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**The effects of male  
out-migration on women's  
management of natural  
resources in the Sudan**

**Mary Myers with Rosalind David,  
Sarra Akrat and Amani Awad Hamid**

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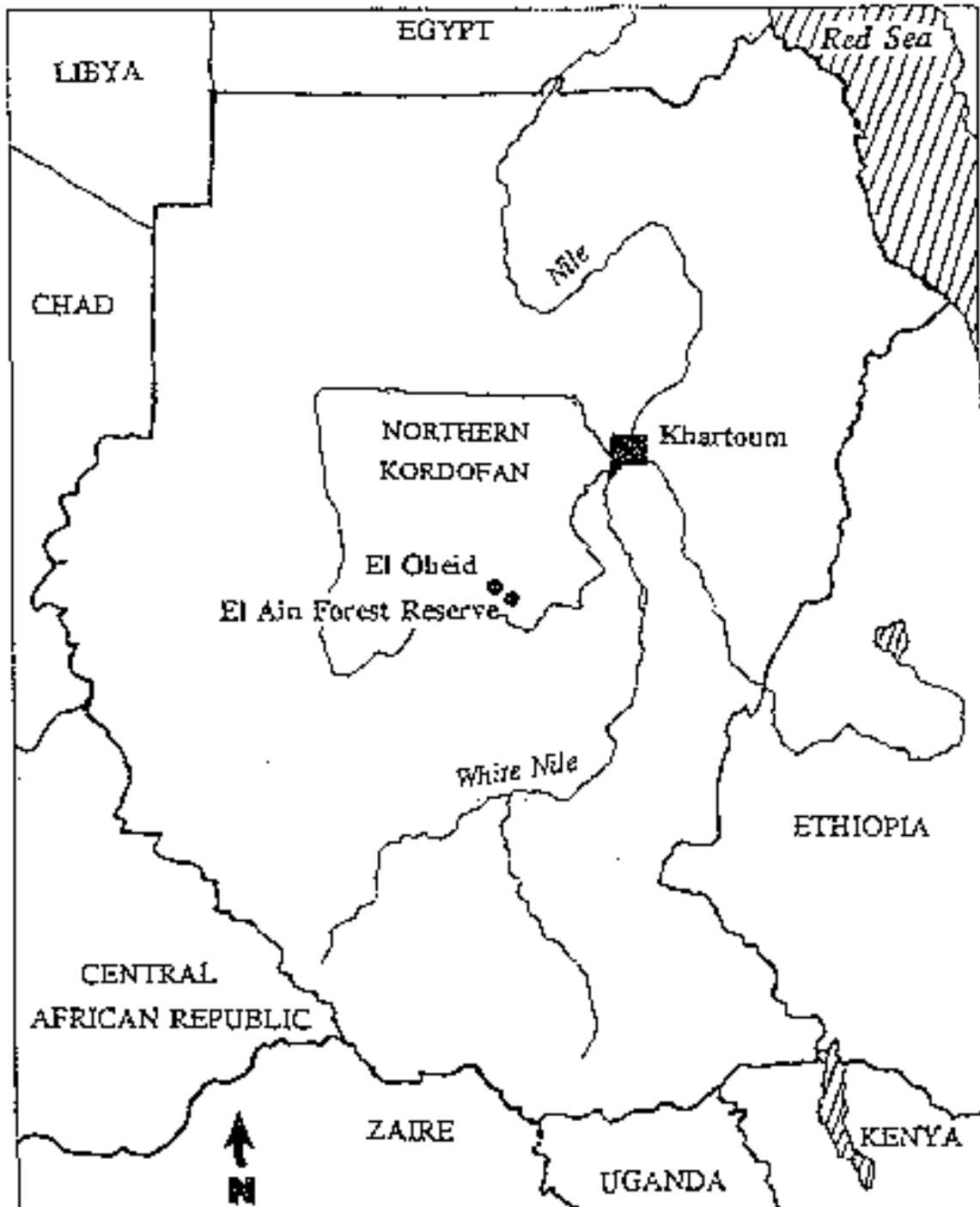
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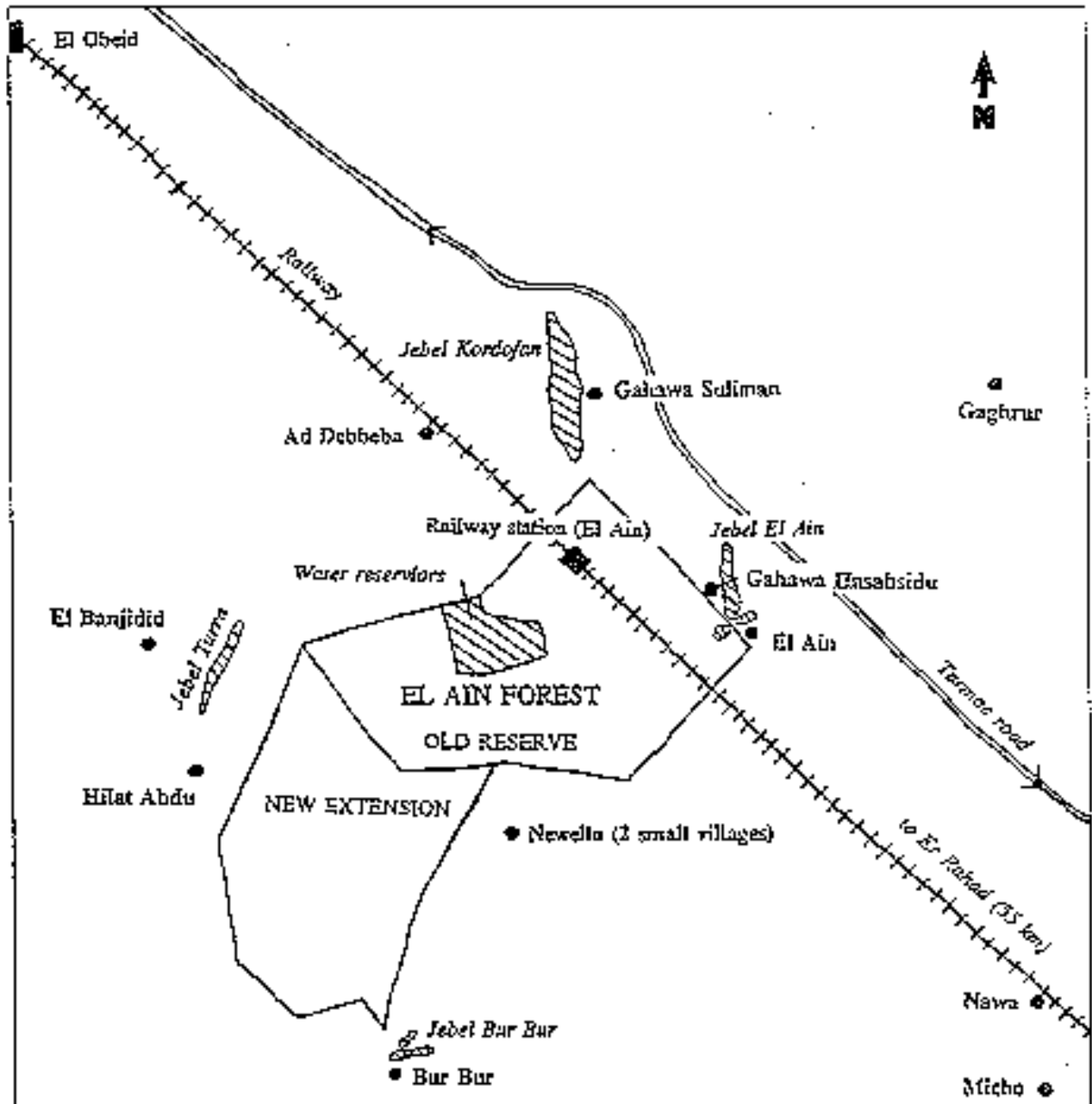
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MAP 1



