THE INTRODUCTION

1. Problem Statement:

Darfur is one of the most important livestock concentration regions in Sudan and no data available in livestock situation in general since last census in 1976. The ownership and rearing of livestock is really a problem in some communities due to the ongoing conflict but there is no data to confirm (Dawoud 2009).

Each conflict presents a different set of challenges and issues in different sectors of livestock which exert influences on population and growth of livestock, the dynamic of livestock ownership, the migratory routes, water resources, pasture and the diseases control. The conflict that threaten livestock in a given region range from slow onset (chronic) to rapid onset (acute), to complex. The populations most affected may be pastoralists, small farmers with minimal livestock holdings, or those who manage mixed farming systems. Animal mortalities from malnutrition increased because fodder is insufficient or inappropriate. Endemic diseases increased when herds were mixed at watering points and

weakened animals have low resistance. Livestock deaths might be resulted from disease, floods, landslides, and extreme cold weather can all lead to the rapid loss of animals, wiping out a family's assets in a matter of days or even hours (Dawoud 2009).

The early stages of the conflict were associated with severe depletion of assets, either directly through looting and destruction or indirectly through loss of access to natural and economic resources. Restricted mobility has affected the livelihood strategies of all population groups, as it limits ability to farm, livestock migration, gathering of wild foods, access employment and markets (Young, et al., 2005) Buchanan and Jaspars, (2006). Markets are barely functioning (Buchanan and Abdullah Fadul, 2008). Journeys to obtain firewood, cultivate land or access markets expose civilians to the risk of murder, rape and theft. With the reduction in livelihood opportunities for all groups, competition over resources is fuelling conflict, for example between pastoralists and IDPs over firewood (Young, et al., 2007).

The movement of pastoralists into farming areas has been a constant source of conflict between herders and

farmers. Other conflicts in North Darfur have made the grazing in the far north areas inaccessible for Abbala Arabs, restricting their migratory routes to the Seraif and Kebkabiya areas and leaving them dependent on grazing in West Darfur. A local-level conflict, fought around issues of local power, tribal territories and natural resources, escalated between 1995 and 1999, leading to the declaration of a state of emergency and a period of devastating losses for the Masalit (Young et al 2007).

The pastoral communities are in a major crisis today, they are economically, politically, and socially marginalized. There are misconceptions concerning their lifestyles, production system, culture and traditions. The pastoral development, unfortunately equated to livestock development, has not enjoyed public investment that could produce tangible benefits for the pastoral communities (UNSO/UNDP: 94). This is partly explained by the inappropriate national policies, discouragement of the pastoral mode of production, international disillusionment with current modes of pastoral development coupled with the lack of

successful alternative models of the pastoral development (BEE 2002).

West Darfur state (currently West and Central Darfur) is located between latitude 10’ 90” to 14’ 30” North and Longitude 22’ 30” to 24’ 30” East. It is bordered by Chad to the west and south west, Central African Republic to the south, south Darfur state to the south east and North Darfur State to the north and north east. West Darfur State comprises 15 localities geographically grouped under two corridors: West-west Darfur corridor and East-west Darfur corridor. The west-west Darfur corridor includes seven localities (Geneina, Habeela, Beida, Forbranga, Kerienik, Sirba and Kulbus) while the Central Darfur State consists of eight localities (Zalingei, Nertiti, Rokerwo, Azum, Wadi Salih, Mukjar, Bendesi, and Um Dukhum). The corridors have significant agro-ecological; socio-economic and political differences that influence livelihoods of the inhabitants. The population of West Darfur State is 1.3 million out of which 48.9 % are males, 51.1 % are females and 52.8 % are youth under 16 years (2008 census).

The main ethnic groups are Fur (Zalingei, Jebel Marrah, Wadi Salih and Mukjar), Messalit (Geneina, Habillah), nomadic Arab tribes distributed in (all localities), Aringa (Sirba) and Gimir (Kulbus). 80% of the populations are Agro-pastoralists, 15% are nomadic pastoralists and 5% are involved in other activities like trade and formal employment. Main activities are agriculture and livestock. Livestock population in west Darfur is estimated to 11,933,599. The state has very strong trading ties with Chad and Central African Republic (FAO 2004).

West Darfur State has a greater natural resource base and endowments. There are six livelihoods groups in West Darfur with different levels of vulnerability to the potential natural and manmade hazards. IDPs in the camps, IDPs mixed with resident communities, returnees (cross boarder or IDPs), and Chadian refugees, resident communities (crop farmer and pastoralists) (FAO 2010).

The conflict in west Darfur started in August 2003 in Mukjar locality, Wadi Salih and Kulbus and gradually spread throughout the state. In September 2003, people started to concentrate in larger towns leaving their

assets, especially crops and livestock as the situation was that they could not move with their properties. It is estimated that about 200,000 people crossed to Chad as refugees while another 500,000 were relocated as IDPs in large towns such as El Geneina, Habillah, Foroboranga, Garsila, Zalingei, Mukjar, Um Kheir. etc. Some communities remained in their villages but still many lost their livestock due to looting and at the same time had to accommodate IDPs from neighboring areas especially in sharing with them food and shelter (FAO 2008).

Since the start of the conflict, most agro pastoralists have been confined to IDP camps with very limited access to land for cultivation purposes. Lack of access to land and water has resulted in limited production of cereal crops and now most of IDPs and to some extent some non IDP population now depend on food aid and other humanitarian assistance (FAO 2004).

El Geneina is the capital of West Darfur State. The Masalit, who are sedentary farmers, are the largest tribe and are concentrated in Dar Masalit in the western half of the state. To the south are the Sinyar, and to the north

are the Erenga, Misseria Jabal and Gimir. Other significant farming groups include the Maba, Tama, Zaghawa, Daju, Burgo and Marariet. Arab groups include the Turgem, Hottiyya, Otryya, Mahadi and Darok to the north-east of El Geneina. In addition, the northern Abbala camel herders have long used the numerous wadis that cross the state for their dry-season grazing. In Central Darfur, the dominant tribe is Fur tribe within clear distinct Fur hakura, however other tribes living in this corridor some of them are of African origin such as Tama, Masaleet, Zaghawa, Burgo, Gimir, Marasa, etc, who are mostly farmers, whereas the tribes of Arab origin are Rizeegat with their different subgroups, Benihalba, Mahadi, Hutya, Tergem, Benihussein and others; these are mostly animal herders nomadic/agro-pastoralists. Central Darfur State is the most affected by the conflict, more people particularly Fur and Zaghawa were displaced and now living in IDPs camps. There are tensions always occur within this corridor over the natural resources, particularly between the nomads(mainly Arabs) and the resident farmers which usually solved by intervention from the local authorities

in partnership with the native administration by employing the native administrations rules (customary aws) and traditions such as Rakuba agreements and Judia councils among the different tribes (FAO 2009).

Grearet Darfur and Greater Kordofan, account for one-third of Sudan's total livestock resources. The bulk of the country's live sheep and camel exports, and cattle and sheep for domestic consumption are sourced from these two regions. Federal Ministry of Animal Resources (FMoAR) figures showed that 18 % of Sudan's TLUs are from the Greater Darfur region. Livestock species in Darfur include camels, cattle, donkeys, goats, horses and sheep. According to FMoAR (2001), Darfur accounts for 21 % of the cattle, 22 per cent of the sheep and goats, 24 % of the camels, 31 % of the donkeys and 63 % of the horses in Sudan (Dawoud 2009).

Young, (2005) reported that in Darfur, livestock production is interspersed with crop production resulting in pastoralist, agro-pastoralism and crop farming cross interests. Economic activities in turn differ (overlapping in some cases) with the varying agro-ecological zones. The Baggara (cattle rearing) and the

Abbala (camel rearing) are the two main pastoral groups of Darfur. They are traditionally nomadic but are increasingly becoming agro-pastoralists. The majority of these groups claim to be of Arab descent but there are also non-Arab Baggaras and Abbalas who, by adapting similar livelihoods, have assimilated with them over time. Such groups include the Fellata and Gimir in the Baggara group and the Zaghawa and Meidobs of the Abbala. The distribution of the Baggaras and the Abbalas within and outside Darfur related to the particular needs of the livestock species they reared amongst other things. Thus, the Abbalas inhabited the semi-arid north and the Baggaras occupied the higher precipitation areas in the center and the south (Dawoud 2009).

Darfur has low and variable rainfall, ranging from less than 50mm in the northern desert to approximately 200mm around El Fasher, 300–500mm in Geneina and Nyala and up to 800mm or more in the south and in Jebal Mara. Rainfall has been lower in recent decades than previously, and dry years have become more frequent (Bromwich 2008).

Rain normally falls in four months of the year, so there is a large variation in the availability of water between the wet and dry seasons. This is exacerbated by the limited storage provided by the Basement Complex geology that underlies most of the more populous parts of Darfur. The Basement Complex rocks are dissected by valleys with alluvial deposits that are comparatively water-rich. Typical well yields in Basement Complex geology are 0.1 to 1.0 liters per second, as against 1–20 liters per second for alluvial areas (Tearfund 2007). This makes the wadi areas good for agriculture, in contrast to the wide rangeland on higher ground, which lies on Basement Complex. During the dry season, livestock migrates off the rangeland to the wadi areas for shade and to feed on crop residues. A variety of longer-distance migrations also take place, including from the wet season rangelands in the north to the less arid south for the dry season. This system requires a high degree of cooperation between pastoralist and farming communities to negotiate access for transhumant herders and to safeguard farmers' crops from grazing animals. A wide range of traditional rules exist, for the

management of long-distance routes, access to water sources at wadies through vegetable gardens, for the timing of different shepherding rules and for dispute resolution (Bromwich 2008).

In arid and semi-arid areas, rainfall is the most significant determinant of the amount of vegetation, so the variability in rainfall and the poor storage of groundwater are reflected in the variability in vegetation both spatially and temporally in Darfur. Whilst this is most pronounced between the wet season and the dry, considerable variation exists between one year and the next. This makes Darfur's subsistence livelihoods additionally uncertain (Bromwich 2008).

2. Objectives of the Research

There are two types of objectives as far as the problem is concerned; one is overall considerably, while the others are specific.

2.1 Overall Objective

The main objective is to find out the change in livestock populations and ownership and analyze the evolving vulnerability and dynamics of pastoralist livelihoods in West Darfur in relation to the impact of conflict, in order

to reach a common understanding and raise the awareness about such issues to promote their inclusion in relevant national and international efforts for peace building and recovery.

2.2. Specific Objectives

The study has the following Specific objectives:

- To study the impact of conflict on the general situation of livestock in West Darfur.
- To study the impact of conflict on total population of livestock.
- To study the livestock ownership and the problems associated with, in regards to the effects of conflict.
- To study the dynamic of pastoralists livelihood in relation to impact of conflict.
- To study the vulnerability due to ownership of livestock in the area.
- To find out the changes in livestock distribution, livestock migratory routes, the areas of livestock concentrations, pasture and water resources.

3. The importance of the research/Justification

Darfur conflict exerted great impact on livestock and livestock related livelihoods in West Darfur. Livelihoods are integrated to the causes of conflicts in Darfur and in turns conflict has had a devastating impact on livelihood. Thus, addressing livelihood issues is crucial to any lasting local or international solutions to the conflict (Young et al...2005).

The efforts to support and protect livelihood must consider the wider political economy of conflict, while peace building and wider peace processes must be based on a full understanding of the way in which livelihoods and conflict impact each other (Young et al...2009).

Pastoralists inhabit sparsely populated semi-arid areas far from national capitals and concerns of governments. They are often located in politically sensitive border areas and may cross international boundaries at will. Their nomadic lifestyle and independence generate suspicions on the part of government, whose policies frequently neglect, marginalize, or alternatively try to settle pastoralists to bring them within the government reach. This process of sedentarization is often imposed

by force (Gilbert, 2007). Governments have systematically favored development of agriculture and settlement at expense of pastoralism and nomadism (Bovin and Manger, 1990). A government committee established by the Minister of Interior in his capacity as the president's representative on Darfur - has identified natural resource conflict as one the root causes of the Darfur conflict. Its report noted that "the committee attributed the current conflict to many factors, including competition between various tribes, particularly the sedentary and nomadic tribes over natural resources as a result of desertification" (International Commission of Inquiry, 2005, p.57, para.203).

The Darfur conflict root causes, influences, and the consequences on different aspects and its impact on livestock situation and the related livelihood dynamics of pastoralists is very complicated and need more efforts to carry out in-depth analysis through concrete researches for more clarifications for the general situation.

4. Hypotheses

The outbreak of conflict in Darfur in 2003 has badly affected the livestock sector. (The animal species and animal breeds in Central and West Darfur were not fully understood is there any foreign blood breeds or any animal breeds improving activities conducted in the two States?). There was widespread looting of livestock in the early years of the conflict, affecting traders as well as producers, so the livestock economy of Darfur has been immensely affected by the current conflict and there is a reduction in livestock population due to the ongoing conflict. Also Darfur conflict, beside the livestock population and situation, has exerted great impact on livestock ownership and the livelihoods of pastoralists as well as their social status.

The sedentary system of pastoralism was mostly affected by the existing conflict. The stock-keepers have been displaced and lost most of their stock. They entered the secured towns and settled in temporary houses or camps. Their animals are kept loosely so most of them have been lost either by theft or by armed robbery. Numbers of animals in these towns increased

and thus resulted in overgrazing around these towns (Amin, 2009).

The animal routes have been closed in front of the migratory herds particularly in the areas under the control of the opponents. Grazing resources have been burnt up. Movements of animals to the local markets were curtailed. In the most affected areas, livestock markets were threatened by the armed robbery. Sales in these markets have been dropped largely. Stock routes from Darfur to Omdurman were also unsecured.

Due to the current conflict the raiding and looting is significantly increased, some owners have lost whole herds, others migrated with their herds to the town boundaries and even camps where they are facing difficulties in accessing good pasture. The veterinary services significantly reduced due to insecure situations as well as the very week livestock yield in terms of animal production (Young, 2005).

Veterinary services are highly affected by this conflict. A considerable number of veterinary stations have been closed. Vaccination programs were not executed as designed. However, the apparent improvement in the

veterinary services was due to the limited assistance provided by NGOs in the areas out of the reach of the veterinary authorities.

The decline in livestock production and productivity is not surprising given the deaths of tens of thousands of people, the displacement of 1,600,906 persons and 419,691 affected residents *(*OCHA, 2004*)*. Thus the animal production in general was negatively affected by the conflict.

5. Area and period of the study

5.1 Period of the research

The study was conducted during the period from 2003 up to May 2014 in Central and West Darfur States in the fifteen localities (Genenina, Habeela, Forbaranga, Sirba, Kulbus. Kereinik, Baida, Zalingei, Nertiti, Azum, Wadi Salih, Bendesi, Mukjar, and Um Dukhun)

5.2 West Darfur State

West Darfur state is one of the five greater Darfur states; it lies at the far western Sudan bordering the republic of Chad from the west, North Darfur state from the north and Central Darfur from the east and south. The capital

of the state is Geneina town. West Darfur state comprised of eight localities of Kulbus, Serba, El Geneina, Kerenik, Habila, Forubranga, Biada and Siliah (Jabel Moon). West Darfur state areas were inhabited mainly by the Masaalit ethnic groups (sedentary farmers) and other sedentary and agro-pastoralists ethnic groups such as Gimir (originally from Kulbus), Fur, Dajo, Bargo, Hausa, and Zaghawa. There were also pastoral groups who have co-existed with the sedentary agro-pastoralist communities along the corridor since time immemorial. There were also nomadic ethnic groups from elsewhere who also frequented the area in search of pasture and water for their animals the Beni Halba, Taisha, Rezigat (Maharia) and Misseriya originating from South Kordofan and chad. The sedentary and agro-pastoral ethnic groups and pastoralists (Non-Arab and Arab decent groups) before the Darfur conflict had close social and economic ties. The Darfur conflict widened the gaps and created rivalry and enemity attitudes between different ethnic groupings (Non-Arab and Arab decent ethnic groups). The social fabric of peaceful co-existence among the ethnic groupings was eroded and socio-economic inter-

dependencies and inter–communal interactions restricted. High incidences of localized insecurity along the entire corridor, concentration of returnees and IDPs areas perceived safer are causing human induced environmental degradation (overgrazing, overexploitation of environmental resources for shelter construction and fuel wood harvesting/charcoal production). The mass deforestation is resulting in mounting resentment among host communities who believe that both returnees and IDPs are competing over resources which do not belong to them. The mounting pressure over environmental degradation could spark violent behavior or could relapse in to another form of conflict. Besides the IDPs and hosting communities, further pressure is being exerted on the forest resources due to over grazing, logging of trees for timber, shelter construction, charcoal making and fire wood harvesting (DCPSF, 2011). Besides displacements, the conflict in El Geneina- Zalingei corridor has exacerbated competition over scarce natural resources and animal concentration in Kerenik (dry season permanent water source) area. Although Kereink residents are mainly sedentary and

agro-pastoralists (Massaliet Tama, Bargo, Misseriya Jabel, Fur, Darouka, Gimer) they have witnessed increasing competition over the water sources after the conflict. Animal concentration leads to water resource conflict between farmers and pastoralists/nomads (Misseriya, Rezigat and Mahada) and also crop /farms destruction by migrating animals. Resource conflicts over water are so frequent and have been exacerbated by recurring droughts affecting the northern pastoralists and nomads (DCPSF 2011).

The sour relationships between the different livelihoods groups (Farmers and pastoralists groupings) created by the conflict has disrupted the old age traditions of peaceful negotiation and dialogue over access to natural resources. In Sanidadi areas conflict over water among the Darouk and Gimer witnessed in 2007 ethnic groups (agro-pastoralists) resulted in 80 persons losing their lives, lootings of animal and burning of villages. In the last 5 years conflicts over resources along the corridor is engulfing same livelihoods pastoralists and pastoralists (Same groups). A Similar conflict was between Misseriya from Sanidadi area in the south east corridor and Rezigat

in 2010 (Arab decent ethnic groups). Accessing most local markets by both livelihoods groups (farmers and pastoralist) have been a big problem because people fear of being attacked by the other group yet, the pastoralists need the farmers to buy cereals and farmers need animal products from the pastoralists (DCPSF 2011).

5.3 Central Darfur State

Central Darfur State is located in the central parts of the greater Darfur region and consisted of eight localities namely (Zalingei, Azum, Nertiti, Rokerro, Wadi Salih, Bendesi, Mukjar and Um Dukhun). The area is characterized by very fertile land along Wadi Azum which flows from Jebel Marra Mountain through Abata, Dankoj and Tululo to Chad. The area is rich in terms of agriculture production with relatively good rainfall, fertile alluvial soils, well endowed with good pasture, forages and palatable browse shrubs for animals and attracts both pastoralist and camel herding groups from the northern Arab decent groups (DCPSF 2011).

Zalingei heartland of the Fur ethnic group and the area was divided into three main dars/homesteads Dar

Tilenge (Southern), Dar Tobola (West) and Dar Kernne (Northern) of the present Zalingei. Each dar had its own native administration or the customary leadership in charge of maintaining peace and order including collecting taxes. There are other non-Arab decent groups such as the Burgo, Tama, Zagawa who practiced farming and Arab decent ethnic groups who practiced nomadism as a way of life, Bani-Hussien, Nawiaba, Misseriya, Khozam, Abala, Tarjam, Jalul, Mahriya, Bani-Halba. The different ethnic groups have symbiotic relations, shared and negotiated over access to resource peacefully (DCPSF 2011).

Central Darfur State have three major traditional animal migratory routes. The first and the longest is Kebkabiya migratory route which stretches beyond Kebkabiya, North Darfur. It passes to the east of Zalingei in Jebel Joa, Nertitei, Khoramla and Koreli Tereige to Mukjar areas. It branches into two, to the east of Um Dukhun, Abujaradil – Magan areas to Chad and the other to South Darfur from Kubung and continues to Central Africa Republic. The second starts beyond west Kutum passes through Sereif to east of Zalingei, Saga-Naga area, Wadi

SAlih, Gasila Bendisi and west of Um Dukhun to Chad. The third route is from Wadi Abuaradeiba from Kulbus (east of Kulbus area) passes through Kerenik , Azerni and Sanidadi , Rosei , Jbon and, Habila to Chad. For decades these migratory routes have “a flash point” for conflicts between pastoralists and farmers (DCPSF 2011).

After the onset of the wider Darfur conflict on 2003-2004 Central Darfur was emptied and completely devastated by counter-insurgency, the predominantly Fur farming population were driven out of their villages and became internally displaced persons in camps. The farmers and agro-pastoralists displaced had their livelihoods strategies disrupted. Long distance to farms and insecurity has hindered access to farming activities and claims of land occupation by other Arab decent ethnic groups. Incidences of constant threats of attacks, damage of crops by livestock or loss of harvest are some of the factors that have reduced agriculture and livestock production.

Besides displacements, the conflict has exacerbated competition over scarce water resources and animal concentration in the area usually characterized by high

animal population because of traversing major livestock migratory routes. The eastern and north eastern parts of Zalingei areas of Dankoj, Hela Biada and Tereige villages are flash points in terms of inter-ethnic conflicts related to water. Blockage of some routes due to various socio economic, political interests and insecurity created by the conflict has further contributed further to conflict. Blocked migratory routes by farmers to prevent animals migration leads to fierce tensions between farmers and pastoralists and strains the relationships. Each year (October/November) pastoralists/nomads migrate towards the south before farmers complete the rainy season harvest leading to crop/farm destruction by animals hence, the conflict between farmers and pastoralists.

The conflict has also exacerbated tensions and deep frustrations between Arab decent ethnic groups themselves because of the increasing competition over scarce common property resources (pastures and water) and stressed livelihoods options. Conflicts among pastoralists (Arab decent ethnic groupings) have also been causing waves of displacement, for example in

2006 the conflict between camel herders (Rezigat) and Hotya (cattle herders) resulted into the displacement of Hotya to the Zalingei camps. The 2010 conflict between the Rezigat and Misseriya led to the displacement of Misseriya to the camps as well. There is increasing incidences of conflicts between pastoralists (pastoralists and nomads) which further limits mobility and restrict the long distance migration to areas with good pastures. Conflicts between Rezigat and Habbania and Salamat (Arab Decent ethnic groups) contributed to the disruption of the normal livestock movement and access to grazing areas. All these factors have forced pastoralists to stay around Zalingei areas and other parts of South Darfur outside their original homeland.

Expansion/encroachment of farming plots to former animal grazing areas and traditional livestock migratory routes. Pastoralists that have lost animals are adopting farming to help build up stocks once again, and farmers, because of low production and productivity are encroaching to grazing areas. These incidences have been fuelled by the influx of IDPs concentrating in and around Krenek, Umtujok, Morni and Geneina putting

more pressure on land which could further act as "multiplier factor" for the conflict. The expansion of farming activities to the wadi areas, which are good for agriculture, in contrast to the wide rangeland on higher ground, is also a cause of conflict between the livestock herders (migrating into the area) and farmers. Areas like Abata, Dankoj and Hella Biada always experienced inter-ethnic conflicts (farmers and pastoralists) as a consequence of competition over scarce resources mainly pasture and grazing lands and water from Wadi Azoom shared with farmers (winter seasons) and pastoralists.

Increased competitions over limited livelihoods resources have seen the different ethnic groups adopt unsustainable coping mechanisms (cutting down trees for charcoal, food fuel and shelters) that have contributed towards deterioration of the environment and further vulnerability. The conflict assessment highlighted environmental degradation as a critical factor that has exacerbated these tensions and increased the severity of these conflicts. As resource scarcity increased and livelihoods shocks become more

pronounced conflicts have become even more frequent because animal owners concentrate in areas with pastures and water while avoiding the over degraded areas. Herders migrate to places that are less degraded leading into conflicts between the farmers and pastoralists/ nomads over resource rights (access and user rights) and also crop destruction by migrating animals (DCPSF 2011).

6. Methodology

This study is conducted in West and Central Darfur States, in fifteen localities (Genenina, Habeela, Forbaranga, Sirba, Kulbus. Kereinik, Baida, Zalingei, Nertiti, Azum, Wadi Salih, Bendesi, Mukjar, and Um Dukhun) during the period from January 2011 to March 2014.

The methods for data collection in this study were descriptive participatory approaches (Participatory Rural Appraisal PRA & Rapid Rural Appraisal RRA) through which the questionnaires will be developed of questions covering animal health, animal husbandry, animal protection, animal production and the dynamics of

livelihood trends within the different livelihood groups in West Darfur for household level and community level, so two or more check lists will be developed for data collection at household level, group discussion and/or key informants levels.

Data will be collected from the pastoralists, agro-pastoralists, sedentary herders and the IDPs within the 15 localities of West and Central Darfur States. The data collected will be analyzed using SPSS 16 (2010) program and frequencies will be obtained for the whole data, and through cross tabulation the numerical data and figures will be estimated.

7. Research Structure

The structure of the research was consisted of the introduction and seven chapters. The introduction consisted of the research problem statement, importance, rationale, and objectives of the research (main and specific objectives) also include the hypotheses, duration, area and the methodology of the research.

Chapter one is handling the issue of conflicts and livestock in area of study which include concept of conflict, conflict in Africa, conflict in Sudan, conflict in Darfur then livestock in Sudan its resources and constraints and livestock in Darfur.

Chapter two handled the peace culture and the pastoralism as style of life it include the culture of peace and conflicts, global culture of peace, history of culture of peace, culture of peace and peace building, pastoralism in a global context and pastoralism and natural resources conflicts.

Chapter three is about pastoralists' livelihoods and include pastoralist livelihoods in Africa, livelihoods in Darfur, assisted livelihoods in Darfur, livelihood zones, pastoralist livelihoods in Darfur, the diversification of pastoralist livelihoods, pastoralists' livelihoods from marginalization to maladaptation and government mobilization and militia recruitment.

Chapter four was specified for some examples of impact of conflicts on livestock in some countries and regions

includes Plateau state of Nigeria, Bauchi State of Nigeria, Kotido district in Uganda and Wajir District in Kenya.

Chapter five deals with the results and discussions of the research and finally chapter six is about conclusions and recommendations.

CHAPTER ONE

CONFLICTS AND LIVESTOCK

1.1 Concept of conflicts

Conflict is an expressed struggle between at least two interdependent parties who perceived incomplete goals, scarce resources and interference from other parties in achieving their goals. Conflict is therefore the result of differences, not the cause of them (Peter, 2003). Conflicts over natural resources may have class dimensions, pitting those who own the resource against those who own nothing but whose work makes the resource productive. The types of conflicts experienced one way or another in the society daily life are: relationship, information, structural based conflict, value and interest based conflict (Ajuwon, 2003).

1.2 Conflicts in Africa

Livestock ownership implies a certain degree of mobility and access to quality natural resources. In securing these conditions, livestock owners frequently encroached upon land otherwise especially used for agricultural purposes.

Conversely, livestock migration routes often offer quality cultivation soil (because of manure), and segments of these routes are also increasingly cultivated by farmers (examples include parts of Darfur in Sudan and southern Niger) (Simpkin, 2005). Where climate is propitious and land occupation is scarce, this cohabitation poses little problem; where available quality resources shrink (due to erratic climate or land tenure issues, for instance), on the other hand, it often leads to friction, even overt conflict. This competition in turn increased the need, for both agriculturalists and pastoralists, defending their assets (Simpkin, 2005). Burton and Duke (1990) reported that pastoral conflict as consisting of three different issues like management problems, disputes and conflicts. Management problems are arising from differences between persons sharing the same goals and interests which required problem solving and improved communication and personal interaction. Disputes are requiring a settlement process, such as judicial procedures, negotiation and bargaining. Conflicts are arising from cultural differences or competition over natural resources. These require

resolution processes based on in-depth knowledge, and sometimes the assistance of a third party. Conflict in pastoral areas is often associated with their marginal location and weak state penetration. Pastoralists are seen as not only physically distant and occupying peripheral areas, but also as politically and culturally marginal. Their presumed distance from modern institutions and from the controlling action of the state is often accepted as a self-evident explanation for widespread violence. The situation is much more complex and closer analysis shows that the colonial and post-colonial state has had a direct role in increasing the insecurity of pastoral communities. For example, in Kenya, several shortcomings have characterized previous government responses to insecurity in the arid areas (Mwaura, 2005).

1.3 The Conflicts in Sudan

Sudan is a typical example of the consequences of a long-term, chronic war. With only 11 years of peace (from 1972-1983) since independence in 1956 more than 2 million people reported died in conflict, 400 thousand are refugees and 3-4 million are internally displaced (IDPs) (Simpkin, 2005). The main causes of the various

conflicts in Sudan are social and economic disparities between regions, religious, ethnic differences and natural resources (mainly oil) which led to demands for autonomy and equality. In the past the war in Sudan had been seen as a “north-south” issue but in actuality there are many smaller conflicts and the situation is more of a “centre-periphery” conflict (North vs. South War) (Simpkin, 2005). The government and the SPLM are the main protractors in the original “north-south” war, with a further 25 government aligned militias in the Southern Sudan Defense Forces (SSDF). These militias remain outside the Naivasha Peace Process initiated in late 2003. Causes and details of the conflict and progress on the peace talks will not be included here, but in terms of the relation between livestock and conflict, the impact is immense. There are also other ongoing conflicts (e.g. Darfur) either between the Government and other rebel groups on various fronts, or just between different ethnic groups. Militias from the disputed oil-rich “Three Areas” in the north (Abyei, Nuba Mountains and Southern Blue Nile) have been fighting alongside the SPLA since the mid-1980s, and tension persists in these areas. In

Abyei, much displacement resulted from the conflict; tension exists mainly between the Ngok Dinka and Misseriya Arabs, who traditionally were at peace through a series of local peace treaties and were all governed from north. Both the Nuba Mountains and Southern Blue Nile accommodate a mainly Muslim population of African origin who are fighting due to perceived neglect by the Government, and the spread of large scale, mechanized farming. These developments resulted in the displacement of traditional farmers and the affected population is between 1.3-1.6 million in Nuba Mountains alone (Simpkin, 2005)

1.4 Conflicts in Darfur

Fighting in Darfur occurred intermittently for at least thirty years. Until 2003, it was mostly confined to a series of partly connected tribal and local conflicts. In early 2003, these hostilities escalated into a full-scale military confrontation in all three Darfur states, which also frequently spills into neighboring Chad and the Central African Republic (UNEP, 2007). The ongoing Darfur conflict is characterized by a 'scorched earth' campaign carried out by militias over large areas,

resulting in a significant number of civilian deaths, the widespread destruction of villages and forests, and the displacement of victims into camps for protection, food and water. Over two million people are currently displaced, and casualties are estimated by a range of sources to be between 200 and 500 thousands (UNEP, 2007). Darfur has 6-7 million people, mainly, farmers, agro-pastoralists and Pastoralists. The conflict has intensified in the area through 2003 resulting in the massive displacements of population. Although violence subsided somewhat in 2004, sporadic attacks and banditry continued, forcing most residents to remain in camps or within their political and/or tribal boundaries (Simpkin, 2005).

