

Securing Pastoralism in East and West Africa: Protecting and Promoting
Livestock Mobility

Sudan In-Depth Study

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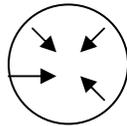
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1. GENERAL INTRODUCTION

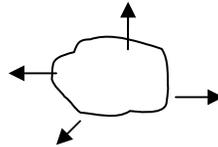
1.1 PRELUDE

Pastoralism is a system of production devoted to gaining a livelihood from extensive livestock raising based on transhumance. It is an adaptation to a particular habitat; arid and semi arid environments. Two common characteristics of pastoral livelihoods are: (i) **Flexibility** involving, among many other techniques, mobility and opportunistic exploitation of resources; (ii) **Social capital** based on communal resource use and a multiplicity of inter and intra-group relations that play a critical role in ensuring access to natural resources. Exchange processes and interactions with farmers are crucial for pastoral livelihood security and viability. One basic differentiated principle between pastoralism and sedentary farming system is related to the conception of space (see 1 & 2 below). The closed in-ward looking system held by the farmers (to define rights and privileges to land and resources) and the open out-ward looking system of the pastoralists based on the opportunistic use of resources and mobility in space and time.

1. *Farmers closed in-ward looking*



2. *Pastoralists open out-ward looking*



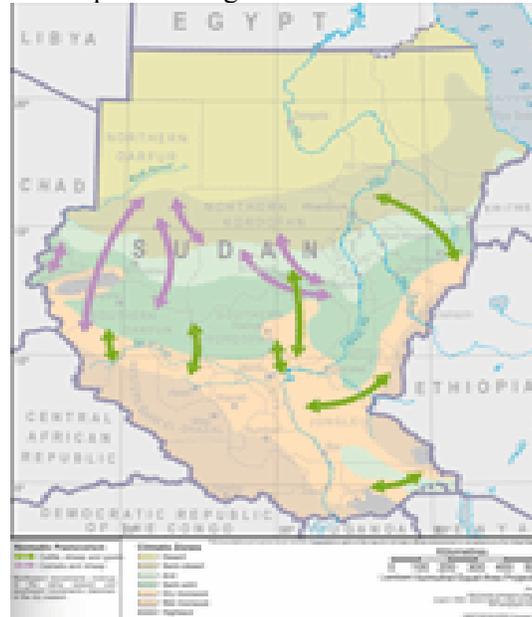
Source: Smith, A.B, (1992)

Sudan is the home to one of the largest concentrations of traditional pastoralists in the world; their number ranges between 2 million (Sudan 4th Population Census 1993) and 3.5 million (Ahmed 2001). The migration of pastoralists in Sudan, as elsewhere, is always dictated largely by rainfall regime and to a lesser extent by the presence of permanent rivers that are largely used as another dry season grazing and water supply. This has created movement along a north-south axis as the most common type of pastoral mobility in the country. However, a conspicuous difference in the pattern of migration exists between camel herders (such as Kababish, northern Rezeigat and Shanabla) occupying the drier northern parts of the country and cattle herders (such as Misseriyya, Hawazma, Rezeigat) towards the wetter parts further south. Camel herders used to move along pastoral routes reaching in some instances more than 1,000 km in length during the annual rhythm of migration between the dry season grazing towards the south and the wet season migration along the southern fringes of the Sahara. Such routes are usually anchored on one or more relatively sure water-point, such as a well or a flooded valley. The more southern transhumance systems used by cattle herders employ shorter routes. However, multiyear periods of extreme and prolonged drought are a recurrent phenomenon on the dry lands of Sudan and, therefore, tend to trigger pastoral movements over long distances.

Despite their vital role in the national economy of Sudan, the pastoralists are in a state of crisis. Customary rangelands and migratory corridors are shrinking in the face of spreading cultivation, nature conservation areas, expanding oil exploitation, rapid transition to market economy and

climate change. During the course of history pastoralists have become among the most politically and economically marginalized groups, rendering them susceptible to radicalisation and recruitment by insurgent groups and conflict entrepreneurs. Traditional raids and confrontations have become more explosive due to the influx of guns and other modern weaponry.

Annual pastoral migration routes in Sudan



Source: UNEP 2006

Opening of livestock corridors in Sudan gained considerable interest in the second half of 1990s as a result of increased conflicts over natural resources. The issue gained further momentum after the Darfur crisis of 2002, which is widely viewed as originating from conflict between pastoralists and farmers over transhumance routes and the breakdown of usufruct rights. Because of that it is not surprising to see the issue of livestock routes explicitly mentioned in all of Sudanese peace agreements including the Comprehensive Peace Agreement CPA (2005), Darfur Peace Agreement DPA (2006) and Eastern Sudan Peace Agreement ESPA (2007).

This report explores, analyses and assesses activities relating to rehabilitating and managing livestock corridors in Sudan focusing on experiences from Kordofan (central western Sudan) and Gedarif State, Eastern Sudan. The aim is to capture evidence of the experiences of practitioners in directly promoting or protecting livestock mobility. This will be achieved through:

1. Mapping of actors working on rehabilitating and managing livestock corridors and the existence or not of any articulation or link ups between them;
2. Detailing the activities completed by actors in relation to livestock mobility
3. Presenting and analyzing the rationale and methodology underpinning their work;
4. Summarising the lessons learned by practitioners with respect to supporting livestock mobility, specifically on rehabilitating and managing livestock corridors;
5. Making preliminary conclusions as to the effectiveness of these activities and identify possible 'pressure points' where the effectiveness of future interventions can be improved.

1.2 METHODOLOGY

The report was based on 2 weeks fieldwork in Kordofan and Gedarif States. During the field work the following tools and techniques were used for collecting data:

1. Preliminary meeting and discussion with SOS Sahel U.K staff in Obied (north Kordofan) focusing on identification of actors;
2. Soliciting and reviewing secondary data available at the offices of the various actors in Obied, namely Ministry of Agriculture and Animal Resources, Range and Pastures administration and IFAD. In Gedarif these were: (i) Ministry of Agriculture, (ii) Ministry of Animal Resources and Fisheries, (iii) Higher Council for Environment and Natural Resources of Gedarif State, (iv) Range and Pastures Administration, (v) Gedarif Locality, and (vi) the Organization for Pastoral Development and Environment Conservation.
3. Consultation meetings with tribal leaders and representatives of pastoral and farmers unions in Kordofan Obied and Gedarif
4. Consultation and discussions with SOS Sahel U.K and IFAD staff in Obied
5. Consultation meetings with senior government officials including the deputy director general of the Ministry of Agriculture in Obied, the director general of the Ministry of Agriculture in Gedarif, the director general of the Ministry of Animal Resources and Fisheries in Gedarif, director general and staff of the Range and Pastures Administration in both north Kordofan and Gedarif, director general and staff of the higher council for environment and natural resources, Gedarif
6. Field tour along 3 corridors, two in Kordofan (Abulghur- Higeir Alsalamat and Al Beida-Faio) and one in Gedarif (Samsam Corridor)
7. Consultation meetings with sheikhs and community members in selected villages along the corridors
8. Consultation meetings with Shanabla pastoralists settled around Aghbash makhraf in north Kordofan
9. Visits to makhrafs, Aghbash
10. Consultation meeting with the community of Umm Semima village (55 km wet of Obied) along the western corridor linking wet season grazing areas in Western Kordofan (Lake Keilak area) and dry season grazing areas in North Kordofan.

