

Economic contribution of pastoral and agro pastoral production to food security and livelihoods systems in Africa: The case of Eastern Sudan, Eritrea and Western Ethiopia in the Horn of Africa.

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ABSTRACT

The paper provides a broad context to the current status of pastoralism and agro-pastoralism in the Horn of Africa from a food security and smallholder livelihoods perspectives. It argues that the significant contribution pastoral and agro pastoral livestock producers make to domestic, national and regional food security is often misrepresented and such contribution to food security is regularly unappreciated by policy makers at State level. Such an attitude is reflected in national and regional government policy perspectives which often do not apportion adequate financial and human resources to help the sector develop to its fullest potential.

The paper argues that pastoralism and agro-pastoralism (i.e. as an environmentally/ socially sustainable livelihood system) is going through a serious self generated and externally driven **evolving process** which may be irreversible. Thus a change of the pastoralist production system from subsistence to more commercial orientation may be feasible. This reality, the authors believe, is so fundamental that government planners, researchers, international organizations and funders must recognise this if they wish to contribute to the wellbeing of pastoral peoples from a food security dimension in the Horn of Africa region.

Drawing from authors’ experiences from Eastern Sudan, Western Ethiopia and Western Eritrea, they demonstrate the significant economic contribution small producers make to food security within the Region as well as the Middle East, the key challenges they face and recommend ways in which such contribution could be enhanced at national and regional levels.

Key words: adaptation, climate change, food security, Horn of Africa, livestock, pastoralism, agro-pastoralism

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Abbreviations

ASAL	Arid and Semi-arid Lands
AU	African Union
CBO	Community Based Organization
GDP	Gross Domestic Product
GR	Green Revolution
IGAD	Inter-Governmental Authority for Development
TNC	Transnational Companies
NGOs	Non-Governmental Organization
OAU	Organization of African Unity
PEAKS	Pastoralist Environment Association Kassala State
PENHA	Pastoral & Environmental Network in the Horn of Africa
RoSS	Republic of South Sudan
PRSP	Poverty Reduction Strategy Paper
SDG	Sudanese Pounds
TLU	Tropical Livestock Units
UN	United Nations

1. Introduction

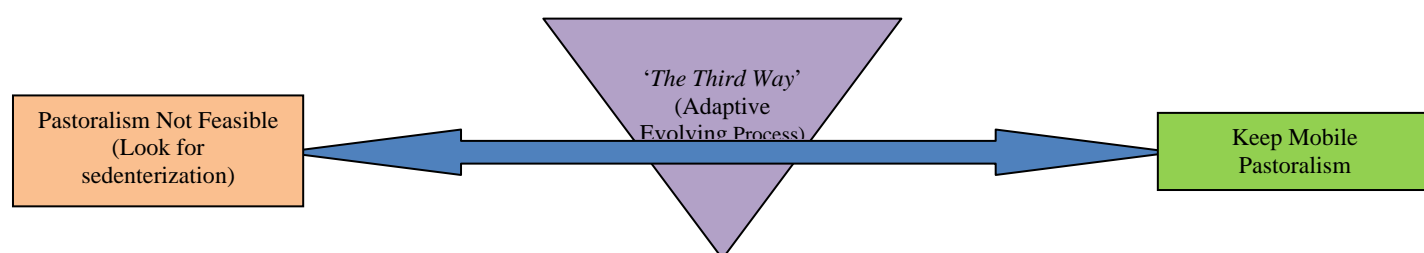
The pastoralists in the Horn and Sub-Saharan Africa survive in fragile ecosystems that are perpetually affected by drought and are continually threatened by desertification. Pastoralists and agro-pastoralists have therefore adjusted and adapted to these environmental challenges by evolving livelihoods mainly dependent on livestock and livestock-related activities. Because of the intimate understanding of these fragile ecosystems, whose resources are scarce and variable, the pastoralist inhabitants of the Arid and Semi-arid Lands (ASALs) have adopted a mobile and flexible pattern of resource use that has proven to be sustainable. Mobility is in itself an important ecological adaptation and may, in part, explain why some of these pastoral areas have a higher productivity in terms of protein per hectare than Western and Australian ranches.¹ Mobility is key pastoral risk management strategy especially when they face acute shortage of water and pasture.² Moreover, Little and et al (2001) explain the risk of loss livestock during the erratic climatic changes is lesser in mobile than sedentary livelihoods. Inevitably, the ability of livestock to convert low quality biomass into high quality products such as meat and dairy products gives it a central position, particularly with regard to food security.