1.5 Livestock in Sudan

Young (2005) stated that Sudan is the leading livestock exporting country in the region and livestock used to generate 20% of the national foreign exchange earnings before the discovery of oil. Darfurs' contribution to the livestock export trade and for the domestic consumption of meat has always been significant. For example, before Darfur was exporting 30 thousand camels to Libya and

about 50 thousand camels to Egypt annually. In economic terms, livestock is the primary target of this conflict. Various sources suggested that the non–Arab population lost between 50-90% of their livestock due to the government armed forces. Solving the livestock issues are central to finding lasting solutions to the problems in Darfur. Darfur's economy has been seriously eroded and the traditional backbone of the economy – livestock trade, is failing fast (Young, 2005).

Simpkin (2005) reported that the last aerial census of livestock in Sudan was in 1976; all livestock population estimates are "projected populations" based on estimated annual herd growth rates since 1976. Obviously it is extremely difficult to predict herd growth rates confidently in such a large country that, in addition to past and present conflict, experiences frequent drought, flood and epidemic. Sudan has the biggest population of cattle and sheep in Africa. 90% of the population is involved in agricultural or livestock based livelihoods. In the north the livestock owners are mixed nomadic pastoralists and agro-pastoralists; in the south the majority is agro-pastoralists. In the south, movement

is transhumant: moving into the floodplains during the dry season from October/November through to March/April when the rains start, and herds move back to the villages, fertilizing the agricultural fields in route. The incidence and severity of malnutrition is higher in areas affected by drought and floods than in areas affected by conflict, because relatively more financial and human resources tend to be focused on conflict affected areas.

Livestock in Sudan served the following purposes: the provision of milk, meat, butter, transport, hides and skins, a source of ploughing, pride and status, capital savings, insurance, cash, marriage and funeral rites, fuel, fertilizer and as an export market commodity. In northern Darfur, livestock owners are reported to be changing from camel to sheep rearing because of market constraints. It should also be noted that the climate and production conditions are very different between the geographic norths and south. The changing role of livestock will become apparent once sustainable peace is achieved, and the use of the Household Economy Approach (HEA) commonly used by many non-

governmental organizations in Sudan will clearly show the changes (Simpkin, 2005)

1.6 The Livestock Resource in Sudan

Livestock production provides livelihoods for 20 per cent of the population and remains one of the major resource bases in Sudan. The livestock population in Sudan was 139 million heads of animals (39, 48, 41 and 3 million heads of cattle, sheep, goats and camels respectively). These figures are equivalent to 52 million tropical livestock units (TLU). The annual growth rate in livestock population are; 3.2 % for cattle, 3.3 % for sheep, 2.5 % for goats and 2.3 % for camels, despite an estimated off- take rate of 16 % for camels, 37 % for goats, 45.7 % for sheep and 20 % for cattle(FMoARF 2002). The reported annual growth estimate showed that Sudan has the highest livestock population in Africa. Livestock is reared in all the 26 states of Sudan, although camels are not reared in some southern States. However, Blue Nile, El Gedaref, El Gezira, the Greater Darfur, Greater Kurdofan, White Nile and Sennar states account for 56 per cent of Sudan's TLUs (52,504,000). Livestock used to generate 20 per cent of the national foreign

exchange earnings. However, after the discovery of oil, this contribution has declined to below 8 per cent (Young, 2005).

Livestock production in Sudan is predominantly pastoral and a significant proportion of the livestock population is owned and managed by this sector. However, export demanded production, particularly of sheep, and the growth in demand for local consumption of red meat is gradually gaining importance in the agro-pastoral sector and by those who invested in livestock (Young, 2005). Moreover, she reported that livestock and meat exports from Sudan are channeled through four routes. Nearly all live sheep and goats (and occasionally racing camels) are exported through Port Sudan. Chilled red meat is exported by air from Khartoum and occasionally from Nyala to various destinations. Exports through these two routes are formal and followed international trade procedures. Live camel export to Egypt is a cross-border operation through Dongola where only part of the export proceeds (amounting to $175/head) is paid in foreign currency and the balance in Egyptian Pounds with which traders import goods into Sudan. Camel export to Libya

is also a cross-border operation but this is considered unofficial. Traders imported goods with the proceeds from Libya. On average, Sudan exported over a million live sheep, about 150 thousand camels (including the Libya route which is not officially accounted for) and less than 10 thousand tons of red meat annually in the last decade except in 2001 due to the Rift Valley Fever (RVF) ban. As such, Sudan also served as a cross-border outlet for camels and sheep from Chad and also for cattle, camel and sheep from Ethiopia and Eritrea to some extent. Sudan's annual export earnings from live animal are between US$100 and $125 million. The bulk of these earnings are from live sheep exports to Saudi Arabia where there are about 1 million Sudanese migrant workers. Despite the conflict in Darfur, export earnings from livestock for the first two quarters of 2004 are close to the 2003 figures (Young, 2005).

Livestock authorities in Sudan continuously search for new markets and recent agreements with Egypt will boost chilled/frozen beef or live cattle exports from Sudan. The annual value of chilled red meat exports is approximately over US$20 million at peak (Young, 2005).

1.7 Current Constraints to the Livestock Sector in Sudan

Constraints to the livestock sector in Sudan are multiple, and largely related to the conflict, either directly or indirectly. The Sudanese breeders faced two types of livestock raiding, depending on whether it is linked to modern violence or more traditional mechanisms *(*Simpkin, 2005*)*. One major factor in the livestock sector is Sudan's position in the global eradication of Rinderpest; this aspect is related to trade and production, but also has further-reaching political implications. Rinderpest is a very lethal and contagious disease that wiped out entire populations of cattle. It is thought that southeast Sudan could be one of the last three remaining foci of Rinderpest in the world; over the last 20 years, much effort and money have been spent on Rinderpest eradication. The Government of Sudan, the Pan African Control of Epizootics (PACE), the Food and Agriculture Organization (FAO) and *Vétérinaires sans Frontières*-Belgium are all involved in Rinderpest eradication in Sudan, and it is recommended at this point that all related aspects be left to the above

specialist organizations, unless the latter request other agencies to assist them *(*Simpkin, 2005*)*. Animal health in general is a major constraint to the livestock sector in Sudan. Before the war livestock vaccinations and treatments used to be heavily subsidized by the government. During the war all livestock facilities were destroyed, and a consortium of more than 17 non-governmental organizations coordinated by Tufts University and the Food and Agriculture Organization carried out all livestock services. Cost, access and drug supply were major problems. In Sudan, dependency on non-governmental organizations and aid has been avoided to some degree: even during the war, livestock services have been associated with cost recovery systems, and payment for services was the norm. Now, the emphasis on the private sector to conduct drug supply is increasing *(*Simpkin, 2005*)*. Also he reported that poor animal health control resulted in less milk production, smaller and weaker animals, lower prices and smaller herd sizes. Trade is also affected with Saudi Arabia because of trade embargoes on livestock from Sudan; this is due to a fear of Rinderpest and Rift Valley

Fever, and the loss of trade animals in route to markets to trypanosomiasis and East Coast Fever. This resulted in lower terms of trade and higher food insecurity and poverty for livestock dependent families.

1.8 Specific Effects of Conflict on Livestock in Sudan

Livestock are often stolen or slaughtered by different militias or raiders, or left to wander without herdsmen or killed by wild animals. Indirect effects include displacement to areas with unfavorable climates or increased risks of disease, and exposure to a lack of pasture, water or health control. At the macro-level, there is a lack of government infrastructure and resources (finances) to support the required livestock inputs and services, and the general population is so impoverished by the conflict that it cannot afford to invest in good management (Simpkin, 2005).

1.9 Livestock Resources and Migration Patterns in Darfur

Federal Ministry of Animal Resources (FMoAR) figures showed that 18 % of Sudan's TLUs are from the Greater Darfur region. With Greater Kordofan, the two regions

account for one-third of Sudan's total livestock resources. The bulk of the country's live sheep and camel exports, and cattle and sheep for domestic consumption are sourced from these two regions. Livestock species in Darfur include camels, cattle, donkeys, goats, horses and sheep. According to FMoAR (2001), Darfur accounts for 21 % of the cattle, 22 per cent of the sheep and goats, 24 % of the camels, 31 % of the donkeys and 63 % of the horses in Sudan.

Young, (2005) reported that in Darfur, livestock production is interspersed with crop production resulting in pastoralism, agro-pastoralism and crop farming. Economic activities in turn differ (overlapping in some cases) with the varying agro-ecological zones. The Baggara (cattle rearing) and the Abbala (camel rearing) are the two main pastoral groups of Darfur. They are traditionally nomadic but are increasingly becoming agro-pastoralists. The majority of these groups claim to be of Arab descent but there are also non-Arab Baggaras and Abbalas who, by adapting similar livelihoods, have assimilated with them over time. Such groups include the Fellata and Gimir in the Baggara group and the

Zaghawa and Meidobs of the Abbala. The distribution of the Baggaras and the Abbalas within and outside Darfur related to the particular needs of the livestock species they reared amongst other things. Thus, the Abbalas inhabited the semi-arid north and the Baggaras occupied the higher precipitation areas in the center and the south. The major Abbala groups in the north are the Meidob and Zaghawa and the dominant Baggara groups are the Beni Halba, Habbaniya and Rizeigat in the south. The livestock migratory routes of both groups followed a general north (wet season) and south/southwest (dry season) direction. Also she added that, few groups also moved from northwest to northeast direction. The Baggara moved south to the Bahr El Arab River and, in some cases, enter the Central African Republic during the dry season. In the wet season, they return to Adila, Ed Daein and Nyala with some groups moving as far north as south of El Fasher Town (parallel 13.5) or westwards into North and West Kordofan. The dry season migration of the Abbalas is towards west or east of the Jebel Mara Mountains. Some of the Abbala groups were moved to Kubum and Rahaid El Birdi areas of Sudan or as

far south as the Central African Republic. Others were moved into the northern fringes of West Darfur, Dar Reizeigat or into Chad. During the wet season, the Abbalas return north, some towards Wadi Howar and others as far north as the oasis of El Altrun in the Sahara Desert. Cattle and camels swap grazing areas during the dry and wet seasons. The dry season grazing areas for camels becomes the wet season grazing area for cattle when camels migrate further north. The wet season grazing areas for cattle becomes the dry season grazing reserves for camels as cattle move further south in the dry season. There are well-established traditional stock routes in Darfur, which have been in use for many years. The stock routes run in north-south direction. Within the national boundaries, these routes extended south into some areas of Kordofan, West and South Darfur and into the northern, southern and western parts of Bahar Gazal. These routes are officially gazetted, have an average width of 100 – 120 meters and run into hundreds of kilometers. Cultivation and campfires are illegal along these routes. However, some of the routes have been altered due to weak law enforcement, expansion of

farmlands and gradual changes for various reasons. A visible outcome of the conflict is changes in livestock migration patterns with potentially disastrous consequences. Increasing hostility between the Arabs and non-Arabs and the control of some critical areas by the SLA along the traditional migratory routes have resulted in the restriction of access for the Jamala (northern Arabs) pastoral population to the wet season grazing reserves (Young, 2005).

1.10 The effects of Conflicts on the Livestock Sector in Darfur

The livestock economy of Darfur has been immensely affected by the current conflict. The decline in livestock production is not surprising given the deaths of tens of thousands of people, the displacement of 1,600,906 persons and 419,691 affected residents *(*OCHA, 2004*)*. However, in such conflicts economic interests usually drive political motives. Easily transferable assets such as livestock (assets on the hoof) provide the economic incentive for deepening and widening conflicts of this nature in pastoral and agro-pastoral settings. The impact of this resource-based conflict (in which the Government

of Sudan has been implicated by international agencies) on the lives and the livelihoods of the civilian population have been enormous. Its implication on the livestock economy has been disastrous *(*Young, 2005). Due to the current conflict the raiding and looting is significantly increased, some owners have lost whole herds, others migrated with their herds to the town boundaries and even camps where they are facing difficulties in accessing good pasture. The veterinary services significantly reduce due to insecure situations as well as the very week livestock yield in terms of animal production (Young, 2005).

The sedentary system of pastoralism was mostly affected by the existing conflict. The stock-keepers have been displaced and lost most of their stock. They entered the secured towns and settled in temporary houses or camps. Their animals are kept loosely so most of them have been lost either by theft or by armed robbery. Numbers of animals in these towns increased and thus resulted in overgrazing around these towns (Amin, 2009). The animal routes have been closed in front of the migratory herds particularly in the areas

under the control of the opponents. Grazing resources have been burnt up. Movements of animals to the local markets were curtailed. In the most affected areas, livestock markets were threatened by the armed robbery. Sales in these markets have been dropped largely. Stock routes from Darfur to Omdurman were also unsecured. Veterinary services are highly affected by this conflict. A considerable number of veterinary stations have been closed. Vaccination programs were not executed as designed. However, the apparent improvement in the veterinary services was due to the limited assistance provided by NGOs in the areas out of the reach of the veterinary authorities (Amin, 2009*)*.

Livestock situation in 2005 has remained similar to 2004—when about 40% of residents reported loss in livestock compared to 90% of IDP households. Few IDPs who have retained some livestock find it difficult to keep it in a camp setting. Many have preferred to sell or have resorted to leave it with host communities. Overall in Darfur, about 47% of the respondents indicated that they own a donkey, six percent cattle, four percent camels, 21% goat and seven percent sheep. Disaggregated data

by IDP and residents showed that the situation was relatively better for resident communities—64% own donkeys compared to 45% for IDPs (EFSNA, 2005)

The percentage of the total livestock species populations in the area of Wadi Salih and Zalingei are 69%, 14%, 14% and 3% for cattle, sheep, goats and camels respectively. Ninety four percent (94%) of the pastoralists reared cattle, while 6% are bred other species. Camels' do not comprise much population in West and Central Darfur. Only 27.9% of the pastoralists possess camels, while 64.7% of the herders reared sheep and 69.3% of them owned goats. Horses are owned by 65.1% of the animal breeders and 67.4% of the herders possessed donkeys. The dominance of cattle species could be due to the fact that; cattle were the most economic animals (Dawoud 2009).

Ninety nine percent (99%) of animal species in Wadi Salih and Zalingei localities are local breeds, while 1% of species are cross breeds, this result could be due to the fact that; no work has been done for improvement of local breeds, however, local breeds are more resistant to the diseases and more adaptable to the environment

than foreign blooded breeds. Approximately, 63.2% of the herders bred animals for meat production, while only 2.8% of them reared animals for milk production and 34% of them bred animals for dual purpose, the high percentage of cattle bred for meat production probably attributed to the fact that the majority of the herders' in the area owned cattle of Baggara type which is for meat production (Dawoud 2009).

The livestock population in Wadi Salih and Zalingei localities was about one and half million heads of different species. While, the current livestock population was estimated to be 948,870 heads of animals from different species in the same localities, in comparison between livestock population before conflict and livestock population at the current time, it was very clear that there is decrease in livestock population in the two localities. The decrease in livestock population during the course of the conflict was due to migration of herders to the safest areas, killing of animals during the war time, looting of animals and buying or slaughtering by the perpetrators (Dawoud 2009).

Livestock population in Wadi Salih and Zalingei localities was decreased due to the fact that the stock-keepers have been displaced and lost most of their stock. The conflict was main cause of decrease in livestock population, (Dawoud 2009).

In Wadi Salih and Zalingei localities, fifty nine percent (59%) of the pasture was uncomfortable and inaccessible while 41% of pastures are comfortable, and 60% of the pasture was poor. High concentration of livestock in one area has exerted enormous pressure on pasture lands and degraded pasture resources and water points. The livestock migratory routes in Wadi Salih and Zalingei were affected by the conflict, 61% of the migratory routes were changed, and the main reason for changes in the migratory routes was the conflict. It was found that 95% of reasons were conflicts (Dawoud 2009).

Actually, 69% of the veterinary services available in Wadi Salih and Zalingei localities before the conflict were lost and disappeared from the area. The lack in veterinary services were due to the insecure situation, lack of veterinary capacity, the authorities did not paid any care to the services and the cost recovery system of

vaccination. 99% of available limited services were routine vaccinations, while 1% of the services were extension services (Dawoud 2009). Animal health in general is a major constraint to the livestock sector in Sudan. Before the war livestock vaccinations and treatments used to be heavily subsidized by the government Simpkin (2005).

The endemic diseases in Wadi Salih and Zalingei localities during the course of the conflict were increased, 62% of the people in Zalingei and Wadi Salih Localities said that the endemic diseases increased, while 20% of them said decreased and 18% said it is remaining as before the conflict and no changes were seen in endemic diseases situation. The increase in the endemic diseases could be due to lack of veterinary services, poor pasture and lack of access for security reasons. the epizootic diseases were increased during the last three years due to the tribal conflict in the two localities, the increase in epizootic diseases due to lack of animal vaccination in particular and veterinary services in general (Dawoud 2009).

The relationship between the nomadic pastoralists and sedentary farmers was affected by the conflict. Sixty six percent of the relationships between the pastoralists and farmers turned to be bad, while 34% of the relationships remained as good relationships, the bad relationships between the pastoralists and farmers due to the blockage of migratory routes, destruction of farms and/or competition over scarce resources (Dawoud 2009). Thirty four percent (34%) of the reasons for bad relationship between pastoralists and farmers were the conflicts, while 28% of the reasons were obstruction of migratory routes and 38% of the reasons were destructions of field crops (Dawoud 2009). The direct impact of raiding on livelihood security is devastating, while the threat of raids and measures taken to cope with this uncertainty undermine herders' relationships and livelihood strategies (Hendrickson et al 1998). Pastoralist's communities in searching for acceptable grazing land often clashed with other pastoralists seeking the resources. However, pastoralists were increasingly impinged on fertile land cultivated by sedentary groups near same waterways. Thus development fuels tension

and conflict with new groups who did not necessarily share the same goals or needs as the pastoralists. In the past, pastoral conflict usually involved pastoralists with common interests (Simpkin 2005).

There are three categories of livestock owners, nomads, sedentary communities and internally displaced persons (IDPs). Seventy nine percent (79%) of the livestock owners are nomads, 3% sedentary communities and 18% are IDPs.

The livestock population owned by the three categories (nomads, sedentary communities and IDPs) before the conflict in Zalingei and Wadi Salih localities were as follows: Nomads owned 580, 176. 174 and 39 thousands heads of cattle, sheep, goats and camels respectively, while Sedentary communities have 35, 13, 5.5 and 2.7 thousands heads of cattle, sheep, goats and camels respectively, and the IDPs owned 150, 159, 175 and 3.5 thousands heads of cattle, sheep, goats and camels respectively. The current livestock populations owned by the same categories are as follows: Nomads owned 612, 121. 122 and 23 thousands heads for cattle, sheep, goats and camels, respectively. Sedentary communities owned

42, 12, 7 and 5 thousands heads of cattle, sheep, goats and camels respectively. IDPs owned 0.8, 0.3, 0.07 and 0.02 thousands heads of cattle, sheep, goats and camels respectively. Before the conflict nomads, sedentary communities and IDPs possessed 64%, 4%, and 32% of total livestock population in the area respectively. While the current percentages of livestock population owned by nomads, sedentary, and IDPs communities were 93%, 7%, and 0% of total livestock population in the area, respectively. The increase in the nomads' livestock percentage from 64% before the conflict to 93% currently could be due to raiding and looting from other categories, natural growth and /or migration from insecure areas and accumulation at safer areas. The drop on percentage of livestock owned by IDPs from 32% before the conflict to 0% might be attributed to the raiding , looting of livestock and displacement of the IDPs to the camps which let to shift on ownership from category to category (Dawoud 2009). Often, livestock are slaughtered to generate income or stolen by soldiers, militias or other desperate people to change ownership. Forced migration of people without their animals can

also severely affect the lives and livelihoods of livestock owners Simpkin, (2005). Moreover, Young, (2005) stated that in economic terms, livestock is the primary target of this conflict. Various sources suggested that the non–Arab population lost between 50-90% of their livestock due to the government armed forces. Solving the livestock issues are central to finding lasting solutions to the problems in Darfur. The comparison between the ownership of the three categories (nomads, sedentary and IDPs) before the conflict and the ownership of the same categories in the current time showed that, nomads' and sedentary current cattle population increased. While the current cattle population for the IDPs is sharply dropped to Zero, this clearly indicated the impact of the conflict on livestock ownership in the area (Dawoud 2009).

Sixty five percent (65%) of the water resources in Zalingei and Wadi Salih localities were boreholes, while 19% of the water resources were seasonal rivers (wadies), and 16% of the water resources in the area were ponds. The dominant of borehole water resource due to the fact that the Wadies and ponds were seasonal water resources and

they only conserve water during the rainy season and sometime after e.g. within the period from July to January (Dawoud 2009). The current livestock populations in the district depending on 35 operational boreholes. This implies that there are more users of the limited water and, as such, chances of conflicts over access and use were very high Omosa (2005). Regarding the watering intervals for livestock in the area, 94% of the livestock were used to be watered on daily basis, while 1% of livestock watered once every second day and 5% were watered within intervals of more than one day (Dawoud 2009).

The total amount of milk produced in Zalingei and Wadi Salih localities was 8891 liter of milk per day and the average daily milk yield was 1.5 liter per cow which was very low production due to the poor pasture, lack of veterinary services and water resources which demonstrated the real impact of conflict on animal production in general and milk production in particular (Dawoud 2009). Even during the war, livestock services have been associated with cost recovery systems, and payment for services was the norm. Now, the emphasis

on the private sector to conduct drug supply is increasing, poor animal health control resulted in less milk production, smaller and weaker animals, lower prices and smaller herd sizes (Simpkin 2005). Moreover, a large number of livestock were burnt or killed. As a result a large number of the cattle herders along with their animals fled from one place to another. This triggered a phenomenal increased in the cost of livestock products especially beef and milk as a result of the conflict (Mohammed 2005).

CHAPTER TWO

THE CULTURE OF PEACE AND PASTORALISM

2.1 The conflicts and Culture of Peace

"It was in 1989, during the International Congress on Peace in the Minds of Men", in Yamoussoukro, Côte d'Ivoire, that the notion of a "Culture of Peace" was first mentioned. Over the past ten years, the idea has come a long way. In 1994, Federico Mayor, Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), launched an international appeal on the establishment of a right to peace; in February 1994, UNESCO launched its "Towards a Culture of Peace" programme; in 1997, the United Nations General Assembly proclaimed the year 2000 as the "International Year for the Culture of Peace"; and in 1998, the same Assembly declared the period 2001-2010 the "International Decade for a Culture of Peace and Non-Violence for the Children of the World". This is how the notion of a Culture of Peace conquered the world. Although the expression "Culture of Peace" took shape in 1989, such a culture already existed before the word was created. UNESCO's creation is a testimonial to the

existence of such a culture as early as 1945. Even though UNESCO has several mandates, it has but one mission, namely that of constructing peace. The purpose of the Organization is to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law and for the human rights and fundamental freedoms which are affirmed for the peoples of the world" (Article I of the Constitutive Act of UNESCO). The notion of a "Culture of Peace" existed long before it was so dubbed. The expression "Culture of Peace" implies that peace means much more than the absence of war. Peace is considered as a set of values, attitudes and modes of behaviors promoting the peaceful settlement of conflict and the quest for mutual understanding. In fact, peace is one way to live together. The expression "Culture of Peace" presumes that peace is a way of being, doing and living in society that can be taught, developed, and best of all, improved upon. The culture of peace is peace in action. Introducing such a culture is a long-term process requiring both a transformation of institutional practices

and individual modes of behavior. Finally, in order to survive and become entrenched in our values, a culture of peace requires non-violence, tolerance and solidarity. The idea of consensus, or peace, is sometimes mistaken for an absence of conflict or for society's homogenization process. However, in order to achieve mutual understanding, there must first be differences with regard to sex, race, language, religion, or culture. The quest for mutual understanding begins with the recognition of these differences and of a will to overcome them to reach a common objective. Achieving mutual understanding protects a society from self-destruction by letting it build foundations so as to design a new way to live together. Indeed, mutual understanding fosters certain values vital for peace, including non-violence, respect of others, tolerance, solidarity and openness to others. Mutual understanding does not mean homogenization of society. On the contrary, a culture of peace is enhanced by the variety of traditions. The fact that a common vision emerges from a multi-cultural society proves that living together is possible and that this society lives according to the

pulse of a culture of peace. Therefore, as UNESCO says it so well, the culture of peace is intrinsically linked to conflict prevention and resolution. The key-values of this culture are tolerance, solidarity, sharing and respect of every individual's rights—the principle of pluralism that ensures and upholds the freedom of opinion—that strives to prevent conflict by tackling it at its source, including new non-military threats to peace and security such as exclusion, extreme poverty and environmental degradation. Finally, it seeks to solve problems through dialogue, negotiation and mediation, so that war and violence are no longer possible (UNESCO 1947).

But how can the culture of peace become a concrete and lasting reality? In the interactive world, everything is a matter of awareness, mobilization, education, prevention and information at all levels of society and in all countries. The elaboration and establishment of a culture of peace require the whole-hearted participation of everyone. Countries must cooperate, international organizations must coordinate their different actions and populations must fully participate to the full in the development of their societies. A culture of peace is thus

a comprehensive union of existing movements, hence UNESCO's desire to create a worldwide movement for a culture of peace and non-violence (UNESCO 1946).

2.2 Global Culture of Peace

The United Nations in a series of actions and publications to launch the 21st Century has called for a transition from the culture of war to a culture of peace. You may read a history, a monograph and an overview of the culture of peace on this website. In the Year 2000, one percent of the world's population took part in the signature campaign on the Manifesto 2000 for the International Year for the Culture of Peace. This has been followed in 2005 by a World Report on the Culture of Peace that has been presented to the UN for the midpoint of the International Decade for a Culture of Peace and Non-Violence for the Children of the World (2001-2010). The culture of peace provides an alternative to the escalating cycle of violence in the world, including the September 11 attacks in the United States and the subsequent attacks on Afghanistan and Iraq. Cycles of violence are not new, In fact, there is an eerie

resemblance in recent events to the crusades of the Dark Ages, and the inquisition that accompanied them.

Utopian, you say. Yes, but all social change begins from those who dream and who strive to make their dreams come true. And the culture of peace is a dream whose time has come. All of the Member States of the United Nations voted for the Declaration and Programme of Action on a Culture of Peace, calling for a Global Movement for a Culture of Peace. And during the United International Year for a Culture of Peace, more than 1% of the population of the world (over 75 million people) signed the Manifesto 2000, pledging to practice a culture of peace in their family, school and community. And, as mentioned about organizations around the world state that the Global Movement for a Culture of Peace is advancing despite its being ignored by the mass media (UNESCO 2000).

2.3 History of the Culture of Peace

Adams, (2003) reported that although the culture of peace began as a UNESCO programme, from the early days, we saw it becoming a global movement; This approach was later confirmed by the UN General

Assembly in their Programme of Action on a Culture of Peace in 1999, and put into practice during the campaign for the Manifesto 2000 which engaged 75 million people. As of this writing in 2003, the global movement has developed far beyond its initial scope, to such an extent that it is difficult to keep track of its myriad manifestations around the world. Although the phrase "culture of peace" was first elaborated for UNESCO in 1989, it is foreshadowed in the mandate of UNESCO when it was founded in 1945-1946. The motivation of its founders was eloquently expressed in the Preamble to the UNESCO Constitution: "a peace based exclusively upon the political and economic arrangements of governments would not be a peace which could secure the unanimous, lasting and sincere support of the peoples of the world.... peace must therefore be founded, if it is not to fail, upon the intellectual and moral solidarity of mankind." Based on this, the preamble contains the unforgettable phrase, "since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed." Already in the UNESCO Constitution we find the idea that war as an

institution is based upon a culture of war that is broader and deeper than the wars themselves. It's like an iceberg: war is the tip which may or may not be visible at any given moment, whereas the culture of war exists continually; supporting particular wars from below and being continually reinforced by the wars that have already occurred. As the Romans said, "Si vis pacem Para Bellum" "If you want peace, prepare for war." For this reason, culture of peace needs more than the absence of war. It requires profound cultural transformation. Culture appears in the very name of UNESCO which was established as the cultural organization of the United Nations. UNESCO is concerned with "values, attitudes, traditions and modes of behaviour and ways of life" - a phrase that opens the first article of the Declaration on a Culture of Peace eventually adopted by the UN General Assembly in 1999. From the beginning, UNESCO was not concerned with culture for its own sake, but culture for the sake of peace. Hence, the UNESCO Constitution states that the purpose of the Organization is for "advancing, through the educational and scientific and cultural relations of the peoples of the world, the objectives of

international peace and of the common welfare of mankind for which the United Nations Organization was established and which its Charter proclaims."(UNESCO 1995).