1.3 The Ecological Context of Pastoralism in Kordofan and Gedarif

1.3.1 KORDOFAN

Kordofan exhibits typical climatic and ecological characteristics of the Sahelian zone. On the basis of rainfall amount Harrison and Jackson (1958)¹ distinguish three ecological zones: the desert, semi-desert and low-rainfall savanna woodland. In the desert zone, with rainfall of less than 75 mm, vegetation is virtually absent except on water courses and consisting essentially of ephemeral grasses. In the semi-desert (75- 300mm) vegetation is mainly scrub and grassland. Here the sandy soils are covered with *Acacia senegal* savanna. Dominant trees and shrubs also include *Acacia tortilis*, *Acacia melifera*, *Balanites aegyptiaca*, *Capparis decidua* and *Maerua crassifolia*. Herbaceous species include *Aristida* spp., *Cenchrus* spp., *Cymbopogon nervatus*, and *Panicum turgidum*. In the low rainfall savanna (300 -500 mm) the dominant trees are *Acacia* spp such as *A. millifera*, *A. seyal* and *A. tortilis*. Herbaceous species include *Aristia* spp., *Cyperus rotundus*, and *Shoenefeldia* spp. and *Zonia* spp. Since Harrison's vegetation map of the 1950s, the vegetation

¹ Harrison, M.N. and J.K. Jackson (1958): Ecological Classification of the Vegetation of the Sudan. Forest Bulletins, New Series No.2, Forest Department, Sudan.

floristic composition has undergone remarkable changes. What was *A. senegal* savanna has now become semi-desert, grassland.

Rangeland degradation

Rangelands are the basis of the livelihood system of pastoralists and agro-pastoralists through provision of feed resources, where they supply about 80% of the total feed requirement for herd. Rangelands also provide soil and water protection/conservation, biodiversity and ecological balance. There is currently sufficient evidence that the decline in precipitation has been a significant stress on pastoral societies in Kordofan. The increase of animal numbers has a negative impact on pastures and their carrying capacity. Around older villages the diversity of plant species is reduced and carrying capacities are lower (Table 1).

Table 1: Some changes in herbaceous biomass productivity by ecological zone in western Sudan

Ecological Zone	Productivity (Tone Dm/ha)		
	1958/59	1974/75	1985/87
Semi-desert	0.2	0.1	0.05
Low rainfall savanna: Northern part	0.24	0.1	0.14
Low rainfall savanna: Central part	0.33	0.1	0.14
Low rainfall savanna: Southern part	0.66	1.5	0.2
Baggara areas	0.99	2.5	0.8

Source: M. Suliman, baseline survey for Kordofan and Darfur, 1985-1987, 1987

An indicator of overgrazing is the disappearance of some palatable species and replacement by non-palatable types. The disappearance of *Andropogon gayanus* in western Kordofan and *Belpharis lenarrifolia* in northern Kordofan are good examples (Suliman 1987). Increased human and livestock population and the uncontrolled expansion of both mechanized and traditional farming have intensified destruction of the natural vegetation. Evidence of such destruction on the rangelands and around settlements and water points has been observed since the 1960s (Libon 1965). The alteration of floral composition and process of desertification is widely evident, especially in north Kordofan.

1.3.2 GEDARIF

The Gedaref State is a vast plain of clay soils that has become the main focus for the expansion of mechanized farming in Sudan. Currently around 66% of all mechanized farming areas in the country (around 32 million feddan or 13.4 million hectares) are located in Gedaref State. Rainfall varies from north to south. The average annual rainfall ranges from 175 mm at Goz Ragab in the extreme north to 570 mm at Gedaref in the centre and 650 mm at Doka in the south. Rainfall is markedly seasonal in character; the length of the rainy season fluctuates around the four months June to September inclusive reaching its peak in August.

The average ground slope is approximately 2.5 meters per km. According to Harrison and Jackson (1955) the Gedaref area lies in the low rainfall woodlands savanna belt on clay. This was subdivided into:

- *Acacia millifera*- Thorn land on dark clays alternating with grassland (400-570 mm of rainfall) and soils formed in situ associated with *Commiphora africana* and *Boscia senegalensis* (200-500 mm of rainfall);
- *Acacia seyal* - *Balanites* savanna alternating with grassland (570-800 mm of rainfall); and
- *Anogeissus* - *Combretum harmannianum* savanna above 800 mm of rainfall.

To the north of the *Acacia millifera* belt lies the *Butana* region which is an open grassland with patches of *Acacia millifera* mainly confined to typical sites (*Khors*). Perennial grasses are almost

absent in the *Butana* region. The *Acacia millifera* gradually merge into *A. seyal/A. balanitias* zone at 570 mm isohyets. Cultivation removes *A. seyal* and *A. balanitias* is left as a pure stand. The dominant grasses are *Sorghum purpures*, *S. soriceum*, *Hyparrheria psendocymbaria* and *Cybbopogon nervatus*. Common species associated with riverbanks include: *Tamarix nilotica* with scattered trees of *Acacia albida* and *Zizyphus spina-christi*. In the shallow depressions (*Mayaas*), species such as *Acacia nilotica*, water grasses and water lettuce are found. Occasionally trees and short grasses are found in gully areas. In areas described as *Azaz* soils, tree species such as *Acacia*, *Combratum hartmannlanua* and *Peterocaus striga* occur. The hills and rocky outcrops support species such as *Stercuih setigara* and *Hyphaena* (dom palm).

Pastoralism

This is mainly confined to the northern half of the district; the *Butana*. This area was described as the best rangeland for camels, sheep and goats. This was largely due to the occurrence of good grazing fodder. Trees and shrubs provide livestock feed in the form of leaves and twigs and pods most valued during the dry season when forage from grasses is both scarce and of low quality. Important among these woody species are *Acacia chrenberiana*, *A. tortilis* sub-species *tortilis* and sub-species *radiana*, *Capparis deciduas*, *Maerua crass folia*, *Salvadora persica* and *Zizyphus spina-christi*. Grasses include: *Aristida* spp., *Schoenfeldia gracilis*, *Eragrostis* spp., *Cenchrus setigerus*, *Cymbbopagan proximus*, *Lasiurus hirsute* and *Panicum turgidum*. However, this area was heavily grazed and has lost some of its valuable species such as *Blepharis sp.* The northern district (*Butana*) is considered as a marginal land for cultivation thus rain-fed cultivation is only sporadically practiced on low-lying sites.

Deterioration of the grazing resources

The development of mechanized farming in the district did not take livestock into consideration. Pastoralists' animals were therefore gradually pushed out of the traditional grazing lands. This, together with ever-increasing livestock numbers, resulted in high pressure on grazing-lands, leading to overstocking and consequently overgrazing. The overstocking rate in the district was estimated to be 8.36% (EL Tayeb and Lewandowski, 1983). This had more bearing on environmental degradation. A.M. EL Hassan (1981) found that large areas have been overgrazed to a point that they now looked devoid of vegetation.

The range and pasture administration estimates that 50% of the state's rangeland is degraded, with a severe incidence of invasive species. Shrubs with high nutritional value for animals such as *Euphorbia aegyptica* and *Conchorous olitorous* have completely disappeared. Perennials which used to be characteristic of the pastures only a few decades ago have become severely depleted. A good example is *Blepharis edulis*, a very important dry season grazing resources plant described as the climax vegetation of the region was only recorded at remote sites. These plants have been replaced by others that are less nutritious or harmful to animals, such as *Calatropis procera* (Akhtar 1994).

Some heavily grazed areas have undergone a notable shift from grassland to woody thickets. The encroachment of mesquite (*Prosopis sp.*) in rangeland in Gedaref, for instance, is linked to overgrazing not only because it's seed is carried in droppings, but also because degraded landscapes favour the spread of such competitive invasive species.

2. LIVESTOCK CORRIDORS IN KORDOFAN AND GEDARIF

2.1 The CORRIDORS

Kordofan and Gedarif States are crisscrossed by a considerable number of livestock corridors. Table 2 and 3 show these corridors and their lengths.

