



ENIDS / Feasibility Study WM /Final Report /2010



Financed by AfDB

Nile Basin Initiative
Eastern Nile Subsidiary Action Program (ENSAP)
Eastern Nile Technical Regional Office (ENTRO)
Eastern Nile Irrigation and Drainage Studies
Feasibility Study Wad Meskin Irrigation Project
Final Report
Annex 4: Sociological Aspects and Land Tenure

June 2010



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ANNEX 4: SOCIOLOGICAL ASPECTS AND LAND TENURE

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1 SOCIOLOGICAL ASPECTS

1.1. INTRODUCTION

In order to get a clear picture of the socio – economic situation in the villages located close to Rahad River, different methods of data collection were followed, and it included two types of questionnaires, observations and group discussion. In all, 10 villages were investigated. For each village a survey was conducted to collect information on total population, village ecology, services available, village institutions, main economic activities and main ethnic groups. Also in each village limited numbers of persons were interviewed through a prepared household baseline survey. This survey provides information on personnel characteristics, main occupation, agricultural services available and methods of farming and perception of the proposed project. Group discussions were conducted with group of villagers to get their perception of the proposed project and willingness to participate.

The study revealed that the type of agriculture practiced is traditional or at least semi-mechanized using tractor for ploughing. The main farms depend on rainfall which is unreliable and erratic. However, some inhabitants own lands along the river Rahad, irrigated by pumps when the review stops flow and changed into pools. Such Gerf (land inside river course) cultivation is small in size and only limited number of inhabitants is involved. Hence, all those interviewed and in the group discussions welcomed the idea of the proposed project. However, some form of land tenure must be reached to convince some large land owners surrender the land for the project.

1.2. POPULATION BETWEEN WAD MISKEEN AND HAWATA

Apparently development programs may involve a set of socio-economic disturbances as well as benefits and hence it is important to establish a baseline condition to indicate trend of changes as a result of project execution. Accordingly different parameters were tested to reveal the socio-economic situation in the study area. Information pertaining to age, family size, the nature of family of the surveyed households, the level of education and the main and secondary occupation were investigated.

1.1.1 Age

Table 1.1 shows that 56% of the surveyed households have an age range between 20-40 years while 44% fall within an age category of 41 to above 60 years old. This may explain that the population composition is still young. Allied with this, young generation they may also be more receptive to the expected opportunities created by the project. It is also shown in Table 1.2 that 92% of respondents are married and no divorced and widowed cases. The high marriage percentage may indicate a stable society which may further encourage the cohesion and fabrics of the community.

Table 1.1: Age (years) of the surveyed households

Age range (years)	20-30	31-40	41-50	51-60	Above 60 years	Total
Frequency	6	8	3	5	3	25
Percentage (%)	24	32	12	20	12	100

Source: Field survey

Table 1.2: Surveyed household's marital status

Marital status	Married	Divorced	Widowed	Single	Total
Frequency	23	0	0	2	25
Percentage (%)	92	0	0	8	100

Source: Field survey

1.1.2 Family Size

It is evident that families with big sizes ranging from 8 to above 10 individuals constitute 64% of respondents (Table 1.3). This may be ascribed to the stable nature of families. However, this may increase the dependency burden of households especially within the prevailing little job opportunities. As far as education is concerned (Table 1.4) reveals a deplorable situation. The illiterate people constitute 52% and both illiterate and primary school education equal to 96%. It is observed that no university graduate and only 4% completed the secondary school. The only plausible interpretation for high illiteracy in a settled community is that, they might have less access to education facilities. Concomitant to this situation was the expected high school dropout.

Table 1.3: Family members living in surveyed household's house

Numbers living in house	2-4	5-7	8-10	Above 10	Total
Frequency	2	7	8	8	25
Percentage (%)	8	28	32	32	100

Source: Field survey

Table 1.4: Level of education of surveyed household's head

Level of education	Illiterate	Khalwa	Primary	Inter.	Sec.	Univ.	Total
Frequency	13	0	11	0	1	0	25
Percentage (%)	52	0	44	0	4	0	100

Source: Field survey

1.1.3 Main and Secondary occupation

Parameters dealing with the main and secondary occupation were also investigated. The overwhelming majority (95%) of households admitted that farming is the main occupation while trade, raising livestock, government employee, artisan and manual labor were mentioned as secondary occupation (Tables 1.5 and 1.6).

Table 1.5: The main occupation of surveyed households heads

Occupation	Farmer	Livestock raising	Farmer and livestock raising	Total
Frequency	19	1	0	20*
Percentage (%)	95	5	0	100

Source: Field survey

* Some households have other main occupations

Table 1.6: The secondary occupation of surveyed households heads

Secondary occupation	Raising livestock	Government employee	Artisan	Manual labour	Trade	Has'nt secondary occupation	Others	Total
Frequency	2	2	1	1	3	10	6	25
Percentage (%)	8	8	4	4	12	40	24	100

Source: Field survey

1.1.4 Housing

The housing condition and number of rooms are depicted in Tables 1.7 and 1.8 which show that no red bricks and the majority of houses are build from mud materials (Jallous), tent, straw with 36, 36 and 28% respectively. The utilization of straw as building material which entirely depend on forest and pasture causing enormous strain on natural resource base which is in most places suffering from serious processes of degradation. This situation may

be aggravated if the population increase as the project may provide better opportunities to others to settle in the area. With respect to the number of rooms 68% of respondents have between 3-6 rooms to meet the large number of family members as mentioned before.

Table 1.7: The housing conditions of the surveyed households heads

Housing condition	Jallous (mud material)	Tent	Red bricks	Straw	Total
Frequency	9	9	0	7	25
Percentage (%)	36	36	0	28	100

Source: Field survey

Table 1.8: Number of rooms in the surveyed households

Number of room (range)	1-2	3-4	5-6	Total
Frequency	8	8	9	25
Percentage (%)	32	32	36	100

Source: Field survey (January, 2010)

1.1.5 Water Sources and Supply

On the other hand questions like the main source of water supply, who brings water to the house? And how water is brought and stored were asked. Tables (1.9, 1.10, 1.11, and 1.12) reveal some figures answering these questions. The majority of the interviewed households 52% indicated that hand pumps are the main source, while a relatively high percentage 36% depend on river Rahad and 16% have access to shallow wells. It is worth mentioning that water is the main source of disease prevailing in the community especially for children. Accordingly river water is subjected to many contaminants particularly in the dry season when the river is in pools. Furthermore, children (girls) and women are the sole concerned group for fetching water. Moreover, 92% of respondents carry water on head which make it more tedious. Almost all households store water in zeers (a mud container).

Table 1.9: Water supply – main source/surveyed households

Water supply – main source	Water yard	Hand pump	Shallow well	River	Other sources	Total
Frequency	0	13	4	8	0	25
Percentage (%)	0	52	16	32	0	100

Source: Field survey

Table 1.10: Who brings water to the house?

Who brings water?	Husband	Women (wife)	Children		Water vender	Others	Total
			Boys	Girls			
Frequency	1	9	2	13	0	0	25
Percentage (%)	4	36	8	52	0	0	100

Source: Field survey

Table 1.11: How water is brought to the house?

How water brought	By donkey	On head	Total
Frequency	2	23	25
Percentage (%)	8	92	100

Source: Field survey

Table 1.12: How water stored in the house

Who water stored	Zeer ¹	Barrels	Jerrican ²	Total
Frequency	25	0	0	25
Percentage (%)	100	0	0	100

Source: Field survey

¹ A mud container² A plastic container

Table 1.13: Do you practice farming?