Over the last forty years there have been ongoing debates among natural and social scientists on the sustainability of pastoralism and whether or not pastoralism is a viable means to exploit the untapped resources of the arid and semi arid environments. The trend in the past has been that natural scientists have viewed pastoralism as an outmoded and environmentally unsustainable system whereas social anthropologists/human ecologists have argued that pastoralism is a sustainable mode of production. Such contrasting or rather polarised perspectives have dominated the literature on pastoralism over the last four decades.

However, the current challenges and realities the pastoralist communities have been facing are forcing them to adopt adaptive strategies and coping mechanisms to stand against all existing and new odds.

The central theme of this paper is to reflect on the current experiences of pastoralist adaptation and their implications for their livelihoods and food security.

Figure 1: Continuum of Pastoralism



¹ Knips, V. (2004: 18) cited from Winrock, 2002

² Kaimba et al (2011)

Source: Adopted from the arguments on understanding pastoralism

The aim of this paper is not to analyze the pros and cons of the natural and social science perspectives; but rather argue that traditional pastoralism like other rural livelihoods is under ecological and political stress which is forcing it to adapt to the new situation by adopting a semi-sedentary mode of livelihood. The authors will draw from their experiences in the Horn of Africa demonstrating that while traditional pastoralism is adopting a more agro-pastoral mode of production it is nonetheless making substantial contribution to food security in the Horn Region. The authors will reflect on whether this new pastoralist adaptation guarantees better quality of life in which access to food is secured specially among the vulnerable section of the population.

Livestock production systems are known to be predominant in the Horn of Africa with the livelihoods of millions depends on the rearing of animals. However despite the significant contribution pastoralism makes to local, national and regional economies, it lacks investment from government and private sector as compared to other sectors - which contribute less than the livestock sector to the regional GDP³.

The present case study is based on Western Eritrea, Western Ethiopia and the Eastern part of Sudan. The three regions share similar ecological, historical, cultural, and socio-economic ties, a situation that go across the colonial boundaries. The authors selected this region because of its significant contribution through livestock production to the local and national economies of the three countries and food security of individual households. Despite the recurrent effects of climate change and environmental factors, pastoralists have shown tenacity and an ability to march beyond the challenges. In the case of Eastern Sudan (Kassala State) there is ample evidence to show that pastoralist communities have opted for a semi-sedentary mode of livelihood where part of the family (wife, children and old folk) are permanently settled rearing small stock (sheep/goats) whereas men and older boys seasonally migrate with large stock (cattle/camels) to distant pastures during the dry season. During the rainy season the men and boys return to the homesteads where they can feed their animals and cultivate their land.

There is clearly an emerging semi-sedentary mode of production where pastoralism is facing different set of challenges and opportunities which have to be addressed from a different policy perspective which some experts call “a third way”. The third way is essentially based on the belief that pastoralism is evolving and there is a need for more imaginative policies which takes into account the dynamic changes in the semi-sedentary mode of production which has become more dominant in the last two decades.

The paper has used the data primarily collected from the field by one of the authors in the last three years and also from related secondary sources like books, IGAD policy brief documents, government statistics and other published articles. The paper provides the conceptual framework and a broad

³ AU-IBAR (2010:4)

definition of pastoralism in the Horn and its particular significance to the study area. It then elaborates the key challenges which are facing pastoralist communities, why such a situation call for new thinking is necessary and therefore the "third way" approach to pastoral development. It links the challenge with the Social protection of the pastoralist communities. The last sections provide some analysis and some recommendations for a way forward.