Table 2: Livestock corridors in Kordofan

Route	Starting and terminal points	Resting places	Length k m	Demarcated?	
				Yes	No
Major routes					
1. Western route ²	Lake Abyad (Unity State) through localities of Keilak, Lagawa and Abu Zabad (South Kodofan) and Sheika n, Nuhud and Sodari (North Kordofan) terminating at Gizu grazing grounds for Abbala	Information not available	955 (380 in S K and 575 in N K)		√
2. Eastern route ³	Araish area in Upper Nile (South Sudan) across South Kordokan to Abulghur area in North Kordofan	Kalogi, Al Nazeif, Atabasa, Umm Shatta, Liri East, araf, Umm Kuwaru ⁴	810 (400 km in SK and 410 km in N K)	Partially	
3. Al Beida ((NK)) – Faio ((SK))	Al Beida- Al Mietan- Shoshai- Nabag- Khoummi- Al Tiur- Habila- Faio	Jebel Altio , El Wedae , El Higeira t, Jebel Faio	164 km (54 km in NK) and 110 km in SK)	√	
4. Abuelghur (NK) – Umm Berimbeita (SK)	Abuelghur- Badoga- Warshal- Al Tikeilat-Khor Kagar- Basili- Manzalat Umm Gofofa- Khor Al Reheim a- Kewekaya- Ampir- Al Shakshok – Mitemira- Al Mashtal-	Umm Gufofa	185 km	√	
5. Abulghur-Higeir Alsalamat (NK)	Badoga- Warshal- Al Tikeilat- Al Aghabash- Umm Diresaia- Al Dibilo	Al Dibilo Mt	85 km	√	
6. Benu-Karakir (NK)	Benu-Regela baraka Um Masareen, Regela Hamra, El Berka, Karakir	Information not available	75 km	√	

Source: SOS Sahel U.K reports, 2006 and 2007

Table 3: Livestock corridors in Gedarif State

Route	Starting and terminal points	Resting places	Length k m	Demarcated?	
				Yes	No
El Darb El Aswad	Northern part of the State, at Suki Sadgab, through kilo 136 to Dhanabou Mts, Tenaibda and Abu Rakham to Sinnar State	Abu Farghaa Khor, Tenaibda , Dhanabou Hafir , Migrih	145	√	
Samsam	From Butana (kilo 6) through Abu	Abu Farghaa Khor,		√	

² The western route is used by both cattle herders (Misseriya and Hawazma) and camel herders (Kababish, Shanabla, Kawahola and Maganein).

³ The eastern route is used by both cattle herders (Hawazma, Misseriya, Awlad Himeid and Fallata) and camel Herders (Kawahla and Shanabla) pastoralists.

⁴ According to the Ministry of Agriculture and Animal Resources Report's (2008) there are some resting places that have not been included due to inaccessibility as the survey of the route took place during the rainy season (30/july - 05/August 2008)

	Kashma, Ganatir, Al Azaza Village Forest, Samsam, Umm Kuraa and Al Fazraa	Amara, Umm Sagata, Migrih	290		
Umm Trumbi	Butana Gubli- Hillat Hassan	Umm Trumbi Hafir, Matna Forest , Abu Al Naga	280	√	
Railway Line	Butana to Gedarif and parallel to the railway line to Galaa el Nahal, Ban, Ballous, Umm Brush Forest, Glaa Al Bagar, Dar Al Radi, African Comp any and Umm Kuraa	Matna Forest , Abu Al Naga	66	√	
Karkora- Taya	From Butana through Karkora , Gedarif Shasina, Doka, Saraf Saeed, Basunda, Wad Abu L isan and Taya	Al Mahal, east of Al Mahal Village, Al Geel Mountain, Rashid , Saraf Saeed Forest	290	√	
Al Mugtaa	From Butana through Mugtaa, Al Shawam, Al Tamargo, Al Saraf Al Ahmar, Gllabat .	Khatir Village, the forest between Ali la and Azaza Villages	244	√	
Abu Sabika –Al Azaza	From Butana through Gedarif, Kassab, Rashid, Umm Seinat, Abu Sabika and Al Azaza .	Safara Mountain, Samsam, Al Azaza Saggoura, Al Saseib	330	√	
Al- Kheiyari- Harira	From Kheiyari through Fao, Harira and then to the north to meet with El Daeb Al Aswad route .		100	√	

Source, Police Headquarter, Central Gedarif Rural Locality, the Executive Office, 2008

2.2 CORRIDORS IN LEGISLATIVE CONTEXT

As previously stated, concerns regarding the link between resource conflict and violent insurgence in the region is reflected in the growing body of legislation aimed at dealing with the demarcation and opening of transhumance routes. In all of the three States visited (Gedarif, N Kordofan and S Kordofan) legislation acts have been issued. These were the Gedarif Transhumance Act 1996, N Kordofan Transhumance Act 1998 and the S Kordofan Organization of Agriculture Act 1998.

2.2.1 Gedarif Corridors Act, 1997

The act specifies the prohibited activities along the routes and their sanctions. These were as follows:

- 1) Closure or blocking of routes
- 2) Cultivation or any other investment in the routes except investments related to livestock development;
- 3) Use of the routes for purposes contradicting with the pastoral activities
- 4) Setting of fires that are likely to negatively the pastures
- 5) Burning of pastures and grazing resources
- 6) Removal or damaging of trees or any other markers identifying the routes
- 7) Gum arabic tapping, except through license from the concerned Minister
- 8) Establishment of villages or any other permanent structures except structures that relate to livestock development
- 9) Commercial cutting of grass and fodder from within the routes
- 10) Use of pesticides and chemicals near the routes and water points
- 11) Any person who violates the Act is considered guilty and is subjected to penalty and imprisonment for up to 5 months.

Since 2000 the Act has been supplemented by annual decree, issued by head of the police office, through what is called “plan for securing entry and exit of nomads” from Butana wet season grazing

area to the dry grazing areas (*masiaf*). The movement of the nomads was described as a major cause of social instability due to trespassing of animals on crops leading to conflict between pastoralists and farmers, encroachment of farmers on pastoral routes, animal thefts and conflict among pastoralists themselves over water and grazing resources. The stated objectives of the Plan included:

- Securing movement of animals along the routes and facilitating the movement of the nomads
- Protecting crops from damage by animals
- Preventing frictions between nomads and farmers
- Provision of mobile veterinary clinic
- Preventing animals thefts
- Reseeding of routes with pastures and forage trees
- Securing resting places for nomads along the routes

As exemplified by the 2008 plan, the plan is managed by a 'route committee' involving representatives from the police and relevant departments along the route. The implementation of the plan involved 75 patrolling police officers and 25 representatives from the Department of Range and Pastures, Pastoral Union, Farmers Union and Localities. The duration of the plan was 30 days and the total cost was 56.8 thousand USD⁵.

2.2.2 N Kordofan Corridors Act, 1998

This act, issued by N Kordofan State Legislature upon request from the Minister of Agriculture, was intended to facilitate the movement of animals between the dry and wet season grazing areas and to protect and secure the rights of pastoralists to grazing grounds and resting places along the routes. The act stipulates that the width of the route should be 200-300 metres and the radius of the resting place 3-5 km. The Act prohibits the following activities along the routes:

- Closure of the routes
- Restricting the movement of animals and the nomads
- Cultivation or any other investment not linked to livestock development inside the routes
- Utilization of services along the routes for purposes contradicting with animal herding
- Setting of fires that are likely to negatively affect the available grazing resources
- Removal or damaging of trees or any other markers identifying the routes
- Cutting of trees inside the routes
- Commercial activities such as the collection of firewood and production of charcoal inside the routes
- Introduction or use of any substances harmful to animals or grazing resources
- Collection of forage and grasses from inside the route except department of range and pastures

The act entrusted the department of Range and Pastures with the management of the routes and the implementation of the Act.

The act was amended in 2003. This amendment specified the radius of the wet season grazing ground (*makhraf*) as 3-5 km while reducing the radius of the resting places to 2-3 km instead of the 3-5 km. The Native Administration was also made responsible for the management of the routes, in

⁵ The Plan, designed by the security authorities involves the deployment of 100 policemen and police officers (calculated total subsistence allowance USD13, 500); six supervision teams (total allowance USD 8,100); fuel for 8 cars (USD 2,340); lubricants (USD 1,200); car rent (20,000 USD)

collaboration with the Department of range and pastures. Penalties up to 2 years of imprisonment or a fine amounting up to 1000 Sudanese Pounds (approximately USD 500) were stated.