2.4 Culture of Peace and Peace Building

In November 1992, the 51-nation Executive Board of UNESCO decided to establish an action programme for a culture of peace in order to contribute to the process of peace-building that had recently been formulated in An Agenda for Peace by UN Secretary-General Boutros Boutros-Ghali. As the first step in fulfilling this decision, a draft proposal was formulated and sent to leading social scientists and peace researchers around the world. The draft proposal called for a process of "cross-conflict participation in projects of human development." By this was meant that the reconciliation of those who had been fighting against each other in the past would be promoted by their joint participation in the planning and implementation of projects designed to benefit all concerned in fields such as education, culture, communication and science. Further, it was emphasized that the actors in the building of a culture of peace

needed to come from all parts of the society, including both leaders (both elected and traditional) and ordinary people, especially those who had suffered from the previous conflict and who, therefore, have the greatest desire for the transformation to peace. Finally, the experts suggested that the experiences gained by those engaged in cross-conflict participation could be extended to the general population through education, both formal and non-formal, especially through the effective use of the mass media. In this way, the attitudes, beliefs and behaviours of a culture of peace, based on local and real events, could be disseminated and could contribute to a national, and eventually a global consciousness of a culture of peace. (Parajon et al. 1996)

2.5 Pastoralism in a Global Context

Pastoralists inhabit sparsely populated, semiarid areas far from national capitals and the concerns of governments. They are often located in politically sensitive border areas and many cross international boundaries at will. Their nomadic lifestyle and independence generate suspicions on the part of government, whose policies frequently neglect,

marginalize, or alternatively try to settle pastoralists to bring them within the government's reach. This process of sedentarization is often imposed by force (Gilbert, 2007).

Governments have systematically favored development of agriculture and settlement at the expense of pastoralism and nomadism (Bovin and Manger, 1990). Historically, tenure rights have been framed in terms of land occupation and improvement of the land by agriculture, while uncultivated land was not considered 'fixed property' (Gilbert, 2007). "The principal rationale behind such an argument was that nomadic peoples were regarded to be in a sort of pre-political state of nature with no proper laws and institutions dealing with property in land" (ibid., p. 686). In most countries, without properly defined rights, pastoralists face discrimination, and are frequently labeled as uncivilized, even criminal (Gilbert, 2007; Markakis, 2004). The jury is still out on the future of pastoral production systems. A recent debate presents widely differing perspectives. Pessimists argue that poorer pastoralist households—unable to benefit from economies of scale—fare worse

than richer as a result of the growing imbalance between humans, livestock, natural environment, and the technology available to improve land productivity (Sandford, 2008). Optimists, however, emphasize the importance of indigenous systems adapted to climate variability and fragile environments and also the marketing opportunities of a 'livestock revolution'. Devereux and Scoones (2008) note several different livelihood adaptations to the problems of this imbalance. These including "stepping up" towards a more commercial production system; "stepping out" with cycles of accumulation and loss of herds, which are complemented by diversification of livelihood activities; and "moving away," meaning moving out of pastoral modes of production, which is compatible with diversification and commercialization options (Devereux and Scoones, 2008, p. 3). Catley points out that both sets of arguments ignore the role of conflict and violence. He emphasizes that peace, protection, and the political representation of pastoralists are the key issues (Catley, 2008). This view was reflected by over 400 pastoralists attending a recent regional gathering in southern

Ethiopia who were very clear that violence and conflict from cattle rustling were the main challenges to lives and livelihoods in the border areas of Ethiopia, Sudan, and Kenya (OCHA RO-CEA, 2008). In both Darfur and southern Europe, there is a similar escalation of tensions between herders and farmers. 'Traditional' conflicts between pastoralist communities have become increasingly destructive and less manageable as a result of "becoming embedded in wider criminal networks serving national and regional black markets" (OCHA RO-CEA, 2008, p. 3).

2.6 Pastoralism and Natural Resource Conflict

The issue of natural resource conflict driven by scarcity has preoccupied pastoralist analysts, Sudan scholars, and commentators for decades (Shazali and Ghaffar, 1999; Gilbert, 2007; Ibrahim, 1984; Hardin, 1968). A government committee—established by the Minister of Interior in his capacity as the president's representative on Darfur—has identified natural resource conflict as one of the root causes of the Darfur conflict. Its report noted that "the committee attributed the current conflict to seven factors. The first factor is the competition

between various tribes, particularly between the sedentary tribes and nomadic tribes over natural resources as a result of desertification" (International Commission of Inquiry, 2005, p. 57, para. 203).

This desertification paradigm has permeated the literature since the seventies and been adopted widely by the UN Environmental Programme (UNEP), the Food and Agriculture Organization (FAO), and governments, despite intense debate among scientists. According to Veron et al., "although large amounts of resources were invested to inventory desertification...during the 1980s and early 1990s, these did not translate into a significant increase in our knowledge of desertification status" (Veron, Paruelo, and Oesterheld, 2006, p. 754). In 1975, Lamprey provided a catastrophic perspective on the rate of desertification across North Darfur and North Kordofan. He attempted to measure the rate of advance of the Sahara by comparing the location of the southern margin at two different times: 1958 (a wet year, preceded by a series of wet years) and 1975 (a dry year, preceded by a series of dry years) Over this seventeen-year period he observed a 90-100 km displacement, and

concluded that the desert was advancing rapidly (Lamprey, 1975). This data, combined with the known effects of the drought and famine of the early seventies, prompted a series of anti-desertification measures, including planting green belts around the Sahara, prohibition of goats, destocking of herds, prohibition of tree cutting or grass burning, and enforcement of soil conservation measures. This early, simplistic paradigm has since been challenged and abandoned (Thomas, 1997; Veron, Paruelo, and Oesterheld, 2006). It is now recognized that desert boundaries are very dynamic and closely linked to patterns of climate variability and annual rainfall. Nevertheless, this desertification paradigm still persists in Sudan and not only within government committees. In 2007, UNEP concluded that an estimated 50 to 200 km southward shift of the boundary between semi-desert and desert has occurred since rainfall and vegetation records were first held in the 1930s. This boundary is expected to continue to move southwards due to declining precipitation. The remaining semi-desert and low rainfall savannah on sand, which represent some 25 percent of Sudan's

agricultural land, are at considerable risk of further desertification. This is forecast to lead to a significant drop (approximately 20 percent) in food production. In addition, there is mounting evidence that the decline in precipitation due to regional climate change has been a significant stress factor on pastoralist societies—particularly in Darfur and Kordofan—and has thereby contributed to conflict. (UNEP, 2007, p. 9).

UNEP describes desertification as "Sudan's greatest environmental problem" (UNEP, 2007, p. 62) although it admits the available data is limited to anecdotal evidence and small scale studies and quotes just one source—the Government's National Plan for Combating Desertification in the Republic of Sudan. UNEP recommends a major study to truly quantify desertification in Sudan combined with national weather and drought forecasting services (ibid, 2007).

The dry decades of the seventies, eighties, and early nineties were part of the mounting pressures on pastoralists, and drivers of social change. But local conflicts are not simply driven by increasing competition between pastoralist and farmer groups (and also between

pastoralists) over their access to land, pasture, or water. We need to look beyond this to the factors driving this competition, including increasing population as a result of natural increase and migration (south to central Darfur), or, alternatively, investments in the exploitation of natural resources, which may be prompted by processes of commercialization and privatization (Manger, 2005). As we see, sets of pressures have been evident in Darfur. These pressures are mediated and influenced by systems of natural resource management, including local customary and federal regulations for managing and controlling use of and control over resources. Consideration of these wider processes and institutions, and analysis of the relative power of different groups, is imperative to understanding natural resource conflict.

Manger examines theories dealing with institutions and resource management and, in particular, the tensions between individual, rational self-interest, and group interests. He explores what Hardin dubbed the 'tragedy of the commons' (Hardin, 1968)—where if individual users of a common resource are not controlled, their

aggregate exploitation of the commons will lead to over-exploitation (Manger, 2005). Alternatives for dealing with this problem are privatization or political control. An opposing position is that pastoralists have their own culture of resource management which, if left to operate on its own, can solve the problem. Manger explains that this is not simply about actors' preferences and incent incentives affecting the choice they make, "but a complex relationship in which the narrow process of management must be understood also against a background of broader social and political relations, relations that are defined by power inequalities"(ibid., p. 137). This explains why power and power relations are another key theme within a fragile natural habitat. While livestock may be owned individually, livestock herding is usually carried out as part of a herding unit or community (fariig), which refers to the members of the unit rather than the location of the herding camp. Thus, nomadic livestock herding is usually a collective activity within a collective space shared by members of the herding unit, often on the territory or lands of other groups. In Sudan, there are historically strong cultural

ties between nomads, their livestock, and the land which they access. These predate the arrival of Europeans and survived after their departure. These distinctive features of nomadic lifestyles are not well recognized, acknowledged, or understood. In many countries, national policies have been adopted to settle nomadic peoples, and nomadic peoples are not well recognized under international law. Gilbert provides an excellent review of the human rights of nomadic peoples—particularly in relation to land use. He points out that historically, "nomadic peoples have not been regarded as having any rights to land because their nomadic lifestyle was not considered to fulfill the criterion of 'effective occupation' of the land" (Gilbert, 2007, p. 681), thus indicating immediate power differentials between nomads and other groups. However, Gilbert goes on to explore how the distinctive features of nomadic people correspond closely to the legal definitions of indigenous people,7 which encompass three elements: (i) indigenous peoples are descendants of the original inhabitants of territories since colonized by foreigners ("having a historical continuity with pre-invasion and pre-colonial

societies" (ibid.,p.693)); (ii) they have distinct cultures, which set them apart from the dominant society; and (iii) they have a strong sense of self-identity.

The causes for tension and conflict in pastoralist and agro-pastoralist areas are multiple. Climate, settlement, resources, tradition, politics, access and crime have all been blamed, and may be interrelated. The link between pastoralist livelihoods and potential conflict over natural resources in particular has long been recognized. Secure access to grazing land and water facilities has, more than ever, become one of the main causes for tension (Simpkin, 2005). The role of armed conflict in the form of raiding has been overlooked as a common feature of societies facing famine and food insecurity. The traditional livelihood-enhancing functions of livestock raiding are contrasted with the more predatory forms common today. The direct impact of raiding on livelihood security can be devastating, while the threat of raids and measures taken to cope with this uncertainty undermine herders' relationships and livelihood strategies (Hendrickson *et al*, 1998).

Simpkin (2005) stated that tension between pastoralist communities and more sedentary groups (and indeed among pastoralists themselves) is also well documented, and has been exacerbated by increasingly erratic rainfall patterns. An otherwise “normal” feature of the pastoralist livelihood, drought, has begun to undermine the assets of the wealthier segments of society, and totally impoverish the most vulnerable. Pastoralist's communities in searching for acceptable grazing land often clashed with other pastoralists seeking the same resources. More recently, however, pastoralists were increasingly impinged on fertile land cultivated by sedentary groups near waterways. This development fuels tension and conflict with new groups who did not necessarily share the same goals or needs as the pastoralists. In the past, pastoral conflict usually involved pastoralists with common interests; the causes for conflict were thus well understood, and could easily be resolved. New conflicts involving members of different livelihoods are more complicated, harder to resolve, and consequently tend to reoccur and escalate. Other causes for tension and conflict in pastoral areas

include a breakdown of the moral economy, community spirit, or reciprocity between clans and tribes, caused by predatory raiding (Niamer, 1999). Loss of respect or control by local elders and traditional bodies, An increasingly sedentary or mixed lifestyle, national boundaries, increasing populations, the proliferation of firearms, increasing needs and marginalization, theft for poverty alleviation, theft for recognition and entertainment, conflict for appeasement, commercial raiding, identity, excessively high bride-price, land tenure. (Bollig, 1990).

2.7 Conflict, Displacement and Livestock Raiding

The Northern Rizaygat have experienced violent attacks, killings, and looting during the course of the conflict, which they widely agreed were directly targeted at them as pro-government Arabs, by rebel groups and their supporters. The continuing security threats and fears of being targeted were the reasons why many were compelled to move from their original homes and this also restricted their access to certain areas. A typical comment illustrating their fear was that “The Fur, Masalit, Zaghawa, started acting together. They told the

Libyans that their intentions were to attack the GoS but their real intention was to attack the Arabs, these fears were a result of a long history of tribal tensions and conflict, and those interviewed remember well a catalogue of incidents and killings, which, in West Darfur, date back to 1997. According to one key informant in West Darfur, “after El Fasher airport was taken the government told Arabs ‘they are going to kill you’. The fear was that after they dealt with the Government of Sudan they would then attack the Arabs. From 2003, fear of attack became a part of the Northern Rizaygat’s lives, particularly following the rebel attacks on Kutum and in Kulbous. For example, in Damrat Masri, near Kutum, between 2003 and 2005, all the schools were closed because the schools, damra, and fariig were thought to be at risk of being attacked at any moment. Older children at every level of schooling “left their schools and came to defend and protect their families, livestock and tribal groups”. In the period just before the schools closed, the teachers took guns to the classroom for protection (Young et al., 2009).

CHAPTER THREE

THE LIVELIHOOD OF PASTORALIST

3.1 Pastoralists Livelihoods in Africa

Indigenous and tribal peoples (ITPs) in Africa, including both hunter-gatherers and pastoralists, are confronted with deteriorating livelihoods due to a declining resource base, population increase and the impact of economic policies. Although most of the indigenous and tribal communities are among the poorest of the poor, they rarely benefit substantially from the poverty alleviation programmes and employment generation initiatives. This is because of their socio-economic marginalization, which makes them even more vulnerable due to lack of access to credit and other basic services. Job creation for ITPs besides protecting and promoting their traditional jobs, which disappear fast, differ considerably from those initiatives suitable for the mainstream society and require distinct approaches, strategies and culturally adapted tools. While ITPS in Africa and elsewhere remain a popular target for the development community, there is a considerable need to strengthen approaches of

working directly with community-based self-help organizations and cooperatives. National poverty alleviation strategies and country action programs benefit from having a clear strategy for ITPs which recognizes their distinct indigenous knowledge systems and practices. There is a need to strengthen investment policies and allocation practices for ITPs to ensure that they are reached by - as well as being involved in the design of - livelihood and employment extension services. (BEE, 2002).

3.2 Livelihoods in Darfur

Most households in the Darfur region depend on agriculture and livestock for their livelihoods. Traditional rain-fed agriculture is the dominant seasonal farming activity across the region. Millet is the main stable food cultivated in the northern and eastern parts of the region while sorghum is cultivated in the south and in the lowlands (wadi). Livestock rearing among the agro-pastoralist groups has considerably diminished due to the conflict that erupted in 2003. Most of the households tend to keep only a few domestic goats to avoid looting which is common amongst large herd

owners. For agro-pastoralists, the hunger season occurs during the rains between late June and late September when labour requirements are highest but food availability is the lowest. Nearly all households attempt to diversify their incomes by engaging in petty trade, firewood and grass collections and sale, domestic labour, long-distance labour migration, remittances, gathering and consumption of wild foods. As a result of the current conflict, the disruption of households' livelihoods and coping mechanisms and subsequent displacement for many has contributed to increased food insecurity and malnutrition (FEWSNET, 2011).

3.3 Assisted livelihood in Darfur

Conflict-affected populations including IDPs, refugees, returnees, and vulnerable residents, represent the majority of targeted beneficiaries. The balance of the WFP beneficiaries are individuals and families who are acutely vulnerable to food insecurity, as a result of conflict and livelihoods affected by depleted natural resources. Frequent natural disasters and persistent high food prices further compound households' food insecurity. In addition, specific demographic groups

have been targeted for specific support, including children under five, school-aged children and pregnant and lactating women. These groups are disproportionately exposed to risks associated with the ongoing conflict as well as broader socioeconomic trends such as limited investments in health and education services. In North Darfur a total of 1.1 million people have been supported through food assistance in 2011 with more than 65 percent are rural residents affected by the conflict. Seasonal food assistance is the main intervention during the lean seasons. The duration of the assistance varies based on the harvest condition, the poorer the harvest, the longer assistance period is introduced and the caseload increases. In addition, children less than five years of age are targeted and supported with supplementary feeding programme North Darfur has the largest number of different activities compared with the two other states, but many of the same activities are also in place in South and West Darfur. In South Darfur, approximately 770,000 IDPs and rural residents and approximately 630,000 IDPs, refugees, returnees and residents in West Darfur will be

supported through general food distribution and seasonal support activities in 2012s. (FEWSNET, 2011)

3.4 Livelihood Zones

The Darfur region consists of nine livelihood zones. In this assessment, eight livelihood zones are included, because the Cattle Dominant Agropastoral livelihood zone is very sparsely populated and is therefore not incorporated in this assessment. The eight livelihood zones are:

Western Agropastoral Millet Zone has plains topography with sand dunes, and stony hills on the far north-west Marra plateau; the natural cover and north sahelian-type scattered bush and grasses. Landholdings tend to be relatively large but yields are low on the infertile sandy soils. Mean annual rainfall in much of the area is well under 300mm, at best marginally adequate for millet cultivation but not for cash crops such as groundnuts or sesame, although small amounts may be grown for home consumption. Rainfall is frequently erratic, with a late or hesitant start up to July, and damaging dry spells thereafter.

North Darfur Tobacco zone is a niche production zone spreading out from the western foot of Jebel Marra. The soil is alluvial and fertile and some 70 percent of the land area is normally under tobacco. Millet and sorghum are also grown and all cultivation is purely rainfed. Rainfall is modest at an annual mean precipitation of 280-350mm.

Western Wadi Cultivation zone Straddling the conjunction of West, North and South Darfur, this zone is characterized by seasonal water-courses – wadis – fed by the drainage of the Marra highland and plateau. This allows irrigated horticulture on the fertile alluvial wadi soils, so that most households, whether wealthy or poor, make most of their money from market gardening. The main items are onions, tomatoes, okra and beans, with mangoes and guava as principal fruits. Market access is good with reasonable proximity to the big town markets.

North Kordofan Gum Arabic Belt zone this is a plains area straddling the North and South Kordofan boundaries and stretching into South and North Darfur. Gum arabic grows naturally across a wide semi-arid area of the country, but this zone offers a special resource in both

wild and cultivated gum Arabic, thus making a major contribution to Sudan's status as the principal exporter of gum arabic in the world.

Western and Central Pastoral zone this is a vast zone with a scattered and very sparse population surviving in a semi-desert ecology by mainly nomadic camel and small stock pastoralism. It stretches across the north of Darfur and Kordofan and comprises also the pastoral part of Nile state that lies to the east of the river. Rainfall is between about 50mm and 150mm per year, insufficient for crop cultivation except in certain moisture-retaining wadi areas in Darfur and Buttana where poorer pastoralists with little livestock have turned to cultivation and usually manage a small millet harvest.

Jebel Marra Mixed Highland Cultivation zone is a densely populated hill and mountain formation rising out of the hot plain of West Darfur to a peak of 1008 meters above sea level, with relatively cool temperatures and reliable rainfall with an annual mean of 800-1000mm of rainfall. This not only supports surplus rain fed production cereals - millet and sorghum, with wheat at higher

altitudes – but also gravity-fed irrigation of gardens and orchards. There are also forest resources exploited for timber. The garden items are cultivated in a later cycle than the cereals. Tomatoes in dried form as well as fresh potatoes, onion and onions are traded as far as Khartoum. Fruits, notably navel oranges, also go as far as Khartoum. The surplus cereals are absorbed by the domestic Darfur market.

Western Agropastoral Millet and Groundnuts zone, it contains most of South Darfur, with margins in West Darfur and Kordofan. It is largely a plains area with scattered bush cover, sandy soils and average annual rainfall of 250-350mm. The rainfall is sufficient to support cereals, especially millet on these soils, as well as groundnuts, but is frequently erratic. Watermelon seed and hibiscus for the kerkedey drink are valuable additional produce and okra is chief amongst vegetables grown for home consumption. The other part of the economy is livestock herding, and this is an area where it is overwhelmingly small stock that are kept, more sheep than goats by wealthier people, more goats than sheep by poorer people. Better off households also keep small

numbers of camels and/or cattle. Conflict is caused by livestock damaging crops, notably the animals of herders from the north who pass through with cattle and small stock on their way to dry season southern pastures.

Rainfed Sorghum Belt, this is a very extensive zone, of medium population density, comprising part of West and South Darfur and the greater part of South Kordofan. The common factors are substantial and mainly reliable rainfall with a mean annual precipitation above 600mm, and relatively fertile clay and sandy-clay soils. Sorghum is by far the main crop, but some millet is also grown, while poorer people grow more sorghum than millet. Cowpeas are commonly intercropped with the cereals. Wealthier farmers are normally fully self-sufficient in grain but choose to buy a certain amount of wheat in form of bread as part of their diet. Poorer households are able to feed themselves from their harvest for about half the year before depending on the market and on grain received as direct payment for labour (FEWSNET August 2011).

3.5 Importance of Livelihoods to the Darfur Conflict resolution

The “Livelihoods under Siege” study, confirmed the importance of livelihoods in relation to the Darfur conflict (Young et al., 2005). This showed that, like in so many other complex emergencies, conflict and peoples’ livelihoods are inextricably linked. Livelihoods are integral to the causes of conflict in Darfur and in turn conflict has had a devastating impact on livelihoods. Thus, addressing livelihood issues is crucial to any lasting local and international solutions to the conflict. Efforts to support and protect livelihoods must consider the wider political economy of conflict, while peace-building and wider peace processes must be based on a full understanding of the way in which livelihoods and conflict impact each other. This approach has slowly gained recognition among local and international stakeholders, as livelihood approaches have been brought to the fore of humanitarian, recovery, and local peace-building efforts.

Historically, rural livelihood systems in the Darfur region have been shaped by migration, ecology, and ethnicity.

Immigration has been encouraged by the region's strategic geographical location—with few natural obstacles to movement— and Darfur's position as the junction for multiple trade routes. Migration, trade, and the strategy of the Fur Sultanate (which ruled the region until it was incorporated into Sudan by the British in 1916) to attract immigrants have increased the number of tribal groupings and the linguistic diversity of the region. Darfuris are of Hamitic, Arab, and Sudanic backgrounds and some fourteen distinct languages are spoken in the region (Morton, 1994; O'Fahey, 1973; O'Fahey, 1980).

3.6 Pastoralists Livelihoods in Darfur

To the north of Darfur are the arid desert zones of the Sahara and to the south the wetter Sahelian zone with rainfall up to 700 mm per annum. In the center, there are upland areas, reaching an altitude of over 3,000 meters which have higher rainfall. Rainfall variability combined with a fragile natural resource base, especially in the north and east, has exposed the region to environmental erosion and production hazards during periods of famine and drought such as those in 1972-73 and 1983-

84. Population density varies according to ecological and climatic zones. In the past, many of the Gabilla tribes of Darfur were distributed very broadly according to ecology and livelihoods. Camel-based pastoralism was practiced in the arid northern areas (with migration to the south) by the abbala. Arable cropping was often combined with more sedentary animal husbandry in the central and western areas on the sandy and alluvial soil. Cattle-based pastoralism was practiced by the baggara (the term widely used for Arab cattle-herding pastoralists) in the wetter southern savannah area. This area of heavier clay soils was hardly used by cultivators prior to the introduction of mechanized equipment. The number of 'real nomads'—groups of people who have no fixed home and move with their livestock in response to seasonal variations in rainfall and pasture—is declining. Conversely, agro-pastoralism—where households combine long-distance livestock herding and more sedentary localized farming activities—has increased over the years, particularly as many adapted their livelihoods to the pressures of drought in the mid-eighties and subsequently. The importance of ecology

and tribal affiliation in influencing livelihoods remains important, despite the massive rural-urban demographic shifts which have occurred as a result of displacement in recent years (Young et al., 2009).

Historically, conflicts between pastoralists and farmers were usually between individuals over access to resources and could be settled by tribal mechanisms. When the rebel insurgency began in 2003, and the government subsequently launched counterinsurgency operations, animosity between tribes ratcheted up, leading to ever greater tribal polarization. This has been misleadingly represented by the Western media as black African versus Arab. Many commentators have reflected stereotypical views that the rebels harbor legitimate grievances while the Arab Janjaweed are apparently 'Arab supremacists' (Young et al., 2009).

3.7 The diversification of Pastoralists Livelihoods

The livelihoods of the Northern Rizaygat are going through rapid transition. Traditional livelihood strategies linked to camel-based pastoralism have declined with the loss of access to seasonal pastures and the massive increase in salaried military service as a livelihood

strategy. This has been accompanied by sweeping changes in pastoralist lifestyles as their seasonal movements are restricted to safe zones. This restriction denies them access to their favored pastures, particularly in the north. The control of this northern area of Darfur by the Zaghawa has blocked former Arab livestock trade with Libya and Egypt, an important source of livelihood for a large number of people. Most of this trade is now dominated by the Zaghawa. This restricted access has also negatively affected labor migration to Libya, another traditional livelihood strategy of the Northern Rizaygat. In the past, male migration to Libya was part of the way of life of the northern Rizaygat, first by camel and later by truck. Once there, they would be assisted by a network of Sudanese who are well-established there. The forced displacement of many rural farmers to towns and camps, as a result of the government's counterinsurgency against the rebels, has given pastoralists the upper hand in these rural areas, but, at the same time, removed a critical part of the social and economic fabric of their society. The displacement of rural farming communities

has destroyed local markets, which nomads depend on to buy essential goods and sell their own produce. At the same time, the increasingly urbanized IDPs represent a captive market for firewood, grass, etc., as they are constrained from directly accessing these natural resources themselves. Firewood, especially in West Darfur, provides a significant source of income for the increasingly sedentarized pastoralists. There is obviously a wider context to the new livelihood strategies of the Northern Rizaygat, including their role as militia in the conflict and the use of intimidation and violence to control access to resources. Although the links between livelihoods and violence were not investigated directly, two areas that have been widely reported on are briefly reviewed as these relate directly to livelihoods (Young et al., 2009).

3.8 The dynamics of Pastoralist Livelihoods from Marginalization to Maladaptations

The livelihoods of the Northern Rizaygat have gone through a rapid transformation over the past five years. Their former pastoralist livelihoods revolved around seasonal livestock migrations, livestock trade, and trade

of animal products, combined often with export trade and labor migration to both Libya and Egypt. This livelihood profile has changed dramatically. Their former nomadic lifestyles cannot be sustained in the current insecurity, particularly as critical grazing areas are out of reach. Partly as a result of this, the Northern Rizaygat have adapted and diversified their livelihoods in this new environment. As well as camels, the abbala traditionally kept sheep, goats, and sometimes cattle. Sheep and camels serve different purposes. In a region of extreme climate variability, camels provide insurance against drought, future investments, and a means to relocate rather than exhaust local resources. Sheep provide daily needs and can be readily sold (more easily than a camel) and their investments are converted to camels for future needs. Milk products enabled them to exchange and barter with local farming communities. Even today, camels are the clear cultural preference of all groups, although it is widely understood that sheep and goats are more economic. In West Darfur, the population and relative importance of camels have reportedly diminished as a result of diseases (in part

because of restricted migration routes), loss of camels through raiding; and loss of herders because of militia recruitment and killings. In West Darfur, it was reported that in the past there were many more camels, and fewer sheep and goats, but this has now reversed, with increasing numbers of sheep and goats. This might also be because of the recent wetter years and lower population density in rural areas and therefore greater access to natural resources that has favored sheep and goats. Before the conflict many Arabs living in the damra would employ herders to look after their livestock, for payments of approximately thirteen sheep annually and one to two young camels, depending on the quality of the labor. In addition, herders are given all their food supplies. Since the war started, most of the labor joined the military groups, thus creating a shortage of herders for hire (Young et al., 2009). The number or proportion of 'true nomads' (those who follow a transhumant lifestyle) is almost impossible to estimate given their rural dispersal, mobility, and small encampments. To make it even more difficult to gauge, rural roads are rarely, if ever, travelled by the international

humanitarian community, or even by Sudanese who are not from these tribes. Currently, in the settlements around Kebkabiya and in West Darfur few abbala depend totally on livestock. For example, in El Hara Garb, only one family owned more than fifty camels. Livestock health is an important concern of all abbala. Various livestock diseases were mentioned, some with relatively high mortality. Um bardab (hemorrhagic septicemia), which occurs especially at the beginning of the rainy season, has a mortality rate that ranges from 100 to 200 deaths in the Zariba region. Tick infestation and tick-borne disease currently need attention. The blocked migration routes, which were described earlier, have confined herds to more restricted grazing areas, thus affecting their health and contributing to excess deaths. The reported livestock diseases included haemonchosis and tick-borne diseases. Livestock vaccination was recently implemented by the International Committee of the Red Cross (ICRC) in collaboration with the Ministry of Livestock Resources. Livestock drugs can be bought commercially in the main markets. Traditional Artisanry Leather work, saddlery, blacksmithing, and handcrafts

(mats, pots, and storage containers) featured strongly as part of the nomadic culture. Women explained how they sold and bought animal hides in the market. They treat cowhides to make garfa, large saddle bags for storing millet. Before the war, they used to make leather rope, baskets from local materials, and gourds for storage with leather handles, but currently they only make these items for their own use and not for sale. Traditionally, women make the howdaj (the litter placed over the camel saddle in which the senior women rides) and the tent structures (the tent canvas is bought from Libya). The Misseriya in Al Geneina are famous camel saddle makers (Young et al., 2009).

3.9 The Mobilization and Militia Recruitment

In early 2003, the government put out a call to Darfuri tribal leaders to rally men and support for a counter-rebellion in Darfur. In Kebkabiya, the governor called all tribes, including the Fur Shartai of Dar Fia, Sabkor, and Jebel Si, and so this call was not limited to pro-government tribes. He requested provision of people for military training to defend the country against the attacks of the rebellion. According to the local Tama

Omda, the Fur did not consult with them and instead immediately refused the government's request, in writing. The Tama took this to mean that the Fur supported the rebels, which ratcheted up dramatically the polarization between the pro-government and pro-rebel tribes. At this point, the Tama responded by providing both money and men to be trained as part of the Popular Defense and police, despite their earlier reluctance and, as a result, they were immediately classified as Arab by the Fur, since they were not supporting the rebellion (traditionally, the Tama are farmers, and many of those in the towns were teachers). Musa Hilal, as the Nazir for the Mahamid, immediately supported the call of the government and his base in Misserya became the center for militia training. The leadership of the Northern Rizaygat tribes, the Amirs, Omdas, and educated Arabs, broadly supported the call and were quick to respond. In retrospect, some tribal members within Darfur complain that this very rapid response to throw their support behind the government's plans was done in haste with little thought of the consequences and without political vision:

“Accordingly the Arabs suffered in the division of the wealth and power of the Abuja” (Young et al., 2009). In North and West Darfur, many interviewees justified the rapid response of support for the government by the accumulation of grievances over the years by the Arab pastoralists against the Zaghawa in the north (who continually raided Arab camel herds) and also against the Masalit, particularly in terms of blocking of migration and fencing of pastures. One leader said their support for the government was “meant in principle to defend and protect ourselves” (Young et al., 2009). It is widely perceived by different tribes that “the government exploited selfish interests of individual groups, and that all groups are defending their interests. The fact that the Arabs were the first to join the government for their own interests is thought to underlie the current clashes between rebels and Arab groups (Young et al., 2009). Although, at a local level, some members of the Northern Rizaygat felt these decisions were taken in the interests of individual leaders close to the government and not in the broader interests of the tribe. Another aspect of the mobilization of the Northern

Rizaygat by the government is their exclusion by the rebels in planning and executing their plans for rebellion, which had started as early as 2000. One group near Kutum described how the Fur, Zaghawa, and Tunjur "started the war in 2002 in a very organized way, and since then they have worked consistently to escalate it, they raised community funds to buy arms, they joined the PDF in a very well organized way and they started to isolate us from their social gatherings and festivals, this exclusion from the discussions on the rebellion was also raised by Tama and Gimr leaders in the earlier Tufts research (Young et al., 2004).