The El Ain Forest Reserve, Northern Kordofan

MAP 2



The El Ain Forest Reserve and the surrounding villages where the research was carried out

## Acknowledgements

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Mary , Rosalind, Sarra and Amani  
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*He left the village that evening  
He went to the East  
He left behind the mountains of the West  
Bring me some 'Sherba' to drink  
To give me strength to follow his footsteps*

(Women's song from Kordofan)

## INTRODUCTION

This paper describes the effects on women of male out-migration in a number of villages in Kordofan, central Sudan. This work forms part of a broader study now available *Changing Places? Women, resource management and migration in the Sahel. Case studies from Senegal, Burkina Faso, Mali, and Sudan*. The research focused in particular on whether the migration of men from rural areas in the Sahel was having a significant impact on patterns of environmental management, and on the capacity of farming households to invest in the improvement of their land, such as through soil and water conservation measures. The three other case study areas were Diourbel in the groundnut basin of Senegal; Passoré on the central Plateau of Burkina Faso; and Bankass near the Dogon plateau of Mali. In the Sudan, the El Ain Forest area was chosen as a site for this research because it was in an area of settled, rainfed agriculture, suffering from a high degree of environmental degradation and affected to some degree by male out-migration.

Since 1989 SOS Sahel International UK - an NGO based in London - has been working in partnership with the Forest National Corporation of the Government of Sudan and the population of 23 villages to find ways to manage El Ain Forest and its surroundings on a sustainable and participatory basis. This project is the Natural Forest Management Project (NFMP). The present study covers 11 villages on the edge of El Ain Forest: 7 covered by the NFMP and 4 non-project villages further away from the reserve, within a radius of about 25 km (See Map 2). Part of the rationale for choosing this site was the potential for results to enhance the ongoing work of the NFMP, while our study was greatly enhanced by the information gained from NFMP staff.

The first phase of fieldwork (July-August 1992) consisted of interviews and group discussions in 11 villages, selected in order to represent a wide range in terms of size, ethnic composition, proximity to the forest reserve, and access to resources and infrastructure. The second phase (May 1993) consisted of



participatory research in three of the villages surveyed in the first phase, chosen to reflect as much of the diversity of the El Ain area as possible, whilst enabling the researchers to have in-depth discussions. A range of rapid rural appraisal techniques was used, including mobility/resource mapping, impact diagrams, ranking Venn diagrams, flow diagrams, oral history techniques, sketches and informal group or individual interviews.

Apart from the usual problems of shortage of time and transport difficulties, the research encountered two main constraints. Firstly, the tight time-scale meant that the initial sample was gathered quickly, so that in some villages, if the sheikh was absent, the names of migrants' wives we were given were less reliable than if taken from sheikhs' official records. Secondly, because our research was carried out under the auspices of the NFMP, we were automatically associated with the project. Though the project has an excellent rapport with villagers, people are nevertheless aware that the project is encouraging the enforcement of forest rules. Thus we suspected that some interviewees were not completely open about their use of forest resources, since their income-generating activities, such as firewood selling and charcoal-making are carried out illegally.

## BACKGROUND

Sudan is the largest country in Africa, covering 2,505,813 km<sup>2</sup> and with 26 million people. If anything typifies the country, it is its diversity and extreme contrasts. Against this backdrop, a constant theme is provided by the large-scale movement, both internally and internationally, of Sudanese people, whether in search of jobs or new pastures for animals. More recently, population movements of an unprecedented scale have been triggered by famine and civil war.

Rural poverty is prompting ever-increasing rates of migration in search of wage-labour. The majority of migrants in North Sudan (80%) (Abd'allah et al. 1991) do not flock to cities, but seek work in other rural areas, such as the cotton fields of the Gezira irrigation scheme. Since the 1970s, there has been a rapid expansion of the mechanised farming sector, dependent on manual labour for certain tasks. The area under mechanised cultivation is now estimated to exceed the area devoted to 'traditional' agriculture in North Sudan (Maxwell 1989).