2.2.3 South Kordofan Organization of Agriculture and Grazing Act, 2001

This act defines livestock routes, different categories of pasture and water points, and lists activities not allowed on stock routes including farming, burning, cutting of trees, building and harvesting of fodder, and fixed penalties. According to the act the farmers should not cultivate inside the routes or around water points used by the nomads. They should not to erect enclosures, should not use chemicals or substances that are harmful to animals and pastures. The Act specifies the following:

1. Responsibilities of the farmers

- Restrict farming to the places assigned for cultivation as per customary rules and allocations by authorities
- Not to cultivate or erect fences around water points assigned for watering of animals
- Not to close or obstruct livestock corridors and water points whether through cultivation that restricts movement of animals or their watering
- Farmers should adhere to the opening of fire lines around their farms during the agricultural operations to prevent fires from damaging range resources
- Not to cultivate in the *harm* of the village or around the water points within a radius of 500 metres without prior approval from authorities
- Not to or allow others to enter animals in raifed farms before the 15th of March every year.
- Erection of air fences is prohibited throughout the State
- Not to use pesticides and chemicals without informing the authorities
- Farm owners in the vicinity of water points should fence their farms for protection from animals

2. Responsibilities of pastoralists

- Not to burn or to cause fire burning in places reserved by fire lines for cultivation and gazing
- Restrict the movement of their animals to the specific corridors
- Immediate reporting of y violation to the route to the native administration leaders or concerned government institutions or the nomads (*mandoubs*) leaders
- They should follow their animals to prevent the trespassing of animals on the agricultural fields
- They should camp away from villages and water points
- They should restrict their camping locations to the *makhrafs* and resting places
- They should abide to the *talaig* timing⁶
- Should not allow their animals to enter into agricultural fields before 31st March every year

3. Responsibilities of the pastoralists leaders (mandoubs)

- Convey the rules and regulations of the Act to the pastoralists
- Help and direct the pastoralists to follow the routes as per the directives and supervision of the Native administration leaders in the areas along the routes

⁶ This is the time following immediately the harvesting of the crops and the collection of the grains from the fields. Customarily this is the time when the pastoralists were allowed to enter their animals in the fields to graze crop residues. Currently this process, which also involves organic exchange, has significantly changed as crop residues have been monetized and eventually the pastoralists have to buy crop residues from the farmers. This has become common practice.

- Representation of pastoralists in customary conflict resolution sessions in case of conflict between pastoralists and farmers
- Immediate reporting of any violation to the Act
- To perform any duties/responsibilities assigned by the authorities

4. Responsibilities of range guards

- Guarding and supervising of the range resources
- Organizing the entry of animals in the range and use of range resources
- Immediate reporting of any violation to the Act
- Range guards and appointed nomads mandoubs are subject to punishment ranging from scolding to firing from job if they fail to perform the responsibilities assigned to them by the Act.

5. Responsibilities of the Range and Pastures Administration

- Preparation of route and range maps and regulating the use of range and natural resources
- Is mandated to establish committees to map boundaries between agriculture and grazing resources to remove bottlenecks and narrowing down of routes and to endorse crop damage estimation committees
- Inspection of range resources
- Collection of range seeds is the sole responsibility of the Administration; any other person or organization should get the permission from the Administration to do so.
- Implementation of the Organization of Agriculture and Grazing Act, in coordination with the relevant bodies
- Has the right to establish animal fences to hold animals caught in any place prohibited by the Act and to fine the animals' owner as per the existing laws and regulations Act
- The possibility of determining the timing of use of some range areas

2.3 ACTORS AND THEIR ROLES

Currently there are a growing number of actors involved in route demarcation and opening. These actors could be classified into either direct or indirect actors, or national and international actors. The role performed by each of these actors varies between legislative, implementation, funding and consultation (Table 4).

Table 4: Actors involved in corridor demarcation

State	Actor	Role
N Kordofan	• State Legislature	• Legislation
	• Ministry of Agriculture and Animal Resources	• Initiate the drafting of corridors Acts and its introduction to the legislature • Communication of laws and regulations • Follow up and monitoring
	• Department of Range and Pastures	• Mapping and demarcation of routes • Implementation of route laws and regulations • Route management including formulation of route rehabilitation plans • Follow up and monitoring • Patrolling • Resource mobilization • Implementation of route rehabilitation plans • Coordination among various actors • Regulating range lands and land uses

	<ul style="list-style-type: none"> • SOS Sahel UK 	<ul style="list-style-type: none"> • Initiation of ideas • Mobilization of stakeholders • Funding • Mapping and demarcation activities • Capacity building • Training • Follow up and monitoring • Reporting • patrolling
	UNDP	<ul style="list-style-type: none"> • Initiation • Resource mobilization • Funding • Dissemination
	IFAD	<ul style="list-style-type: none"> • Funding • Mobilization of stakeholders • Route mapping and demarcation activities
	Pastoral Union	<ul style="list-style-type: none"> • Advocacy at the State executive and legislative levels • Mobilization of constituencies (pastoralists) • Promote negotiations between pastoralists and farmers • Consultation and coordination with funding and implementing bodies
	Farmers Union	<ul style="list-style-type: none"> • Participate in discussions over route legislation • Participation in the implantation of the route demarcation and opening
	Tribal leaders (Omdas and Sheikhs) of sedentary people (farmers)	<ul style="list-style-type: none"> • Negotiations of the routes with nomads sheikhs • Participation in implementation of the route mapping and demarcation process • Supervision of the opened routes • Manage and handle violations to the route • Manage conflicts over the routes • Awareness raising among their communities at village level
	Nomads sheikhs and tribal leaders (Omdas and Sheikhs)	<ul style="list-style-type: none"> • Negotiations of the routes locations with farmers omdas and sheikhs • Participation in route mapping and demarcation • Awareness raising among nomads • Ensure nomads adherence to route regulations • Reporting violations to the route • Manage conflicts over the routes, in collaboration with the farmers omdas and shkeiks
	Locality administration	<ul style="list-style-type: none"> • Promotion and dissemination of route laws and regulations • Provision of legal and administrative backup to route demarcation and opening • Supervision of laws and regulations

S Kordofan	SOS Sahel UK	<ul style="list-style-type: none"> • Mobilization of actors • Funding of surveying, mapping and demarcation activities • Support institutional capacity building, especially of the Range Administration through mapping equipment • Training of teams involved in the demarcation process including village sheiks and representatives of civic unions (Pastoralists and Farmers Unions) • Monitoring the demarcated routes • Reporting to partners, namely Range and Pastures Administration and UINDP and to SOS Sahel UK office via SOS office in Khartoum • Patrolling of the demarcated routes for monitoring and evaluation purposes • Documentation of the demarcation experiences through reporting and filming (CD has been produced, shared and disseminated in collaboration with UNDP)
	UNDP	<ul style="list-style-type: none"> • Initiation of the route demarcation process through Project “Reduction of Resource Based Conflict”, developed in partnership with SOS Sahel, Farmers and Pastoral Unions, tribal leaders and civil society organizations (Sudanese Environment Conservation Society and Massar Organization for the development of the nomads”). • Funding of demarcation activities channelled through its partner SOS Sahel UK • Sharing and dissemination of the experience (with the international community and UNDP regional and global offices) • Reporting to UNDP headquarters
	IFAD	<ul style="list-style-type: none"> • Funding of route surveying, mapping and demarcation interventions • Support to institutional capacity building, especially of the Range and Pastures Administration • Mobilization of stakeholders • Route mapping and demarcation activities • Patrolling of routes for monitoring and evaluation purposes • Documentation, mostly in the form of reports and production of maps • Reporting and dissemination of experiences
	Pastoral Union	<ul style="list-style-type: none"> • Advocacy at the State executive and legislative levels • Mobilization of constituencies (pastoralists) • Promote negotiations between pastoralists and farmers • Consultation and coordination with funding and implementing bodies
	Farmers Union	<ul style="list-style-type: none"> • Participate in discussions over route legislation • Participation in the implantation of the route demarcation and opening