Practice farming	Yes	No	Total
Frequency	23	2	25
Percentage (%)	92	8	100

Source: Field survey (January, 2010)

1.1.6 Farming system

A set of questions like total area owned by the farmer, area cultivated last year, types of crops cultivated, who involved in farming and land ownership and acquisition were asked. Although farming is the main occupation and ultimately the major source of income, it is observed that the holding size is very small and 95% of respondents have a total ownership ranges between 0-20 feddans while only 5% have a relatively reasonable holding (41-60) feddan (Table 1.14), whilst the average area cultivated last year by respondents is small. As reported 63% cultivated only 0-5 feddans (Table 1.15). This may be due to the very traditional tools used by farmers and poor agricultural practices which require more efforts. The main crops grown in the area are dura (44%), sesame (30%), groundnut (20%) and lubia (6%). Evidently dura is the main staple food and may be complemented with lubia, while groundnut and sesame are used as cash crops (Table 1.16). As far as the involvement of the family in farming is concerned, almost all family members are involved, however men have a big share following by women and children while hired labors have insignificant share only 2% (Table 1.18). Concerning the landowner-ship 100% of respondents own their land (Table 1.19), this situation indicates that land is available which creates a good potential for farmers to increase their ownership if more inputs are provided. About 74% of land was inherited from their predecessors while only 26% was given by the village authority (Sheikh) (Table 1.20). In some villages, some farmers own or rent land along the river banks to grow vegetables and fruit gardens.

Table 1.14: Total area of the farm (feddan)

Area of the farm	0-20	21-40	41-60	61-80	81-100	Above 100	Total
Frequency	21	0	1	0	1	0	22*
Percentage (%)	95	0	5	0	5	0	100

Source: Field survey

* Some people not practice farming

Table 1.15: Area cultivated last year (feddan)

Area cultivated last year	0-5	5-10	10-15	15-20	Above 20	Total
Frequency	14	3	5	0	0	22*
Percentage (%)	63	14	23	0	0	100

Source: Field survey

* Some people not practice farming

Table 1.16: Crops cultivated in the farm

Crops	Dura	Groundnut	Sesame	Lubia	Total
Frequency	22	10	15	3	50*
Percentage (%)	44	20	30	6	100

Source: Field survey

* Some farmers grow more than one crop

Table 1.17: Family members involve in farming

Family members	Father	Mother	Children	Hired labours	Total
Frequency	20	17	11	1	49*
Percentage (%)	41	35	22	2	100

Source: Field survey

* Different categories working in the same field

Table 1.18: Land ownership

Land owned	Yes	No	Total
Frequency	23	0	23*
Percentage (%)	100	0	100

Source: Field survey

* Some respondents are not farmers

Table 1.19: How households obtained cultivated land

How cultivated land obtained	Inherited	From Sheikh*	Government land	Rented	Others	Total
Frequency	17	6	0	0	0	23**
Percentage (%)	74	26	0	0	0	100

Source: Field survey

* Local authority

** Some respondents are not farmers

1.1.7 Extension Services in the Area

Tables 1.20 and 1.21) indicate the types of pests and extension services provided by State Ministry of Agriculture. The respondents (37.5%) mentioned that birds have the major effect following by worms (30%) and locust (17.5%), termites and rats were also reported in a very minor percentage 10% and 5% respectively. As shown in Table 1.22 there are sometimes more than one pest at the same time. On the other hand 91% of households with the opinion that extension services are entirely not available, while only 9% acknowledged its availability.

Table 1.20: Type of pests

Pest	Birds	Locust	Worms	Rats	Termites	Total
Frequency	15	7	12	2	4	40*

Percentage (%)	37.5	17.5	30	5	10	100
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Source: Field survey

* Sometimes there are more than one pest in the same field

Table 1.21: Extension services

Extension services	Available	Not available	Total
Frequency	2	21	23*
Percentage (%)	9	91	100

Source: Field survey

* Some respondents are not farmers

1.1.8 Livestock

Livestock tending is a village based activity practiced by sedentary population. About 80% of the interviewed people have livestock while only 20% not rearing animals (Table 1.22). The main types of livestock are cattle, goats, sheep and very few percentages of camels (Table 1.23). The mixing of farming and livestock tending is very common practice in Sudan and it is thought to be a sort of business diversification to mitigate the risk of both crop failure and animal losses. Men and children are the main family member's shouldering the responsibility of animal rearing. Women, relatives and hired labour are less involved in livestock business (Table 24). On the other hand 61% of herders have denied the availability of veterinary services (Table 26).

Table 1.22: Livestock ownership

Do you own?	Yes	No	Total
Frequency	20	5	25
Percentage (%)	80	20	100

Source: Field survey ¹

Table 1.23: Types of livestock

Types of livestock	Goats	Sheep	Camels	Cattle	Horses	Total
Frequency	13	8	2	15	1	39*
Percentage (%)	33	21	5	38	3	100

Source: Field survey * Some households have more than one category

Table 1.24: Who takes care of livestock?

Who takes care of livestock	Father	Mother	Children	Relatives	Hired labour	Total
Frequency	9	6	9	1	2	27*
Percentage (%)	33.3	22.2	33.3	3.7	7.4	100

Source: Field survey

* Some households not own livestock

Table 1.25: Veterinary services provided

Veterinary services	Yes	No	Total
Frequency	7	11	18*
Percentage (%)	39	61	100

Source: Field survey

* Some respondents have no livestock

1.1.9 Income

The main source of income is shown in Table 1.26 in which farming has a higher rank 80% while other sources are of minor importance. Livestock rearing and government jobs have 8% each and artisans are only 4%. Other expected income generating activities like trade charcoal selling and remittances were denied. Evidently both trade and charcoal selling may be highly activated by the road which makes the area accessible to other centers. However, trade may increase the inhabitant's income while charcoal selling is expected to have a negative environmental effect. A significant share of house-holds crops (56%) are sold as indicated in Table 1.27, while 43% of it is remaining for family consumption.

Table 1.26: The main source of income

Main source of income	Farming	Livestock	Manual labour	Gov. emp.	Remittance	Trade	Artisan	Selling charcoal	Total
Frequency	20	2	0	2	0	0	1	0	25
Percentage (%)	80	8	0	8	0	0	4	0	100

Source: Field survey

Table 1.27: Selling part of households crops

Selling part of crop	Yes	No	Total
Frequency	13	10	23*
Percentage (%)	57	43	100

Source: Field survey * Some respondents are not farmers

1.1.10 Health services

As far as health is concerned, 21% of respondents received no health services and the entire area has no hospitals. The available services are provided by dispensaries as indicated by 66% of households and another minor services provided by primary health care (Table 1.28). Given the prevailing condition, it is expected that some people try to seek health services elsewhere i.e. Faki or Baseer who are the local religious authority and healers who used herbs and other traditional methods provide such services. Table 1.29 reveals that 68% of respondents resort to healers and only 8% either go to Faki or Kugoor, while 24% not resort to traditional medicine.

Table 1.28: Health services

Health services	Dispensary	Primary health care	Hospital	No services	Total
Frequency	16	3	0	5	24*
Percentage (%)	66	13	0	21	100

Source: Field survey

Table 1.29: Household resort to traditional medicine

Resort to traditional medicine	*Faki or Baseer	Healer	Not resort to traditional medicine	Total
Frequency	2	17	6	25
Percentage (%)	8	68	24	100

Source: Field survey

* Religious authority

1.3. VILLAGE CHARACTERISTICS AND ETHNIC PROFILE

Table (1.30) reveals the village characteristics in which parameters like establishment of the approximate population and the tribes living in the villages are found. Apparently, these villages were established long some time ago. Some of them like Hilat Khalifa have been established during Mahdia era. The recent one is Ingamaina, but also dated back to early seventies.