Rural-urban migration is also on the increase. According to the International Labour Organisation, the population of greater Khartoum increased by an

average of 6.6 per cent per annum between the mid-1950s and the mid-1970s, largely as a result of rural immigration from the provinces of North Sudan. The causes and effects of rural poverty can be traced, in part, to the degradation of the natural environment. Sudan has progressively become more food-insecure since colonial times: in 1985 the consumption of cereals overtook production, rendering Sudan a food deficit country (Duffield, 1990). Although 80 per cent of the population are engaged in crop production and animal husbandry, between 1965 and 1986 the contribution of agriculture to GDP dropped by 19 per cent (DANIDA 1989); and in the period 1988-90 food production per capita was only 71 per cent of 1979-81 levels (UNDP 1993).

Environmental decline and increased migration are apparent in the El Ain area. El Ain Forest lies about 26 km to the southeast of Kordofan's regional capital, El Obeid. Rainfed production of sorghum and millet, is the main means of livelihood for the settled population of the area, with livestock production practised to a varying degree in all villages. Nomadic people cross the area on a seasonal basis, and there are also scattered communities of settled nomads throughout the forest's buffer zone.

This area of Western Sudan was traditionally considered to be highly productive. Until the 1960s, Kordofan was not only self-sufficient in staple food crops, edible oils, meat and milk, but also produced surpluses of gum arabic, cotton, groundnuts, sesame and livestock. However, in recent years, the region has faced a dramatic decline in overall agricultural productivity at a time of increasing national demand. Over the past twenty or thirty years, productivity has fallen by as much as 50 per cent. This decline is due to a combination of factors, including increased human and livestock populations, the expansion of mechanised agriculture on the poorer soils, environmental degradation, drought recurrence, and, more recently, insecurity, due to the war in the South.

Rainfall decline and its poor distribution is perceived to be the single most important factor in these changes by the local population of El Ain. According to 1964 figures, El Ain should lie between the 400 mm and 500 mm isohyets, but the mean rainfall for 1982-86 was only 260 mm. It is likely that over the last twenty to thirty years the average annual rainfall has decreased by about 30 per cent (SOS Sahel & FNC 1989).

The area is characterised predominantly by clay soils on which sorghum is cultivated, but which have a low rate of water infiltration and are heavy to work. Sandy soils occur in pockets and are used for cultivating millet and sesame. Although they are less fertile than clay, sandy soils are easier to cultivate, and are therefore in greater demand.

El Ain lies within an area with very little groundwater. Therefore irrigated agriculture is almost impossible; the population relies on rain-fed agriculture, and villages are commonly clustered by khors, or seasonal watercourses, of which the two main ones feeding the forest reserve are Khor El Nil and Khor Baggara.

The vegetation of the area is classed as Sahelian acacia wooded grassland and deciduous bushland, with Kitr (*Acacia mellifera*) the dominant tree species within the Forest Reserve. The total area of El Ain Forest is about 19,000 ha. No permanent villages are allowed within the forest reserve, with the exception of the water department village of Wad El Bacha, which is also the site of the NFMP field office. Settlements are situated in the forest buffer zone and the local population relies heavily on the forest for fuel, building materials, wild food, browse and medicines.

The *Acacia mellifera* forest is currently under considerable stress, from both human and natural causes. According to the NFMP, research shows annual mortality rates of between 20-30 per cent. This is probably due to the fact that trees in the area have been severely weakened by years of drought. Soil erosion is on the increase with rainwater run-off rates over 90 per cent on some clay soils (Shanks et al. 1992). The continuing loss of trees and ground-cover due to drought and human pressure exacerbates this erosion.

### Social Environment

In 1983, the province of Kordofan was inhabited by just over 3 million people. The majority (63 per cent) of people are farmers, while 24 per cent are nomadic pastoralists. The rest (13 per cent) of the population live in El Obeid or in other urban centres. The population of the area immediately surrounding El Ain Forest Reserve amounts to a total of about 11,000, scattered quite sparsely in relatively small villages at a density estimated at 12 people per km<sup>2</sup>. Village size varies between about 10 households in the smallest villages, to about 110-150 households in the larger ones. Average household size is estimated by the NFMP at between 7 and 8 members. Most households in a village are linked through family ties. More often than not women marry inside the village and inside their own extended family - the ideal is to marry a first-cousin.

## FOOD PRODUCTION, LIVELIHOOD PATTERNS AND GENDER ROLES

Agricultural production in Western Sudan is family-based, and rural women play a major role in almost every aspect of agriculture, food and cash crops, as well as in animal rearing (Vogt & El Dai 1990, Hamid 1991). Although Western Sudanese rural society is strongly Islamic, the segregation of women characteristic of other parts of Sudan is not found in Kordofan. Only a few agricultural activities are clearly divided by gender.

### Land Tenure and Management

Land tenure and management in El Ain must be seen in the wider context of policy changes at the national level. Sudan has experienced a profoundly *unsettled period in terms of rural administration from 1969 to the present*, during which time the system of rural administration changed twice. In 1969, President Nimeiri abolished the colonial system of Native Administration set in place by the British in 1898. Nimeiri's 'modernising' Local Government Act of 1971 was designed to remove the traditional hierarchy which managed the land and to replace it with elected local and provincial councils. In 1989, the present Government of Sudan largely restored the traditional rural hierarchy to its pre-Nimeiri status. In the interim, a state of confusion over responsibility for land, and its management, caused considerable damage. As El Din Awad Shegaf writes:

*[the abolition of native administration] resulted in decline of security and led to poor land use and poor regulation of the natural resources...government law and order was no longer properly functioning. This led to disorder...uncontrolled activities opened the way for haphazard grazing, cutting of trees and fires...[which] enhanced the desertification process.*  
(El Din Awad Shegaf 1989, p.111)

Now all land is administered through the authority of the regional Amir (formally Nazir), the district Umda, and the village Sheikh, although ultimately all land belongs to the Government of Sudan. However, despite the restoration of traditional hierarchies, it is still possible for influential people in military or business circles to obtain rights to exploit farmland or woodland through the issue of government licences.