	Tribal leaders (Omdas and Sheikhs) of sedentary people (farmers)	<ul style="list-style-type: none"> • Negotiations of the routes with nomads sheikhs • Participation in implementation of the route mapping and demarcation process • Supervision of the opened routes • Manage and handle violations to the route • Manage conflicts over the routes • Awareness raising among their communities at village level
	Nomads sheikhs and tribal leaders (Omdas and Sheikhs)	<ul style="list-style-type: none"> • Negotiations of the routes locations with farmers omdas and sheikhs • Participation in route mapping and demarcation • Awareness raising among nomads • Ensure nomads adherence to route regulations • Reporting violations to the route • Manage conflicts over the routes, in collaboration with the farmers, omdas and sheiks
	Locality administration	<ul style="list-style-type: none"> • Promotion and dissemination of route laws and regulations • Provision of legal and administrative backup to route demarcation and opening • Supervision of laws and regulations
Gedarif	<ul style="list-style-type: none"> • State Legislature 	<ul style="list-style-type: none"> • Legislation
	<ul style="list-style-type: none"> • Ministry of Agriculture and Animal Resources 	<ul style="list-style-type: none"> • Initiate the drafting of corridors Acts and its introduction to the legislature • Dissemination of laws and regulations • Follow up and monitoring
	<ul style="list-style-type: none"> • Department of Range and Pastures 	<ul style="list-style-type: none"> • Mapping and demarcation of routes • Implementation of route laws and regulations • Route management including formulation of route rehabilitation plans • Follow up and monitoring • Patrolling • Resource mobilization • Implementation of route rehabilitation plans • Coordination among various actors • Regulating range lands and land uses
	Police authorities	<ul style="list-style-type: none"> • Executing the Annual Plan for Securing the Entry and Exit of Nomads from Butana • Implementation of route laws and regulations • Patrolling
	Pastoralists Union	<ul style="list-style-type: none"> • Advocacy for legislation issuing • Participate in the implementation of the Annual Plan for Securing the Entry and Exit of Nomads from Butana. • Participate in route mapping and opening • Report violations to route regulations

2.4 CORRIDOR RELATED ACTIVITIES COMPLETED BY ACTORS IN KORDOFAN AND GEDARIF

2.4.1 Corridor surveying, mapping and demarcation

The table below (Table 5) shows the routes surveyed, mapped and demarcated in Kordofan and Gedarif.

Table 5: Corridors surveyed, mapped and demarcated in Kordofan (2005/07) and Gedarif (1997-2005)

Route	Length km	Surveyed	Mapped	Demarcated	Direct main actors
I. N. Kordofan					
Banu-Karakir	75	√	√	√	SOS Sahel UK, Range and Pastures Dept
Abulghur-Basili	95	√	√	√	SOS Sahel UK, Range and Pastures Dept
Abulghur-Higeir Alsalamat	85	√	√	√	SOS Sahel UK, Range and Pastures Dep
Al Beida-Shosahi	54	√	√	√	SOS Sahel UK, Range and Pastures Dept
Al Odaiat-Al Karakir	38	√	√	√	SOS Sahel UK, Range and Pastures Dept
Western route	575	√	√		IFAD; Range and Pastures Dept
Eastern route	410	√	√		IFAD; Range and Pastures Dept
South Kordofan					
Basili- Ambeir – Mitamira	90	√	√	√	SOS Sahel UK, Range and Pastures Dept
Shosahi – Fio	110	√	√	√	SOS Sahel UK, Range and Pastures Dept
Migrih – Tibeisa	45	√	√	√	SOS Sahel UK, Range and Pastures Dept
Abbasiyya– Umm Fakarien	65	√	√	√	SOS Sahel UK, Range and Pastures Dept
Western route	380	√	√		IFAD; Range and Pastures Dept
Eastern route	400	√	√		IFAD; Range and Pastures Dept
Gedarif					
El Darb El Aswad	145	√	√	√	Range and Pastures Dept, Police Office of Gedarif Locality
Samsam	200	√	√	√	Range and Pastures Dept, Police Office
Umm Trumbi	160	√	√	√	Range and Pastures Dept, Police Office
Railway Line	200	√	√	√	Range and Pastures Dept, Police Office
Karkora- Taya	240	√	√	√	Range and Pastures Dept, Police Office
Al Mugtaa	220	√	√	√	Range and Pastures Dept, Police Office
Abu Sabika –Al Azaza		√	√	√	Range and Pastures Dept, Police Office
Al- Kheiyari-Harira	100	√	√	√	Range and Pastures Dept, Police Office

Source: SOS Sahel Reports 2006 and 2007, Obed; Range and Pastures Administration, Gedarif, 2007

2.5 CASE STUDIES

2, 5.1 AL BEIDA– FAIO CORRIDOR, KORDOFAN

The route links the dry season grazing (Ar. *masiaf*) in south Kordofan to the wet season grazing (Ar. *makhraf*) in north Kordofan. The length of the route is 164 km including 54 km in north Kordofan and 110 km in south Kordofan. The route is used by both camel herders (Shanabla pastoralists) and cattle herders (Hawazma and Misseriya). The surveying, mapping and demarcation of the corridor were completed in 2006.

Route mapping and demarcation was specified as one of the activities in the UNDP document (Jan 2004) of the project “Reduction of Resource Based Conflict”, implemented by SOS Sahel UK in north Kordofan. Starting in north Kordofan in 2005 the work was then extended to south Kordofan realizing the spatial nature of the corridor in connecting north and south Kordofan. The intervention involved the following steps:

- SOS undertook initial discussions and consultations with direct stakeholders namely, local council authorities (Shikan in north Kordofan and Delling in south Kordofan), State Ministry of Agriculture, Farmers and Pastoral Unions and tribal chiefs at the local council level. The purpose was to introduce the idea of route opening and its rationale, explaining the process, and to gain the interest of stakeholders for effective participation and involvement.
- Team formation for the purposes of implementation; on the basis of discussions and consultation a team was formed involving representatives of SOS Sahel, Range and Pastures Administration, Pastoralists Union, Animal Resources Administration, Farmers Union and the tribal chief of the local council.
- Consultation meetings undertaken by the team with sheikhs of villages located along the corridor with the purpose of involving tribal leaders at the village level. Involvement of village sheikhs was also based on realization of the importance of local institutions, especially native administration, and their historical role in the management of corridors and settling of disputes over it. The role of sheikhs in community mobilization and awareness raising was also recognized and sought. In these meetings elements of the Transhumance Corridors Act were discussed and the implementation of the act and management of the corridors was discussed and clarified with tribal leaders.
- Training of the team involving use of GPS and methodology for mapping and demarcation.
- Corridor surveying by the team to develop a thorough understanding of the corridor in terms of the location of its various components (resting places and makhrafs) and proximity to villages and, if they exist, blockages to the route. The team also decided on the materials needed for the demarcation and ensured the effective participation of village sheikhs and community members. Whilst raising awareness of the route, the team also learnt how to operate a GPS to delineate selected points along the corridor for the demarcation process.
- On the basis of the survey results and in the presence of village sheikhs and some community members cement posts 1.5-2.0 metre high were fixed at both sides of the route at an interval of approximately one km (although this tends to vary depending on the nature of the route and its topography). The demarcated width of the corridor is 100 metres, which violates the 1998 Corridor Act and its 2003 amendment stating that corridors should be between 200 and 300 metres wide. This was the result of pressures from the farmers at the village level and their refusal to surrender what they refer to as their customary rights to land as primary land right holders.

Data for the Abulghur- Higeir Salamat-Basili corridor (Table 6) shows that the corridor passes through 12 sheikhships with all sheiks in addition to 89 persons from the 12 villages being directly involved in the demarcation process. Considering the length of the corridor (85 km) this gives a spacing interval of 0.9 km between posts. Recognizing the fact that the posts are fixed alternatively on both sides the interval between each post and the other becomes approximately 2 kms, on average.