CHAPTER FOUR

SOME PROFLIES (EXAMPLES) OF IMPACT OF CONFLICTS ON LIVESTOCK IN DIFFERENT COUNTRIES AND REGIONS

4.1 Plateau state of Nigeria

Plateau State is located in the highlands of Central Nigeria. It has a lot of features, which attracted a large population and supported various economic activities. The discovery of tin and columbine on the Plateau by the British led to the conscription of laborers from all the provinces of Northern Nigeria to work in the tin mines. The availability of fertile agricultural land attracted farmers from distant places engaged them in the production of various crops. The climatic situation of the Plateau, which is near temperate along with the abundant water and pasture led to the flocking of livestock rearers to the area. The absence of diseases which are detrimental to livestock rearing led to a heavy concentration of livestock usually reared by the Fulani on the Plateau (Mohammed 1997*).*

Fetuga (2003) demonstrated that Livestock played a very important role in the national economy. He stated that historically, it has consistently contributed 5-6% of the national GDP and 15-20% of the total agricultural GDP over the years. More significantly it provided a source of employment and income for a large proportion of the rural population as well as an important source of protein in the local diet. The current estimated livestock population comprises about 15.6 million cattle, 28.69 million sheep, 45.26 million goats, 5.25 million pigs, 118.59 million horses, camels and donkeys. The livestock sub-sector is dominated by traditional systems of production, processing and marketing. Eighty percent of cattle, sheep and goats are reared by transhumant pastoralists (Fetuga, 2003).

The availability of pasture as a result of the favorable rainfall, abundance of sources of water supply and the temperate climate of Plateau State makes it conducive for livestock rearing. The practice of transhumance also makes Plateau State a favorable destination for flocks of livestock from the North West and North East zones of the country. The following livestock are reared on the

Plateau: Cattle, Sheep, Goats, Pigs, Poultry and Rabbits. The livestock sub-sector generates revenue for Plateau State through its many diverse upstream and downstream enterprises e.g. Livestock trade tax, slaughter fees paid in government – owned abattoirs, Hides and Skins Buyers License fees and clinical treatment fees for livestock at government veterinary clinics. A large scale national trade network in livestock exists and Plateau State served as one of the supply centers of this intricate trade (NVRI, 2005*)*.

With the on-set of the conflicts in Plateau State in 2001 a number of Fulani community leaders and herders were killed. A large number of livestock were burnt or killed. Cattle's rustling has been a major cause of the most recent conflict in the Southern part of the State. As a result a large number of the cattle herders along with their animals fled from the State to the neighboring States of Bauchi, Nassarawa, Kaduna and the Federal Capital Territory. This triggered a phenomenal increased in the cost of livestock products especially beef and milk as a result of the conflict. The research questions that could arise with respect to the impact of the conflicts on

the livestock sub sector could be: How many heads of livestock were lost? How much revenue was lost by the State from the livestock sub-sector? By what percent did the cost of livestock products rise as a result of the conflict? What effect did the conflict have on the livestock population in the State? Adequate responses to these research questions would assist in measuring the negative impact of the conflict on the economy of Plateau State with particular reference to the livestock sub-sector (Mohammed, 2005*).*

4.2 Bauchi State of Nigeria

Bauchi State is one of the States that benefited from the National Fadama Development Project. It lies within the North east pastoral corridor in Nigeria. Between 1996 and 2002 there were 28 incidences of Farmer-Pastoralist conflicts and also 4 cases of farmer-fishermen conflicts. Because of these incessant conflicts especially farmer-pastoralists conflicts in the State, the state government decided to set up a committee to look into the matter. The observations of the committee are; conflicts between the farmers and pastoralists occurred almost annually in the last five decades, and before the advent of the

aggressive Udawa and Bokoloji pastoralists, conflicts were minor in scope and their occurrence were minimized through the use of Fulani elders (jauro/ardo), and the newly emerged militants pastoralists (Udawa & Bokoloji) introduced a violent and fatal dimension to conflict and do not pay traditional homage or inform the local leaders when they arrived and they are young, militant, heavily armed with guns and arrows; and some local godfathers and bandits protected them (Ajuwon, 2003).

In regards to the effect of the Conflict in the State, between 1994 and 2002, 28 villages were affected and recorded loss of lives, crops, livestock and properties. Between 1995 and 2002, in 8 out of the 28 villages affected, it was reported that 31 farmers, 66 pastoralists and 4 policemen were killed. Also 44 farmers and 2 pastoralists were injured (IPCR, 2003).

In addition to the above, there were burning of settlements, destruction of irrigation facilities and fear of vengeance on both parties. The prominent conflict-prone areas are communities located on the major interstate livestock routes such as Gamawa, Zaki,

Itas/Gadau, Jamare, Misau, Kirfi and Kuddu Local Government Areas (Ajuwon, 2003).

4.3 Kotido district-UGANDA

Karamoja lies in the northeastern corner of Uganda, bordering Sudan and Kenya. It is divided into three administrative districts namely, Kotido in the north, Moroto in the centre and Nakapiripirit in the south. Karamoja region is semi-arid, with an average rainfall of 500-700 mm per annum, Karimojong take on extensive livestock keeping as their principal economic activity, it is semi-arid, and characterized by a combination of acute poverty, vulnerability to drought, poor infrastructure and basic social services delivery, limited marketing opportunities, natural resource degradation, social and cultural marginalization, long-standing dependency on external aid and most importantly chronic insecurity. The region is the least socially and economically developed in Uganda, even among the generally poorer parts of northern Uganda as a whole, with the result that there was increased competition for the already limited scarce resources leading to declines of average herd sizes and destitution of pastoralist households. With no

alternative to pastoralism, livestock raiding has emerged as a key livelihood strategy by some (Nangiro, 2005). The human impact of raiding and conflict in Karamoja is difficult to quantify. Gray (2000) reported that more than 300 women interviewed during 1998 and 1999, virtually every one had lost either a husband or at least one male child to intra-tribal violence within the Karimojong. Raiding has become a major cause of poverty, removing a household's assets at a stroke. Ocan, (1992) found in a fieldwork that out of 160 respondents in Karamoja, 47 had lost cattle completely. The increased scale of raiding, particularly in the last decade, has led to periodic displacement of communities within Karamoja itself and in neighboring districts.

According to the Conflict Early Warning and Response Mechanism (CEWARN) of IGAD (2003-2004) approximately seven hundred and twenty five (725) people were killed and 18,875 livestock were lost in the Karamoja region between June 2003 and April 2004. Insecurity manifested itself in form of cattle raids, road banditry, looting of villages, properties and killing of people. These are frequent and indiscriminate in times

of hardships such as drought, inter-communal conflicts and during clashes that involved government forces against LRA rebels or armed pastoralists (Nangiro, 2005).

As already noted pastoral poverty and destitution has encouraged the adoption of violent conflict and raiding as part of pastoralism in Karamoja. This occurred in the form of interethnic cattle raiding, often pitying one group against one another in a series of successive counter and revenge raids. Small groups of two to five youth steal small number of livestock, which if unchecked climaxes into communal raids involving a whole tribe. This situation is worse during times of hardship such food insecurity and worsens when there are no concrete interventions from government to mitigate the situation (Nangiro, 2005).

Livestock raiding is not confined to Karimojong pastoralist people alone but also their immediate neighbors in the Karimojong cluster and the neighboring districts. The nature of raids has since become complex and gruesome on the immediate people involved. 90 percent of reported cattle raiding incidences occur in the mobile Kraals and settlements during the night (Nangiro,

2005). As a result of raiding, many people have lost their cattle to raiders and are left with no other alternative to resort to. This leads cyclical raiding and to absolute poverty on the victims. According to the Turkana district Veterinary Department 17,400 people crossed over to Uganda with 58,800 cattle, 145,000 and 5,880 donkeys. After the conflict 8,715 cattle, 7,250 shoats and 527 donkeys died due to lack of water and 2,915 cattle 7,250 sheep & goats and 174 donkeys were lost to the raiders *(*Nangiro, 2005).

4.4 Wajir District in Kenya

Pastoralists are livestock herders found throughout Africa's arid regions, where they constitute between 12 and 16 per cent of the total population. East Africa has the largest variety and number of pastoral societies. Pastoralists occupy over 70 per cent of the Kenyan land and 50 per cent of Ethiopia, Somalia, Sudan, Tanzania and Uganda. In most of these countries, pastoralists are minorities as they lead a different way of life in terms of culture, values and language (Omosa, 2005).

Wajir District is one of the most sparsely populated and least developed areas of Kenya and considered low in crop production. Arid and semi-arid lands (ASALs) are vitally important in Kenya cover 80 per cent of Kenya's total area of 592,000 sq km. They support approximately 25 per cent of the country's human population and over 50 per cent of the country's livestock. The livestock industry contributes approximately 10 per cent to the Gross Domestic Product (GDP). The current livestock population in the district is about 260,000 cattle; 280,000 camels; 265,000 sheep; and 30,000 goats, depending on 35 operational boreholes (WASDA, 2002*)*. This implies that there are more users of the limited water and, as such, chances of conflicts over access and use are very high (Omosa, 2005).

The district is 100 per cent ASAL with an average annual rainfall of just 280 mm. The district is categorized as trust land, with rangelands suitable for pastoralism, and with small parts suitable for annual crop production. The majority of the people in the district live below the poverty line of less than a dollar a day. Of the total population, 96 per cent lack access to safe drinking

water, 80 per cent are not literate and only skilled in nomadic livestock production, and 89 per cent lack access to health care services. The district has a life expectancy of 50.6 years. The district has been hit by a number of catastrophes with devastating effects. Examples are the 1964- 1967 secession attempt aimed at incorporating northeastern Kenya into the Republic of Somalia. The war impacted on pastoralism through a government restriction limiting pastoralists' families to within 14 kms of towns as one way of monitoring their movements (Omosa, 2005).

CHAPTER FIVE

RESULTS AND DISCUSSION

5.1 Animal population

5.1.1 Livestock species:

The results in figure (1) showed the species of livestock population in the two states (Central and West Darfur). The analyzed data demonstrated that percentage of the total livestock populations in Central and west Darfur states are 32%, 35%, 23% and 10% for cattle, sheep, goats and camels respectively. The results in figure (2) also indicated that 98% of the pastoralists in the two states are rearing cattle, while 2% are bred other species. Camels' do not owned by much population in the two states. Only 27% of the pastoralists possess camels, while 73% of them have no camels. Ninety seven percent (97%) of the herders reared sheep and 98% of them owned goats. Horses are owned by 94% of the animal breeders in the two states and 97% of the herders possessed donkeys. The dominance of sheep and cattle species could be due to the fact that; sheep and cattle were the most economic animals. These results confirmed the results of Young, (2005).

5.1.2 Animal Breeds:

Approximately all animal species in the two states are local breeds, this result could be due to the fact that; no work has been done for improvement of local breeds in the area, however, local breeds are more resistant to the diseases and more adaptable to the environment than foreign blooded breeds.

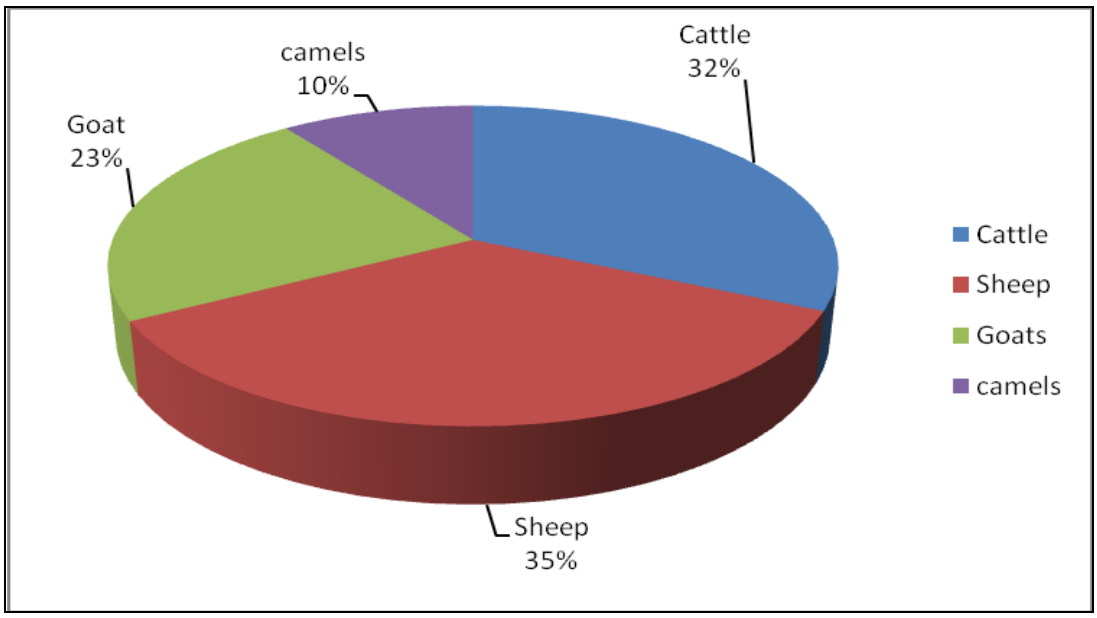

Figure (1) livestock species percentage (according to the respondents)

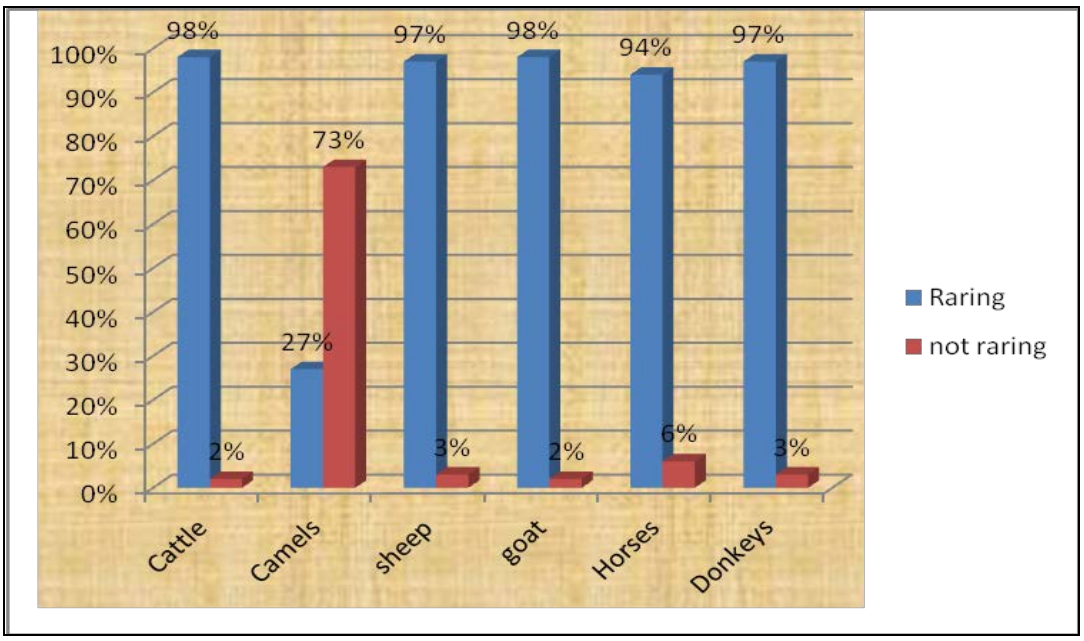

Figure (2) %of herders' raring different species (according to the respondents)

Statistical analysis of the data in figure (3) showed that; 17.3% of the herders bred animals for meat production, while only 0.7% of them reared animals for milk production and 82% of them bred animals for dual purpose, the percentage of cattle bred for meat production is high than that of milk production and that could be attributed to the fact that the majority of the herders' in the area owned cattle of Baggara type which is for meat production.

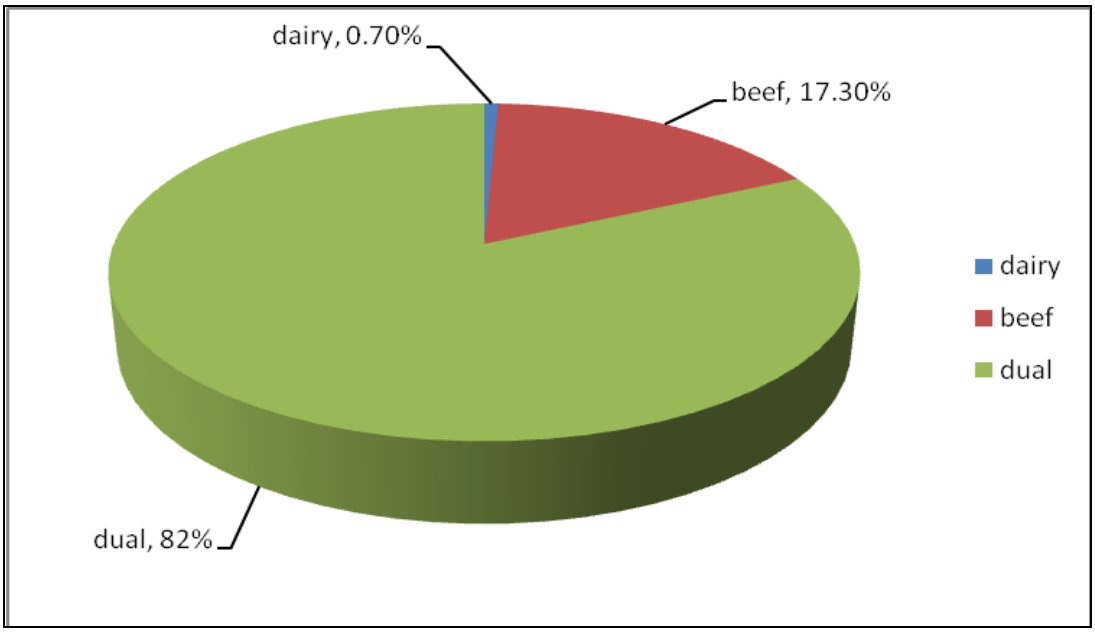

Figure (3) purpose for animal breeding (according to the respondents)

5.1.3. Pastoralist Livestock Population before conflict:

The results in tables (1) showed that the livestock population before the conflict in Central Darfur was about three million heads of different species (920, 1,058, 688 and 297 thousand heads of cattle, sheep, goats and camels, respectively).

Table (1) CD Pastoralists livestock population before conflict (according to the respondents)

Locality	Cattle	sheep	goat	camel	Total
Azum	119,167	137,006	89,100	38,490	**383,763**
Bendesi/Mukjar	196,862	226,331	147,191	63,585	**633,969**
Nertiti	44,841	51,554	33,527	14,484	**144,406**
Umdukhum	162,907	187,293	121,803	52,618	**524,621**
Wadi Salih	200,361	230,354	149,807	64,716	**645,238**
Zalingei	196,473	225,884	146,900	63,460	**632,717**
Total	**920,611**	**1,058,422**	**688,328**	**297,353**	**2,964,714**

The results in table (2) showed that the livestock population before the conflict in West Darfur was about four and half million heads of different species (1.467, 1.687, 1.097 and 0.474 million heads of cattle, sheep, goats and camels, respectively).

Table (2) WD Pastoralists livestock population before conflict (According to the respondents)

Locality	Cattle	sheep	goat	camel	Total
Baida	137,246	157,791	102,617	44,330	**441,984**
Geneina	491,314	564,859	367,348	158,691	**1,582,212**
Habeela/Forbranga	257,321	295,840	192,395	83,113	**828,669**
Krienik	193,817	222,830	144,914	62,602	**624,163**
Kulbus/ Seliea	218,441	251,140	163,325	70,555	**703,461**
Sirba	169,517	194,892	126,745	54,753	**545,907**
Total	**1,467,656**	**1,687,352**	**1,097,344**	**474,044**	**4,726,396**

5.1.4 Pastoralist current Livestock Population:

The data in table (3) demonstrated that the current livestock population in Central Darfur was estimated to

be about two and half millions heads of animals from different species (917, 964, 631 and 258 thousand heads of cattle, sheep, goats and camels respectively). While the data in table (4) demonstrated that the current livestock population in West Darfur was estimated to be about four millions heads of animals from different species (1.406, 1.537, 1.007 and 0.411 million heads of cattle, sheep, goats and camels respectively). In comparison between livestock population before conflict and livestock population at the current time, it is very clear that there is decrease in livestock population.

Table (3) CD Pastoralists current livestock population (according to the respondents)

Locality	Cattle	sheep	goat	camel	Total
Azum	118,781	124,812	81,780	33,451	**358,824**
Bendesi/Mukjar	196,224	206,189	135,099	55,261	**592,773**
Nertiti	44,696	46,966	30,773	12,587	**135,022**
Umdukhum	162,379	170,625	111,797	45,730	**490,531**
Wadi Salih	199,712	209,854	137,501	56,243	**603,310**
Zalingei	195,836	205,781	134,833	55,152	**591,602**
Total	**917,628**	**964,227**	**631,783**	**258,424**	**2,772,062**

Table (4) WD Pastoralists current livestock population (according to the respondents)

Locality	Cattle	sheep	goat	camel	Total
Baida	136,801	143,748	94,187	38,526	**413,262**
Geneina	489,753	514,590	337,172	137,916	**1,479,431**
Habeela/Forbranga	256,486	269,512	176,590	72,232	**774,820**
Krienik	193,188	202,999	133,009	54,406	**583,602**
Kulbus/ Seliea	217,732	228,789	149,908	61,318	**657,747**
Sirba	112,645	177,547	116,333	47,585	**454,110**
Total	**1,406,605**	**1,537,185**	**1,007,199**	**411,983**	**4,362,972**

The decrease in livestock population during the course of the conflict could be due to migration of herders to the safest areas, killing of animals during the war time, looting of animals and buying or slaughtering by the perpetrators. These results concurred with those of Young (2005) and Amin (2009) who reported that due to the current conflict the raiding and looting is increased, some owners have lost whole herds, others migrated with their herds to the town boundaries and even camps where they are facing difficulties in accessing good pasture. They entered the secured towns and settled in temporary houses or camps. Their animals are kept loosely so most of them have been looted either by thieves or armed robberies. The results in figures (4) and (5) show that the decrease in the current populations of sheep and goats in Central and West Darfur compared to

their populations before the conflict was about 5%. The decrease in cattle and camels was about 3% of the population. This decrease could be attributed to the armed robbery, raiding and slaughtering of the animals by the perpetrators. The results were inconsistent with those of Simpkin, (2005) who stated that apart from being killed or wounded by bullets, bombs and landmines, livestock are often stolen or slaughtered by different militias or raiders, or left to wander without herdsmen or killed by wild animals. The decrease in livestock population also might be due to migration of herders to the safest areas. Moreover, our findings were in agree with those of Mohammed, (2005) who recorded that large number of herders along with their animals fled to the neighboring states of Bauchi, Nassarawa, Kaduna and the territory of Federal Capital of Nigeria.

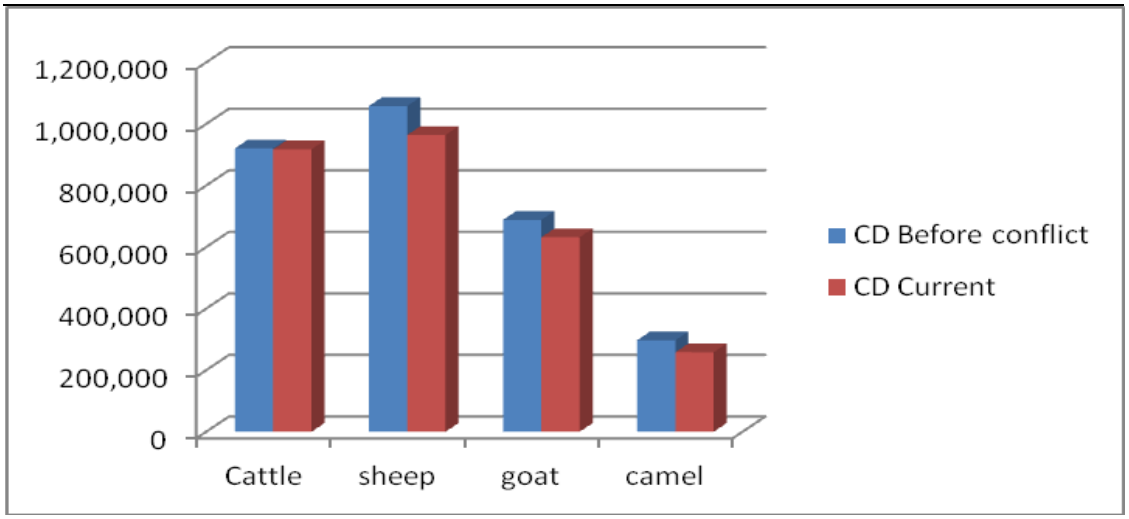

Figure (4) comparison between livestock population before conflict and now in Central Darfur

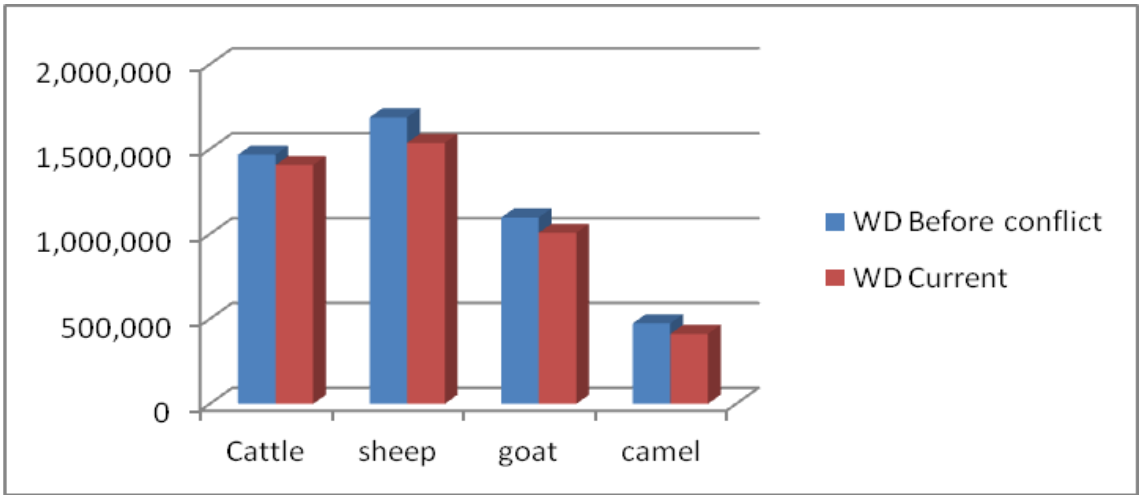

Figure (5) comparison between livestock population before conflict and now in West Darfur

5.1.5. Livestock population status

The results in figure (6) showed that 60% of the respondents said that the livestock population was decreased, 36% told that it was increased, while 4% them said it remained constant, and according to the assumption of the majority the livestock population was decreased and that could be due to the fact that the stock-keepers have been displaced and lost some of their stock. They entered the secured towns and settled in temporary houses or camps, these as were reported by Young (2005). The data in figure (7) demonstrated that 64 % of interviewed livestock owners said, the conflict was main cause of decrease in livestock population, 6% said robbery was the cause, 4% said the cause was looting of animals, 3.3% said diseases were the main causes, 13.3% said bad services were the cause, while 9.3% of them assumed that the losses in livestock was due to poor pasture.