People in the El Ain area agreed that these administrative changes have caused

profound disruption and damage to the natural environment. Abuses, such as sheikhs selling communal village land to rich outsiders, continue, while increasingly tense relations between farmers and herders serve to cloud the land management issue. Local-level land disputes are common, and the question of who manages and benefits from common resources, particularly the all-important El Ain Forest Reserve, is still not resolved.

Nevertheless, a basic system of land tenure and management still exists. From the villagers' point of view, their land belongs to the sheikh, and fields are assigned by him to families on the basis of need. Fields are then passed down through families. Surplus uncultivated village land is common grazing land (known as kerib) and/or wooded area known as sheikhs' forest. Under Islamic law women are entitled to inherit land, though a daughter receives only half that of a son, and a widow receives a quarter of her husband's estate. Women are also entitled to rent land in their own name. In practice, though, very few women own land; as a rule, they cultivate the family land which belongs to either their husbands, fathers or fathers-in-law.

### Agriculture

The staple crops are sorghum, millet and okra; the most important cash crops are karkade (*Hibiscus* sp.) and sesame. Watermelon, pigeon peas and a cucurbit called tibish are also widely grown, mainly for household consumption. When listing crop priorities, women invariably listed okra as most important after sorghum and millet, whereas men prioritised cash crops, thus reflecting women's responsibility for household subsistence, and men's responsibility for earning cash. Groundnuts and gum arabic have virtually disappeared from the area since the droughts of the 1980s.

Agricultural yields are relatively low and declining. This is explained by local people as largely due to the recurrence of drought, but other causes include labour shortages, insecurity of land tenure, and lack of conservation measures.

The average size of a cultivated holding in the area is between 5 and 9 mukhammas (1 mukhamma = 1.8 hectares). Usually a family will have fields in several different locations around the village. Families thus 'spread the risk' according to water sources and soils. Due to labour constraints most families do not cultivate the full extent of the land they own, but open fields up within the holding on a fallow rotation. Land availability is not generally perceived to be a problem in the area, and there is very little expansion in terms of clearing new land for agriculture. Men and women work together on the family plots, with tasks divided along gender lines according to the season.

In addition to the family holdings described above, most women in the El Ain area work on their own small plot of land, called a jubraka. These jibarik (pl) are sometimes in the main fields or near seasonal water courses (khors), or sometimes within the precincts of the village, either within or near the household compound. The average size of a jubraka is less than half a mukhamma. They are almost always to be found on clay soils. Jibarik can be defined as household gardens, owned by the male head of household, but cultivated exclusively by women and their children, for mainly subsistence crops. Okra is the main jubraka crop; tibish and karkade are also cultivated and, if seeds are available, other vegetables such as tomatoes and aubergines. If there is a surplus a woman can sell this produce and use the money earned for herself on clothes, shoes, etc, though normally women will prioritise children and household goods over their own personal needs.

### Livestock

Before the 1984/85 drought, this area was rich in animals but it is now rare to find households with more than four goats. Large herds of cows or sheep are limited to the richer farmers or traders. Nevertheless, all settled families keep a mix of livestock - cattle, sheep and goats - which still form an essential part of their risk-spreading, land-use strategy. Most animals are kept for meat, milk and/or skins, and as an investment to be sold in times of need. Using animals for draft is very rare. Carts and ploughs are almost unheard of in this area, though donkeys (and sometimes camels) are used for transport.

Men and boys herd camels and cows, and are largely responsible for donkeys, while women are responsible for chickens, goats and sometimes sheep, which mainly stay around the villages, and are herded by their younger sons. However, the animals are almost always owned by their husbands, and a woman would be lucky to own even one or two goats.

Settled nomads are dotted about the El Ain area and represent several distinct groups, Hawaweer, Kababish, Baggara. These were the groups most severely affected by the drought, and since then have resorted to settled agriculture, while at the same time trying to rebuild their herds.

### Use of fuel and woody resources

The inhabitants of the villages around El Ain Forest depend heavily on the forest for fuel, wild-foods, medicine and building materials, as well as for grazing of livestock. However, they must observe the rules governing the forest's use. For example, no one is allowed to cut green wood for fuel, or to

make charcoal for sale (see Forest Rules, page 22). These rules are designed to ensure that the Forest Reserve is conserved. Uniformed Forest Guards, employed by the Forest Department, patrol the forest and can fine or arrest anyone exploiting the forest illegally.

Despite these rules, the forest has declined over the last twenty years. This is largely due to the commercial exploitation of the trees by firewood merchants and charcoal makers from outside the area. It is also due to a lack of proper management of the Reserve itself by the government authorities, the local population and nomads. The forest rules are not enforced efficiently (there is only a handful of Forest Guards who patrol on foot), while drought has exacerbated the situation.

On the whole, people living in the forest's buffer zone are keenly aware of deforestation in the area and seem to know and accept the rules of the forest. Charcoal is made mainly for home consumption, and most women use only dead wood as fuel. However, a degree of illegal activity continues to take place. For example, some people still make charcoal for sale, and donkeys continue to be used to transport dead wood out of the Reserve, despite the fact that only head-loads are permitted. Income from illegal exploitation of the Forest Reserve is, therefore, a significant means by which some of the population earns a living.

### The Effects of Drought

The droughts of the 1970s and 1980s had a profound and lasting effect on agricultural yields in the area. The figures for Kordofan in Table 1 show an overall decline in yields since the 1960s.

**Table 1. Yields of major crops in Kordofan Province 1961-85**

Tons per feddan	1960/61	1967/68	1972/73	1984/85
Sorghum	0.377	0.120	0.136	0.104
Millet	0.545	0.180	0.088	0.037
Groundnuts	0.400	0.248	0.090	0.071
Sesame	0.348	0.093	0.090	0.047

Source: *El Sammani 1985, p. 64*

Oral testimony from the El Ain area confirms the general trend of decline:

*In the past we used to have everything. Now things are mixed up. We have hardly any millet, sorghum or livestock. After the drought we had to do everything differently. The men go to the cities to get small jobs.*

(Haga Fatima Bet El Surag, Micho village)

Within recent memory the revenue from cash crops, such as sesame, was significant enough for there to be camel-powered oil presses in some of the villages around El Ain Forest, but declining yields have rendered them uneconomic. The damage done by drought to the gum arabic tree (*Acacia senegal*) is reflected in the figures from El Obeid (Table 2), although excessive cutting and other management practices have also contributed to this decline.