This means that, the people have created a way of life suiting their surrounding environment and typically representing the rural traditional and peasant communities. Nonetheless, there are semi-nomads like Awlaad Saeed tribe in Kumor Basheer. On the other hand, some villages are densely populated like Hilat Khalifa, Bazora Khalifa, Wad Abakar, Maykankana, Abdel Lateef and Kumor Basheer.

Concerning the tribes living in the area, it is very rare that a single tribe is dominating the village with only exception in Maykankana in which Hawsa is the sole tribe. All other villages are inhabited by different tribes. In some cases eight or more tribes are found in one village. It is worthwhile to mention that, although these tribes have different ethnical and cultural background, they have developed their own mechanism that helps to promote peace and/or to mitigate conflict among them.

Table 1.30: Village characteristics

Village	Establishment (approximately)	Total population	Main tribe	Other tribes
Bazora Kahlifa	1942	4000-5000	Hawsa	Folani
Hilat Khalifa	1885	5000-6000	Rofaa	Galeen, Barno, Folani, Abdalab
Ingamaina	1970	400	Masaleet	Taaysha, Bargo, Four
Kumor Basheer	1950	1400	Hawsa	Awlaad Saeed
Wad Batool Mokharim	1945	400-500	Habaneya/For	Hawsa
Wad Batool Hilat Bakheet	1930	200-300	Hamada	Gawasma, Marareet, Bargo, Maseerya, Tama, Masaleet
Shamam	1950	600	Barno	Awlad Rashid
Wad Abakar	1831	1500-2000	Hawsa	Tama, Four, Salaamat, Zagawa, Bani Halba, Dago, Abyadaab
Abdel Lateef	1940	1500	Bargo	Bagara tribes, Masaleet, Dago, Barno, Four, Folani, Hawsa
Maykankana	1930	1700	Hawsa	No other tribes

Source: Field Survey July 2009

1.4. VILLAGE ORGANIZATIONS

Table 1.31 shows the different organizations in the village. It is clear that the Sheikh is available in all villages, may be ascribed to the important role that he plays in such rural areas. That is to maintain traditional rules which are very helpful in peaceful coexistence of the community. Other tribal organizations like Mode, Nazi and Shore committees are not observed, except in Bazora Khalifa where they have claimed Shore Committee. Social organizations like people's committee are available in most of the villages; however, their role is not felt.

Youth and women organizations are not observed with exception of youth organization in Abdel Lateef village. Moreover, villagers have admitted that there is a minor role for NGOs. Child friendly village has some intervention in Kumor Basheer, while UNICEF has some activities in Shamam and Wad Abakar villages.

Table 1.31: Organization in the village

Village	Traditional organization				Modern organization			NGOS
	Sheikh	Omda	Nazir	Showra	People's committee	Youth	Women	
Bazora Kahlifa	√	X	X	√	√	X	X	X
Hilat Khalifa	√	X	X	X	√	X	X	X
Ingamaina	√	X	X	X	√	X	X	X
Kumor Basheer	√	X	X	X	√	X	X	Child friendly village
Wad Batool Mokharim	√	X	X	X	X	X	X	X
Wad Batool Hilat Bakheet	√	X	X	X	X	X	X	X
Shamam	√	X	X	X	X	X	X	UNICEF
Wad Abakar	√	X	X	X	√	X	X	UNICEF
Abdel Lateef	√	X	X	X	X	√	X	X
Maykankana	√	X	X	X	√	X	X	X

Source: Field Survey July 2009

Note: √ = Available X= Not available

1.5. SERVICES

Table 1.32 reveals the deplorable situation of education, health, water and veterinary services.

Apparently, some villages like Ingamaina, Wad Batool Mokharim, Wad Batool Hilat Bakheet and Maykankana have no services. Regarding the education services there are only four basic level schools, one of them is shared between two villages. Consequently most of the children are either not attending schools or go to nearby villages or attending Khalwa (informal school for Quran teaching) which are also not available in all villages.

Health services may be even worse; there is only one dispensary in Kumor Basheer, while the only accessible hospital is in El Hawata which is about 40 kilo meters far from some villages.

During rainy season people used to travel to El Hawata using very traditional and dangerous sailing methods. Likewise, clean water is only available in about five villages. However, in most cases it is supplemented by river water. For the remaining ones Rahad River and the seasonal streams are the main source of water supply. Eventually, the veterinary services are not observed.

Table 1.32: Social services

Village	Education	Health	Water	Basic	Dispensary	Hospital	H. pump	W. yard	Kishok	River	Vet. Services
	Khalwa	Basic	Secondary								
Bazora Kahlifa	√	√ shared	X	√ shared	X	X	X	X	√	X	X
Hilat Khalifa	X	√ shared	X	√ shared	X	X	X	X	√	X	X
Ingamaina	X	X	X	X	X	X	X	X	X	√	X
Kumor Basheer	√	√	X	X	√	X	√	X	X	√	X
Wad Batool Mokharim	X	X	X	X	X	X	X	X	X	√	X
Wad Batool Hilat Bakheet	X	X	X	X	X	X	X	X	X	√	X
Shamam	X	√	X	X	X	X	√	X	X	√	X
Wad Abakar	√	X	X	√	X	X	√	X	X	√	X
Abdel Lateef	X	√	X	X	X	X	X	X	X	√	X
Maykankana	√	X	X	X	X	X	X	X	X	√	X

Source: Field Survey July 2009

Table 1.33 shows the health staff, evidently since there is very little health services, it is not expected the availability of a considerable number of staff. Certified midwives are available in most villages and only few number of medical assistant. However, immunization campaign has been a usual practice.

Table 1.33: Health staff

Village	Staff				
	General Doctor	Medical Assistant	Nurse	Health Visitor	Midwives
Bazora Kahlifa	X	√ (1)	X	X	√ (1)
Hilat Khalifa	X	√ (1)	X	X	√ (1)
Ingamaina	X	X	X	X	√ (1)
Kumor Basheer	X	√ (1)	X	X	√ (1)
Wad Batool Mokharim	X	X	X	X	X
Wad Batool Hilat Bakheet	X	X	X	X	X
Shamam	X	X	X	X	√ (2)
Wad Abakar	X	√ (1)	X	X	√ (2)
Abdel Lateef	X	X	X	X	√ (1)
Maykankana	X	X	X	X	X

Source: Field Survey July 2009

1.1.11 Cost of Services

The services needed in the project area are defined below with its associated cost.

Table 1.34: Bill of Quantities

Ref	Description	Unit	Qty	Rate SD	Amount USD
1	Supply and erect water yards components which include, borehole, submersible pump, elevated tank, fence etc.	No.	3	80,000	240,000
2	Supply material, build and supply equipment and furniture for the health centres.	No.	2	80,000	160,000
3	Supply material and build, and supply equipments and furniture for high schools.	No.	2	62,500	125,000
4	Supply material, build, and supply equipments, and furniture for foundation schools.	No.	4	110,000	440,000
5	Supply material, build, and supply equipments, and furniture for pre-schools.	No.	2	42,000	84,000
6	Construct raised roads (20 km length) adjacent to main and major canals) with 5 m width and 0.7 m depth.	m3	70,000	2.5	175,000
	Total in USD				1,224,000

1.6. LAND OWNERSHIP

Table 1.35 reveals the land tenure status of the respondents; most of them have admitted that the land owned is inherited from their predecessors. Nonetheless, the other scenario land is bought or given by Sheikh. On the other hand, the range of holding size is substantially diverse ranging from five to thousand feddan. However the big holdings are owned by few people. Customary tenure is prevailing but some original inhabitants own large plots while recent migrants rent land for cultivation.