2. Regional Context of Pastoralism

The Horn of Africa, comprising of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, and Uganda occupies an area of 5.2 million km² and supports a population of over 200 million people. The newly independent Republic of South Sudan (RoSS) will soon be the 8th member of the Regional body called the Inter Governmental Authority for Development (IGAD). The arid and semi-arid lands (ASALs) and sub-humid lands constitute 80 percent of the land area and contain more than 90 million tropical livestock units (TLU) that provide livelihoods for pastoralists.⁴ With 60 percent of the land in IGAD countries being known as arid, the area of coverage in the countries differs from 100% in Somalia and Djibouti, over 73percent in Kenya, 67 percent in Eritrea, 41 percent in Ethiopia and 1percent in Uganda.⁵

Getting an insight about the common features of pastoralism and agro-pastoralism of the Horn of Africa contributes to understanding the challenges these pastoral communities facing in Eastern Sudan, Western Eritrea and Western Ethiopia.

According to Fre (1989) traditional pastoralism in the Horn Region in general and in Eritrea and Eastern Sudan in particular is predominantly semi-sedentary, and has the following characteristics:

- It lacks uniformity and specialization; there is almost no clan which can be referred to as 'purely' pastoralist;
- It cuts across ethnic, cultural and ecological boundaries; communities interact economically and share available range resources;
- Highland-lowland economic interactions among peasant (agro-pastoral groups) and pastoral communities is much more symbiotic than is often recognized;
- It is based on multi-species-based herding;
- It contributes significantly to the local economy through animal sales at local and regional markets including the Middle East.

As the *AU Policy Framework for Pastoralism in Africa of 2010* documented there is more positive trend of policy experience emerging among the East African countries, mainly in improving coordination and understanding pastoralism across national governments.⁶ Though

⁴ IGAD (1990)

⁵ Knips, V. (2004:2)

⁶ AU (2010: 15)

the awareness on the pastoral vulnerability is improving, there is still limited understanding and negative perceptions on the nature and magnitude of the cross-border trade from the side of decision-makers which leads to the lack of attention and backup to the sector.⁷ As this sector has been a major contributor to the household and national economies, countries attempted to have relevant legal frameworks, policies and strategies. Given each country's particular context, policies towards pastoralism differ from one to another in the IGAD bloc. Some of these countries have clear legal frameworks whereas others do not have. According to Ibnoaf, the policy intervention constraints in these countries can be summed up as follows:⁸

- The variable/unpredictable political environment.
- The weak capabilities of the private sector (in livestock trade and marketing).
- The disincentive to establishing functional and promoted pastoralist and other community based organizations.
- There is absence of active livestock policies at state and national levels.
- A low livestock profile in national economic planning, particularly observed in poverty reduction strategy paper (PRSP) which contains only general issues.
- Lack of understanding of the potential role of livestock sector in meeting the pro-poor development objectives.
- Low levels of data and information availability and the consequent poor analysis.
- Lack of participatory approaches in pastoral development and policy making.

3. Pastoralist communities in transition and the underlying causes.

There are a number of major factors that are playing key role in shaping traditional pastoralist livelihoods and pressurizing them to take alternative community-based adaptive strategies. The Horn of Africa region has been facing numerous socio-economic and environmental challenges due to manmade and ecological challenges. The following issues are critical and it is worth highlighting them as they negatively impact pastoralist livelihoods and their production systems. Ultimately they undermine both the local and regional food security situations. The critical issues include:

- ***High and low intensity conflicts negatively impacting on pastoral livelihoods, production and productivity:*** Many of the pastoral areas in Western Eritrea, Eastern Sudan and Western Ethiopia have experienced conflicts of various forms and intensities both internal/intrastate and high intensity interstate wars over the last four decades. Proxy wars were also fought as national regimes fought cross border wars in hot pursuit of opposition groups who used pastoral areas as their safe haven. Such conflicts have had a devastating impact on pastoralist production and livelihoods leading to the pauperization of pastoral communities, large scale settlement and force urbanization.

