshal (El Madakha)	18
20. Hay El Sikka	11
21. El Gefeil	20
22. El Kandakiya	12
23. Tenga	16
24. El Qoz	9
25. Badoga	14
26. Umm Arad	2
27. Hillat El Nur	8
28. El Gibina	7
29. El Dibbeba	3
30. Jebel Kordofan	2

Source : Extension Unit Office Files.

Table (4) Time Series Of Adoption Of Activities Phase II.

Activity	1994		1995		1996		1997	
	Number Of Participants (P)	Size Of Work (S)	Number Of Participants (P)	Size Of Work (S)	Number Of Participants (P)	Size Of Work (S)	Number Of Participants (P)	Size Of Work (S)
1. Village Nurseries. P Number Of Nurseries S - Number Seedlings	17	19802	11	9084	12	6781	35	10705
2. Community Forests. P Number Of Villages S Community Forests	5	5	9	9	11	11	13	13
3. Micro-Catchments P - Number Of Villages S- Micro-Units	17	6021	7	2465	12	5135	15	3032
4. Gubraka Plots P Number Of Plots S - Number Seedlings (for fencing)	4	800	20	4960	33	12034	40	7500
5. Improved Stoves. P Number Women Trained S Women Trained By Trainers	35	177	35	202	31	525		
6.Schools Environmental Enhancement. P- Number Of Schools S- Seedlings Plantation	-	-	7	2036	8	2422	5	2501

Source: Office Data Files

Table (5) Encroachment Incidences on El Ain Forest.

Year	Grazing	Cutting	Unlicensed Charcoal -making	Fire
1993	200	27	20	1
1994	114	28	32	2
1995	56	47	20	4
1996	76	31	41	-
1997	25	25	12	-

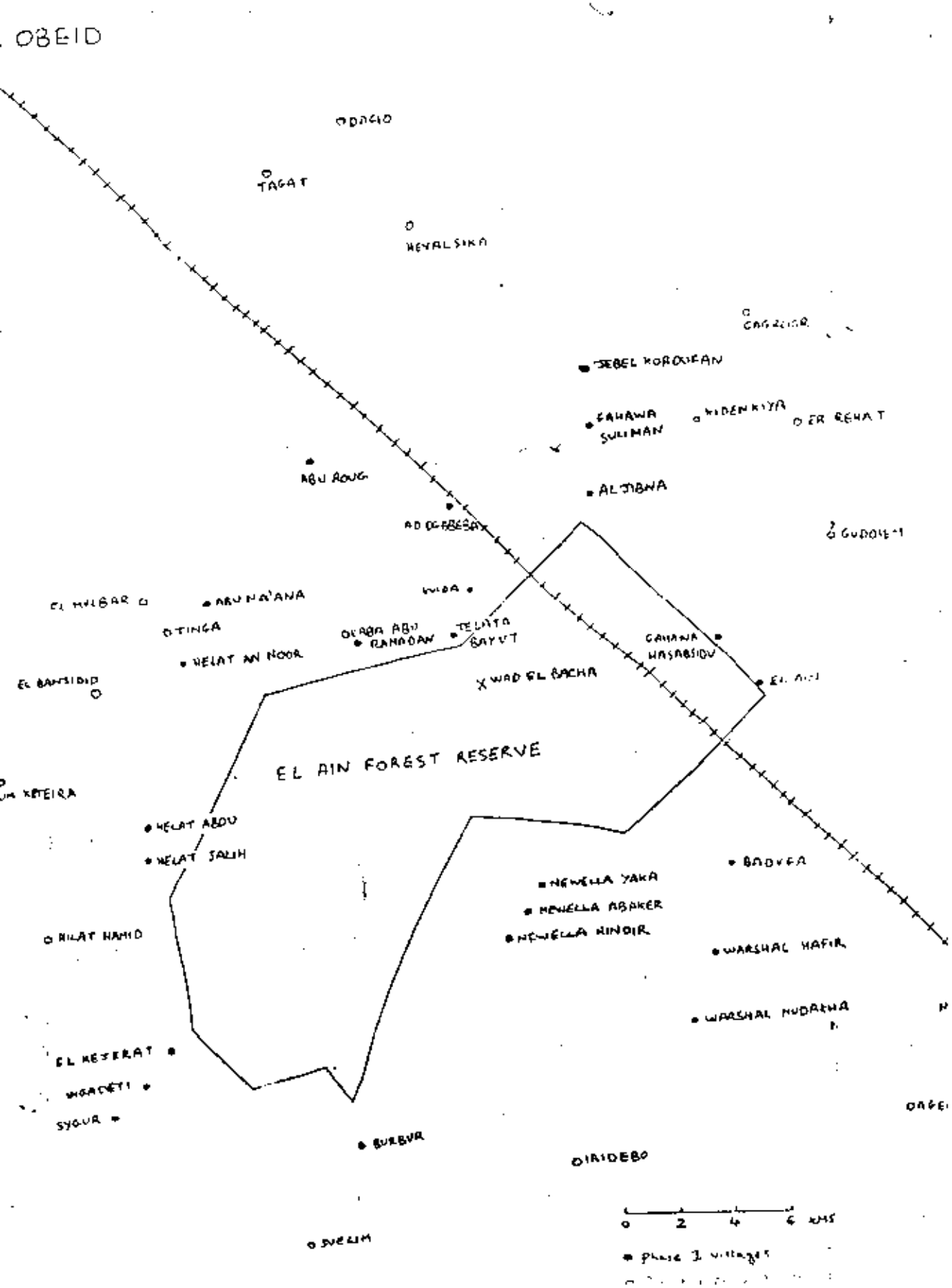
Source: Project Office Files

Table (6) Villages And Activities .

Village	Activities							
	Village Nurseries	Micro-Catchments	Improved Stoves	Comm. Forest	School Prog.	Gubrakas	Hashab Planting	T A
1. Garur		x	x	x				3
2. El Yafia		x	x	x				3
3. Abu Taraboush			x					1
4. Warshal 5. (El Madakha)		x	x	x				3
5. Warshal (Haffir)		x	x	x				3
6. Badoga		x	x	x			x	4
7. El Ain			x	x				2
8. El Gefeil				x	x			2
9. Burbur			x		x			2
10. Angadeiti			x		x			2
11. Jebel Kordofan			x		x		x	3
12.Gahwat Suleiman	x	x	x					4
13. Abu Nama		x	x	x	x			5
14. El Ban-Gadeid (A)					x	x		1
15. El Ban-Gadeid (B)					x	x		1
16. El Mulbas	x		x					2
17. Tenga	x		x			x		3
18. Umm Kitera Bukhari	x		x			x		3
19. Hay El Sika	x	x	x					
20. Q. Suweilim		x	x					2
21. Halfa	x	x	x					3
22. Irediba	x	x	x			x	x	5
23. Nabalat	x	x	x		x		x	5
24. Majo			x					1
25. Umm Arada	x	x	x				x	4
26. Umm Laota	x	x	x				x	4
27. Qoz El Kursan		x	x	x			x	4
28. Nawa		x	x	x			x	4
29. Nawa		x	x	x		x		4
30. Gadeim	x		x			x		4
31. El Kandakiya								
Total	11	17	27	11	8	6	8	

Source : Projeet Office Data.

(FIG 1) Map showing location of Project Villages



Map showing location of Project Villages