Table 1.35: Land tenure and range of holding size

Village	Agricultural land			Hired	Range of holding size (feddan)
	Inherited	Bought	Given by Sheikh		
Bazora Kahlifa	√	√	X	√	5 - 15
Hilat Khalifa	√	√	X	X	25 - 500
Ingamaina	X	X	√	X	5 - 50
Kumor Basheer	√	√	X	X	10 - 15
Wad Batool Mokharim	√	X	X	X	20 - 1000
Wad Batool Hilat Bakheet	√	X	X	X	Not indicated
Shamam	√	X	X	X	15 - 500
Wad Abakar	√	√	√	X	10 - 1000
Abdel Lateef	X	X	√	X	Not indicated
Maykankana	√	√	√	X	5 - 10

Source: Field Survey July 2009

Table 1.36 shows that livestock tending is a village-based activity practiced by sedentary population in which cows, sheep, goats are the main livestock raised. Another form of livestock husbandry is the nomadic pastoralist who is mainly practiced by itinerant tribes living around the study area settled when crop residues are available and moves during the rainy season to Al Butana area.

Table 1.36: Livestock

Village	Livestock				
	Cattle Av. No.	Sheep Av. No.	Goats Av. No.	Camels Av. No.	Others
Bazora Kahlifa	100	300	80	Not available	Not available
Hilat Khalifa	300	500	200	"	"
Ingamaina			20	"	"
Kumor Basheer	15	150	70	"	"
Wad Batool Mokharim		80	20	"	"
Wad Batool Hilat Bakheet			10	"	"
Shamam		200	200	"	"
Wad Abakar	150	400	600	"	"
Abdel Lateef	10	200	150	"	"
Maykankana	75	300	100	"	"

Source: Field Survey July 2009

1.7. AGRICULTURE

Table 1.37 indicated the agricultural aspects covered parameters like main crops grown, agricultural services and marketing. Apparently the main indigenous rain crops like dura, dokhon and sesame are dominating the study area. Farmers have access to Rahad River used to grow different types of vegetables and fruits like guava and mango are characteristically grown.

Most of the interviewed people have admittedly mentioned that few agricultural service, exemplified by improved seeds occasionally provided by farmer's Union in an insufficient quantities. They have denied the availability of crop protection and extension services. As far as marketing of their products are concerned, most of farmers have a limited access to distant marks either in Khartoum or Gadarif and the only available alternative is the local market in Al Hawata.

Table 1.37: Agricultural aspects

Village	Main crops	Agricultural services				Marketing		
		Implements used	Improved seeds	Crop protection	Extension services	Hawata	Gadarif	Khartoum
Bazora Kahlifa	Dura, dokhon, sesame	Tractor & Disc	Sometimes	Not Available	Not available	√	X	X
Hilat Khalifa	Dura, dokhon, sesame	"	"	"	"	√	X	X
Ingamaina	Dura, dokhon, sesame	"	"	"	"	√	X	X
Kumor Basheer	Dura, sesame, groundnut, vegetables and fruits	"	"	"	"	√	X	X
Wad Batool Mokharim	Dura, sesame, dokhon, fruits (mango, gwava, lemon)	"	"	"	"	√	X	X
Wad Batool Hilat Bakheet	Dura, sesame, dokhon, fruits and vegetables	"	"	"	"	√	√	X
Shamam	Dura, sesame, lubia, fruits and vegetables	"	"	"	"	√	X	X
Wad Abakar	Dura, sesame, dokhon, fruits and vegetables	"	"	"	"	√	√	√
Abdel Lateef	Dura, sesame, vegetables and fruits	"	"	"	"	√	√	√
Maykankana	Dura, dokhon, sesame, fruits and vegetables	"	"	"	"	√	X	X

Source: Field Survey July 2009

As reverted by table 1.37 and other tables, rainfed agriculture is the main economic activity of the inhabitants. Resident livestock is limited to view sheep and goats. Main crops grown are Dura (Sorghum), Sesame, Dukhon and some vegetables along the river bank (gerf cultivation). Implements used are traditional; however, semi-mechanized farms are practiced through hired tractor. Yields are low, depending on rainfall.

Agricultural services and extension is not available in all villages. In some cases plant protection staff visits the area to control locust infestations.

1.8. PERCEPTION OF THE PROPOSED PROJECT

As mentioned in table 1.35 landholdings range from 5 feddan to 100 feddan. Land tenure is based on customary rights or on lease. Hence the proposed project is welcomed by the majority of the population, particularly those owning small plots. As a matter of fact inhabitants agree on the project expecting benefits by owing irrigated farms and good agricultural services.

Despite the heterogeneous tribal mix, social interaction and peaceful coexistence is apparent in all villages. The project is expected by all to bring improvement to the way of life, particularly provision of services and improved infrastructure. The inhabitants perceive that the project will bring with it more services to the area. They complain about the spread of malaria and no medical facilities to contain it. They also complain about lack of clean drinking water and other services. They also feel that the project may contain Rahad River to its banks and reduce overflow on villages and floods that destroy houses and buildings.

The project is expected to provide capacity building at village level to maximize the willingness to participate in the project. Such institution building may be through formation of farmers unions to enable farmers participate effectively and to help solving problems of land tenure and to organize the presence of nomads during the dry season. Capacity building may also extend to formation of village development communities to take care of village development needs and to be the link between the villagers, project management and the locality. It is expected that in the project management there must be a social mobilize to take care of these issue. Capacity building may extend to the formation of water users associations (WUA) to help in organizing irrigation of different fields.

1.9. GENDER ISSUES

The survey revealed that women occupy a very low status in the society. They are totally excluded to domestic services and agriculture. Their needs are not considered by the village community. Very limited education facilities are available to women. In village like Makankana which inhabited by Hawsa tribe, no single girl attended school. The only available education facility for women in this village is Khalwa. In other villages, girl education does not go beyond basic level education. Women after marriage are totally under the control of the husband. The husband takes all decisions regarding the household.

Women participation in village decision making is not allowed, because this is the men domain. Owning land is also men's domain despite their participation in farming activities.

2 LAND TENURE

1.1. BACKGROUND

Land is a central issue for rural communities in Sudan; not just as a means for livelihoods and basic survival, but it also has profound cultural and socio-political dimensions. Historically, established elites have managed to lay successful claims to the lands of poor communities, especially in rural areas. This tampering with established rights has been a recurrent cause of unrest and conflict in the country. (Pantuliano 2007).

The land tenure arrangements within the project area are complex, comprising smallholders with leases owning relatively small areas of irrigated land close to the Rahad River, larger landholders in the traditional rainfed farming area away from the river who have acquired land by inheritance, purchase or donation by the local sheik (some with leases, most without), state owned but communally used forested land and ill-defined livestock migration routes used by nomadic pastoralists.

The report is structured as follows. Following this brief background, section 1.2 looks at the policy and legal context of land tenure and land ownership in Sudan, section 1.3 covers the current institutional status of land tenure and section 1.4 looks at the land tenure situation in Wad Miskeen. Section 1.5 proposes measures related to land tenure to facilitate the implementation of the project.

1.2. POLICY AND LAW

1.1.12 Policy

The historical policy setting is that authorities in Sudan have traditionally given priority to agricultural development to achieve food security and support the development of other sectors. This has been manifest in the increases in cultivated area rather than increases in productivity per unit area. Under the Comprehensive National Strategy (1992-2002) authority was given to politicians and administrators to distribute land, particularly for the expansion of Semi-mechanised Rainfed Farming (SMRF) (Newtech & HTSPE 2008).