Table 2 Sale of gum arabic in El Obeid, 1940-79

YEARS	SALE OF GUM ARABIC (TONS)
1940 - 1944	109,396
1945 - 1949	225,653
1950 - 1954	372,083
1955 - 1959	407,808
1960 - 1964	382,095
1965 - 1969	285,049
1970 - 1974	110,105
1975 - 1979	90,271

Source: WASAPP (Western Sudan Agricultural Research Project), El Obeid, 1985, p.13

*Now that I am getting old I can't remember all the fruits we used to collect. There were so many... We'd never buy things. We'd just go to the forests and to our farms...I am very sad for our village. They cut trees for building and to make charcoal. The drought also caused trees to die. Now the khor doesn't have*



*trees like it did in the past... no one is interested in what I say.*

### Natural Resource Management

Despite increasing degradation of soils and vegetation caused by drought and human activity, people carry out few improvement measures, such as soil conservation structures. This may be due to the relatively low people to land ratio, which means that there is always new land onto which agriculture can move. Most families already have larger holdings than they have labour available to cultivate; so most land is fallowed on a regular basis.

#### On-plot measures

Farmers are concerned to maintain yields and practice various types of crop-rotation and intercropping. Most commonly, sesame is rotated with sorghum or millet. Intercropping involves planting karkade alongside sesame, watermelon with pigeon peas, or watermelon with sesame. Fallowing is the main technique used to improve soil quality in the area. The intervals between fallows vary according to size of holding, labour availability and quality of the soil. Generally, sandy soils will be fallowed after five or six years of cropping while clays can yield well for up to 20 years.

Animals are often encouraged onto the fields after the harvest for manuring, but since herds have diminished due to drought, the effects are not significant. In the past, reciprocal arrangements between pastoralists and farmers ensured a certain amount of manuring, but this has diminished with worsening relations between the two groups. Very few people expressed the need for transporting manure to the fields, or for acquiring artificial fertilisers.

Some forms of agro-forestry have traditionally been practised in the area, by allowing the natural regeneration of tree species, particularly *Acacia senegal*, in fallowed fields. However young trees are vulnerable to grazing by animals and mature trees have died through lack of rain. Fields in this area are not generally bordered with hedges or trees, but some women use dry hedging (thorny branches) to protect their plots from animals. This is the source of contention because some women are said to cut live wood to build their fences. The NFM project is encouraging the planting of live hedges, to encourage agro-forestry, and to reduce wind erosion.

#### Conservation of common property resources

Some resource management activities have traditionally been carried out at

village level where these concern common property resources - water, grazing, woodlands - but they seem to be in decline. They revolve around the village sheikh, whose duties should include the preservation and protection of the surrounding natural environment, especially forest resources. As El Din Awad Shegaf writes, these customary duties are reinforced by law:

*"The Forest Ordinance of 1932... shows that the Sheikh is an agent bound to protect forests from danger or damage (Sudan Laws, 1932). Moreover, the ordinance illustrates that any forest officer, policeman, Nazir, Umda or Sheikh may, without warrant, arrest any person reasonably suspected of having been concerned in a forest offence. Contribution of the Sheikh to the forest conservation involved maintenance of water course, soil and grazing."*  
(El Din Awad Shegaf 1989, p.108)

In the El Ain area, rules are said to have once applied to the following:

- \* the use of wet/dry season pasture
- \* the opening and closing of different wells
- \* the harvesting of berries and fruits by season
- \* the use of trees, especially near water courses
- \* the control of fires in forest areas

Communal work groups (nafeers) were used to maintain fire-lines, and they played an important role in protecting village resources from wandering animals, pest attacks, and illegal wood-cutters. All these jobs were the task of men. However, the enforcement of these rules is in decline. As Eltayeb Haroun, the Nazir of Er Rahad, said: 'these traditional ways made people treat the environment gently and have respect for the forests.' Reasons for this decline include ambiguous ownership and management due to the administrative changes of the 1970s, the ethnic heterogeneity of the El Ain area, and the absence of adult men due to high rates of out-migration.

#### Relations between farmers and herders

In recent years, traditional goodwill has broken down between settled agriculturalists and pastoralists. In the past, nomads brought their herds to eat crop residues while farmers benefitted from the animals' manure. The herders followed pre-determined nomadic routes (marahcel), and if the animals strayed and ate a farmer's crop, fines would be levied.

But, the marahcel are shifting due to increased field sizes; the extension of El Ain Forest Reserve; and the war in the South, which has meant that pastoral

groups no longer have access to the pastures of the Nuba Mountains. The fact that animals are banned from grazing in the Forest Reserve is a major source of tension. Farmers are worried by herders allegedly cutting live wood to corral their calves, trampling their crops, and making the land infertile with camel urine, which is said to contain harmful quantities of salt. Herders complain that farmers have restricted their access to pasture and water sources and have planted trees on land which was formerly used for grazing. Thus a previously beneficial system has become a vicious pattern of accusation and counter-accusation, a pattern which is repeating itself across the whole of the Sahel.

### Non-agricultural Activities

Women are involved in a range of non-agricultural activities: petty trading, handicrafts and tailoring. Men and women sell firewood and charcoal, though to a lesser extent in villages close to the Forest Reserve due to the enforcement of the Forest Rules. The sale of wild herbs, leaves and fruit is mainly done by women, and includes Tabaldi (*Adansonia digitata*) leaves and fruit, senna maka pods (*Cassia senna*) and guddeim (*Grewia tenax* fruit). However, non-agricultural activities, are not sufficient to provide the cash needed for payment of taxes.