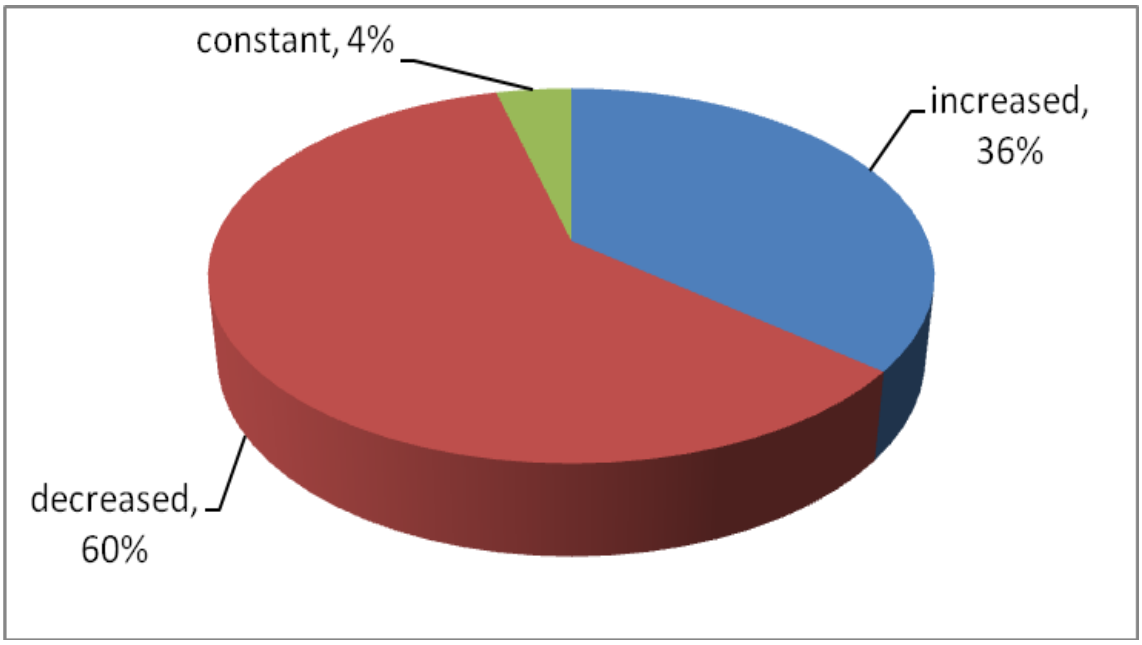

Figure (6) livestock population status (according to the respondents)

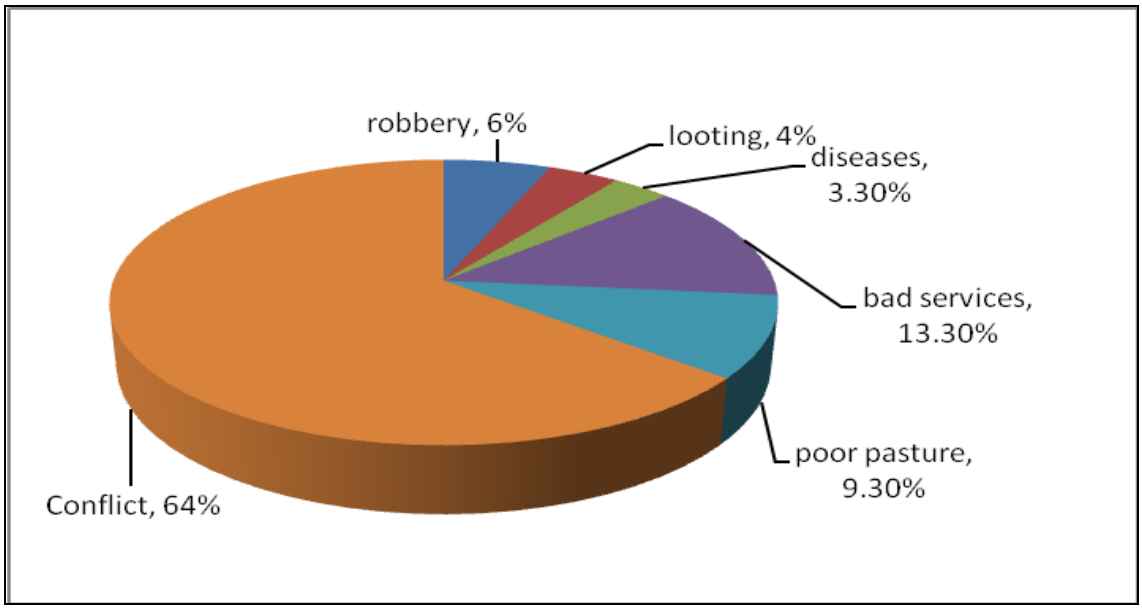

Figure (7) causes for decrease in livestock population (according to the respondents)

Decrease in livestock population could be attributed to the raiding and looting of animals. These results were in agreement with those of Young (2005) who reported that due to the current conflict the raiding and looting is significantly increased, some owners have lost whole herds, others migrated with their herds to the town boundaries and even camps where they are facing difficulties in accessing good pasture.

5.2. Pastures and migratory routes

5.2.1 Pasture Situation:

The result in figures (8 and 9) showed that 56% of the pasture was uncomfortable and inaccessible while 44% of livestock owners said that pastures are comfortable, and 63% of the pasture was poor. The inaccessibility to pastures probably due to security reasons, while the poor pasture was due to overgrazing in the limited pastures and the herders could not move to the high lands and rich pastures for security reasons. These results are in line with those of Simpkin (2005) who stated that high concentration of livestock in one area has exerted enormous pressure on pasture lands and

degraded pasture resources and water points. Also These results are confirming of Young (2009) which estated that

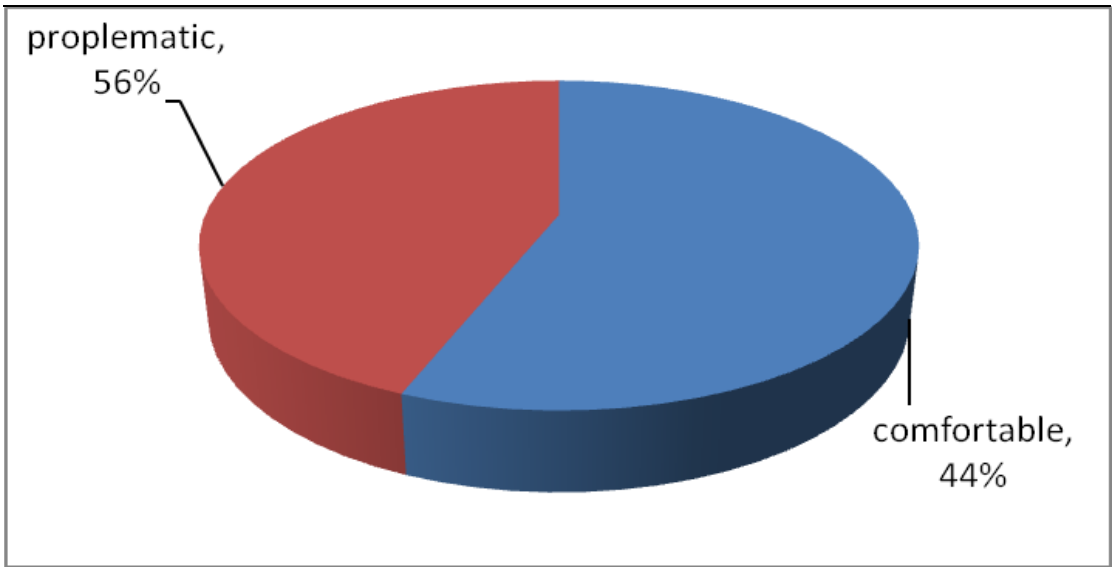

Figure (8) Pasture situation (a) (according to the respondents)

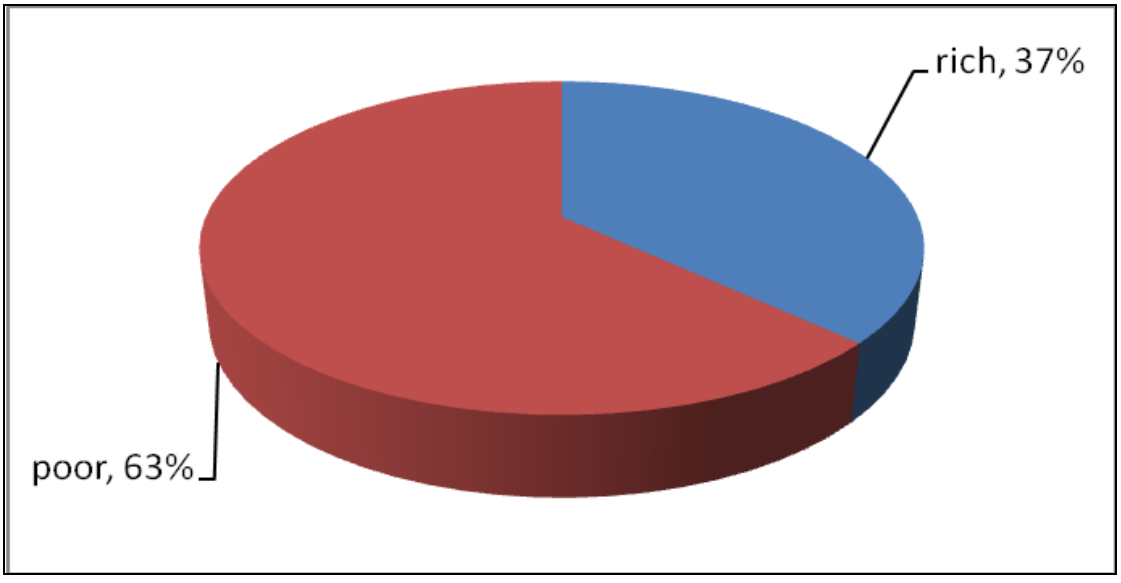

Figure (9) Pasture situation (b) (according to the respondents)

5.2.2 The migratory routes:

The data in figure (10) revealed that livestock migratory routes were affected by the conflict, 59% of the migratory routes were changed. The result in figure (11) explained that the main reason for changes in the migratory routes was the conflict. It was found that 54% of reasons were the ongoing conflicts, 42% were cultivation in the livestock migratory routes and 4% were fire. However, the results in this study agreed with those of Young (2005) and Simpkin (2005) who reported that some of the routes have been altered due to weak law enforcement, expansion of farmlands, increased hostility between the Arabs and non-Arabs and the control of some critical areas by the SLA along the traditional migratory routes which resulted in the restriction of access for the Jamala (northern Arabs) pastoral population to the wet season grazing reserves. Also the results agreed with those of Young (2009) which reported as the blocked migration routes, which were described earlier, have confined herds to more restricted grazing areas, thus affecting their health and contributing to excess deaths.

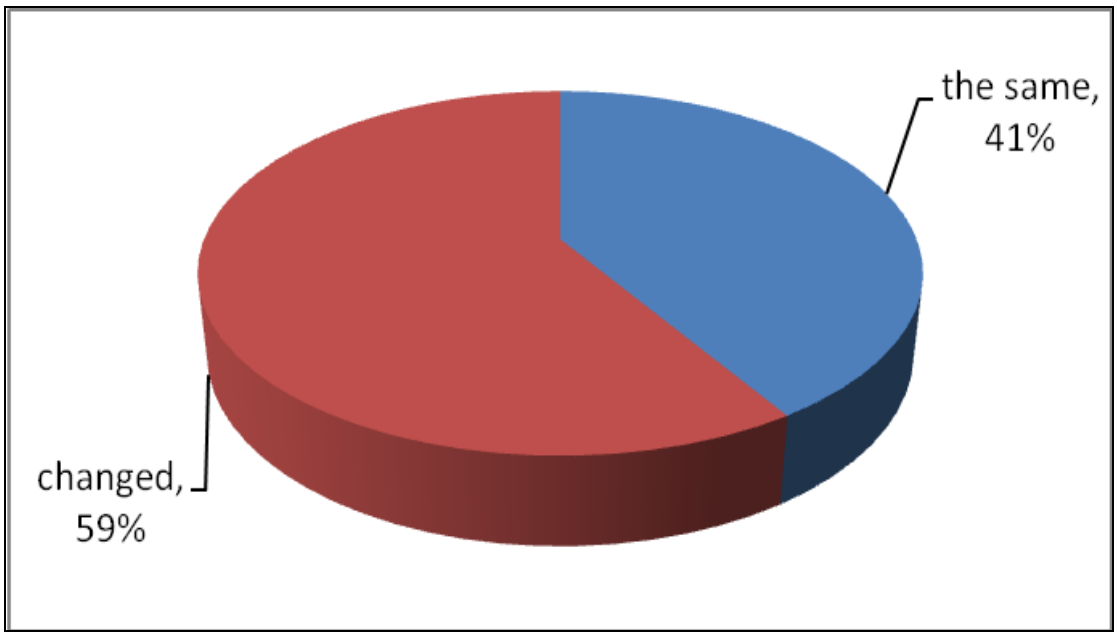

Figure (10) Migratory routes status (according to the respondents)

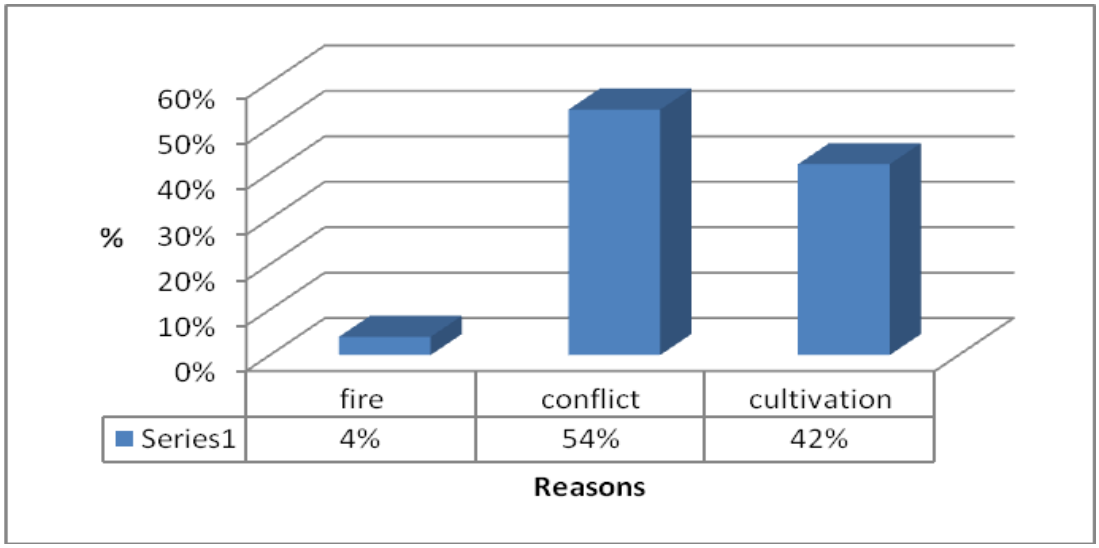

Figure (11) reasons for changes in migratory routes (according to the respondents)

5.3 The Veterinary Services

The results in figure (12) showed that 52% of the veterinary services available before the conflict were lost and disappeared from the area and only 48% of veterinary services were available. The lack in veterinary services could be due to the insecure situation in the area, lack of veterinary capacity, the authorities did not paid any care to the area and the cost recovery system of vaccination. The data in figure (13) revealed that 86% of available limited services were routine vaccinations, 11% were trainings, while 3% of the services were extension services. Moreover, the results in figure (14) showed that 72% of the reasons for lack or poor veterinary services were the prevailing insecure situations in the two states. The results were confirmed by Simpkin (2005) who concluded that animal health in general is a major constraint to the livestock sector in Sudan. Before the war livestock vaccinations and treatments used to be heavily subsidized by the government. The result also in line with those of Young (2005) who reported that the veterinary services significantly reduce due to insecure

situations as well as the very week livestock yield in terms of animal production.

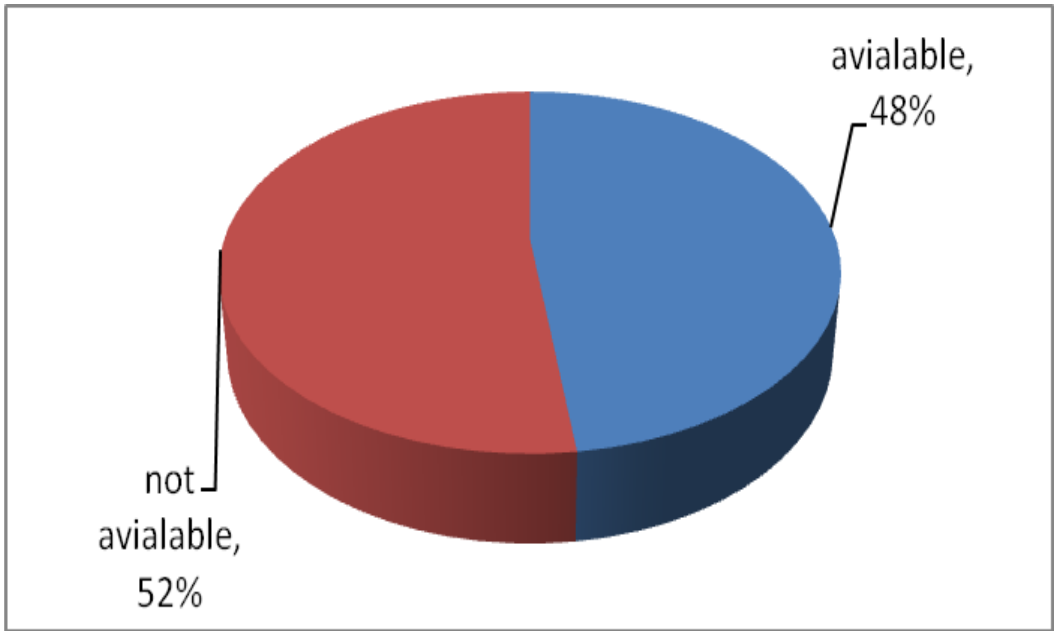

Figure (12) veterinary services status (according to the respondents)

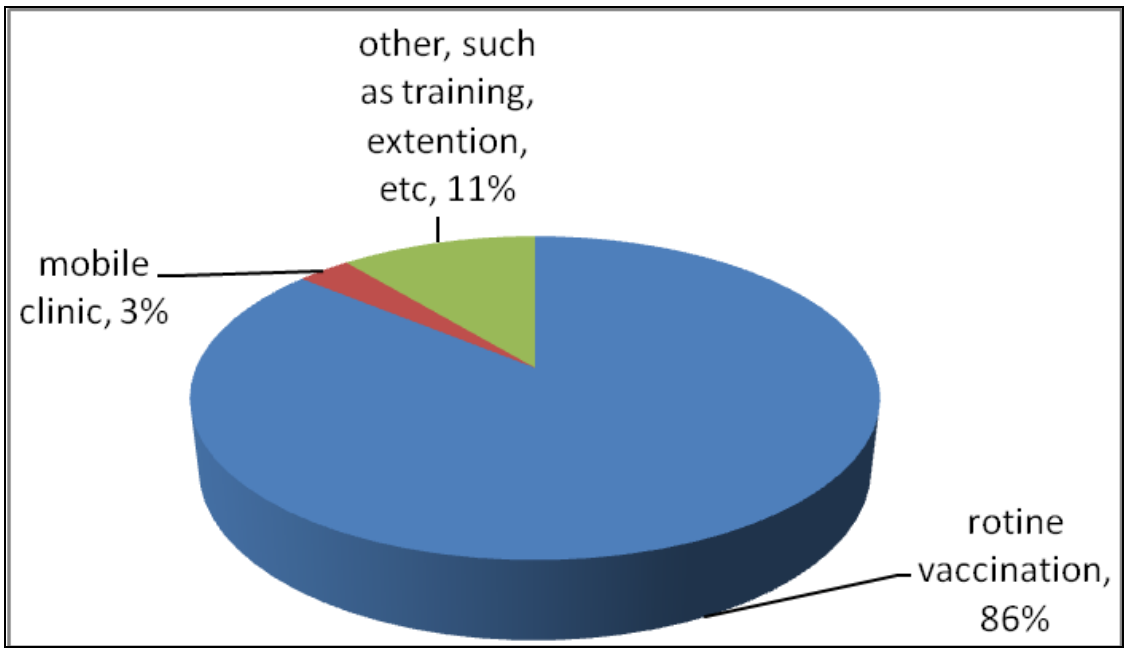

Figure (13) types of veterinary services available (according to the respondents)

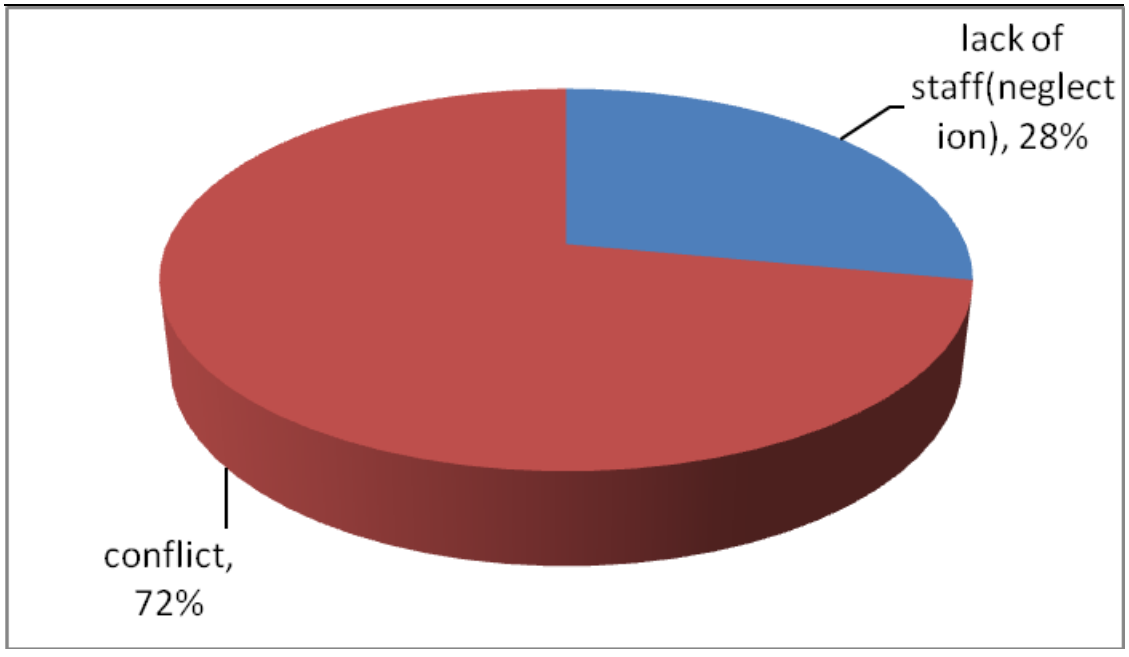

Figure (14) lack veterinary services reasons (according to the respondents)

5.4 Animal Diseases Situation

5.4.1 Common endemic diseases in the area

The data in figure (15) showed that the endemic diseases during the course of the conflict were increased, 51% of the respondents said that the endemic diseases increased, while 23% of them said decreased and 26% said it is remaining as before the conflict and no changes were seen in endemic diseases situation. The increase in the endemic diseases could be due to lack of veterinary services, poor pasture and lack of access for security reasons. These findings were consistent with those of Simpkin (2005) who recorded that the conflict threaten livestock in a given region range from slow onset (chronic) to rapid onset (acute), to complex, and the populations most affected are: pastoralists, small farmers with minimal livestock holdings, or those who manage mixed farming systems. Animal mortalities from malnutrition increased because fodder is insufficient. Endemic diseases increased when herds were mixed at watering points and weakened animals have low

resistance. Also the result was in line with those of Young (2009) that Livestock health is an important concern of all abbala. Various livestock diseases were mentioned, some with relatively high mortality. Um sardab (hemorrhagic septicemia), which occurs especially at the beginning of the rainy season, has a mortality rate that ranges from 100 to 200 deaths in the Zariba region. Tick infestation and tick-borne disease currently need attention. The blocked migration routes, which were described earlier, have confined herds to more restricted grazing areas, thus affecting their health and contributing to excess deaths. The reported livestock diseases included haemonchosis and tick-borne diseases.

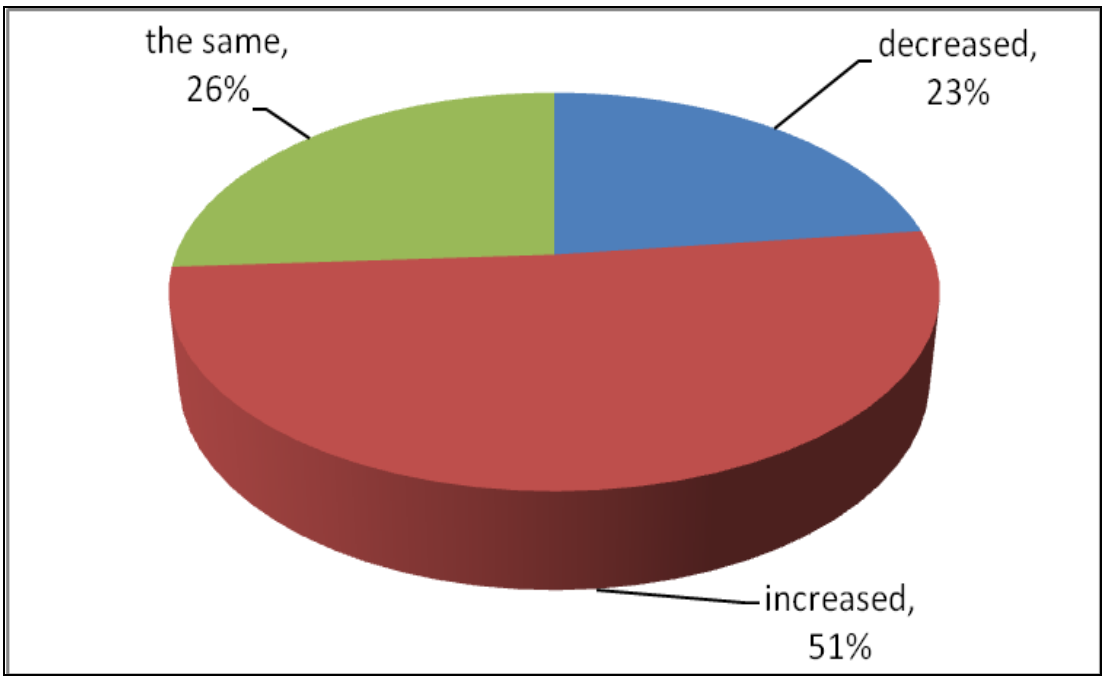

Figure (15) situation of endemic diseases during last 5 years (according to the respondents)

5.4.2 The Epidemic Diseases

The results in figure (16) revealed that 45% of the respondents said the epizootic diseases were increased during the course of the conflict could be due to the tribal conflict in the area, while 17% of them, thought the epizootic diseases decreased, and 38% said the epizootic diseases situation remained the same as before the conflict. The increase in epizootic diseases probably due to lack of animal vaccination in particular and veterinary services in general, these results were in accordance with those of Simpkin (2005) who reported that animal health

in general is a major constraint to the livestock sector in Sudan. Before the war livestock vaccinations and treatments used to be heavily subsidized by the government.

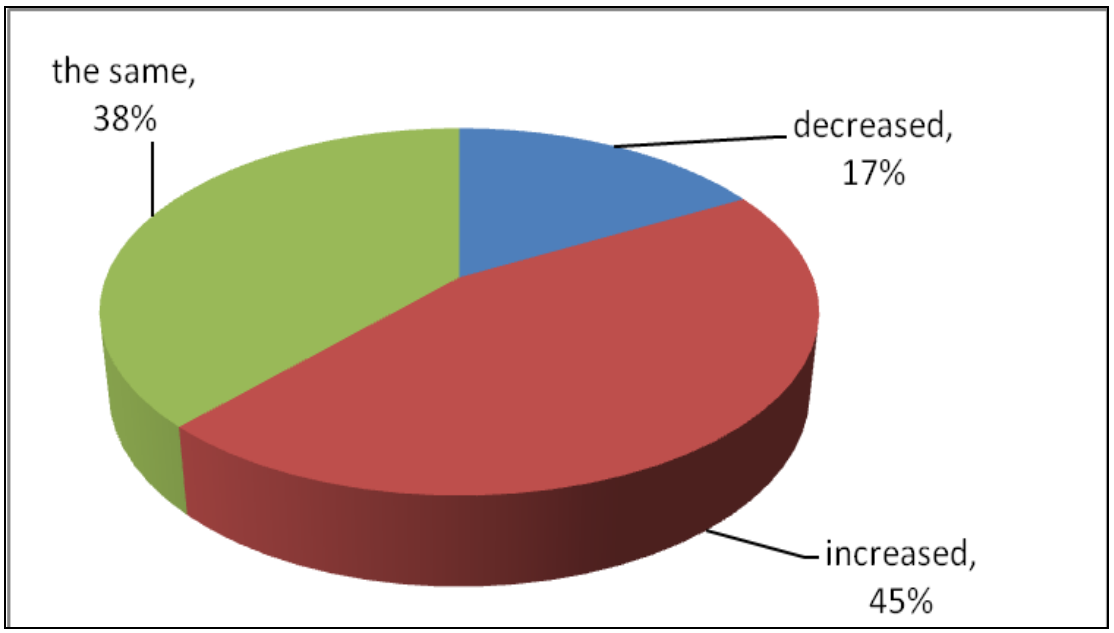

Figure (16) situation of epidemic diseases (according to the respondents)

5. 5. The social status of the Pastoralist

The data in figure (17) showed that 95% of the pastoralists' communities were married, 3% of them were widows, and 2% were in divorced situations. While the result in figure (18) showed that 77% of the pastoralists have family members ranged between 3 to 10 individuals, 20% of them have family members ranged

between 11 to 17 individuals, while 3% have family members ranged between 18 to 27 family members.

The results in figure (19) revealed that 75% of the pastoralists were working for themselves or for their families, 16% of them working for others as labors and 9% of the community working for both themselves and other families, this meant that the labors are not available in the pastoral communities as before the conflict and this result agreed with those of Young (2009) who stated that before the conflict many Arabs living in the Damra would employ herders to look after their livestock, for payments of approximately thirteen sheep annually and one to two young camels, depending on the quality of the labor. In addition, herders are given all their food supplies. Since the war started, most of the labor joined the military groups, thus creating a shortage of herders for hire.