The current policy setting is provided by the Comprehensive Peace Agreement of 2006 which called for the establishment of four Land Commissions (one National, one for South Sudan and two State Commissions) with a mandate for decision-making on land ownership through a process of land tenure reform. The current status of the commissions, land tenure and reform is discussed in section 1.3.

1.1.13 Legal Framework

There is no unified land tenure legal framework across Sudan. In the North, despite the fact that official land law has undergone transformations under successive governments, the legislation is essentially founded on colonial land laws. Customary land rights are generally not recognized by the government and statutory legislation has traditionally been used to bypass local customs by the state or for private interests in rural areas.

Government laws concerning land tenure have been rooted in the principle, introduced by the British colonial administration in 1898, that unregistered land is assumed to be owned by the government unless the contrary is proven (Pantuliano 2007). The British colonial administration paid particular attention to the system of land tenure. Early in 1899 it issued its first 'Titles to Land Ordinance' by which it recognized and started registering as private property the continuously cultivated lands in northern and central riverine Sudan. The Ordinance excluded from land settlement and registration the rainlands of central, eastern and western Sudan as well as all lands in Southern Sudan. No individual private ownership of any land in these regions was recognized. As the case with the uncultivated riverine land in northern and central Sudan, the 'unsettled' areas were categorically classified as government-owned divided into two classes:

- (a) Government land subject to no right (confined mainly to the northern and central riverine regions)
- (b) Government land subject to customary usufruct rights vested in a community such as tribe, section or village, (mainly the abundant rainlands)

Because the "customary usufruct rights" are not legally registered, they are also implicitly subject to withdrawal by government. Accordingly, subsequent colonial land legislation served to consolidate and further the right of government to withdraw the customary usufruct rights. These legislations included:

The 1903 Land Acquisition Ordinance which gave the government, powers to acquire land for irrigation schemes and other public purposes.

The 1905 Land Settlement Ordinance made general provision for the settlement and registration of claims to land which were, alleged to be waste, forest or unoccupied, and added the important provision that all such land should be deemed the property of the government unless claims to the contrary were proved. However there was provision made for land adjudication and titling.

The 1918 Native Disposition of Lands Restrictions Ordinance by which the colonial government sought the protection of the native private landowners from dispossession by expatriates.

The 1925 Land Settlement and Registration Act enabled anybody that claimed title or right on land to be recognized and registered. The act is still in force today and reiterated the stipulation regarding 'unoccupied land' from the 1905 Ordinance while, at the same time, providing for the systematic settlement (i.e. identification of the land rights held in an area), demarcation and registration of such land rights in particular areas by Settlement or Registration Officers.

A stated intention of the Act was to 'provide for registration of title to land'. This introduced a way in which occupiers of land previously deemed to be government property could be provided with formal registered title. Registration Officers were obliged to prepare Settlement Registers where there were legitimate claimants to land being settled and only when a piece land 'is entirely free of any private rights or the rights do not amount to full ownership, it is registered as government land'.

This last stipulation meant that customary tenure was not regarded as giving rise to private ownership rights even when there was evidence that the land had been cultivated. The colonial authorities therefore never acknowledged that intermittently used community land had any private rights. Title to land as defined by common law principles was classified into either freehold or leasehold ownership, i.e. individually owned rather than the traditional tribal ownership system.

The 1930 Land Acquisition Ordinance enabled the government to acquire land for public purposes. Government could acquire any 'land subject to village or tribal rights' when it 'appears that it is likely to be required permanently or temporarily for any public purpose'. Land could also be acquired for temporary occupancy on a leasehold basis for public benefit e.g. the Gezira irrigation scheme and forest reserves.

By the early 1930s, the entire Sudan came to acquire a tribal structure with relatively well-defined tribal agglomerations headed by tribal chiefs, and inhabiting carefully delineated and recognized tribal homelands based on customary rights. One of the most important features of such customary tenure is the right and sovereignty exercised by the leadership of the native customary institutions in the allocations of land, its administration and the settlement of disputes over it. This right is vested through the institutionalization of the Native Administration, primarily based on the principle of Dar, or "tribal homeland, and empowered by economic and legislative mechanisms".

The Unregistered Land Act 1970 made all land that had not yet been registered, government property effectively nationalising unregistered land and abolishing customary land rights. People and communities that held land under customary tenure became tenants of the state and could be removed at any time.

This enabled the government to seize land as it liked and grant leases and usufructs to favoured people and investors, in other words to use land as patronage as a means of political power. Land formerly held by customary tenure (both individual and communal) was replaced by 'massive mechanical farms' registered under the act.

The Law of Criminal Trespass 1974 introduced even more restrictive rights of access for pastoralists and smallholder farmers to land under a number of schemes while **The Sudan Penal Code 1974** concerning trespass; stated that any farmer who lost land (owned under customary law) by expropriation would be guilty of criminal trespass if he remained on the land. This was retained in the 1983 and 1990 Acts.

The Civil Transactions Act 1984 repealed the Unregistered Land Act 1970 but maintained and strengthened its impact with holders of registered freehold and leasehold land converted automatically to usufruct rights only to occupy and use land. The only exceptions were freehold rights registered before 6th April 1970.

The Civil Transactions Act (Amendment) 1990 swept away all customary title to land with the first provision stating that 'all non-registered land should be considered as if registered in the name of the State' as well as decreeing that all land cases in court should be struck off and prohibited any judicial recourse against land allocation decisions. The Government of Sudan therefore took legal hold of all smallholders' land.

1.3. CURRENT STATUS OF LAND TENURE IN SUDAN

As shown above a succession of laws since colonial times have reduced the rights of traditional land users in favour of state control and, in many areas, large-scale mechanised farming schemes. Traditional land use rights, particularly of pastoralists, are not recognised by current laws. There are a number of institutions involved in land tenure and administration but there is no land use planning policy or law to guide land allocation.

1.1.14 Institutions

There is no unified institutional structure responsible for the allocation and management of land in Sudan with central government, state ministries of agriculture and traditional local authorities all playing roles.

Most of the responsibility for land tenure is at state rather than federal level although there are responsibilities at federal level but these are not clearly defined. Examples include the Survey Department which is responsible for all surveying activities but which was housed in a number of different ministries through the 1990s. In addition the federal Ministry of International Co-operation and Investment approves land leases for foreign investors but it is not clear how they co-ordinate with other players. Under the Investment (Encouragement) Act 1999 (amended 2003) a licence can be granted by the Minister of Investment after referral to competent federal or state ministers. Anecdotal evidence, however, indicates that foreign investment has largely stalled due to the lack of clarity concerning land tenure.

The Land Registration Department within the Ministry of Justice keeps the descriptive part of the national land registry.

At state level the main land tenure responsibilities include:

- Land administration by the Government Agricultural Land Disposition Committee (GALDC)
- Surveying by the Survey Department (in State Ministry of Engineering Affairs)
- Legal issues by the Land Registration Office

The GALDC has a mandate for land allocation and is composed of representatives of state ministries (Agriculture, Survey, Urban Planning, Forestry, Irrigation, Land Registration) and reportedly responds more to the State Governor than federal ministries.

The Survey Department's main responsibility to date has been the survey of urban plots where little time is given to establish any existing rights over an area.

The Land Registration Office is part of a State's judiciary and keeps the descriptive part of all state land registries in the civil court.