⁷ Pavanello, S.(2010:1)

⁸ Ibnoaf, M. (2008)

The whole region, but Kassala State and Kassala city in particular have experienced massive population displacement both internal and across borders which included a large segment of pastoral and agro-pastoral population from both Eritrea and Western Ethiopia. The influx to the Kassala State created a pressure on the pasture resources and provision of social services.

- ***Land grabbing in high potential pastoral areas:*** This new phenomenon is leading to land encroachment onto pastoralist land and is fundamentally affecting pastoralist livelihoods, production and food security. High potential savannah and wetland (riverine areas) are targeted by land grabbers and thus its availability to pastoralists is rapidly diminishing because of agricultural expansion. Under such circumstances, resource based conflicts among the various stakeholders will be inevitable. In some cases the land grabbing by local elites, commercial farmers, Trans-national companies (TNCs), foreign governments (mainly the Gulf and Asian countries) and the State itself is taking place in high potential areas which have already been denied to pastoralists in previous interventions (That is, from both colonial and post-colonial large scale commercial agriculture).
- ***Climate change and drought -*** The climate variability and change compounded with the above factors has resulted in creating recurrent droughts and famine as witnessed over the last many decades.⁹ The source of food in these communities depends highly on the availability of the grass and water sources. However, the decline in the amount of rainfall and vegetation, and ecosystem disturbances are creating a major challenge for them. This is contributing towards the diminishing livestock population and increasing food insecurity among poor families.
- ***Revival and promotion of the Green Revolution (GR) inspired approach:*** the GR based policy approach which has been adopted by the national governments does not tend either to accommodate pastoralist livelihoods and production priorities or to recognize the significance of indigenous knowledge systems or sustainable biodiversity. Yet, pastoralists in the Region still own and manage some of the most productive breeds of animals which are highly adaptable to their environment.
- ***The Prosopis Juliflora challenge:*** Vast and high potential rangelands have been invaded by Prosopis at the expense of the indigenous vegetation which is vital to pastoralist survival as well as livestock productivity. Prosopis was introduced to the Region from South America more than 50 years ago as part of a desert encroachment control measure especially in Northern Sudan. Prosopis which is highly drought resistant with very deep roots has expanded to many riverine and savannah suppressing the growth of the palatable indigenous vegetation upon which livestock depend. Prosopis is partly toxic to livestock, less palatable and yet abundantly available in the range lands. The alternative uses for Prosopis have not been properly considered, researched or supported by national governments, UN bodies or

⁹ Omolo, N. A. (2010:98)

NGOs and Prosopis therefore remains as the most underutilized resource. The desire to adopt changes emanates from the pastoralists themselves which challenges the commonly held view by some policy makers in the Region that ‘pastoralists are resistant to change’. Indeed, the contexts provided above are the pushing forces that are encouraging the pastoral communities to accept change in their livelihood. Furthermore, the role of federal and local government and other stakeholders in providing the necessary social services can be highlighted as a pulling force that is attracting the pastoralists to adopt semi-sedentary livelihoods in Kassala State and possibly other parts of the Horn Region

3.1 The emerging livelihood systems and opportunities

Because of the various challenges described above, many former pastoral communities are adjusting to the new situation by adopting multiple survival strategies. The strategies of this ‘Third Way’ are creating new livelihood opportunities and as well as enhancing household food security which include:

i. Creating stronger urban-rural socio-economic linkages

The adaptation mechanism taken by these communities increased the rural-urban interaction enabling former pastoralists to have access to goods and services in nearby towns as the Kassala case study will demonstrate. For instance, involving themselves in urban and peri-urban agricultural activities, adopting a semi-sedentary form of pastoralism with fixed homesteads but allowing mobility for larger livestock (camels, cattle), and commercialization of livestock production. Pastoralists bring livestock, livestock/dairy products, hides/skins, artifacts, charcoal, wood products etc. for sale and in return they buy a variety of food stuffs, domestic utensils, school materials for their children, farm implements, animal fodder and so on.

Improved road situation and better communications have made access between pastoralist settlements and have created greater opportunities for economic interaction between the urban and the rural communities. In the case of Kassala city fresh milk is supplied daily by small milking associations/groups of pastoralists who jointly hire tracks to carry from remote grazing areas to Kassala city.