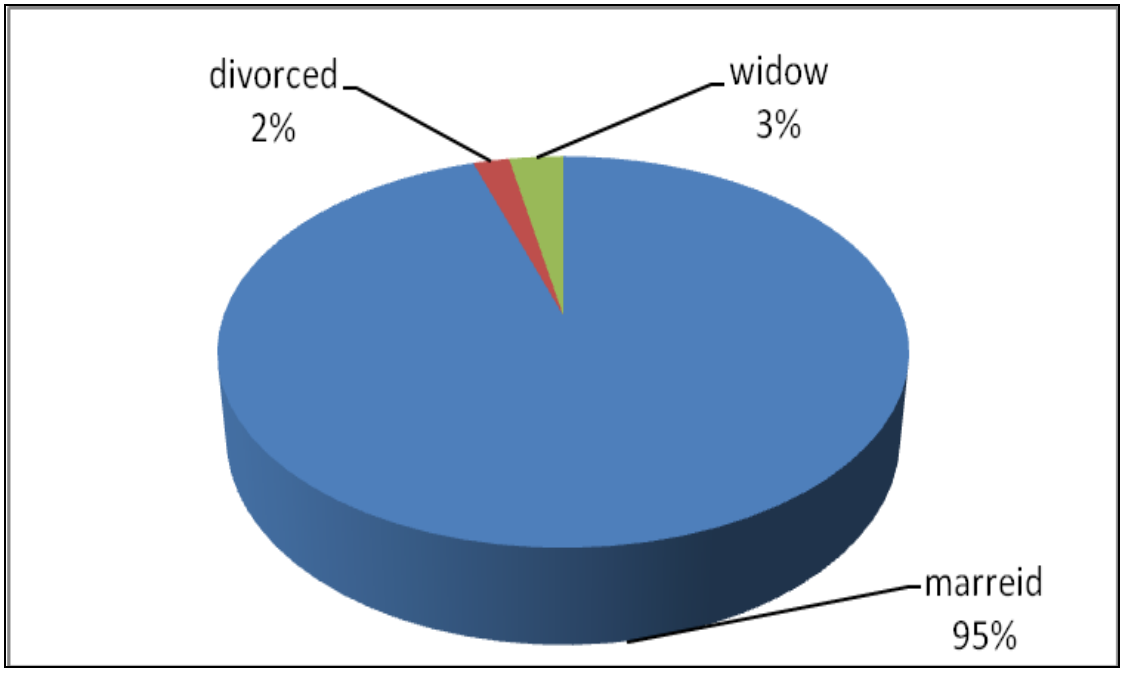

Figure (17) Pastoralists social status (according to the respondents)

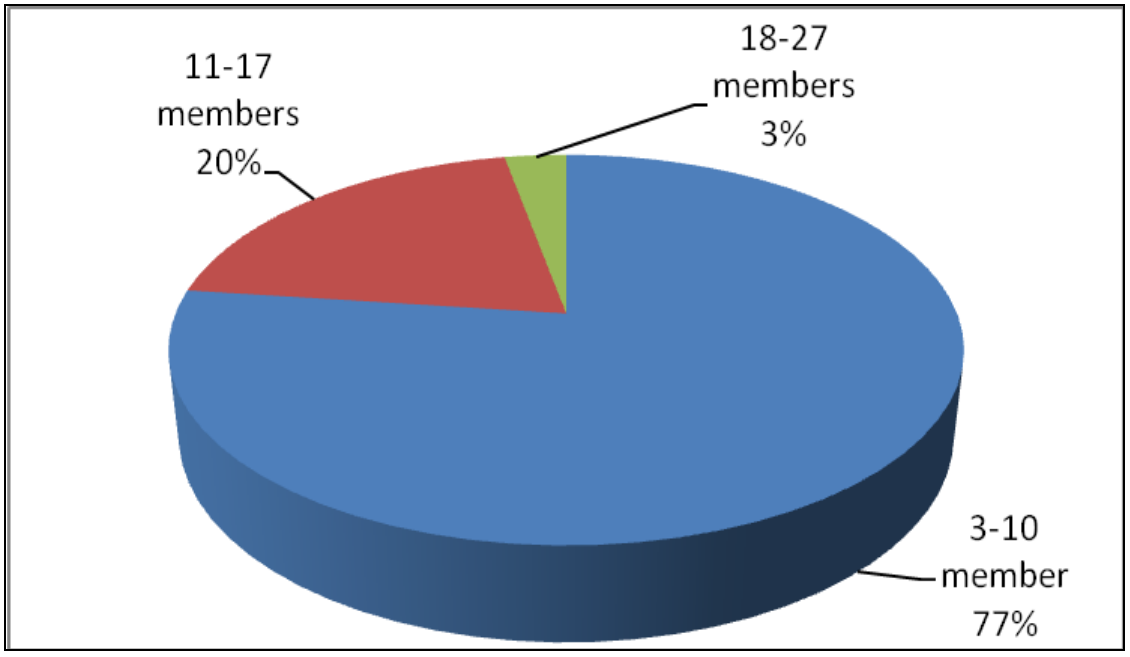

Figure (18) Pastoralists family members (according to the respondents)

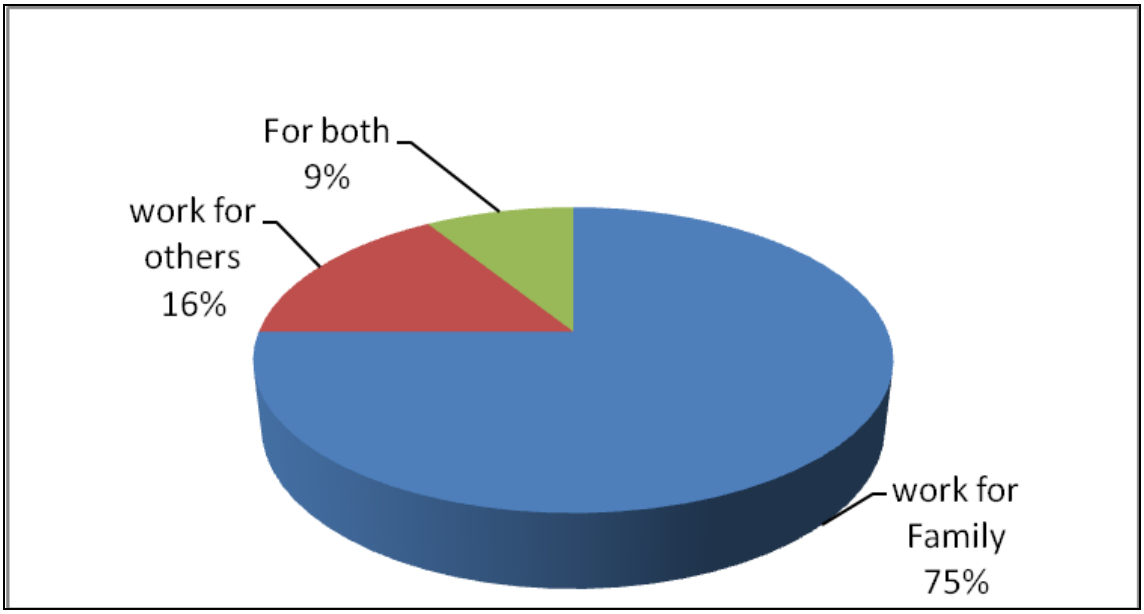

Figure (19) Pastoralists work for others (according to the respondents)

5. 6 Pastoralists Livelihood

Livestock is one of Darfur's main economic assets and a central component of most rural livelihoods, so the main livelihood option of pastoralist is animals raring. Other livelihood options carried out by pastoralist were cultivation, fire wood collection, charcoal production, dry grass sale, building woods sale, agricultural products transportation, wild food collection, leather handcrafting, militarization, securing roads and some other activities.

5. 6.1 Livelihood groups

The result in figure (20) showed that 26% of pastoral livelihood groups in the two states were pastoralist, 52% of the groups were agro-pastoralists, 19% of them were farmers and 3% of them were IDPs. The high percentage of agro-pastoralists group was clearly indicate that nature of pure nomads was changed to semi nomads or the pastoralists were settled and became agro-pastoralists.

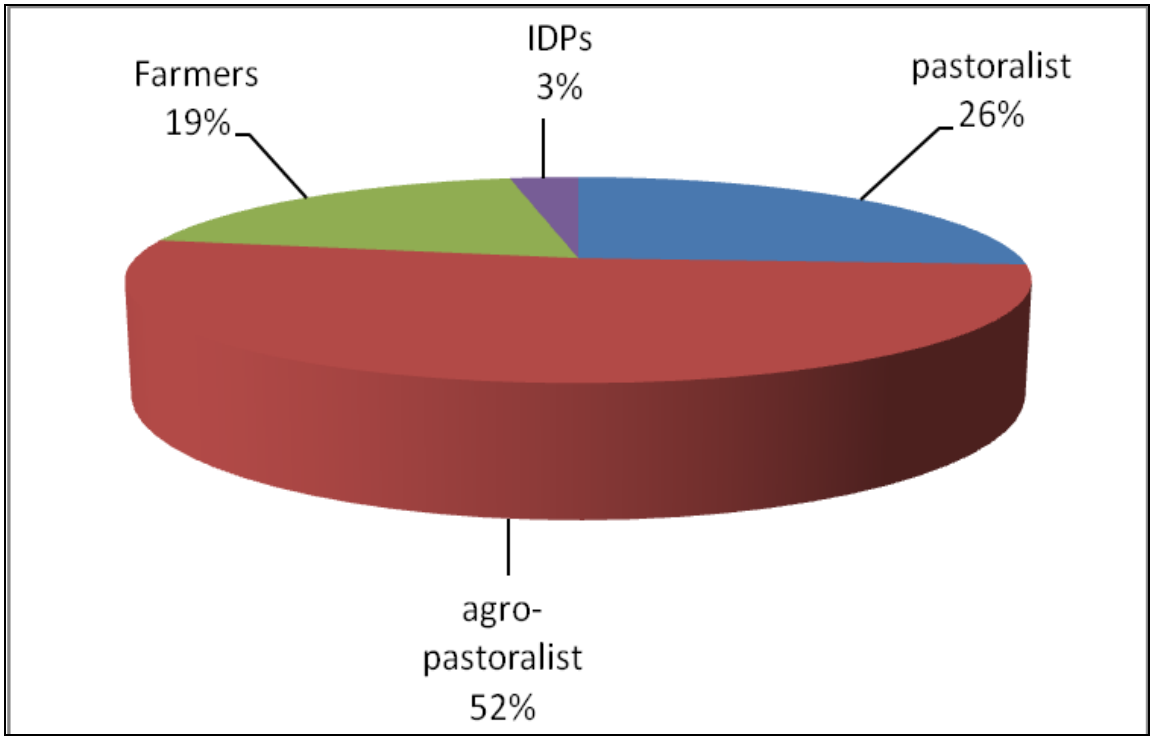

Figure (20) Pastoralists livelihood groups

5. 6.2 Livelihoods options before the conflict and currently

The data in figure (21) revealed that 98% of the pastoral communities carrying out animal raring as main livelihood activities before the conflict, while 94.7% of them experience animal raring activity currently, 82.6 % of pastoral communities used to cultivate before the conflict, this was turn to 86% currently. The portion of pastoralists working on fire wood collection before the conflict was 22.1% of the community and currently increased to 37.3%. The charcoal production was conducted by 10.1% of the pastoral community which was increased to 25.3% currently. The portion of the community that worked on grass sale before the conflict was 12.1%, which was turn to 23.5% currently. Building woods sale is also a component of pastoralist livelihood activities carried by 18.8% of them before the conflict and currently increased to 28.7%. Before the conflict, pastoralist used to transport the agricultural products for the farmer as an activity done by 23.5% of the community which is now carried by 26% of them. Wild food collection and leather handcrafting carried by 11.4%

and 20.1% respectively, while now increased to 16.7% and 26% of the community respectively. Militarization, securing roads and other activities before the conflict carried by small portion of pastoral community only 5%, 6% and 4% of the community respectively, while now these activities increased dramatically to 30%, 32% and 15% of the community respectively. From the above stated results of livelihood options it was very clear there was a change occurred in pastoralist livelihood as the result in figure (22) shown 84% of the respondents said the livelihoods changed, and that was positive impact of conflict on the pastoralist livelihood options as the results in figure (23) show that 65% of the respondents said the livelihood options changed to the good. These findings were in line with these of Young who reported that the livelihoods of the Northern Rizaygat are going through rapid transition. Traditional livelihood strategies linked to camel-based pastoralism have declined with the loss of access to seasonal pastures and the massive increase in salaried military service as a livelihood strategy. This has been accompanied by sweeping changes in pastoralist

lifestyles as their seasonal movements are restricted to safe zones. This restriction denies them access to their favored pastures, particularly in the north. The control of this northern area of Darfur by the Zaghawa has blocked former Arab livestock trade with Libya and Egypt, an important source of livelihood for a large number of people.

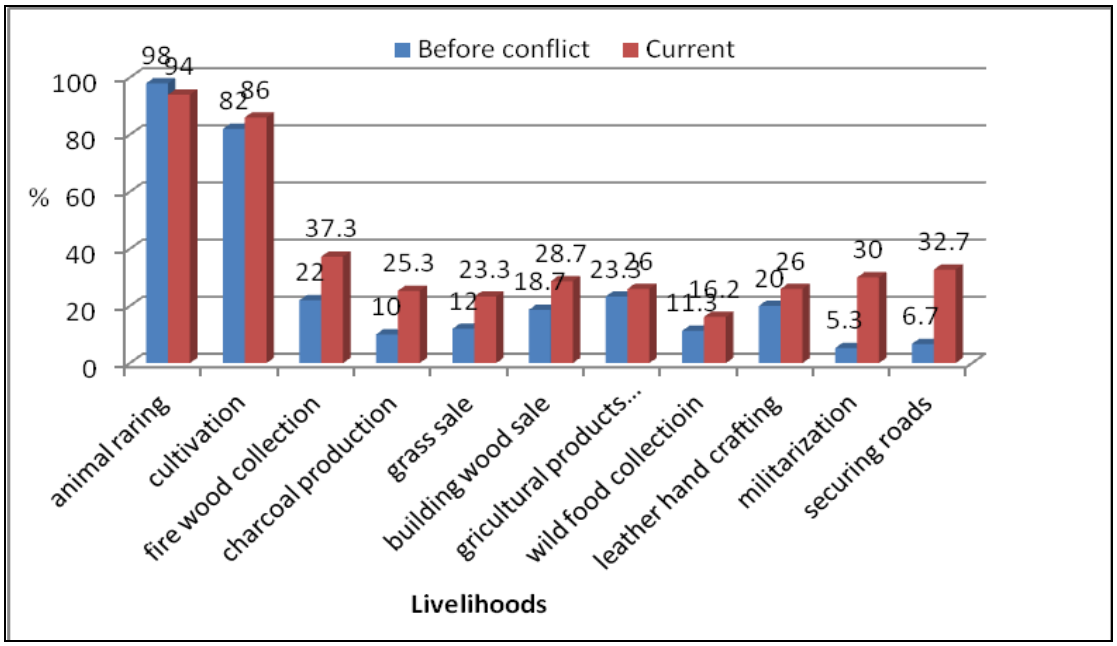

Figure (21) %Pastoralists Livelihoods before the conflict and currently

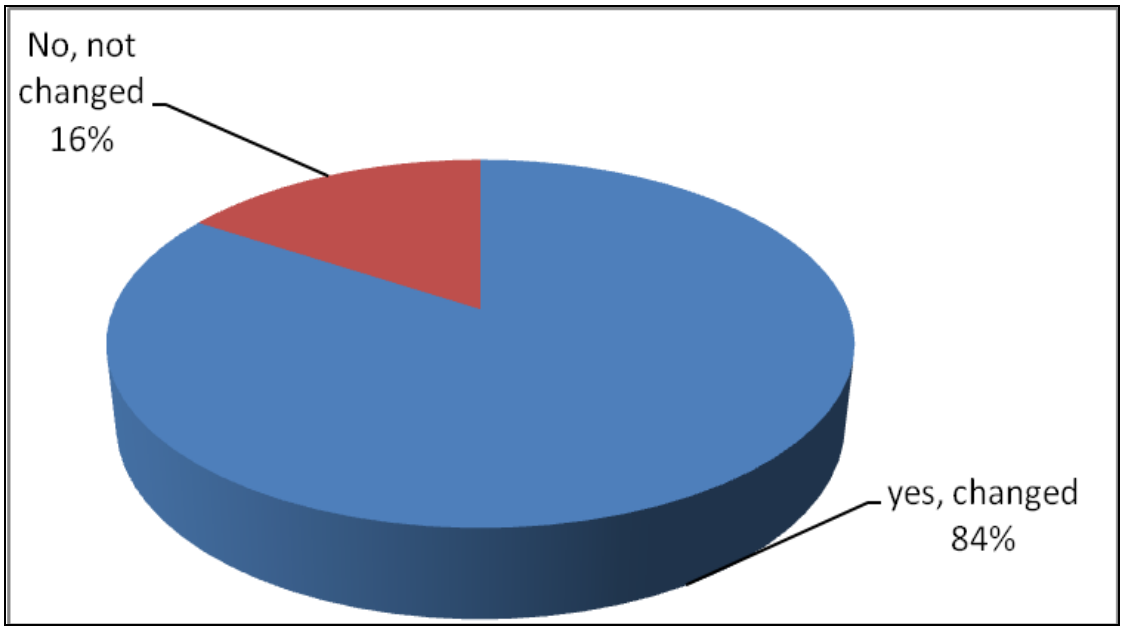

Figure (22) Pastoralists Livelihoods option situation

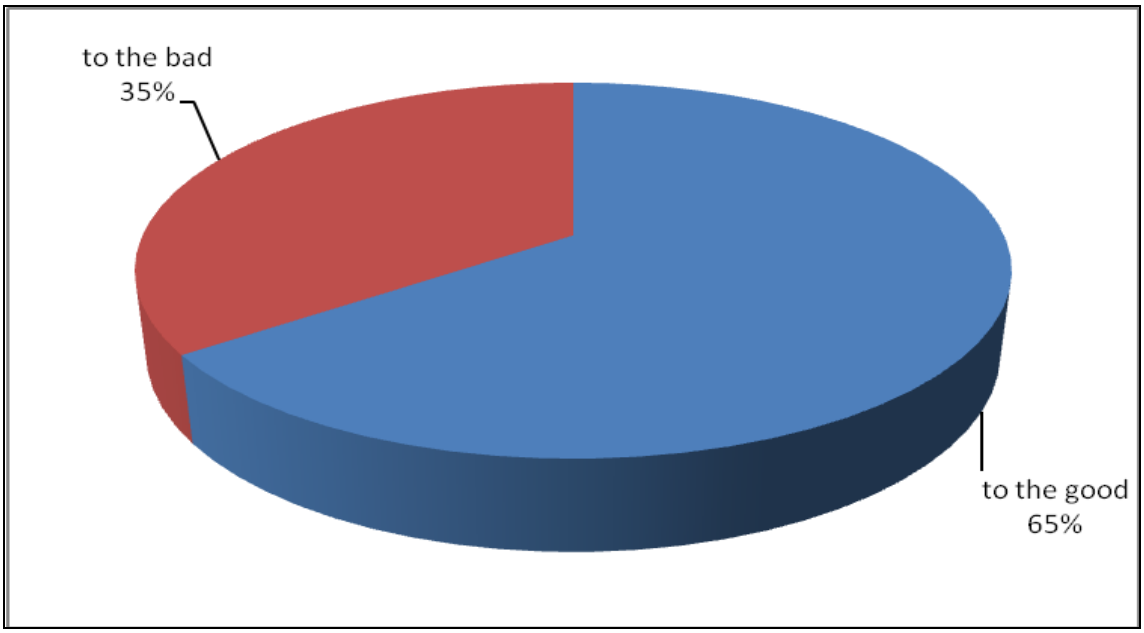

Figure (23) Pastoralists Livelihoods option status

5.7 Relationship between pastoralists and farmers

The data in figure (24) showed that the relationship between the nomadic pastoralists and sedentary farmers was affected by the conflict. eighty six percent of the relationships between the pastoralists and farmers turned to be bad, while 14% of the relationships remained as good relationships, the bad relationships between the pastoralists and farmers could be due to the blockage of migratory routes, destruction of farms and/or competition over scarce resources as the results in figure (25) demonstrated that 88% of the reasons for bad relationship between pastoralists and farmers were the conflicts, while 10% of the reasons were destructions of field crops and 2% of the reasons were obstruction of migratory routes. The results were in accordance with those of Hendrickson et al (1998) who stated that the direct impact of raiding on livelihood security is devastating, while the threat of raids and measures taken to cope with this uncertainty undermine herders' relationships and livelihood strategies. Moreover, Simpkin (2005) revealed that Pastoralist's communities in searching for acceptable grazing land often clashed with

other pastoralists seeking the resources. However, pastoralists were increasingly impinged on fertile land cultivated by sedentary groups near same waterways. This development fuels tension and conflict with new groups who did not necessarily share the same goals or needs as the pastoralists. In the past, pastoral conflict usually involved pastoralists with common interests.

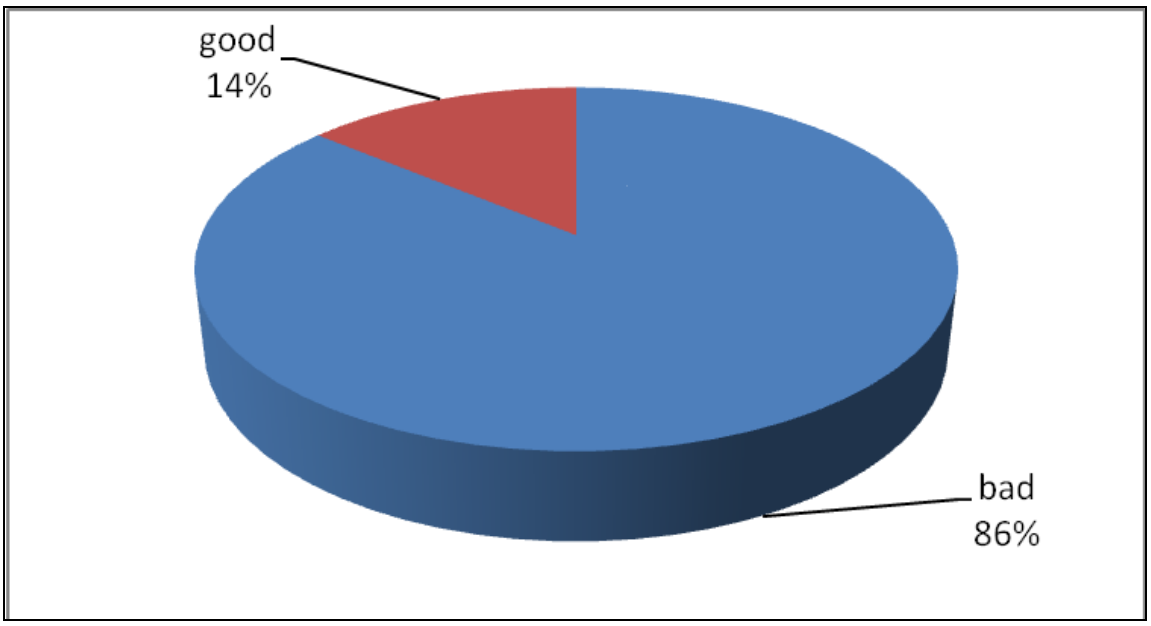

Figure (24) relationship between pastoralists and farmers (according to the respondents)

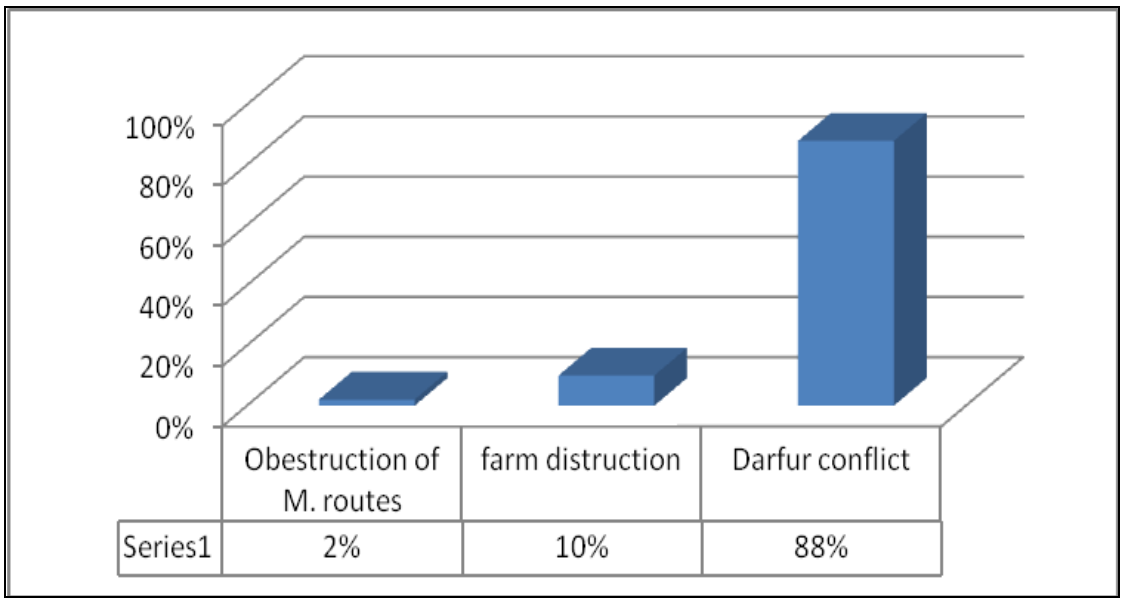

Figure (25) reasons for bad relationship between pastoralist and farmer (according to the respondents)

5.8 Livestock Ownership

There are four categories of livestock owners, nomads, semi-nomads, sedentary communities and internally displaced persons (IDPs). The data in figure (26) showed that 27% of the livestock owners are nomads, 41% are semi-nomadic, 24% sedentary communities and 8% are IDPs.

The data in table (5) demonstrated the livestock population owned by the four categories (nomads, semi-nomads, sedentary communities and IDPs) before the conflict. Nomads owned approximately 644, 741, 482

and 208 thousands heads of cattle, sheep, goats and camels respectively, semi-nomads owned 979, 1.125, 732, 316 thousands heads of cattle, sheep, goats and camels respectively, while Sedentary communities have 513, 628, 428 and 185 thousands heads of cattle, sheep, goats and camels respectively, and the IDPs owned 191, 219, 142 and 61 thousands heads of cattle, sheep, goats and camels respectively.

Table (5) showed Livestock Ownership categories before the conflict (according to the respondents)

Category	Cattle	sheep	goat	camel	Total	%
nomadic	644,832	741,359	482,131	208,277	2,076,599	27
semi-nomadic	979,189	1,125,767	732,126	316,273	3,153,355	41
Sedentary	573,184	658,986	428,561	185,135	1,845,866	24
IDPs	191,061	219,662	142,854	61,712	615,289	8
Total	**2,388,266**	**2,745,774**	**1,785,672**	**771,397**	**7,691,109**	**100**

The results in table (6) showed the current livestock population owned by different categories. Numbers of livestock owned by Nomads are: 604, 645, 426 and 174 thousands heads for cattle, sheep, goats and camels, respectively. Semi-nomads owned 1.20 million, 1.29 million, 852, 348 thousands heads of cattle, sheep, goats and camels respectively. Sedentary communities owned 441, 471, 311 and 127 thousands heads of cattle, sheep,

goats and camels respectively. IDPs owned 69, 74, 49 and 20 thousands heads of cattle, sheep, goats and camels respectively.

Table (6) Current Livestock population per ownership categories (according to the respondents)

Category	Cattle	sheep	goat	camel	Total	%
nomadic	604,301	645,687	426,135	174,306	1,850,429	26
semi-nomadic	1,208,601	1,291,374	852,271	348,612	3,700,858	52
Sedentary	441,604	471,848	311,407	127,377	1,352,236	19
IDPs	69,727	74,502	49,169	20,112	213,510	3
Total	2,324,233	2,483,411	1,638,982	670,407	7,117,033	100

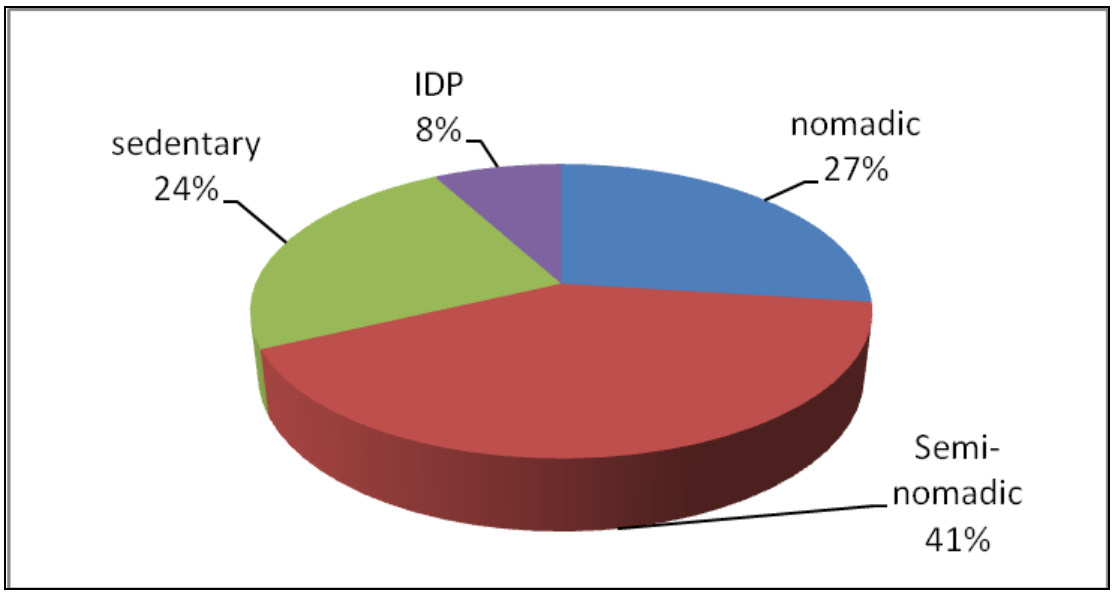

Figure (26) livestock owners (according to the respondents)

The data in figure (27) showed that before the conflict nomads, semi-nomads, sedentary communities and IDPs possessed 27%, 41%, 24% and 8% of total livestock population in the area respectively. While the results in figure (28) revealed that the current percentage of livestock population owned by nomads, semi-nomads, sedentary, and IDPs communities was 26%, 52%, 19% and 3% of total livestock population in the area, respectively. The increase in the semi-nomads' livestock percentage from 41% before the conflict to 52% currently could be due to raiding and looting from other categories, natural growth and /or migration from insecure areas and accumulation at safer areas. The drop on percentage of livestock owned by IDPs from 8% before the conflict to 3% might be attributed to the raiding , looting of livestock and displacement of the IDPs to the camps which let to shift on ownership from category to category. These results were in harmony with those of Simpkin, (2005) who reported that often, livestock are slaughtered to generate income or stolen by soldiers, militias or other desperate people to change ownership. Forced migration of people without their animals can

also severely affect the lives and livelihoods of livestock owners. Moreover, the result agreed with the findings of Young, (2005) who stated that in economic terms, livestock is the primary target of this conflict. Various sources suggested that the non–Arab population lost between 50-90% of their livestock due to the government armed forces. Solving the livestock issues are central to finding lasting solutions to the problems in Darfur.