At local level land can be allocated by the village sheikhs who are traditionally the custodians of land, responsible for its allocation, disposition and the resolution of disputes. Sharecropping and land rental ('dangada') are also common and provide access to land for those without. Purchase of land is a more recent phenomenon with Newtech & HTSPE 2008 reporting that 13% of land in the SMRF area had been purchased and in Wad Miskeen 5 out of 10 villages reported that some land owners had bought their land. This purchase has no legality in formal law but suggests that land is becoming a scarce commodity and that any formal land administration and registration procedure is being circumvented by informal transactions.

1.1.15 Land Commissions

The Comprehensive Peace Agreement (CPA) of January 2005 and the Interim National Constitution (INC) provide an impetus for a more socially-informed land tenure policy and appropriate changes to legislation. Specifically, the CPA calls for the incorporation of customary laws but Omer Egemi (2006) states that the agreement has 'not dared address the question of land in any depth, deferring much of the work to the post-agreement phase'. The CPA, despite insisting that it is not intended to address "ownership of land and subterranean natural resources" in any part of Sudan, seems implicitly to recognize existing land tenure procedures as a de facto situation.

The CPA calls for the establishment of four Land Commissions (a national commission, one for southern Sudan and for each of Southern Kordofan and Blue Nile states) to arbitrate claims, offer compensation and recommend land reform policies and the Eastern Sudan Peace Agreement (2007) stipulates a further three Land Commissions in the east including Gedaref State.

The National Land Commission's responsibilities include:

- Arbitrate between contending parties on claims over land
- Entertain claims, at its discretion against the relevant government or other parties interested in land
- Enforce the law applicable to the locality where the land is situated or such other law as the parties to the arbitration agree, including principles of equity
- Accept references or make recommendations concerning land reform policies and recognition of customary rights or customary land law
- Assess appropriate land compensation during arbitration

- Advise different levels of government on how to co-ordinate policies on national policies affecting land or land rights
- Study and record land use practices in areas where natural resource development occurs

However the establishment of these land commissions has not been successful. Only the National Land Commission has been established and then in name only. Further problems with the proposed commissions include:

- the commissions are mandated to make recommendations; these are not binding on either party or on government policy
- The CPA does not provide for the representation of pastoralists and farmers, the majority of direct land users, in the commissions
- It is unclear how claims to rights are to be submitted, resubmitted, legitimated or contested, whether such claims are to be made on an individual or collective basis, and, if collectively, who will represent communities and with what basis of legality or legitimacy
- Neither the CPA nor the INC clarifies explicitly whether the National Land Commission will be centralized or decentralized
- While the CPA recognizes customary rights, the relationship between the Native Administration system (an important institution that used to regulate land and manage conflicts over it) and other government structures is unclear
- Existing customary institutions and structures are repeatedly accused of weakness and of undemocratic and discriminatory structures (e.g. their exclusion of women)
- Each state has the right to develop, conserve and manage its natural resources but does not have the institutional arrangements for inclusive, just and equitable use and management of land and natural resources
- There is extremely limited public awareness about the CPA in general and the Land Commissions in particular.

1.1.16 Conclusions

The conclusion concerning the current status of land tenure in Sudan is that despite the apparent simplicity of the state owning all land it is extremely complex with a number of different institutions involved at different levels with no clear policy or strategy. This is borne out by the findings of a number of studies.

The Pastoral Land Tenure Study (UNDP 2002) attributed the proliferation of local conflicts between pastoralists and farmers on a number of factors, an important one of which was the confused legal framework concerning land tenure with an apparent dichotomy between customary and statutory land tenure regimes.

Ijami (2005) quoted in Newtech & HTSPE (2008) conducted research in the SMRF areas and indicated that semi-mechanised farming was a major source of conflict with pastoralists with a complete lack of institutional structures and arrangements and called for informed land and agricultural policies.

Newtech & HTSPE (2008) in a study concerning semi-mechanised rainfed farming reported that there was no unified institutional structure responsible for the allocation and management of land in Sudan and that this had resulted in several forms of legal tenure as well as illegal occupation of SMRF land.

IFAD (2008) reported that the context of land tenure in Sudan had changed radically in the previous decade with large scale environmental degradation and competition between pastoralists and farmers over inadequate resources coupled with an absence of land use planning and with confused legal frameworks for land tenure had combined to create an environment conducive to poverty and conflict. The study called for land tenure reform, institutional capacity building, rural development and land use planning.

As Polloni 2005 has pointed out, the key common drawbacks of the current land tenure system are as set out below:

- vulnerability of small farmers to the risk of being ousted from communal land by wealthier investors
- lack of clear policies for environmentally sustainable land use
- failure to consistently enforce nomadic land use rights – a constant source of tensions
- failure to adequately consult with local communities in matters of land use
- poor coordination and ineffective decentralisation of extension and marketing services
- extensive use of low-quality seeds, with greater exposure to disease and decreasing yields
- lack of statutory recognition of the rights to wild resources
- an agricultural credit structure heavily skewed against traditional small-scale farmers.

Planning for the development of irrigation at Wad Miskeen must take these into account.

1.4. LAND TENURE IN WAD MISKEEN

Information regarding the land tenure situation in the proposed irrigation development area of Wad Miskeen has been gained from three main sources. First, The Southern Kassala Agricultural Development Project (SKAP), (Masdar & SA Consultants 1992) contains some information regarding the villages along the Rahad River; second, a socio-economic survey was undertaken for the current feasibility study and third, a visit to the study area by the land tenure expert.

1.1.17 SKAP Information

The SKAP noted that the area along the Rahad River was considered to come under '**Traditional Landholding**' where agriculture is practised at subsistence level with some cash generated from sesame and fruit and vegetable production and possibly some paid employment. Farmers in this category hold small plots of land (1-50 feddan)

The salient features of these communities are:

- The villages designated are ancient and the villagers have been cultivating their land for a very long time.
- The security of individual tenure of land immediately adjacent to the river (geruf) is further reinforced and symbolised by ageing mango and lime orchards which, in some cases are, irrigated by river-pumps
- The villagers grow rainfed sorghum and sesame on land by the river starting immediately behind the village settlements. These lands (bildat) have likewise been under cultivation for a long time
- Had they applied to register their land before 6th April 1970 the majority of these villagers could have qualified as freeholders
- These villagers are under present law, customary usufructuaries who are eligible to register their interests as such
- Orchards and gardens in the area were (in 1992) being registered at the initiative of the Regional Ministry of Agriculture.

The study also indicated that away from the river a hybrid landholding regime with characteristics of both the traditional and large-scale existed. It called this a '**Semi-Traditional Landholding**' regime. Land users in this category were able to multiply their original holdings through purchase of land. A farmer in this category holds a total area of 100-1,000 feddans, usually composed of separately dispersed smaller plots. The salient points of this category are:

- Land tenure in this category is fraught with legal intricacies
- Assuming that the seller has a valid usufructuary title, the sale of land, the bare ownership of which belongs to the State is not self-evidently legal
- If one or more of the plots purchased are situated within the land of a village other than that of the purchaser, the communal usufruct rights of the village may prevail over the private interest of the purchaser.
- The Eastern State Ministry of Agriculture was in the process of undertaking a programme of preliminary registration covering farmers holding 200-1,000 feddans

1.1.18 Socio-economic Survey Information

The socio-economic survey of the study area included some information on the land tenure situation. This survey, which concentrated on ten villages along the Rahad River, included two types of questionnaires, observations and group discussion.

Table 2.1 reveals the land tenure status of the respondents. Most people (in 8 out of 10 villages) who 'own' (in reality have usufructory rights) land have inherited it. The second most common means of acquiring land (in 5 out of 10 villages) is through buying land closely followed (in 4 out of 10 villages) by being given land by the sheikh.