### Household Roles

Women are responsible for child-care, food preparation, cooking and cleaning of the house and compound, in addition to their work in the fields, and their care of small stock. Most women rely heavily on their daughters for help, particularly with child-care. Fuel and water collection is also mainly a women's task, though men participate, particularly if the water source is far from the homestead.

## MIGRATION

*Nowadays men have to go out of the village to get money for their families. There is no livestock, no gum arabic and there is not enough millet and sorghum to last the summer months. The village men go to Khartoum, El Obeld, Er Rahad and to Libya.*  
(Fatima Bet El Surag from Micho village)

Kordofan once flourished on the trans-Saharan trade routes. As a result, all peoples in this area have a long history of movement. The ethnic diversity of

the area illustrates the transient nature of many of its communities. Whole villages have migrated here from Chad, Nigeria, Niger, Burkina Faso and neighbouring regions of Sudan, some as recently as one generation ago.

Seasonal movement of men from the El Ain villages to other parts of the Sudan dates from before the drought years of the 1970s. Men have traditionally moved South with cattle and camels on a regular basis during the dry season. A major increase in migration began in the 1940s to the irrigated cotton-growing scheme of Gezira. Then in the 1960s and 1970s, other big schemes were set up such as Habila, Blue-Nile, White-Nile and Er Rahad Agricultural Corporations. These schemes established a pattern of sending trucks to villages in Kordofan to transport both men and women workers, particularly for the harvest.

Male out-migration has been on the increase again since the droughts of the 1970s and particularly that of 1984/85, when the whole region saw very severe upheavals, with heavy loss of livestock, and the beginning of a series of poor harvests.

Seasonal migration is the dominant pattern, and takes place mainly during the dry season, when there is virtually no agricultural work. Lengths of seasonal migration vary year by year, depending on the rains. In bad years men leave around October, and return in June of the following year. In better years, when harvesting and marketing take longer, seasonal migrants may not leave until around January. In some of the villages studied as many as 75 per cent of households are headed by a migrant, and none of the villages were unaffected by male out-migration.

### Remittances

From our sample the average monthly remittance sent by migrants to their wives, taking seasonal and longer-term migrants together, was about 700 LS per month (£1 Sterling equivalent to 200 LS Sudanese Pounds in 1994). At the lowest extreme, we found some women were receiving only 50 LS per month, for comparison, a cup of tea in the market costs 5 LS, and half a kilo of tomatoes costs 40 LS. We found that the vast majority of migrants sent something, even though some amounts were extremely small. Out of 50 migrants' wives we found only 4 who had been totally abandoned by their husbands and were not receiving any monetary or in-kind assistance.

On remittance levels, in the upper category were large villages with high livestock numbers or with many longer-term migrants, some of whom are salaried professionals, or who have found regular employment in the Gulf. In

the lower category, were small villages where seasonal migration predominated.

Migrants' wives normally receive fairly irregular remittances from their husbands, in the form of cash through friends or relatives visiting the village. Many migrant's wives, especially younger women, are looked after by their in-laws during their husband's absence. They will often receive a small sum for their personal needs while their in-laws receive the bulk of the migrant's remittance.

Because remittances are relatively low, migration does not seem to be making a significant contribution to agricultural or livestock investment in the El Ain communities. Remittances are used to buy food and other necessities, filling a 'cash gap' felt at village level. This 'cash gap' has been created by the decline in agricultural yields, which, has led to an increasingly monetised rural economy, since people must buy food to supplement what they grow. Households are far from self-sufficient, and require cash for the following necessities: clothing, shoes, furniture, utensils, salt, soap, spices, charcoal, oil, meat, vegetables, flour-milling, medicines, and, in bad years to buy staple grains. In some cases, migrants also bring back food and clothes.

### Types of Work

*Seasonal migrants* find brick-making, construction work and other unskilled casual labour in Khartoum and El Obeid. Others join the harvest on various mechanised agricultural schemes, such as in Gezira and Habila (cotton and sorghum).

There is a wide range of occupations for *longer-term migrants*, though many of the women surveyed did not know their husband's job. The most common occupations were armed service, animal herding, and trading. More unusual occupations included an *itinerant radio-mender* and a *travelling imam* (Islamic holy man). The three destinations cited for migration outside Sudan were Iraq, Libya and Saudi Arabia, where many work without papers.

The wives and families of longer-term migrants were among the most wealthy in the villages surveyed. The heads of these households were either traders/professionals in the Gulf or Libya (eg, one man was a trader in fertilisers and agricultural goods, another was a clerk in a law court), or had permanent jobs in Khartoum (for example, policeman). Almost as well-off were families of traders working permanently in El Obeid, who tended to have large herds of cattle. At the other end of the scale were wives of seasonal migrants whose husbands go in search of temporary day-labouring jobs on building sites, or in

small brick-making concerns in urban areas. The majority of interviewees fell into the lower social strata.

With the intensification of the civil war, the government of Sudan is increasing incentives for soldiers to join up. When men join the army they are normally contracted to work for six years, and then can renew on a four-year basis, but for those on active duty in the South, pay is double, and one year served in the South counts as two served elsewhere. For many poor villagers, the financial advantages seem to outweigh the high risk of getting killed. Apart from 'contract' soldiers, military service for 18-30-year-old men is officially compulsory, and, although enforcement has been patchy in the rural areas, the general trend is towards increased strictness.

## EFFECTS OF MIGRATION

The effects of migration differ significantly depending on whether it is seasonal or longer-term. In general though, the feeling, especially among women, is that neither is to be encouraged: male out-migration is seen as a necessary evil, a fairly recent strategy adopted in the face of low rainfall, rising prices and environmental degradation. A local proverb sums up the prevailing attitude: "Wattani wala mali Battni" (It is better to stay at home, even with an empty stomach, than to go away).

### Effects on Women's Workloads and Roles

*The wives of seasonal migrants* (38 per cent of our sample) assume complete responsibility for the household once their husbands leave, managing the household budget, children's welfare, small stock, crop storage, fuel and water needs and marketing. While their workloads evidently get heavier, women talk particularly of difficulty in disciplining children during their husbands' absence. For example, one woman said after her husband left she was powerless to stop her son running away to join the army.