The data in figures (29), (30), (31) showed the comparison between the ownership of the three categories (semi-nomads, sedentary and IDPs) before the conflict and the ownership of the same categories in the current time. The semi-nomads' current livestock population increased. While the current livestock population for the sedentary and IDPs is decreased, this clearly indicated the impact of the conflict on livestock ownership in the area.

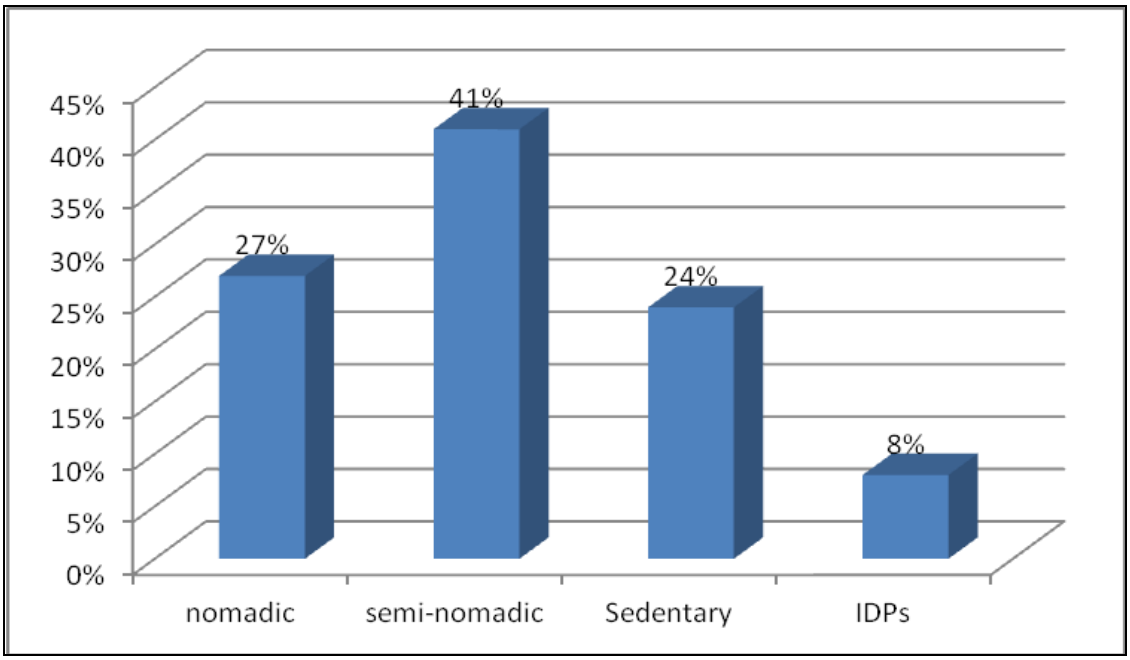

Figure (27) percentage of livestock per categories before conflict (according to the respondents)

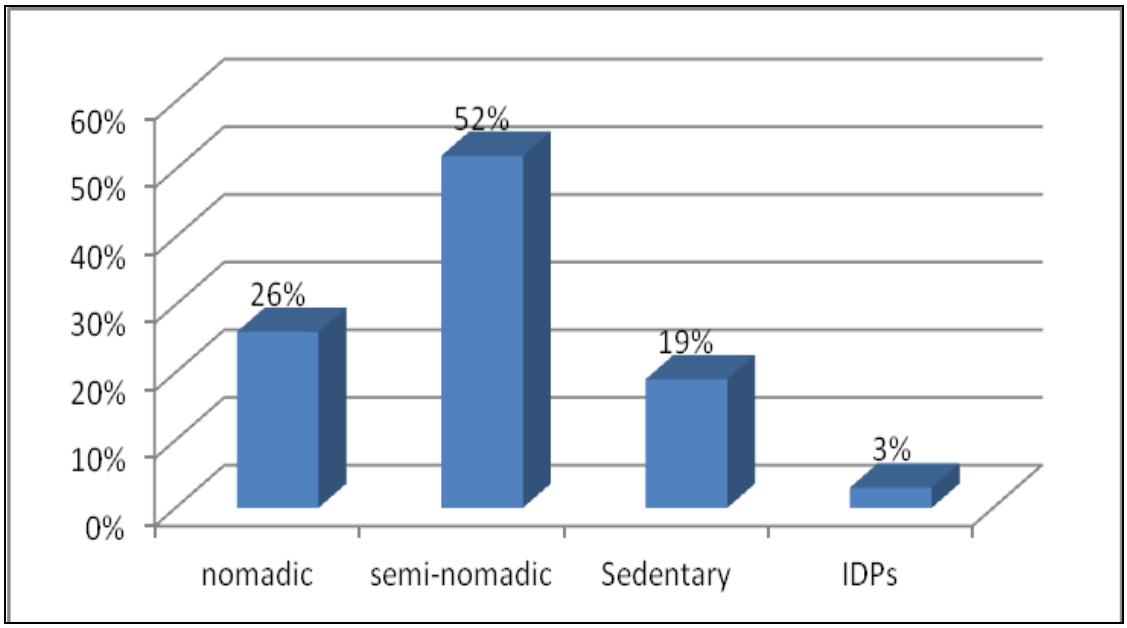

Figure (28) current percentage of livestock per owner categories (according to the respondents)

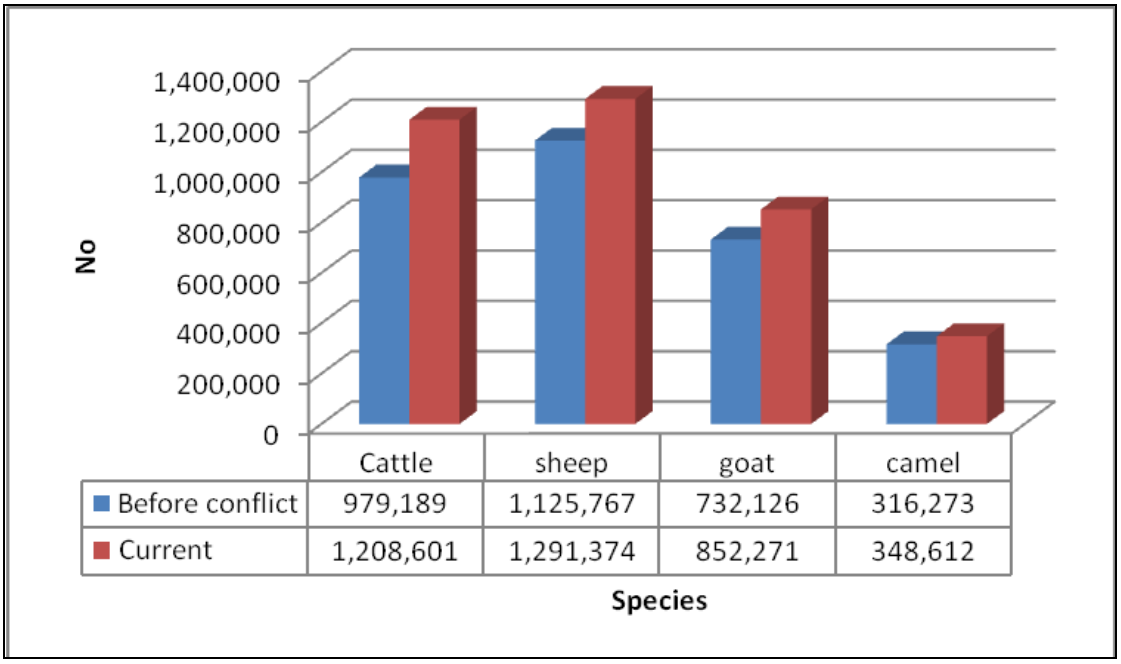

Figure (29) Semi-nomads livestock population before conflict and currently

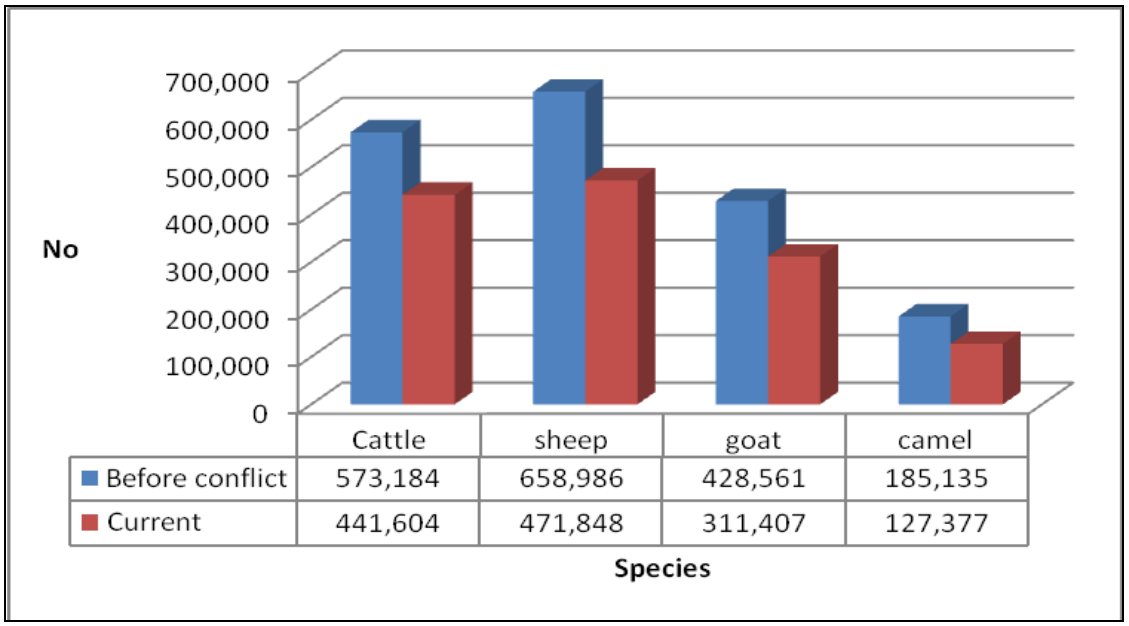

Figure (30) sedentary livestock population before conflict and currently

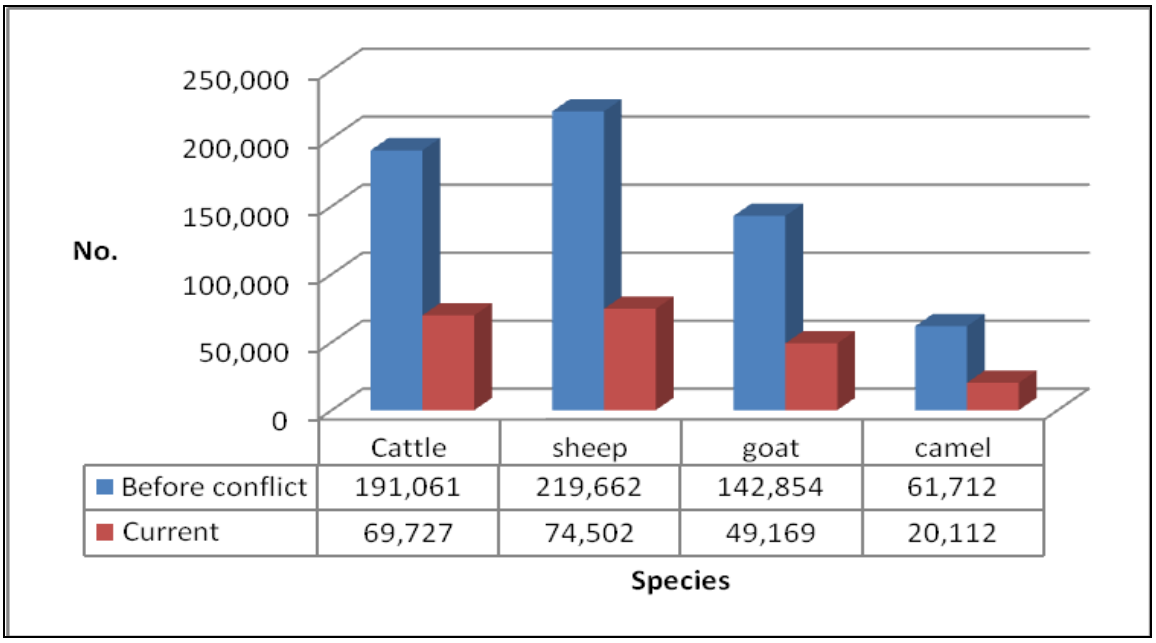

Figure (31) IDPs livestock population before conflict and currently

5.9 Animal husbandry and production

5.9.1 Water Resources:

The result in figure (32) showed that 65% of the water resources in the area were boreholes, while 19% of the water resources were seasonal rivers (wadies), and 16% of the water resources in the area were ponds. The dominant of borehole water resource could be due to the fact that the Wadies and ponds were seasonal water resources and they only conserve water during the rainy season and sometime after e.g. within the period from July to January. The results were confirmed those of Omosa (2005) who reported that the current livestock

populations in the district depending on 35 operational boreholes. This implies that there are more users of the limited water and, as such, chances of conflicts over access and use were very high.

Regarding the watering intervals for livestock in the area, the data in figure (33) showed that 94% of the livestock were used to be watered on daily basis, while 1% of livestock watered once every second day and 5% were watered within intervals of more than one day.

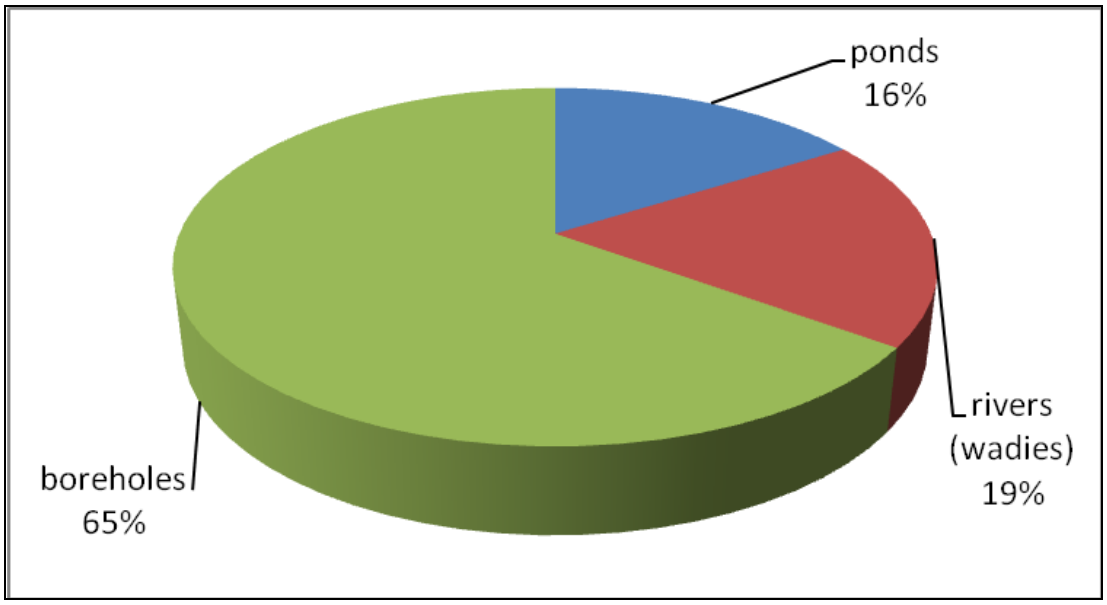

Figure (32) water resources (according to the respondents)

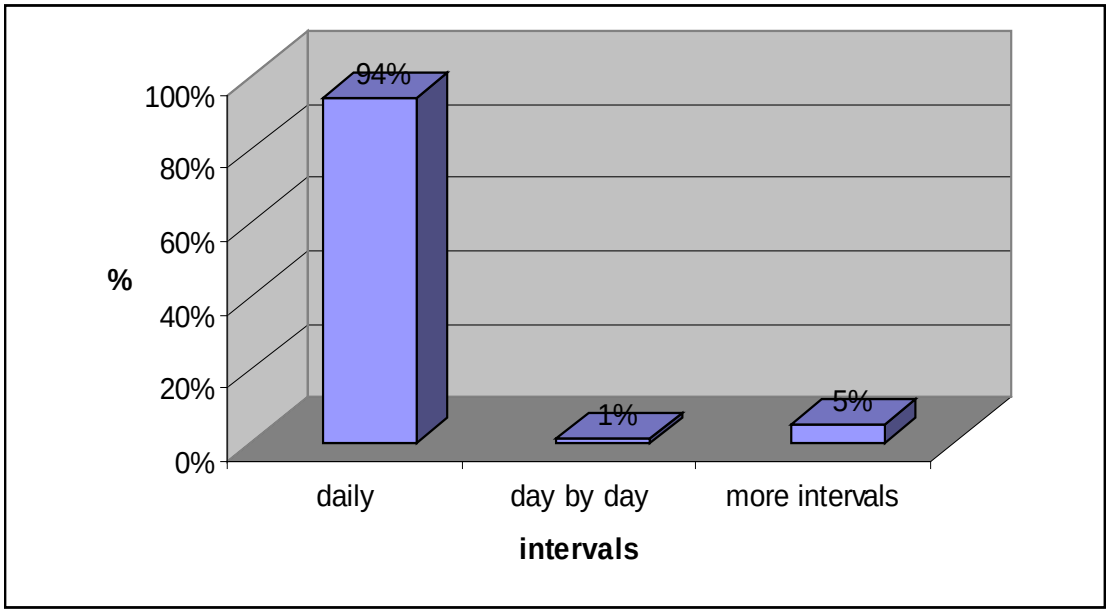

Figure (33) watering intervals (according to the respondents)

5.9.2 Grazing Manner

The results in figure (34) revealed the common types of pasture grasses in the area are Abusabi (Dactyloctaenium aegyptium), Algao (Aristida sp), Nageela (Cyndon dactylon) and Kaweel (Chloris gayanus). The analytical data showed that 32%, 26% and 21% of the pasture grasses in the area are Abusabi, Algao, and Nageela and Kaweel respectively. Abusabi is the most dominant pasture grasses in the area, while algao is the second pasture grasses.

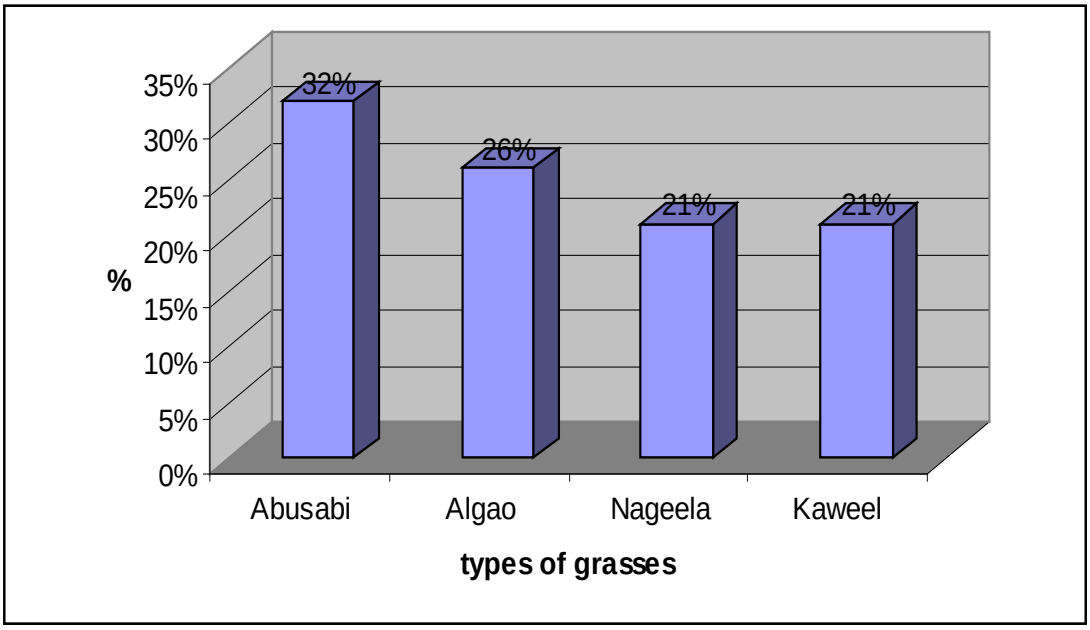

Figure (34) percentage of common pasture grasses (according to the respondents)

Results in figure (35) explained that 16% of the pastoralists grazing their animals during the day and night, while 84% of them grazing their animals during the day only. The high percentage of grazing during the day in the area might be due to the fact that the pasture was poor enough to satisfy the night grassing.

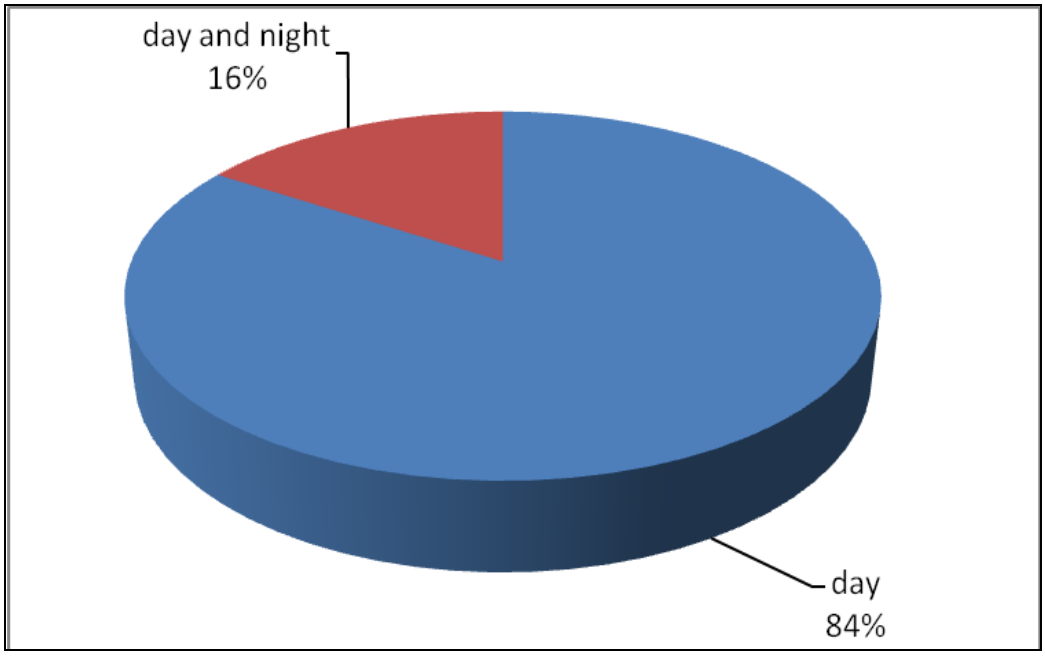

Figure (35) Grazing manner (according to the respondents (according to the respondents)

5.9.3 Milk Production

The result in table (36) showed that 61% of produced milk in the two states were consumed as raw milk, 34% of the milk is butter and only 5% of the milk was processed as yogurt. The average daily milk yield was 1.69 liters per cow which was very low production could be due to the poor pasture, lack of veterinary services and water resources which demonstrated the real impact of conflict on animal production in general and milk production in particular. The above results were

consistent with those of Simpkin (2005) who stated that even during the war, livestock services have been associated with cost recovery systems, and payment for services was the norm. Now, the emphasis on the private sector to conduct drug supply is increasing, poor animal health control resulted in less milk production, smaller and weaker animals, lower prices and smaller herd sizes. Moreover, the results was agreed with that of Mohammed (2005) who reported that a large number of livestock were burnt or killed. As a result a large number of the cattle herders along with their animals fled from one place to another. This triggered a phenomenal increased in the cost of livestock products especially beef and milk as a result of the conflict.

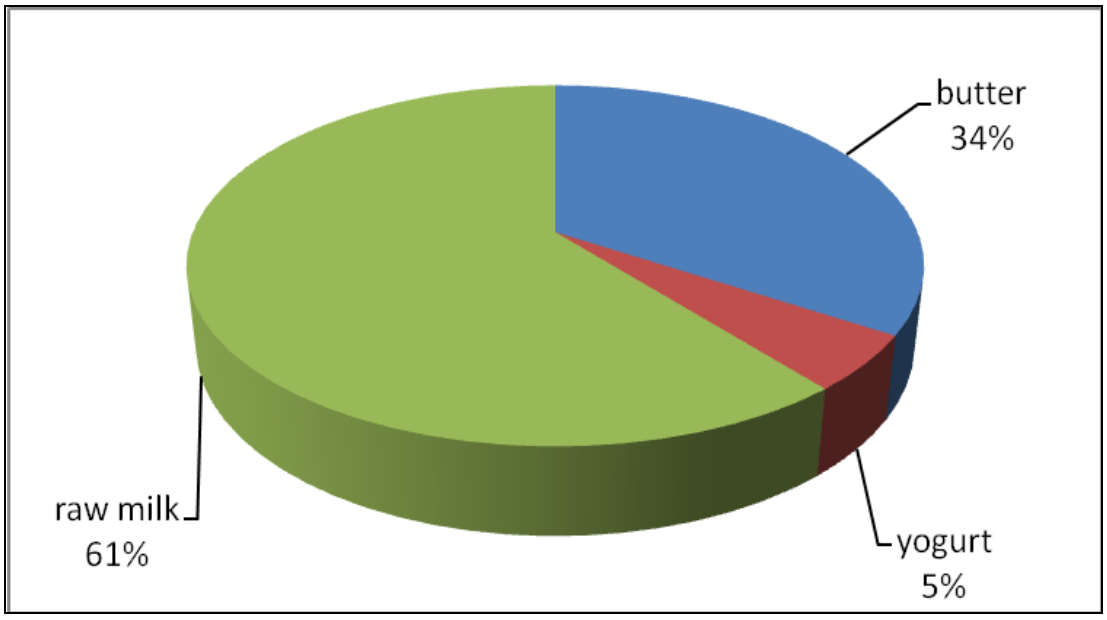

Figure (36) milk products (according to the respondents)

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The following conclusion could be drawn from the result of this study:

1. The most dominant species of livestock in the area was cattle, consist 69% from the total population of livestock species.
2. Hundred percent of the livestock species in Central and West Darfur States are from locally adapted breeds which were reared for meat production rather than milk production.
3. The livestock population was to some extend decreased as a result of impact of the conflict.
4. The pasture was uncomfortable and problematic. 60% of the pasture was poor due to overgrazing in a limited pastures area and restriction of movements to the high lands for security reasons.
5. The livestock migratory routes have been altered and mostly changed due to the conflict, weak law enforcement and expansion of farmlands.

6. The veterinary services were highly deteriorated and only 48% of the services were the available on ground now.
7. The endemic and epidemic diseases were increased due to lack of animal vaccination in particular and veterinary services in general, during the course of the conflict.
8. The ownership of livestock was changed specially among IDPs. The percentage of livestock owned by IDPs dropped from 32% before the conflict to approximately 0% during the course of the conflict.
9. Sixty five percent of the water resources in the area were boreholes, while 19% of the water resources were seasonal rivers (wadies), and 16% of the water resources in the area were ponds.
10. The average daily milk yield was 1.69 liter per cow which was very low production could be due to the poor pasture, lack of veterinary services and water resources which demonstrated the real impact of conflict on animal production in general and milk production in particular.

5.2 Recommendations

The followings are the study recommendations:

1. The authorities should encourage the process of peace building and extremely facilitates the activities of reconciliation and peaceful coexistence between the conflicting communities.
2. More researches and work on improvement of locally adapted livestock breeds is highly recommended.
3. Provision of full veterinary services in the rural and remote areas.
4. Efforts should be directed towards rangelands preparation and pasture enrichments.
5. Encourage the intra communities restocking activities
6. Demarcation of livestock migratory routes within the current context is recommended to enhance the process of conflict reconciliations.

References:

Amin A.I. (2009). Overview of the general situation of livestock in Darfur, before and after the conflict. Department of Animal Production/ Faculty of Veterinary Science/ University of Nyala. Paper presented at Livestock workshop in Nyala.

Ajuwon, S.S (2003). Analysing and Managing Potential conflict Case study; Fadama Project In Nigeria. [info.worldbank.org/etools/library/latestversion_p .asp?objectID.Access date 27/11/2008]

Anon. (2004). Livestock Population in the Sudan. Report. Animal Production Administration, Ministry of Agriculture, Natural Resources and Animal wealth, Khartoum, Sudan

Bollig, M. (1990) Ethnic conflicts in North-West Kenya: Pokot-Turkana Raiding 1969-1984. Zeitschrift fur Ethnologie 115:73 90 [http://cat.inist.fr/?aModele=afficheN&cpsidt=42971 51: Access Date Dec. 2008]

Bovin, Mette, and Leif Manger. 1990. Introduction. In Adaptive Strategies in African Arid Lands, edited by M. Bovin and L. Manger. Uppsala, Sweden: The Scandinavian Institute of African Studies, SIAS

Burton,J. and Dukes, F. (1990) Conflict: Practices

in management,Settlement and resolution, St. Martins Press, New York [http://www.beyondintractability.org/booksummary/10087/: Access date Jan. 2009]

Burton, J. (ed.) 1990a. Conflict, Human Needs Theory. St. Martin's Press, New York. [http://catalogue.nla.gov.au/Record/1512854: Access date Jan. 2009]

Catley, Andy. 2008. Response to: Too many people, too few livestock: pastoralism in crisis? Future Agricultures Debate - Responses. Available from http://www.future-agricultures.org/pastoralism_responses.html

Dawoud A. A. (2009): The Impact of Darfur conflict on livestock population and ownership: Thiess for Master Degree in Peace and Development Studies

David Adams, (August 2003): Early History of the

Culture of Peace-A Personal Memoire-http://www.culture-of-eace.info/history/introduction.html.