The range of holding size is diverse ranging from five to a thousand feddan, generally with smaller plots close to the river and larger areas further away. The larger holdings are owned by few people.

Customary tenure is prevailing but some original inhabitants own large plots while recent migrants rent land for cultivation.

Additional information gained during the land tenure expert's visit to the area in November 2009 indicated that around Hawatta the land tenure situation was stable with most farmers having leases and with smaller irrigated plots of land closer to the river (average 3 fd) and larger rainfed plots further away (average 5fd but large variation). It was also stated that there was no conflict between farmers and pastoralists.

Table 2.1: Land tenure and range of holding size

Village	Agricultural land			Hired	Range of holding size (feddan)
	Inherited	Bought	Given by Sheikh		
Bazora Kahlifa	√	√		√	5 – 15
Hilat Khalifa	√	√			25 – 500
Ingamaina			√		5 – 50
Kumor Basheer	√	√			10 – 15
Wad Batool Mokharim	√				20 – 1000
Wad Batool Hilat Bakheet	√				Not indicated
Shamam	√				15 – 500
Wad Abakar	√	√	√		10 – 1000
Abdel Lateef			√		Not indicated
Maykankana	√	√	√		5 – 10

Source: Field Survey July 2009

In the south of the study area a different picture emerged, still with smaller irrigated plots of land close to the river and larger rainfed parcels further away but with more conflict between pastoralists and farmers. There are four or five traditional livestock migration routes passing through the area used by nomadic pastoralists who bring their animals to water in eleven pools on the right bank of the river. According to local sources these routes (which are not well defined) have shrunk from 150m wide to 50m wide through encroachment by rainfed farmers who complain of livestock harming their land and soil. In addition there is pressure for land on smaller farmers close to the river from larger mechanised farmers.

In Bazura, at the very south of the study area, people indicated that only very few people had leases but that some irrigators owned land close to the river, people on SMRF land well away from the river had leases but that people in the rainfed land (presumably corresponding to the SKAP semi-traditional landholding) did not have leases. They also indicated that the government was in the process of registering land.

1.1.19 Forms of Tenure in Wad Miskeen

The situation regarding land tenure in the Wad Miskeen study area is complex. Basically, there is no freehold land; the ultimate title of the land is vested in the state. People who farm or control this land have one or more of the following three systems of tenure over the land.

Leasehold	This refers mainly to SMRF leased land (if it occurs in the study area) and any 'Semi-traditional' rainfed land for which leases have been issued
Usufruct	This relates to the traditional rights of people to farm in specific areas and includes 'Traditional Landholdings' close to the river
Easement	This refers to the rights of nomads where they have traditionally benefited from their historical right to move across certain areas and obtain grazing and water

Leasehold land has conditions attached although these may well not be adhered to.

Figure 2.1 shows a lease for 1,000 feddans of rainfed land issued in 1994. The lease has to be renewed annually in Gedaref at a current cost of SDP 3,000. Areas of any 'Semi-traditional' rainfed land for which leases have been issued can also be assumed to be leasehold but similar land for which leases have not been issued must be assumed to be covered by usufruct rights only.

Usufruct land includes all the traditional 1-50 feddan bildat farmers and all the riparian communities along the Rahad River. Many of the farmers in this category are under pressure from undemarcated mechanised farming.

Nomadic communities claim that they have ancient rights over land along the Rahad River as their summer grazing land and also claim rights over the traditional northeast-southwest aligned stock movement routes that they have been using for many years. They also insist on access to water.

In addition to these land tenure categories above, there are also areas of forest land within the study area that are owned by the state and managed by the Forests National Corporation. These forests have some degree of protection (the felling of trees is prohibited) although grazing is practiced within them. Whether any of these forest areas fall within the traditional stock migration routes or whether they comprised traditional grazing areas before being designated and protected as forest areas, is not known.

Figure 2.1: Lease for 1,000 feddans of Rainfed Land

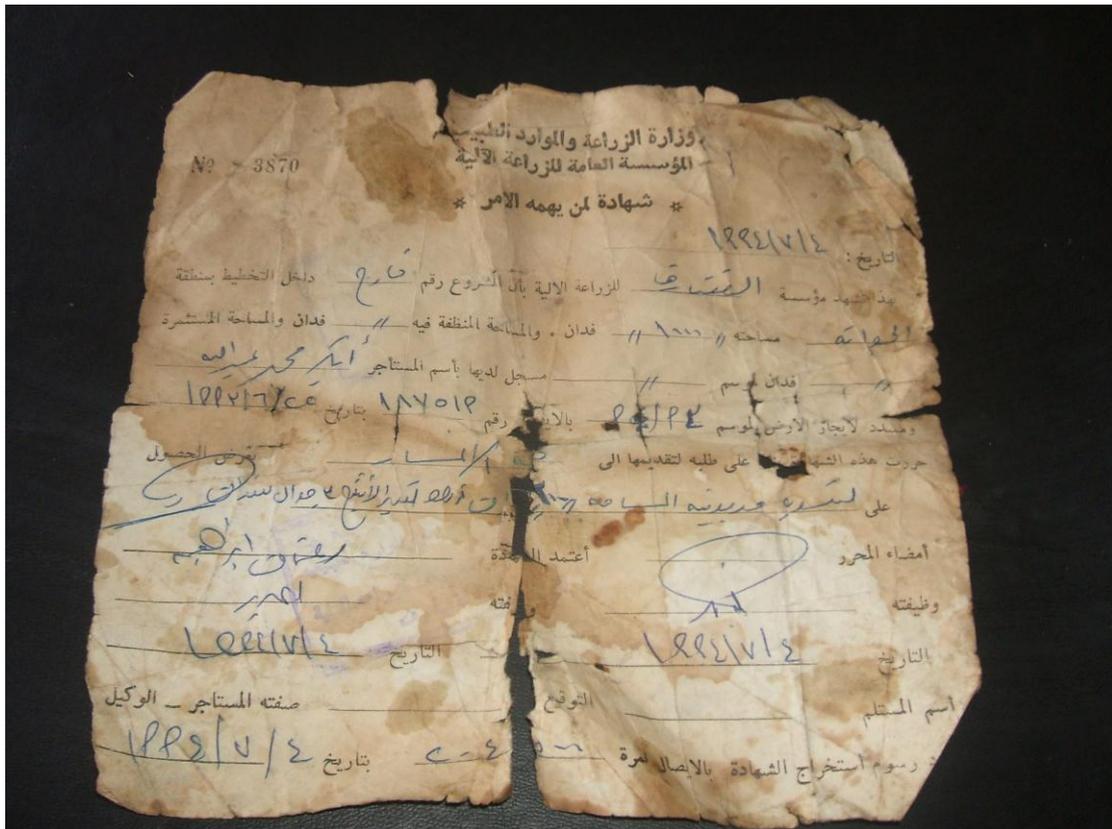


Figure 2.2: Demarcation of Farmland and Forest



In summary, the situation regarding land tenure in the study area is complex. The problems associated with land tenure are not a major constraint to agricultural production in the study area but are a source of rising social conflict and will need clarification before the proposed irrigation scheme is implemented.

As noted in the SKAP in 1992 'the whole area of land allocation, registration, demarcation, and land use rights is fraught with confusion, contradictory laws and regulations, and disparate records the roles of many GoS institutions remain unclear and lines of authority and overall responsibilities are ill-defined'. Unfortunately the situation does not appear to have changed much by 2009.

1.5. LAND TENURE PROPOSALS FOR IRRIGATION DEVELOPMENT

The complexity of the land tenure in the study area and the issues of conflict between rainfed farmers, irrigators and nomadic pastoralists mean that there are a number of issues to be resolved and measures to be taken for the successful implementation of the irrigation project.