Others complained of the irregularity of remittances, and in some villages women said that life was particularly hard around the month of March when men have been gone for a month or two, but before remittances start to be sent. In cases where men leave in search of pasture for their animals, they are not able to send remittances, but tend to sell one or two animals before they leave, and give their wives enough money to manage until their return at the start of the next rains.

*For wives of longer-term migrants*, the picture is somewhat different. This group can be divided roughly into three: women heads of households; those who are absorbed into their in-laws' or their own families, and abandoned women. In our sample, the numbers in the first two of these categories were roughly equal, with a small minority of abandoned women.

**Migrants' wives as heads of household.** Out of our sample of 50 migrant's wives we found 11 (about 20 per cent) who we could define as heads of households. They were living alone with their children and other dependents (elderly relatives) and had assumed the main responsibility for their family during their husband's absence, whilst also receiving remittances from him. For these women life is normally more difficult than for those absorbed into an extended family. However, a husband will normally decide to migrate over the longer term only if he can ensure the welfare of his wife and children in his absence. Therefore we found that these women heads of household often had their own means (land or livestock) or had a trade (for example, tailoring or handicrafts). Several women said they receive financial or in-kind support from other family members in the village when they request it. In some cases, notably in Micho village, women heads of household cited credit from local shop-keepers as an important source of support, particularly during the 'hungry months' before the harvest. Some women, if they were not living with their family, had male 'guardians' appointed by their husbands.

Average monthly remittances from longer-term migrants are higher than from seasonal workers. As noted above, remittances are crucial for providing household essentials (salt, soap, onions, oil). Of the 11 women in the sample who could be classed as heads of household, only 2 had ever hired labour on the family farm. Remittances are therefore not used to fill a labour-gap left by migrating males, but instead, fill a 'cash gap'.

**Migrants' wives absorbed by the family.** The wives of longer-term migrants were found to have been absorbed into either their own parents' household or that of their in-laws. In these cases, a migrant's wife will cultivate the family land or her in-laws' land alongside her relatives. Remittances from absent husbands will normally be sent both to the household-head and to the wife, with the household-head normally receiving the major part.

**Abandoned women.** In our sample of 50 migrants' wives we found 4 abandoned women (8 per cent). They do not receive anything from their husbands and depend variously on sons or brothers working abroad, or their own income-generating activities. Some said that they knew their husbands had taken second wives elsewhere, and one or two said they wanted a divorce. In most cases

their plight was recognised by the community, and they were given help by neighbours and relatives.

### Changing roles

Many women felt that they had taken over men's roles, for instance in cutting and clearing the fields, and marketing crops while some women talked of their husbands returning from Libya having forgotten how to farm: 'while we have hard hands, darker skins and are always tired from working in the fields.'

Another effect of migration felt by women is the burden of entertaining when their husbands return, particularly from abroad. Women joked, saying: 'all the money our husbands come back with is used up by the parties we must have for the relatives when they return!'

The reliance of migrants' wives on their children is becoming greater than ever, and it was noted that children, particularly girls, are missing out on schooling because they are required to help shoulder their mothers' extra work burdens in the farm and household. Although women are increasingly assuming more household and farm responsibilities, women's role in decision-making remains limited. In one village with a particularly high proportion of longer-term male migrants, women claimed to be making decisions on important social issues such as children's circumcision and marriage, but on the whole, social decisions are postponed until men's return. In public life women are not replacing the sheikhs and their older male relatives in village matters. Staff of the NFMP feel that, although women are consulted, men always have the final say in matters relating to the village and to the project.

### Social and Economic Effects at Village Level

Migration is not seen as benefitting the community as a whole. Indeed it is viewed by many as contributing to the disintegration of village life. In most of our discussions, migration was seen to benefit only the migrant's immediate, and sometimes extended family. As the sheikh of El Banjdidid said: 'A man is lucky if he brings back enough to feed his children, let alone to help his neighbours'. In only three cases did we find evidence that migration was concretely benefitting the community as a whole, where associations have been set up among migrants in Khartoum to equip the village school. Migration is generally felt to reduce village cohesion. Villagers' ability to protect their resources from outsider utilisation has been undermined, so they cannot protect themselves from neighbours coming to cut or collect natural resources. More menacing, is



the threat of merchants (and the army) who send lorries into the area to collect large quantities of wood.

Interaction between villages has declined. Negotiations, feasts, funerals and general meetings between villages would normally have taken place in the dry season when people were less busy. The absence of men during this period was said to have reduced community interaction and management agreements between villagers in the region. Although women take on some of the men's roles such as meeting and greeting strangers, they are not involved in negotiations at village level. The sheikh of Micho complained that: 'it is now harder than ever to look after village land'.

Relations between villagers and pastoralists have deteriorated. Traditional reciprocal arrangements between these two groups have been severely eroded. This might be solved with formal agreements negotiated between the two groups, but the absence of adult men for much of the year makes this more difficult.

In open discussion with villagers, both men and women particularly stressed the negative effects of migration on child-rearing. Added to this, people mentioned the disadvantages of fewer men present to protect the house, to discuss and run village matters, and to take part in communal work parties (nafeers).

A further effect of migration has been to increase the integration of villages into the monetary economy. Although the people of this area are no strangers to money - the figures relating to sale of gum arabic show that they have long been marketing cash crops - migration has intensified this orientation. There is some evidence that the influence of money is contributing to the breakdown of traditional communal values. For example, village sheikhs find it harder to organise nafeers (communal work-parties) because men no longer want to work for no pay. It is also reported that some village leaders, tempted by financial gain, have been illegally selling village land to developers from outside the area.

### Current Effects on Agricultural Patterns and Natural Resources

A first glance at agricultural practices suggests that migration is having little impact on farming. However, long-term patterns are discernible which suggest that migration may be having a profound effect on natural resources and agriculture-based livelihoods.