Table 6: Village along Abulghur-Higeir Slammat Corridor and participants in the demarcation

Village	Village Sheikh	No of participants from the village	Number of posts fixed
Al Dibeilo	Nor El Din Mohamed Al Daw	6	16
Arran	Al Tom Abdalla	4	27
Umm Diresaya	Mohamed Khalifa	4	6
Al Aghabash	Ibrahim Adam	2	5
Umm Siyola	Abdelrahman Ahmed	2	4
Al Firog	Omar Adam	3	2
Umm Siyola	Mohamed Khalifa	4	7
Mago	Hassan Ali	0.0	2
Al Tikeilat	Ali Al Nour	4	6
Ingameina	Adam Saeed	2	2
Warshal Madhagha	Abdelatif	3	6
Badoga	Abbakar Mohamed	8	6
Total	12	42	89

2.5.2 Gedarif State Experience

Following the 1997 corridors act the eight corridors of Gedarif State, with total length of 1745 km, was mapped and demarcated during the period 1997-2001. The width of the corridor was supposed to be 1 km but the proposal was strongly rejected and contested by the Farmers Union. Following this the demarcated width of the corridors is 150 metres except corridor # 1 (Al Darb Al Aswad) where the demarcated width was reduced from 500 metres in 1997 to 300 meters in 2001 due to pressures exerted by mechanized farmers. The Al Darb Al Aswad corridor is given due attention as it is considered the most intensively used corridor as it links Gedarif and Sinnar States bringing pastoralist from as far south as Blue Nile State. The selected width of 150 metres, according to Range Administration authorities in Gedarif was a compromise with the farmers who were pressurising for a route width of 50 metres. The corridors are demarcated by fixed cement posts alternating at an interval of 0.5 km at both sides of the corridor. In accordance to the 1997 Corridors Act the demarcation process has been managed and implemented exclusively by the Range and Pastures Administration, helped by a staff member from the Department of Surveying.

The annual mobility of the nomads between the wet and dry season grazing areas is facilitated and managed annually by the corridors committee emanating from the annual plan for securing entry and exit of nomads from Butana. This involves patrolling and following of the nomads by police along the corridors from makhrif to masiaf. The duration of this activity is about two weeks, from end of September to mid of October, every year.

2.5.3 SERVICE PROVISION ALONG STUDIED CORRIDORS

Kordofan

Provision of services along demarcated routes is extremely limited confined to three interventions implemented by SOS Sahel UK, during 2006-2007, under the community development fund (CDF) component of the Reduction of Resource Based Conflict project implemented jointly by UNDP and SOS Sahel UK. These interventions were:

- a) Provision of veterinary services and vaccination: Implemented along Shoshaia- Fio Route in Delling Locality, Habila Area (south Kordofan). Habila Area is criss-crossed by three stock routes and constitutes an important wet season grazing area. The intervention was implemented in collaboration with Delling locality with the participation of livestock administration of the locality, pastoralists union and tribal leaders. The duration of the activity was 30 days and it involved: animal vaccination, livestock extension, mobile veterinary clinic. The total cost of the intervention was USD 25,000.
- b) Rehabilitation of pastures and provision of veterinary services: This activity was intended for the rehabilitation of the degraded grazing resources along the routes targeting the two routes of Tagmala- Rashad and Basili – Tagmala in the eastern Nuba Mountains of south Kordofan. Implemented in collaboration with the pastoral Union, Range and Pasture Administration, Department of Forests and Animal Administration the activity involved reseeded of pastures and provision of veterinary services. The duration of the activity was 6 days and the total cost was USD 25,000.
- c) Building and rehabilitation of Warshal basic school. Warshal village is located along Abulghur-Umm Barambita route that is followed by cattle herding (Hawazma and Misseriya) and camel herding (Shanabla) groups during the annual rhythm of mobility between the dry and wet season grazing. The activity was intended as a social capital asset that brings pastoralists and farmers together around shared interest while contributing to peace building. Besides serving the three villages of Warshal Hafir, Warshal Madagha and Badoga the school also provides education opportunity to nomadic children from 14 nomadic camps scattered seasonally around the villages. In 2008 17% of the school children were nomadic. Both groups of farmers and pastoralists were involved in the building and rehabilitation of the school. The total cost of the intervention amounted to USD 50, 300 (SOS Sahel Reports, 2007).

Gedarif

All those interviewed (government officials, farming and pastoral unions, concerned national NGOs and community members) stressed that corridor services are completely lacking along the Gedarif corridor. This is exemplified by Samsam corridor, surveyed during the fieldwork. The corridor extends from Butan in a north-south direction through Samsam to Umm Koraa and Fazraa along the banks of Rahad River (seasonal tributary of the Blue Nile) and the northern border of the Dindir National Park. The total length of the corridor is 290 km and is used principally by Falata pastoralists. No single activity has been implemented to support the nomads and their mobility and the corridor consists of a bare road devoid of services and vegetation (see picture below).



Samsam-Umm Koraa- Fazra Corridor, Gedarif State, devoid of any corridor services

3. ASSESSMENT

3.1 EFFECTIVENESS AND CHALLENGES TO CORRIDOR DEMARCATION

The process of corridor demarcation has been strongly supported and recognized by all actors, including nomadic and farming groups, as a necessary process important for securing and protecting nomadic mobility. The effectiveness of corridor demarcation in minimizing disputes and conflict between nomads and farmers has also been widely appreciated and stressed by both groups (see box below).

Perception of corridor demarcation intervention by stakeholders

- “We do believe strongly in the role of route demarcation as the entry point for the development of the pastoralists and the pastoral sector. This is why we are one of the first States in Sudan to issue the Corridors Act in 1998. Even the economic contribution of the livestock sector to poverty reduction in the country could be increased substantially through effective demarcation and management of livestock corridors” (Dr. Hamid Adam, Deputy DG, Ministry of Agriculture and Animal Resources, North Kordofan State)
- “Before the demarcation the route was very narrow, 40-50 metres, and conflicts between the farmers and the pastoralists were very common. With the demarcation of the Soshaiia Route conflicts have been largely minimized and both the pastoralists and the farmers benefited very much. We do thank SOS for that” (Sheikh Mohamed, Sheikh of Nabag South Village, South Kordofan).
- “The murhal was 20 metres in width before the demarcation; now the width is 100 metres. It took a large portion from my agricultural land. At the beginning I refused that and I asked for compensation but finally I accepted under pressures from the sheikh and the villagers. Now I do feel the benefits of the demarcation for me personally, for the people of the village and also the pastoralists. The demarcation should include all the murhals in South Kordofan so that conflicts could be minimized and peaceful co-existence promoted” (Hussein Hamid, Nabag North Village, S Kordofan).

The viability and sustainability of the process are, however, under increasing pressures and stress. The major pressures are:

1. Continuous and progressive encroachment of cultivation on demarcated routes. The process has been reported in both Gedarif and Kordofan but more intensity in Gedarif due to the extensive mechanized cultivation. The picture below from Gedarif illustrates that



Samsam corridor: Cement post surrounded by dura cultivation

2. Removal/breakdown of posts: Removal or breaking down of the posts by farmers has also been widely reported. In Gedarif a state official who is also a mechanized farmer removed the posts and used it to support a water tank in his farm.



Cement post broken down by a farmer near Badoga village, N Kordofan

3. Loss of nomads to the resting places (*manzala*) along the corridors. Field investigations and consultations revealed that the most of the resting places have been lost to cultivation and, on some occasions, the expansion of villages in both Kordofan and Gedarif.
4. Lack of investment in physical infrastructure, especially water sources along the corridors to serve the nomads and their families. This has in turn forced pastoralists to take their animals to the nearby water sources at the outskirts of villages or in the agricultural schemes resulting in confrontation and disputes between nomads and villagers. According to the undersecretary of the Farmers Union, Gedarif State “*Nomads trespass on cultivated fields even if these fields are 5 kilometres away from the corridors. This is because of the absence of the suitable environment for corridors...sometimes the nomads move for 20-25 km without finding a source of water to water their animals; their resting places have been cultivated and no one is concerned to provide services along the corridors to help the nomads...the pastoral union is also to be blamed because they never report violations to the corridors act.*”
5. Complete absence of education and health services means the nomads are the poorest group on all human development indicators. Nomadic women and children are the most affected as they exist outside the immediate vicinity of all services.