1. Need for a land audit

Given the complexity of the land tenure situation with Traditional Landholdings, Semi-traditional Landholdings, SMRF land (all either with or without leases), Forests and Livestock Migration Routes it is considered essential that a Land Audit be undertaken prior to any irrigation development. Even if the proposed irrigation scheme does not include land reallocation (and certainly if it does) then a land audit will be needed to clarify the land tenure, land use and land management arrangements.

2. Need to redefine livestock migration routes

The main source of conflict in the study area is between farmers and nomadic pastoralists. According to the pastoralists the routes have been encroached upon by farmland and according to farmers the pastoralists' animals encroach on their land. There is therefore a need to redefine these routes and for both sides to agree on their location and the land management conditions that will apply.

3. Requirement for 5% forested area

According to regulations, there is a requirement that any irrigation development must set aside 5% of the area for forests. Given that Wad Miskeen is crossed by livestock migration routes and that there is an additional requirement for fodder it is proposed that this 5% forested land be composed of multi-purpose tree and shrub species that could provide fodder. If possible these trees could help to better define the migration routes.

4. Land Management in Forest Areas

There is a need to define the criteria for land management in the forest areas that already exist in the study area. It is known that the Forests Act of 1989 changed the classification of many pasture areas to forest (UNDP 2006a) but also made any existing pastoral usufruct rights subject to the

restrictions contained in the Forests Act. The Forests and Renewable Natural Resources Bill of 2002 is a federal initiative to synchronize access to pastoral resources with forest management but it is not known what the current status is with regard to forest management in the study area. This should be clarified prior to irrigation development.

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Appendix 1

Household Baseline Survey

Village Name

1 – Personal characteristics

Age (years)

- 01. 20 – 30 years
- 02. 31 – 40 years
- 03. 41 – 50 years
- 04. 51 – 60 years
- 05. Above 60 years

2 – Marital status

- 01. Married
- 02. Divorced
- 03. Widowed
- 04. Single (unmarried)

3 – Number of family members living this house

- 01. 2 – 4
- 02. 5 – 7
- 03. 8 – 10
- 04. Above 10
- 05. Number of males.....
- 06. Number of females.....

4 – Nature of family

- 01. Settled
- 02. Migratory
- 03. Displaced
- 04. Returnee

5 – Number of children

Name	Age	Sex	Education	Still in School

6 – Level of Education of H – Head

- 01. Illiterate
- 02. Khalwa
- 03. Primary
- 04. Intermediate
- 05. Secondary
- 06. University & above

7 – Occupation of H – Head

- 01. Farmer
- 02. Raising livestock
- 03. Farming & raising livestock
- 04. Merchant /Trade
- 05. Artisan/Carpenter/ Blacksmith
- 06. Manual labour
- 08. Others (specify)

8 – Secondary occupation of H – Head

Use the above numbers

9 – Housing condition (Materials)

- 01. Jalous
- 02. Tent
- 03. Red bricks

10 – Number of rooms

- 01. 1 – 2
- 02. 2 – 3
- 03. 4 – 5

11 – Water supply – Main source

- 01. Water yard
- 02. Hand pump
- 03. Shallow well
- 04. Hafir
- 05. Other source (specify)

12 – Who brings water to the house?

- 01. Husband (Male member of family)
- 02. Women (Wife)
- 03. Children (boys)
- 04. Children (Girls)
- 05. Water vendor
- 06. Others (specify)

13 – How water is brought to the house

- 01. By Donkey
- 02. On head (manual)

14 – How water is stored in house

- 01. Zeers
- 02. Barrels
- 03. Jerricans
- 04. Water skin (Girba)

15 – Do you practice farming?

- 01. Yes
- 02. No

If practice farming state the following

- 01. Area of the farm (feddans)
- 02. Area cultivated last year
- 03. Crops cultivated
- 04. Implements used
- 05. Family members involved in farming
 - 01. Father
 - 02. Women
 - 03. Children
 - 04. Hired labourers

Crops cultivated	Area of the crop	Production (sacks)

16 – Do you own the land cultivated

- 01. Yes
- 02. No

If yes how obtained

- 01. Inherited
- 02. From Sheikh (Given)
- 03. Government land
- 04. Rented
- 05. Others (specify)

If no how obtained

- 01. Family land
- 02. Rented
- 03. Given free by owner

- 17 – State type of pests
 18 – State type of extension received
 19 – Do you own livestock?
 01. Yes 02. No

If yes fill the table

Type	No
Goats	
Sheep	
Camels	
Cattle	
Others	

- 20 – Who takes care of livestock?

01. Male member (Father)
 02. Women
 03. Children
 04. Relatives
 05. Hired labour

- 21 – Type of veterinary service provided

- 22 – State main sources of income

01. From farming
 02. From livestock
 03. Manual labour
 04. Employee (Government)
 05. Remittances from migrant members
 06. Training
 07. Artisans
 08. Selling charcoal & fire wood

- 23 – Do you sell part of your crop?

01. Yes 02. No

If yes where you sell your crop

Health Service:

- 24 – State type of health services available

01. Dispensary
 02. Primary Health care
 03. Hospital
 04. No service

- 25 – If no service where you go to get such service

01. Place
 02. Distance

- 26 – Do you pay for the health service?

01. Yes 02. No

If no who provides the service

01. NGO
 02. Government
 03. Others (specify

- 27 – Do you resort to traditional medicine?

01. Yes 02. No

If yes who provides such medicine

01. Faki
 02. Healer

Appendix 2

Village Survey

1. Name of the village (camp)
2. Total No. of population
3. Sheikh's name
4. Main tribes
5. Other tribes
6. Give brief history of settlement and describe morphology of the village and factors affecting the nature of the village.
7. Give brief ecological description of the area.
8. Water supply sources
9. Services:
 - a. Education
 - b. Health/ Veterinary service
 - c. Administrative services

10. List of organizations (traditional & modern) in village
.....
.....
.....

11. List of NGOs present in the village
.....
.....
.....

12. Capacity of services in the village:

- a. Education:

Level	No. of Teachers	No. of pupils	Building material	Condition of School & Build	Others
Primary (Boys)					
Primary (Girls)					
Intermediate (Boys)					
Intermediate (Girls)					
Secondary (Boys)					
Secondary (Girls)					
Khalwa					
Adult education					

- b. Health

Level	No. of staff	No. of Beds	Building material	Condition of buildings
Hospital				
Dispensaries				
Others (specify)				

13. Commercial Activities performed by the villagers:

14. Activities and services performed/ provided by NGOs in the village:

Name of NGOs	Activity performed	Nature activity	General evaluation
1.			
2.			
3.			

15. Main economic activities carried by villagers:

- a. Agriculture (check appropriate):

Type: Rain fall Irrigated W. Harvest Vadi

Crops: sorghum Vegetable

Average production

Average size of holdings

b. Livestock kept:

- Type
- Average number
- Grazing areas
- Dry season
- Wet season
- Winter
- Range condition around village
- No. involved
- Increasing of decreasing why
- Decreasing why

c. Trading:

- Type
- No. involved
- Who are they

d. Forest products:

- Charcoal making /Wood fuel
- No. involved
- Areas of production
- Where sold
- Fruits
- Others

- 16. Assess capacity of local organization in mobilizing villagers.....
- 17. Describe traditional techniques for W. Harvesting
- 18. Describe improvements introduced to traditional techniques and by whom
- 19. Land tenure in the area
- 20. Describe decision making at the village
- 21. Relief. Food distribution