From a food security perspective the milk is fairly cheap and this enables the urban dwellers to have adequate supply of dairy products in Kassala city, especially poor families who lack enough protein in-take. As the African Union in its “*Framework for Mainstreaming Livestock*” mentioned ‘animal source foods are the best source of essential micro-nutrients like vitamin B12 that are essential for children physical and cognitive development.’¹⁰ The adequate supply these pastoralists are making to the Kassala State is contributing to the price stabilization and food security of the communities.

¹⁰ AU-IBAR (2010:2)

ii. *Income source diversification*

As part of their adaptive strategy, they are gaining new skills to generate income which compliments livestock production. Such widened economic opportunities include: rearing more small ruminants around the homesteads, poultry production for women and wage labour (farming or urban employment), petty trading in various commodities and livestock marketing.

iii. *Involvement in local government processes*

Pastoralists are asserting their rights by actively involving themselves in civic and political rights by asking for more representation in state affairs. Such opportunities include participation in local elections to represent their communities at various levels, forming their own CBOs and so on.

iv. *Ensuring adequate social services*

Many thousands of boys and girls from pastoralist areas now have now access to formal education. However, some older boys who have to seasonally migrate during the dry season with their fathers and have to opt out of schooling. This has increased ratio of girls over boys in the nomadic schools. The semi-sedentary communities are also now more accessible and have easier access to human health and veterinary services provided by local authorities and NGOs.

v. *Owning land in semi-sedenterized system*

By adopting a semi-sedentary mode of production, pastoralists are now able to secure land ownership while at the same time maintaining some form of seasonal mobility in distant grazing areas for larger stock (camels and cattle). Land ownership within their homestead not only secures tenure but widens their opportunities for small scale farming and keeps away land grabbers who traditionally occupied pastoral land under the pretext of such lands being unoccupied.

vi. *Improved communication facilities*

In the case of Eastern Sudan mobile telephone coverage even in the distant grazing areas is very good. The improved communication facilities serve multiple purposes which include: better communication between the pastoralist families in the settlements and herders in remote grazing areas; communication with towns regarding livestock markets, commodity prices, in case of emergencies (droughts, epidemics, communal clashes, etc) contacting local authorities who are mostly based in towns and so on.

vii. *Change in gender roles*

Pastoralist communities in the study area have been traditionally male dominated with very limited social and economic roles for women beyond the domestic chores. As mentioned previously pastoralists in the sedentary context have more access to health, education and other services. Women's role in managing small stock in the homestead is manifested by

women being in a position to sell small livestock and its products; set up and manage small businesses and cooperatives as well as women led CBOs. Women's role is further enhanced by their role as primary and secondary teachers in their villages. Women of a pastoralist origin are now able to join higher educational institutions and such transformation through widened opportunities for women is a growing phenomenon which is worth studying.

Pastoralist girls are going to school in larger numbers (see iv above).

4. Implications of Social Protection Policy on Pastoralism

Social investments promote societal justice and contribute to poverty reduction.¹¹ This was drawn upon Africa's experience during the 1960s and 1970s. Though social protection is a fundamental human right, pastoralists have been neglected in securing this right. They usually do not get the necessary facilities that help their survival in the drought affected areas of the Horn. The problem of drought in the Horn of Africa is systemic and has led to a vicious cycle of famine. Over the last forty years, the Horn of Africa witnessed a number of development interventions which one after another failed to address the rights issues and ensure social security. Among pastoral communities, inequalities are mainly caused due to the absence of the sharing of power, unfair trade, exploitation by middle men, unfair government taxation of livestock, and ecological decline. The above problems have been exacerbated as most government policies focus more on urban and semi-urban areas rather than the rural areas predominantly occupied by pastoralists and their unique livelihood. Basic social services (health, education, hygiene and sanitation) are urgently needed to be developed in the remote pastoralist but in a manner which is responsive to the special circumstances, culture and way of life. of the pastoral communities.