Devereux, Stephen, and Ian Scoones. 2008. The crisis of pastoralism? Future Agricultures Debate. Available at http://www.future-agricultures.org/pastoralism_debate.html

EFSNA (2005). Emergency Food Security and Nutrition Assessment in Darfur, Sudan 2005 by FAO, WFP and UNICEF

FAO (2004). Food and Agriculture Organization of the UnitedNation West Darfur Emergency coordination Unit: Annual Report for 2004 activities of FAO in West Darfur State.

FAO (2008). Food and Agriculture Organization of the United Nation West Darfur Emergency coordination Unit: Veterinary Units Assessment-FAO in Collaboration with State Ministry of Animal resource

FAO (2008). Food and Agriculture Organization of the Unite dNation West Darfur Emergency coordination Unit: Annual Report for 2008 activities of FAO in West Darfur State.

FAO (2009). Food and Agriculture Organization of the United Nation West Darfur Emergency coordination Unit: Proposal for Darfur Community Peace stability Fund.

FAO (2010). Food and Agriculture Organization of the United Nation West Darfur Emergency coordination Unit: 2011 Sudan Humanitarian Work Plan. Food Security and livelihood 2011 work Plan.

Faustine K. BEE (2002). Challenges to Traditional

ivelihoods and Newly Emerging Employment Patterns of Pastoralists in Tanzania. An ILO-INDISCO Study in collaboration with Jobs for Africa (JFA)

(FEWSNET 2011): A special report by the Famine Early Warning System Network (FEWS NET) August 2011

Fetuga, B.L.A. (2003), "Harnessing Nigeria's Animal Resources for Food Security," in Tropical Veterinarian, Vol. 21 :(4) 168-181 [ajol.info/index.php/tv/search/titles?searchPage=3: Access date August 2008]

FMoAR (2001). Annual report: Animal resources report 2001. Ministry of Animal Resources. Khartoum, Sudan

FMoAR (2002).Statistical Bulletin for Animal Resources, Issue No 11. Khartoum: 2002. Ministry of Animal Resources. Khartoum, Sudan

Francisco Lacayo Parajon, Mirta Lourenço and David Adams (1996): THE UNESCO CULTURE OF PEACE PROGRAMME IN EL SALVADOR- AN INITIAL REPORT UNESCO Culture of Peace Programme

Gilbert, Jeremie. 2007. Nomadic Territories:

A Human Rights Approach to Nomadic Peoples' Land Rights. Human Rights Law Review: 7 (4):681-716.

Gray, S.J. (2000) A Memory of Loss: Ecological Politics, Local History, And the Evolution of Karimojong Violence. Human Organization, Vol. 59, No. 4, 2000. [http://findarticles.com/p/articles/mi_qa3800/is_20 0001/ai_n8879583/: Access date Sep. 10, 2008]

Hardin, G. 1968. The tragedy of the commons. Science 162:1243-48.

Hendrickson, et al, R. (1998). The changing Nature of conflict and famine and vulnerability: The case of livestock raiding in Turkana district Kenya. Disasters, Vol. 22, No 3, September, 1998. [www.ingentaconnect.com/content/bpl/disa/1998/0 0000022/.../art00001: Access date August 2009]

Ibrahim, Fouad N. 1984. Ecological imbalance in the Republic of Sudan - with reference to desertification in Darfur: Bayreuther Geowissenschaftliche Arbeiten Ed. Bayreuth Verlagsgesellschaft mbh.

International Commission of Inquiry. 2005. Report of the International Commission of Inquiry on Darfur to the United Nations Secretary-General. Pursuant to Security Council Resolution. 18

September 2004. Geneva. Geneva. http://www.un.org/News/dh/sudan/com_inq_darfur.pdf (25 January 2005).

IPCR (2003) Strategic Conflict Assessment: Consolidated Zonal Reports Nigeria, Institute for Peace and Conflict Resolution. Federal Government of Nigeria, The Presidency, Abuja

Lamprey, H.F. 1975. Report on the desert encroachment reconnaissance in Northern Sudan.21 Oct to 10 Nov. Republished in Desertification Control Bulletin 17, pp1-7. Paris/Nairobi: UNESCO/ UNEP.Paris/ Nairobi.

Manger, Leif. 2005. Understanding Resource Management in the Western Sudan: A Critical Look at New Institutional Economics In Beyond Territory and Scarcity: Exploring Conflicts Over Natural Resource Management, edited by Q. Gausset, M. A. Whyte and T. Birch-Thomsen. Sweden: Elanders Gotab.

Margie Buchanan-Smith and Abdul Jabbar Abdulla Fadul, with Abdul Rahman Tahir and Yacob Aklilu (2012): On the Hoof Livestock Trade in Darfur- published in September 2012 by the United Nations Environment Programme © 2012, United Nations Environment Programme

Markakis, John. 2004. Pastoralism on the Margin.

London: Minority Rights Group International. London.

Mohammed, A.S. (2005) the Impact of Conflict on the Economy: The Case of Plateau State of Nigeria Web Paper. [E FUND – fundforpeace.org. : Access date Jan. 10, 2008]

Mohammed, A.S. (1997), "The Dynamics of the Current Ethnic Conflicts in Africa: Nature, Context and Consequences," in Nigerian Journal of Policy and Strategy, Vol. 12, Number 1 and 2, June/December, 1997.

Morton, James. 1994. The Poverty of Nations: The Aid Dilemma at the Heart of Africa: London: British Academic Press.

Mwaura, C. (2005) Kenya and Uganda Pastoral Conflict Case Study. Human Development Report Office-Occasional Paper. [hdr.undp.org/fr/rapports/mondial

Nangiro, S. (2005) the impact of insecurity on livelihood and social service provision in Kotido district. Human Development Report Office-Occasional Paper hdr.undp.org/en/reports/global/

Niamer, F. M. (1999) Conflict management and mobility among Pastoralists in Karamoja, Uganda. In: Managing mobility in African rangelands: The

legitimization of transhumance. FAO, ITS Publications.

NVRI (2002).National Veterinary Research Institute, 2002 Annual Report, NVRI, Vom, Nigeria

Ocan, C.E. (1992). Pastoral Crisis in North-eastern Uganda: The Changing significance of cattle raids. Working Paper No. 21, CBR, Kampala

OCHA (2004). Darfur Humanitarian Profile No. 1. Part III. Khartoum: Office of the UN Resident and Humanitarian
Co-coordinator for the Sudan. United Nation Office of Humanitarian Affairs.

OCHA RO-CEA. 2008. Cattle rustling, violence and food insecurities in Eastern Africa Regional Implications and Solutions. Pastoralist Voices, June 2008, 1.

O'Fahey, RS. 1973. Slavery and Slave Trade in the Sudan. The Journal of African History 14 (1):29-43.

Omosa, E. K (2005). The Impact of Water Conflict on Pastoralist Livelihood. The Case of Wajir District in Kenya. IISD [www.iisd.org/publications/pub.aspx?id=715: Access date Nov, 23, 2007]

Peter, B. (2003). The Answer to How Is Yes: Acting

on What Matters. Published by Berrett-Koehler Publishers,
pp.200. www.bkconnection.com

Sandford, Stephen. 2008. Too many people, too few livestock: the crisis affecting pastoralists in the Greater Horn of Africa. Future Agricultures Debate.

Shazali, Salah, and M. Ahmed Abdel Ghaffar. 1999. Pastoral Land Tenure and Agricultural Expansion: Sudan and Horn of Africa. Paper read at DFID workshop on Land Rights and Sustainable Development in Sub-Sahara Africa, February 16-19, 1999, at Sunningdale Park Conference Center, Berkshire, UK

Simpkin, S. P (2005). Regional Livestock Study in the Greater Horn of Africa. (ICRC) International Committee of the Red Cross: Nairobi Regional Delegation:

Simpkin, S. P. (2005) Regional Livestock Study in the Greater Horn of Africa- Sudan Country Profile. ICRC, Khartoum, Sudan

SPSS (2010) Statistical Package for Social Sciences: Version 16, SPSS Inc., Carry, NC., USA.

Sudan Census2008: (*Fifth Sudan population and housing census- 2008*)

Tearfund, Darfur. 2007: *Water Supply in a Vulnerable Environment*, 2007,p. 5).

Thomas, D.S.G. 1997. Science and the desertification debate. Journal of Arid Environments 37:599-608

UNEP (2007). Conflicts and the environment, Sudan Post-conflict Environmental Assessment. United Nation Environment Program [http://www.scribd.com/doc/16669679/Sudan-Post-Conflict-Envirnment-Assessment: Access date Nov. 26, 2007]

UNESCO 1946 :(Article I of the Constitutive Act of UNESCO). Which signed by 37 states members and come in to force on Nov. 1946? Found at: www.unesco.org/new/en/unesco/about-us/who-we-are/history/constitution/

UNESCO (1995): The final chapter of the 1995 UNESCO monograph on a culture of peace and the chapter on the global movement in the 1996 report on the El Salvador Culture of Peace Programme.

(UNESCO 2000). Dossier d'information de l'UNESCO, CAB-99/Ws/4, page 14): UNESCO Publications on a Culture of Peace. At :(http://www3.unesco.org/iycp).

Veron, S.R., J.M. Paruelo, and M. Oesterheld. 2006. Assessing desertification. Journal of Arid Environments 66 (4):751-763.

WASDA (2002). Five Year Strategic Plan 2001–2005. Wajir South Development Association

Young, H., Osman, A. M., Aklilu, Y., and dale, R. (2005). Darfur – Livelihoods Under Siege. Medford, Feinstein International Famine Center, Tufts University. [nutrition.tufts.edu/docs/pdf/famine/darfur_livelihoods_under_seige.pdf: Access date Jul, 4, 2007]

Young, H. and Osman, A. M. 2006. Challenges to Peace and Recovery in Darfur: A Situation Analysis of the Ongoing Conflict and its Continuing Impact on Livelihood. Feinstein International Center, Tufts University (fic.tufts.edu).

Young, H., Osman, A. M. and Dale, R. 2007. Strategies For Economic Recovery and Peace in Darfur; Why a wider livelihoods approach is imperative and inclusion of the Abbala (camel herding) Arabs is a priority. Feinstein International Briefing Paper, Tufts University (fic.tufts.edu).

Young H, Osman A, Buchanan M., Bromwich B, Moore K, And Ballou S (2007): Sharpening the Strategic Focus of Livelihoods rogramming in the Darfur Region A report of four livelihoods workshops in the Darfur region (June 30 to July 11, 2007).

Young, H., Osman, A. M., Abusin, A. M. Asher, M., Egemi,

O. 2009: Livelihoods, Power, and Choice: The Vulnerability of the Northern Rizaygat of Darfur, Sudan

Annex i:

Household Questionnaire

استبيان

Name of Owner……..اسم الراعى

Locality……..المحلية

Admin. Unit……الوحدة الادارية

Area/village…….....المنطقة/القرية

Tribe…….....القبيلة

Name of interviewer ….....اسم اخذ الاستبيان

Animal population **أحصاء الحيوان**

1- Species of livestock in the area. 1- انواع الحيوانات فى المنطقة:

Cattle() camels() sheep() goats horses() donkeys () ابقار() جمال() اغنام() ماعز()خيول() حمير()

2- Animal breeds: 2- تالالس الحيوانات:

Local Breeds ( ) Cross Breeds ( ) محلية( ) هجين( ) مستوردة ( )

Dairy ( ) Beef ( ) Dual ( ) سلالات لأنتاج الالبان( )لأنتاج اللحوم( ) لأنتاج اللحوم والالبان ( )

3- Pastoralist current Livestock Population: 3- عدد الحيوانات التى يملكها الراعى حالياً:

Cattle…Sheep/goats…..Camels…..جمال.....ماعز.....ضان.....أبقار

4- Pastoralist Livestock Population 6 ago: 4- عدد الحيوانات التى يملكها الراعى قبل 6 سنة:

Cattle…Sheep/goats…..Camels…..جمال.....ماعز.....ضان.....أبقار

5- Livestock population 5- تعداد الحيوانات:

Increased () decreased () constant ( ) فى زيادة ( ) فى نقصان ( ) ثابت ( )

6- Why the No. Of livestock increased/decreased? 6- لماذا الحيوانات نقصت/زادت؟

……. …….

……. …….

Pastures and migratory routes **المراعى و المسارات**

7- Current Pasture Situation: 7a- الوضع الحالى للمرعى:

Comfortable ( ) Problematic ( ) ا- مريح ( ) هناك مشاكل ( )

b- Rich ( ) Poor ( ) ب- غنية ( ) فقيرة ( )

8- Migratory routes: 8- المراحيل و المسارات:

The same( ) Changed ( ) لم تتغير المسارات( ) تغيرت المسارات( )

9- If the migratory routes why? 9- اذا تغيرت المسارات ما السبب؟

a- conflict () b- Fire () c- cultivation () أ- النزاع ( ) ب- الحرائق( ) ج- الزراعة( )

Veterinary Services **الخدمات البيطرية**

10- Are Veterinary Services: 10- هل الخدمات البيطرية :

Available as before( ) Not Available( )11 Types of ( ) - متوفرة كما فى السابق( ) ام غير متوفرة

Veterinary available: 11- نوع الخدمات البيطرية المتوفرة:

……. …….

……. …….

12- If not available, what is the reason? 12 - اذا لم تكن متوفرة، ما هو السبب؟

…….. ……..

Animal Diseases **أمراض الحيوان**

13- Common Endemic Diseases in the Area: 13- الامراض المعروفة فى المنطقة/المحلية:

…….. …….

…… ……...

…….. ……..

…… ……..

14- The situation of diseases during last 6 years 14 - موقف الامراض خلال ال6 سنوات الماضية

Decreased ( ) Increased( ) The same( ) ? نفصت( ) زادت( ) ظلت كما فى السابق( ) ؟

15- Epidemic Diseases during last 6 years: 15- الامراض الوبائية خلال ال6 سنوات الماضية:

…….. …….

…….. ……

…… ……

16- The Epidemic Diseases 16- ارمرال ض الوبائية

Decreased ( ) Increased ( ) The same( ) زادت ( )نقصت ( ) ظلت كما هى ( )

The social status of the Pastoralist: **الحالة الاجتماعية للراعى:**

17. Sex Male() Female () 17 الجنس: ذكر ( ) انثى ( ) 18.Marred

() Divorced () Widow () 18 متزوج ( ) مطلق ( ) ارمل ( )

19. Family members and their ages 19. عدد افراد الاسرة و اعمارهم

Number () العدد ( )

Ages الاعمار

……. …….

……. …….

…….. ……

20. Education level 20. مستويات التعليم

Males الذكور

Basic ( ) Secondary ( ) University () الاساس ( ) الثانوى ( ) الجامعى ( )

Females الاناث

( ) Secondary ( ) University () الاساس ( ) الثانوى ( ) الجامعى ( )

21. The work they did: 21. العمالة:

a. for family ( ) b. For other ( ) ا. عمالة الاسرة ( ) ب. عمالة الاجرة ( )

22- The Pastoralist: 22. الراعي

a. Owner () / Labor ( ) أ. مالك الماشية ( ) / أجير ( )

b. If labor How much the salary per Month…..؟ب. اذا كان اجيراً. كم الاجرة الشهرية

c. Nomadic ( ) Sedentary ( ) IDP ( ) ج. من الرحل ( ) من المقيمين( ) من النازحين ( )

23- The Relationship between Pastoralists and Farmers: 23- العلاقة بين الرعاة والمزارعين:

Good ( ) Bad ( ) جيدة ( ) سيئة ( )

24- If bad, what is the reason? 24- اذا كانت سيئة، ما السبب؟

…….. ……..

……. …….

Pastoralists Livelihood **سبل كسب عيش الرعاة**

25- Livelihood groups in the area 25- المجموعات الاقتصادية فى المنطقة:

a- Pastoralists ( ) b- agro-pastoralists ( ) أ- الرعاة ( ) ب- رعاة-زراع ( )

c- Farmers ( ) d- IDPs ( ) ج- مزارعين ( ) د- نازحين ( )

26- Livelihoods options before the conflict 26- مصادر الدخل المتوفرة قبل النزاع

a- Animal raring ( ) ا- تربية الحيوانات ( )

b- Cultivation ( ) ب- الزراعة ( )

c- F. wood collection ( ) ج- جمع الحطب ( )

d- Charcoal products ( ) د- انتاج الفحم ( )

e- Grass sail ( ) ه- جمع وبيع القش ( )

f- Building woods sail ( ) ف- جمع وبيع حطب البناء ( )

g- Agric. Product transportation ( ) ق- ترحيل المنتجات الزراعية ( )

h- Wild food collection ( ) ح- الثمار الخلوية – نبق، لالوب،الخ ( )

i- Leather hand craft ( ) ي- الصناعات الجلدية اليدوية ( )

j- Militarization ( ) و- التجييش ( )

k- Securing roads ( ) ك- تامين الطرق ( )

l- Others ( ) ل- أخرى ( )

27- Current Livelihoods options 27- مصادر الدخل المتوفرة الان بالمنطقة

a- Animal raring ( ) ا- تربية الحيوانات ( )

b- Cultivation ( ) ب- الزراعة ( )

c- F. wood collection ( ) ج- جمع الحطب ( )

d- Charcoal products ( ) د- انتاج الفحم ( )

e- Grass sail ( ) ه- جمع وبيع القش ( )

f- Building woods sail ( ) ف- جمع وبيع حطب البناء ( )

g- Agric. Product transportation ( ) ق- ترحيل المنتجات الزراعية ( )

h- Wild food collection ( ) ح- الثمار الخلوية – نبق، لالوب،الخ ( )

i- Leather hand craft ( ) ي- الصناعات الجلدية اليدوية ( )

j- Militarization ( ) و- التجييش ( )

k- Securing roads ( ) ك- تامين الطرق ( )

l- Others ( ) ل- أخرى ( )

28- Did the livelihoods options change? 28- هل تغيرت مصادر الدخل الان من ذي قبل؟

Yes ( ) No ( ) نعم ( ) لأ ( )

29- If yes in 26. Is it changed to: 29- اذا كانت الاجابة نعم في السؤال السابق. هل تغيرت الي:

Good ( ) or Bad ( ) الافضل ( ) ام الاسوء ( )

Animal husbandry/ production: **الرعاية والانتاج الحيوانى:**

30- Water sources for livestock: 30- مصادر المياه للماشية:

a- boreholes() b- rivers(wadies)() c- ponds () أ- ابار( ) ب- وديان ( ) ج- رهود ( )

31- Grassing manner: 31- طريقة الرعى:

During the Day( ) Day and Night( ) خلال النهار( ) خلال النهار و الليل( )

32- Watering intervals: 32- فترة السقاية:

Daily( ) Day by Day( ) more Intervals( ) ( ) يومياً( )يوم بعد يوم( )لأفترات اكثر من يوم( )

33-Types of Grassing plants: 33- نوعية النباتات التوفرة فى المرعى:

……. …….

……. …….

…… …….

34- Are you giving other feeds to the animals? : 34- هل تعطى حيواناتك اعلاف اخرى؟

Yes, ( ) No, ( ) نعم ( ) لا ( )

If yes, illustrates اذا كان الاجابة نعم، اذكر الاعلاف

……. …….

……. …….

35. No. of lactating cows in the herd: 35- كم عدد الابقار الحلوب فى القطيع:

…… ……..

36. Length of lactation period: 36- طول موسم الحليب:

3 months() 5 months() 6 months() 3 شهر( ) 5شهور( ) 6 شهور( )

37. Amount of milk per cow: 37- كمية الحليب للبقرة الواحدة:

…… ……..

38 Milking frequency per day: 38- عدد مرات الحليب فى اليوم:

Once ( ) Twice ( ) Triple ( ) مرة واحدة ( ) مرتين ( ) 3 مرات( )

39 Average amount of milk/herd / day: 39- متوسط الحليب للقطيع فى اليوم:

…….. …….

40 Milk Products: 40- منتجات الالبان :

Butter ( ) Cheese ( ) Yogurt ( ) Raw Milk ( ) سمن( ) جبنة( ) زبدة( )حليب( )

41 Lactating Calves: 41- العجول الرضيعة:

Remain with Mothers ( ) Isolated( ) تعزل من الامهات( ) لا تعزل من الامهات( )

42 Reproduction methods: 42- اسلوب التزاوج:

Natural( ) Organized( ) طبيعياً( ) يتدخل الراعى ( )

43 Where you sales your animals?: 43- اين تسويق ماشيتك؟ مع ذكر الاسواق:

Mention the markets

locally() in neighbor markets() محليا( ) فى الاسواق المجاورة( )

Out of state() in Khartoum() خارج الولاية( ) تباع فى الخرطوم( )

…….. …….

…….. ……

…… ……

44 ◌Are you keeping your livestock in pens?: 44- هل تحفظ حيواناتك فى حظائر؟:

If yes, mention the types of pens اذا كان الاجابة نعم، أذكر نوع الزيبة

…….. ……

45 Culling of the old animals: 45 - عزل الحيوانات الكبيرة فى العمر:

No culling() Sale the old animals() لا يوجد عزل( ) تعزل وتباع( )

46 The main problems facing livestock owner: 46- المشاكل التى تواجه مالكى الحيوانات فى المنطقة:

a- The conflict() b- Poor pasture() أ- الصراع ( ) ب- فقر المرعى ( )

c- Lack of water() d- Robbery() ج- قلة المياه ( ) د- النهب المسلح ( )

e- Diseases and insects ( ) ى- الامراض والحشرات ( )

Annex ii

Group Discussion/Key Informant Questionnaire

استبيان

Locality……..المحلية

Admin. Unit……الوحدة الادارية

Area/village…….....المنطقة/القرية

Name of respondent….....اسم المستبين

Name of interviewer ….....اسم اخذ الاستبيان

1- Species of livestock in the area. 1- انواع الحيوانات فى المنطقة/المحلية :

Cattle() camels() sheep() goats horses() donkeys () ابقار() جمال() اغنام() ماعز()خيول() حمير()

2- Animal breeds: 2- تالالس الحيوانات:

Local Breeds( ) Cross Breeds( ) محلية( ) هجين( ) مستوردة ( )

Dairy ( ) Beef ( ) Dual ( ) سلالات لأنتاج الالبان( )لأنتاج اللحوم( ) لأنتاج اللحوم والالبان ( )

3-Area Livestock Population 6 years ago: 3-عدد الحيوانات بالمنطقة/المحلية قبل 6سنوات:

Cattle…..Sheep/goats…Camels. أبقار.....ضان.....ماعز.....جمال.....

4- Current Area Livestock Population: 4- عدد حيوانات المنطقة/ المحلية حالياً:

Cattle….Sheep/goats….Camels.....ابقار.....ضان.....ماعز.....جمال

5- livestock population 5- تعداد الحيوانات:

Increased () decreased () constant ( ) فى زيادة( ) فى نقصان( ) ثابت( )

6- Why the No. of livestock increased/decreased? 6- لماذا الحيوانات نقصت/زادت؟

……. ……

……. ……

7- Current Pasture Situation: 7a- الوضع الحالى للمرعى:

Comfortable ( ) Problematic ( ) ا- مريح ( ) هناك مشاكل ( )

b- Rich ( ) Poor ( ) ب- غنية ( ) فقيرة ( )

8- Migratory routes: 8- المراحيل و المسارات بالمنطقة/المحلية:

The same( ) Changed ( ) لم تتغير المسارات( ) تغيرت المسارات( )

9- If the migratory routes why? 9- اذا تغيرت المسارات ما السبب؟

a- conflict() b- Fire() c- cultivation() أ- النزاع ( ) ب- الحرائق( ) ج- الزراعة( )

10- Veterinary Services: 10- الخدمات البيطرية بالمنطقة/المحلية :

Available as before( ) Not Available( )11 Types of ( ) غير متوفرة( ) متوفرة كما فى السابق -

Veterinary available: 11- نوع الخدمات البيطرية المتوفرة:

……. …….

……. …….

12- If not available, What is the reason? 12 - اذا لم تكن متوفرة، ما هو السبب؟

…….. ……..

13- Common Endemic Diseases in the Area: 13- الامراض المعروفة فى المنطقة/المحلية:

…….. …….

…… ……...

…….. ……..

…… ……..

14- The situation of diseases during last 6 years 14 - موقف الامراض خلال ال6 سنوات الماضية

Decreased ( ) Increased ( ) The same( ) ? نفصت( ) زادت( ) ظلت كما فى السابق( ) ؟

15- Epidemic Diseases during last 6 years: 15- الامراض الوبائية خلال ال6 سنوات الماضية:

…….. …….

…….. …….

…… ……

16- The Epidemic Diseases 16- ارمالا ض الوبائية

Decreased ( ) Increased ( ) The same( ) زادت ( )نقصت ( ) ظلت كما هى ( )

17- The Relationship between Pastoralists and Farmers: 17- العلاقة بين الرعاة والمزارعين:

Good ( ) Bad ( ) جيدة ( ) سيئة ( )

18- If bad, what is the reason? 18- اذا كانت سيئة، ما السبب؟

…….. …….

……. …….

19- Water sources for livestock: 19- مصادر المياه للماشية:

a- boreholes() b- rivers(wadies)() c- ponds () أ- ابار( ) ب- وديان ( ) ج- رهود ( )

20- Grassing manner: 20- طريقة الرعى:

During the Day( ) Day and Night( ) خلال النهار( ) خلال النهار و الليل( )

21- Watering intervals: 21- فترة السقاية:

Daily( ) Day by Day( ) more Intervals( ) ( ) يومياً( )يوم بعد يوم( )لأفترات اكثر من يوم

22-Types of Grassing plants: 22- نوعية النباتات التوفرة فى المرعى:

……. …….

……. …….

…… …….

23-Types of other feeds given to the animals 23- انواع الاعلاف الاخرى التى تعطى للحيوانات:

……. …….

……. …….

24- Length of lactation period: 24- طول موسم الحليب:

3 months() 5 months() 6 months() 3 شهر( ) 5شهور( ) 6 شهور( )

25- Milking frequency per day: 25- عدد مرات الحليب فى اليوم:

Once ( ) Twice ( ) Triple ( ) مرة واحدة ( ) مرتين ( ) 3 مرات( )

26- Milk Products: 26- منتجات الالبان :

Butter ( ) Cheese ( ) Yogurt ( ) Raw Milk ( ) سمن( ) جبنة( ) زبدة( )حليب( )

27- Lactating Calves: 27- العجول الرضيعة:

Remain with Mothers ( ) Isolated( ) تعزل من الامهات( ) لا تعزل من الامهات( )

28- Reproduction methods: 28- اسلوب التزاوج:

Natural ( ) Organized ( ) طبيعياً( ) يتدخل الراعى ( )

29- Marketing of livestock: 29- تسويق الماشية:

Sale locally() in neighbor markets() تباع محليا( ) فى الاسواق المجاورة( )

Out of state() in Khartoum() خارج الولاية( ) تباع فى الخرطوم( )

30- Livestock markets in the area/locality. 30- اسواق الماشية بالمنطقة/المحلية.

…….. …….

…….. …….

…… …….

31- Housing of the livestock: 31- حظائر الابقار:

In fenced area () In open area () زرائب ( ) طليقة ( )

Local shades () Under trees() مظلات محلية( ) على الاشجار( )

32- Culling of the old animals: 32 - عزل الحيوانات الكبيرة فى العمر:

No culling() Sale the old animals() لا يوجد عزل( ) تعزل وتباع( )

33- The main problems facing livestock owner: 33- المشاكل التى تواجه مالكى الحيوانات فى المنطقة:

a- The conflict() b- Poor pasture() أ- الصراع ( ) ب- فقر المرعى ( )

c- Lack of water() d- Robbery() ج- قلة المياه ( ) د- النهب المسلح ( )

e- Diseases and insects ( ) ى- الامراض والحشرات ( )

34- Livelihood groups in the area 34- المجموعات الاقتصادية فى المنطقة:

a- Pastoralists ( ) b- agro-pastoralists ( ) أ- الرعاة ( ) ب- رعاة-زراع ( )

c- Farmers ( ) d- IDPs ( ) ج- مزارعين ( ) د- نازحين ( )

35- Livelihoods options before the conflict 35- مصادر الدخل المتوفرة قبل النزاع

a- Animal raring ( ) ا- تربية الحيوانات ( )

b- Cultivation ( ) ب- الزراعة ( )

c- F. wood collection ( ) ج- جمع الحطب ( )

d- Char cool products	( )	( )	د- انتاج الفحم
e- Grass sail	( )	( )	ه- جمع وبيع القش
f- Building woods sail	( )	( )	ف- جمع وبيع حطب البناء
g- Agric. Product transportation	( )	( )	ق- ترحيل المنتجات الزراعية
h- Wild food collection	( )	( )	ح- الثمار الخلوية – نبق، لالوب،الخ
i- Leather hand craft	( )	( )	ي- الصناعات الجلدية اليدوية
j- Militarization	( )	( )	و- التجييش
k- Securing roads	( )	( )	ك- تامين الطرق

36- Livelihoods options

36- مصادر الدخل المتوفرة الان بالمنطقة

a- Animal raring	( )	( )	ا- تربية الحيوانات
b- Cultivation	( )	( )	ب- الزراعة
c- F. wood collection	( )	( )	ج- جمع الحطب
d- Char cool products	( )	( )	د- انتاج الفحم
e- Grass sail	( )	( )	ه- جمع وبيع القش
f- Building woods sail	( )	( )	ف- جمع وبيع حطب البناء
g- Agric. Product transportation	( )	( )	ق- ترحيل المنتجات الزراعية
h- Wild food collection	( )	( )	ح- الثمار الخلوية – نبق، لالوب،الخ
i- Leather hand craft	( )	( )	ي- الصناعات الجلدية اليدوية
j- Militarization	( )	( )	و- التجييش
k- Securing roads	( )	( )	ك- تامين الطرق

37 - Did the livelihoods options change?

Yes ( ) No ( )

37- هل تغيرت مصادر الدخل الان من ذي قبل؟

نعم ( ) لأ ( )

38- If yes in 26. Is it changed to:

Good ( ) or Bad ( )

38- اذا كانت الاجابة نعم في السؤال السابق. هل تغيرت الي:

الافضل ( ) ام الاسوء ( )