6. Very weak and poor implementation of corridors laws and regulations. Violations of corridors laws are very rarely reported whether by nomads, their leaders or the responsible government authorities. One reason stated by nearly all members of Pastoral Unions in both Gedarif and Kordofan is that the pastoralists feel they do not have full rights to land and because of that they prefer to avoid legal confrontation with the farmers. The violation of law in Kordofan by demarcating the width of the route at 100 metres instead of the 200-300 specified by the 1998 Act and its 2003 amendment is concrete evidence, although the Act gives pastoralists and their leaders the right to report and by definition to defend their acquired rights.
7. Unbalanced distribution of power between farmers and pastoralists. It is an established fact that farmers in Sudan are extremely powerful, compared to nomads, constituting part and parcel of the decision-making apparatus. This has in turns largely affected legislation and the implementation of laws.
8. Population growth in villages and the concomitant demand for increased cultivable lands resulting in continuous expansion of cultivation on corridors.
9. Absence of clear institutional structure for the management of the corridors. Corridor committees are seasonal and government institutions are based in the capital cities of the states lacking the capacities required for effective monitoring and follow up.
10. Weaknesses of tribal leaders institutions: Village sheikhs institutions are not engaged in Gedarif and when engaged (Kordofan) they do suffer systemic weaknesses and inefficiencies. As explained by Sheikh Ali Nour of Tikeilat Village (along Abulghur Corridor) *“In the past the sheikhs have power and authority over their people but through time they have lost that power due to the confused institutional situation of the native administration system; as sheikh I have not been supported by the power needed to protect and manage the corridor; what I can only do is to reach for the respect of the regulations among my people but they mostly do not listen and I cannot afford to go into conflict with my people. In addition the government allocates land to investors without the consultation of the sheiks and a good example is the case of Al Aghbash makhraf (wet season grazing) which has been distributed to farmers creating heavy pressures by nomads on the farm lands leading to erosion of relations and mistrust between the two groups.* This has created corridor management as a voluntary activity rather than one based on clear institutional structures with a legitimate mandate and responsible accountability.
11. Accelerated land degradation and prevalence of poverty conditions among both farmers and the nomads tend to exert heavy pressures on corridors and their ecosystems. Due to decreasing returns from agriculture caused by declining land capability increasing numbers of farmers have started to increase their cultivable lands. Many have also initiating a process of heavy deforestation through wood cutting and charcoal making as they seek sources of cash in order to compensate for their declining incomes. Similarly, growing numbers of nomads suffering from declining herd sizes or the escalating security situation, especially in south Kordofan, have started to settle down as agropastoralists combining animal raising and cultivation. As a result new settlements have emerged mostly inside makhrafs and resting places. A typical example is provided by the settlement of Shanabla (about 85 households) around Aghbash *makhraf*. All of these households are now cultivating inside the makhraf.
12. The issue of land rights and land ownership constitutes one important challenge to corridor mapping and protection of nomad mobility. Farmers hold the perception that they are the

owners of land and because of that they should not be sanctioned for violations of corridors. Some farmers express the argument that because of increasing population in villages the farmers should either claim back the land covered by corridors or to be compensated by the government. The same argument was stressed by mechanized farmers in Gedarif, arguing that they purchased land from government and they are paying taxes on annual basis; because of that they are entitled to compensation for any cuts in that land for the corridors.

3.2 THE APPROACH

There are some similarities and differences in the approaches to corridor demarcation in Kordofan and Gedarif. Both approaches are grounded in the principle of demarcating corridors by burying cement posts at both sides of the corridor. However, in Kordofan the approach is based around peace building through committees and in Gedarif the approach is focussed on security through police patrols. The Kordofan approach has resulted in a marked reduction in violent conflict in the 2 years since the route was demarcated, as well as an increased awareness from both farming and nomadic communities of when they are outside their recognised rights.

The Gedarif approach, however, seems inherently weak and reductionist, dealing with the corridor sectorally and in isolation from the dynamic and progressively changing socio-economic, ecological and political realities of contemporary Sudan. Changes in land use patterns and the accelerating transformation towards market economy under conditions of increasing human and livestock population, accelerating land degradation, increased competition over land and growing tendency towards climatic aridity have all combined to create new realities that require concrete placing of corridor demarcation within a wider perspective. As expressed by the Deputy DG of the Ministry of Agriculture and Animal Resources of North Kordofan “from our experience we do annually have the problems of corridor closure as a result of the expansion of agriculture. We will remain revolving in the same circle unless corridor demarcation is designed and implemented within an overall framework of land use planning and natural resource management that takes into account all the contemporary socio-economic and ecological changes in Sudan”.

In addition, rather than advocating or supporting establishment of recognizable and capable institutional structure for the management of the corridors the approach was based on the implicit assumption of the power of the native administration leaders in villages to manage the corridors. This assumption proved false. The powers of the leaders, as established by the results of fieldwork and numerous recent studies in Sudan, have significantly eroded due to a combination of political, economic and modernization factors.

The major weakness of the approach in Gedarif, however, stems from the fact that it has been fully based on the states’ corridor legislation which has been drafted mainly from a security point of view with the main intention being to repressively minimize conflict rather than intending the development of nomads and securing their rights to mobility and access to resources. Because of that both the corridor legislation and the demarcation approach by extension are unduly onerous to the nomads. The absence of corridor services is concrete evidence. Again, it is also worth mentioning that both government and NGOs show refrain and reluctance from the provision of basic services along corridors, especially water and education, arguing that provision of these services will motivate nomads to stay longer around makhras and resting places which will lead to increased disputes between the farmers and nomads; this in fact the same argument of the farmers who always do not like to see the pastoralists moving a round for a long time. Judged from this perspective the approach is highly biased to the power of the farmers while at the same time compromising the rights of the nomads.

4. CONCLUSION, LESSONS AND RECOMMENDATIONS

4.1 CONCLUDING REMARKS

There is currently widely held recognition that the historically established amicable relationship between pastoralists and farmers has been significantly eroded and replaced by relations of belligerence and increasing mistrust. In particular, in Kordofan there are growing fears regarding large-scale social instability and currently fragile relationships between farmers and herders, aggravated by the proliferation of animal thefts, and increased incidence of local-level crime and abundance of small arms at the community level.

As a result the mobility of pastoralists between the dry and wet season grazing areas has become a major issue of concern at the various levels of governance, from the level of government institutions to the level of tribal leaders and community members. In this respect corridor demarcation is widely viewed as a necessary important intervention but usually from a security perspective rather than an intervention to establish the rights of pastoralists to mobility.

The sustainability and viability of the corridor demarcation has been seriously challenged and questioned by the seasonality of the intervention and corridor management (usually during the wet season), absence of the necessary corridor services, especially water, education and health. The existing water sources (mainly hafirs) in the vicinity of villages are old, malfunctioning and widely spaced. Education services are lacking and the education model of nomads schools adopted throughout Sudan has proved a failure. Out of the 15 nomadic schools opened in Kazgail locality of north Kordofan, 8 schools have been abandoned by the nomads' children and eventually closed. Lack of boarding houses remains the most critical factor hindering access of pastoral children to education in Sudan. Increases of human and livestock population, land degradation and changing patterns of land use associated with commercialization of the rural economy, diminishing resource base and the associated rising stakes over land, constitute major challenges to corridor demarcation. The situation is compounded by the absence of recognizable institutional structures for the management of corridors and weak community governance structures to deal with that as manifested in the erosion of native administration system and the apparent weaknesses of pastoral structures. The numerous number of government actors ranging from the police to localities, Ministry of Agriculture, Range and Pastures Administration, Animal Resources Administration and Corridors Committees reflect the absence of a clear vision towards pastoralism and issues of pastoral development, including security of pastoral mobility.

The sectoral nature of the approach adopted has also created route demarcation as an isolated process that failed to capture the interrelationships and interconnectedness among the various socio-economic, ecological and political factors that are currently affecting pastoral mobility and their rights of access to natural resources and social capital development services. As argued by many in the field the continuous encroachment of farmers on corridors is a concrete reflection of the absence of integrated and negotiated strategy to natural resource management and institutionalized land use systems in the country.