The pastoralists' key assets are livestock where there is a need for livestock based insurance or other alternative mechanisms to be introduced in order to support their self-adaptive strategies during the financial and environmental crisis. The high degree of market volatility and herders assumption about the expected risks of chronic drought pushes them to sell animals at lower prices.. Such situation, force the herders to pay more for the cereals which is not comparable to livestock sales.¹² Such unfavourable terms of trade negatively affects the overall pastoralist household financial position, and they are thus exposed for social insecurity. Currently, they depend almost entirely on their own social, cultural and traditional means for their social protection. Designing long-term development interventions and policies that make social protection a backbone should be devised in order to alleviate

¹¹ Bangura, Y. (2011)

¹² Little, P. and et al (2001:151)

poverty and improve their wellbeing.

5. Case study: The significance of the pastoral economy and the case of Kassala Regional market

5.1 Overview: Livestock Production in Kassala

In terms of livestock products, draught power, crop manure and fuel (dung), livestock will remain a major source of livelihood for the rural population and also a source of cash and social prestige. The most interesting part of the current livestock management change is the development of commercial-mindedness of the pastoralists.¹³ This process-based attitudinal change is greatly contributing to the commercialization of livestock sector, market stability and food supply of the Kassala communities and beyond. Livestock will continue to play a significant role in the national economy contributing well beyond the estimated twenty-five percent of agricultural GDP.

In the case of Western Eritrea, it has to be stated that reliable figures on livestock and the extent of their contribution to domestic and international markets are unavailable. Nauheimer (1995) stated that in 1994 that 35,000 heads of sheep and goats were exported to Saudi Arabia from the Gash-Setit alone earning for the country at the time an estimated \$100,000. The export trend has been on the increase since liberation of Eritrea in 1991.

Pastoralists in the Kassala State (including some from Western Eritrea and Western Ethiopia) make significant contributions to the State and Regional economies. Generally, reliable data is difficult to get as the major livestock trade made unofficially, but the following data gives us a general overview the sectors' economic and food supply contribution. Total numbers and value of livestock sold for local consumption or export is shown on Table 1 below. A total of 76 million SDGs (equivalent to 38 million dollars) is a result of pastoralist production.

- Cattle (which are not exported) contributed 23 million SDG (30%)
- Camels (local consumption and export) contributed 32 million SDG (42%)
- Sheep contribution was estimated at 20 million SDG (26%)
- Goats share in local consumption and export was 1.1 million SDG (2%)

Revenues from the camel trade came first followed by cattle, sheep and goat respectively. The goat contribution to trade is underestimated because most of goats are slaughtered for home use and therefore are not reported.

Table 1: Livestock market output – Kassala State (2007)

Species	Local consumption recorded slaughter (Number)	Value at retail prices (1,000 SDG)	Export (Number)	Value at retail local prices (1,000 SDG)	Total (Number)	Value (1,000 SDG)
Cattle	37,962	22,777	-	-	37,962	22,777
Sheep	79,115	14,241	31,783	5,720	110,898	19,961

¹³ For more discussion see [Livingstone, I.\(1977:221\)](#)

Goats	7,129	428	11,234	674	18,363	1,102
Camels	1,114	1,337	25,717	30,860	2,6831	32,197
Total	-	38,783	-	37,254	-	76,037

Source: Fre and et al (2009) mentioning the State Ministry of Animal Resources, Animals Slaughtered and Animals Exported report. (Note: Non-market local consumption is not included.)