Because most migration is seasonal and men return for the rainy season, agricultural patterns in the area as a whole have, so far, changed little as a result

of migration. Since fields are only tilled during the rainy season, and no soil-improving measures and very little gardening are carried out during the dry season, seasonal migration seems to have little effect on land-use or quality.

The few women who become head of households assume greater farm management roles. If they have become heads of their households, wives of longer-term migrants will manage the family land and livestock themselves, though many receive advice and support in farming management from male relatives resident in the village, such as their fathers, sons or nephews. They will make decisions regarding selection and rotation of crops, and, if the husband's absence is prolonged, will decide on which fields to leave fallow and which to put under cultivation. Most wives of longer-term migrants report a labour shortage. However, it is difficult to determine whether or not this is due to their husbands' absence, since most households report labour shortages.

Remittances are not sufficient to invest in agricultural improvements or wage-labour. Remittances were found to be relatively low, and were mainly used to buy food and other basic necessities. There was no evidence that remittances were ever invested in agricultural improvements, such as pesticides, or machinery. There was also no evidence to support the idea that families left behind might attempt to solve their labour shortage by using the remittances to employ wage-labour on the farm. The few wealthy families interviewed, who had members on longer-term migration abroad, tended to have more livestock. This points to livestock being a priority over land for investment of remittances.

Many of the social effects of migration mentioned above, such as absence of men for communal work, have the potential for exacerbating environmental problems in the long term. The lack of men to clear grass-lines, as they once did, to reduce the risk of bush fires is one example; another is insufficient numbers of villagers to protect the Forest Reserve from exploitation by outside users. Furthermore, alternative opportunities for supporting the family have replaced the need to invest in the natural resource base at home. In the long term, environmental degradation is likely to provoke more migration away from the increasingly unproductive family land.

Women left behind lack the time to invest in resource improvement activities. Women are, on the whole, keen to try new techniques to invest in the long-term fertility of the land, especially when food or cash is offered for the work done. However, the main problem from women's point of view is lack of time, and the need for long-term investment in the land is not seen as a priority.

## CONCLUSION

The research in El Ain has shown that male out-migration is one factor among many that is leading to the destabilisation of the ecological balance in the area. Migration is both a reaction to the deteriorating rural environment and economy, and a cause of this deterioration. Because of the impoverishment of households in this area, and the growing need for cash, rates of out-migration are bound to increase in the near future. If longer-term migration increases, this will put added pressure on women and families left behind.

For the moment, the seasonal pattern of migration which characterises the area is clearly a rational livelihood strategy. Seen from the household level, it is a 'necessary evil', which enables survival from year to year. Seen from the overall perspective of natural resource management, the phenomenon of migration alone is not having significantly negative effects on agriculture and environmental sustainability. Other human activities, such as land disputes, confusion of management responsibilities and exploitation by outsiders are more serious threats to agriculture and the environment. However, if longer-term migration increases, the extra workloads that out-migration entails for women, coupled with the increasing environmental degradation, will mean that both the land and women will suffer.

In the light of this research it is possible to suggest some strategies for the El Ain area.

1. Households need cash, and men need employment in the dry season, and would stay at home if work was available nearby. Support should be given to the creation of local-level rural employment for men and women that is non-exploitative of the local natural resources, perhaps by paying people to plant trees and carry out other environmental improvement initiatives.
2. It is important to find ways of easing women's workloads through appropriate labour-saving technologies such as improved stoves, and better water-provision nearer the home. Better health-care facilities would help women cope with the triple burden of child-bearing, domestic tasks and farm-work.
3. Because of their heavy involvement in agriculture, it is important to include women in training and agricultural extension programmes (indeed, the NFMP is planning to implement a jubraka programme specifically for

women, involving the promotion of live-hedging, composting, manuring and agroforestry). Women's involvement will become more crucial if male out-migration increases further.

4. Support for institutions and networks which already support migrants is needed, in order to help make migration a more successful and secure strategy. Possibilities include help with transport, information on wage-levels and workers' rights, and advice on the best migration options.
5. Migrants' own networks should be supported to encourage investment back in their home communities. Longer-term migrants often have their own informal associations which have the potential for raising money to be invested in infrastructural developments. These funds could benefit from greater institutional and technical support.

## APPENDIX

### Summary of rules for the El Ain forest reserve

1. The Forest Department will only grant privileges to the people who are living around the reserve. These people are responsible for the protection and proper utilisation of the Reserve. Otherwise, any privileges received may be revoked.
2. Dead wood may be collected from both the New Extension and Old Forest Reserve, for personal use at home only. This can only be taken out by people and not by animals.
3. Green wood for building purposes can only be cut after a permit has been obtained from the Forest Department Office at Wad El Bacha for both the Old Forest Reserve and New Extension in areas specified by the Forest Department.
4. Collection of grass and dead leaves is possible from both the Old Reserve and New Extension. It can be transported by legal animals which are allowed in the Reserve.
5. Water collection is possible for domestic use in the Old Reserve from El Ain Station. However, water for illegal animals needs to be carried out of the Reserve. Donkeys can be used to collect water.
6. Fruit collection is possible in the Old and New Reserves but permission first needs to be sought from the Forest Department Office at Wad El Bacha.
7. Goats and camels are not allowed to enter any part of the Forest Reserve except if permission has been sought from the Forest Department for travel through the Reserve or if a camel is being used for transporting a person.
8. Cows, sheep and donkeys may use parts of the New Extension agreed with the Forest Department. However, they may not enter the Old Reserve until further notice.
9. Travel through the Forest Reserve is allowed on the major roads only. If illegal livestock are to be transported then a permit needs to be obtained

from the Forest Department Office at Wad El Bacha before animals enter the reserve.

10. No agricultural activity can take place in any part of the reserve.
11. No *fariqs* (nomads temporary camp) can stay within the Reserve. When the Baggara people arrive then this problem will be discussed with them.
12. All animals are prohibited from the fenced-off *hafir* (reservoir) areas within the Old Reserve.

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