4.2 LESSONS LEARNED

1. Corridor demarcation is essential for maintaining and protecting pastoral mobility and minimizing conflict between pastoralists and farmers
2. Successful corridor demarcation needs placing within a wider perspective of regulated land use that recognizes, legitimates and institutionalizes the entitlement and interests of the diverse land users while promoting the more efficient and equitable distribution of land and resources
3. Corridor demarcation needs to be based on a negotiated and agreed upon process for the management of common property resources
4. Trust building between pastoralists and farmers is an essential entry point for maintaining and sustaining pastoral mobility
5. Service provision, especially water, education and health is essential for sustained route demarcation and long-term development of pastoralists.
6. Boarding houses constitute the entry point for encouraging pastoralists to send their children to schools.
7. Sustained mobility of pastoralists requires a recognizable institutional structure for the management of the corridors
8. In their present status tribal institutions and civic unions (pastoralists and farmers) are not well equipped to serve pastoral mobility. Tribal institutions have been weakened over time and civic unions are urban based and disconnected from their constituencies.

4.3 RECOMMENDATIONS

1. Trust building and promotion of partnership between pastoralists and farmers. In this respect a number of people consulted, particularly in Kordofan proposed the idea of conducting series of meetings (3) one for each group and another for both groups together. The meetings are expected to inform a socially negotiated process for management of the commons, corridor demarcation and management besides promoting understanding of shared interests and trust building.
2. Investment in provision of services, especially water, health and education along corridors. Investment in boarding houses, in partnership with solicited actors, is highly recommended.
3. Building and strengthening capacities of pastoral and farmers unions so that they could better serve the interests of their constituencies. This is a mid to long-term investment.
4. Support and advocacy for the reform of the native administration system and its empowerment.
5. Initiate and support pastoral community organizations.
6. Initiate and promote strategic partnership among civil society organizations genuinely advocating the case of pastoralists.
7. Advocate and support possible institutional options for corridors management at State and local levels.

References

- Ahmed, Bdel Ghaffar M. (2001) Livelihood and resource competition, Sudan, in M. A. Mohamed Salih, Ton Dietz and Abdel Ghaffar Mohamed Ahmed (Eds) African pastoralism, Pluto Press, USA
- Akhtar, Mariam (1994) Geo-Ecosystems and pastoral degradation in the Butana, Animal Research and Development, vol 19, Institute for Scientific Cooperation Tuibingen, Federal Republic of Germany
- El Hassan, Ahmed M. (1981) Environmental consequences of open grazing in Butana, Institute of Environmental Studies, University of Khartoum, Sudan
- El Tayeb, Gala El Din and Lewandowski (1983) Environmental degradation in Gedarif District, Institute of Environmental Studies, University of Khartoum, Sudan
- Government of Gedarif State (1997) Livestock Corridors Act, Gedarif
- Government of South Kordofan State (2001) Organization of Agriculture and Grazing Act
- Government of North Kordofan State (1998) Corridors Act, 1998
- Government of North Kordofan State (2003) Corridors Act, amendment 2003
- Harrison, M.N. and J.K. Jackson (1958): Ecological Classification of the Vegetation of the Sudan. Forest Bulletins, New Series No.2, Forest Department, Sudan
- North Kordofan Ministry of Agriculture and Animal Resources (2008) Natural Resources Management Project, Western Sudan, Survey of the Western Livestock Corridor
- North Kordofan Ministry of Agriculture and Animal Resources (2008) Natural Resources Management Project, Western Sudan, Survey of the Eastern Livestock Corridor, Obied
- Police Headquarter, Central Gedarif Rural Locality, the Executive Office (2008) Annual Plan for the entry and exit of the nomads from Butana
- Smith, A.B. (1992) Origin and spread of pastoralism in Africa, Annual Review of Anthropology vol 21, Cape Town
- SOS Sahel U.K (2006) Final Report on Route demarcation, South Kordofan State
- SOS Sahel U.K. (2007) Route mapping and demarcation 2005-2006i, North and South Kordofan States
- SOS Sahel U.K. (2007) Community Development Fund Files, Obied
- Suliman, M. M (1987): Baseline Survey of Kordofan and Darfur, Khartoum
- Taha, Mohy Eldden (2007) Land degradation and conflict in Sudan, Workshop Paper, Resource Based Conflict Network in the Horn of Africa, Uganda
- UNEP (2006) Annual pastoral migration routes in Sudan, map

List of people met and consulted/interviewed

North Kordfan		
1.	Dr. Hamid Adam	Deputy DG, Ministry of Agriculture
2	Faisal Fasab Al Rasoul	Naural Resources Adm, MoA
3	Samia Mohamed Ahmed	DG, Range and Pasture Adm
4	Suliman Haroun Suliman	SOS Sahel U.K
5	Babikir El Amin	Pastoralist Union
6	Hassan Al Mak	Omda of Kazgil and member of Farmers Union
7	El Ftih	Voluntary Ass for N Res, Um Simeima Village
8	Abdel Razig Ahmed	Policeman, Um Simeima Village
9	Ali Al Nour Ali	Sheikh, Al Tikeilat Village
10	Abdelatif Mamoun	Range and Pasture Adm
11	Dr. Babikir Ahmed Adam	Support to livestock Production and Marketing
12	Aisha Hassan	Support to livestock Production and Marketing
13	Osama Osman	Support to livestock Production and Marketing
14	Aisha Moh Fadl	Range and Pasture Adm
15	Hassan Faradi	Support to livestock Production and Marketing
16	Ahmed Al Sayed	Western Sudan Natural Re Project, IFAD
17	Faiza Salih	Western Sudan Natural Re Project, IFAD
18	Abbakar Mohamed	Sheikh, Badoga Village
19	Abdel latif	Sheikh, Warshal village
20	Amal Hamid	Western Sudan Natural Re Project, IFAD
South Kordofan		
21	Sheikh Mohamed	Sheikh, Nabag South Village
22	Adam Mohamed	Community member, Nabag South Village
24	Hamad Moh El Amin	Community member, Nabag South Village
25	Hamad Nasir	Head of Popular Committee, Nabag North Village
26	Hussein Hamid	Member of popular committee, Nabag N Village
27	Nabag North Village	16 community members
28	Abu Hania Saeed Ismail	Sheikh, Hagiz Saeed Village
29	Hagiz Saeed Village	13 community members
30	Kamal Omer Balal	Chair of Village Council, Mashisha Village
31	Mashisha Village	17 community members
32	Mohamed Haroun	Director of Mechanized Farming, Habila
33	Abdin Abdalla	SOS Sahel
34	Hasan Mukhtar	Mechanized Farm owner, Habila
35	Ahmed Al Mabrouk Ali	Mechanized farming Adm, Habila
36	Hamad Agabna	Community member, Habila
37	Salman Adam Salman	Head Of Pastoralists Union, Sheikh of Safa Village
38	Osman Sineen	Teacher, Habila
39	Yousif Ibrahim	Director, Habila Administrative Unit
40	Abdel Mageed Yahya	Lecture, Delling University
41	Mohamed Abdelgadir	Director of Peace Centre, Delling University
42	Executive Office	Delling Locality
Gedarif		
43	Dr Mohamed Osman	DG, Ministry of Agriculture and forests
44	Amna Mahmoud Moh Salih	Range and Pasture Adm
45	Samia Mohamed Ibrahim	Director, Higher Council for Environment and NR
46	Al Tigani Suliman Nouh	Political Advisor to Governor and head of Masar
47	Mohamed Ali Abdelrahman	Undersecretary, Farmers Union
48	Bashir Abbakar	Mechanized farm owner, Shuwak
49	Al Nour Mohanmed Osman	Masar, Pastoralists Union
50	Hassan abbou	Pastoralists Union
51	Mohamed Omer	Pastoralists Union
52	Samaha Shakir	DG, Range and Pasture Adm
53	Dr. Gibreel Ahmed Abdalla	DG, Ministry of Animal Resources and Fisheries