5.2 Why is the Kassala market locally and regionally significant?

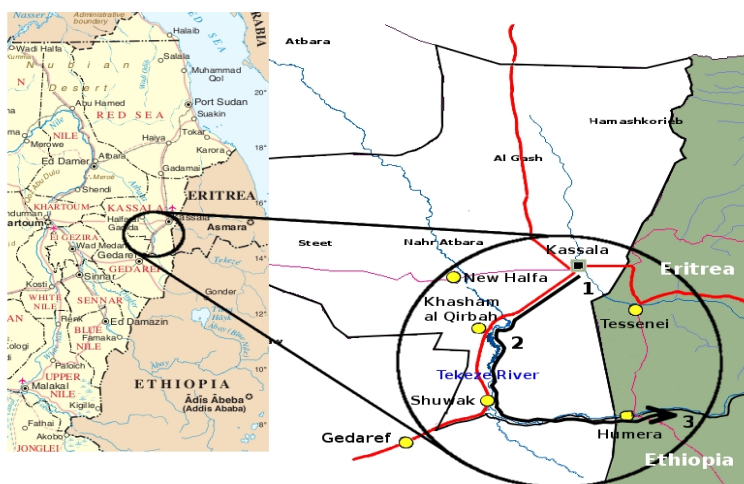
The Kassala city with a population of over 150,000 people is located 60 Kms from the Eritrean Sudanese border in the East and 180 km from the Ethiopian-Sudanese border to the South. It also located on the main tarmac road which connects the main sea gate of Port Sudan and the capital city Khartoum (See map below).

Kassala was chosen as the Eastern administrative center by the Ottoman Turks in 1840 and since then remained the most important administrative and commercial centre for Eastern Sudan, the neighboring countries and the Middle East. It was then the capital of Kassala region (1950), capital of the Eastern region (1980) and capital of Kassala State (1994).

The demographic mix of Kassala is fascinating – ranging from the Fulani of West Africa to the Rashaida Arabs from Yemen to several indigenous tribes whose livelihood occupations equally range from camel herding to small scale farming, urban agriculture, petty trade and commerce.

Kassala is also well connected to the neighboring countries with whom it shares: natural resources (rivers), ethnicities, trade, marriage affinities, wage labor and so on. Sudan is also a major provider of petrol and grain to both Ethiopia and Eritrea which use the Kassala main road while at the same time remaining a major market for livestock owners from Eritrea and Ethiopia.

Map 1: Positioning of Kassala city and pastoral mobility in Regional context



Source: Fre, Z. and et al (2009)

Note: Black arrow on the map shows their annual movement from Kassala State area to Ethiopia and Eritrea. Numbers (1, 2, and 3) shows approximate places where livestock owners are in each season of the year. 1. Rainy season, 2. Harvest season and 3. Dry season. .

The following are the main reasons why the Kassala regional livestock market is so important to pastoral communities of the three countries, namely Eritrea, Ethiopia and Sudan:

- ***Relative safety and security:*** Kassala is one of the safer border cities for both Eritreans and Ethiopians to exchange goods and services. The three countries have had their share of civil wars and interstate conflicts over the last three decades which at times led to border closures and thus limiting cross border trade. The Ethio-Eritrea border has been closed following the 1998-2000 border conflicts which means direct cross-border trade between the two countries has become impossible, thus making Kassala as the most viable market for cross-border communities. So the absence of formal cross-border trade agreements between Ethiopia and Eritrea resulted in the increased the opportunity for unofficial trade exchanges among Ethiopian, Sudanese and Eritrean pastoralists using Kassala livestock market as the most viable option.
- ***Proximity of the area:*** Kassala city is close to the Eritrean border and not far away from the Ethiopian border (see map 1) and this allows pastoralists from both countries to trade freely with pastoral communities of Kassala city in the Eastern Sudan. For Eritrean and Ethiopian pastoralists to reach their own capital cities hundreds of kms away would add high transportation costs.
- ***Wider market options and competitive prices:*** The Kassala market attracts both local as well as global livestock dealers as there is a wider opportunity for better prices and exchange of other commodities given the strength of the Sudanese currency compared to the Eritrea and Ethiopian currencies. The Kassala market is also a major source of live animals for major centres like the capital Khartoum, Port Sudan and intermediary cities. Kassala market also supplies livestock for the North African, Gulf and Arab countries consistently but the researchers could not obtain data on such an important market outlet.

5.3 Some major market drawbacks in Kassala

There are a number of drawbacks many of which are beyond the control of the pastoralist communities but such drawbacks clearly undermine livestock production, access to food and household food security. These include the following:

- ***Taxation:*** The problems of multiple and excessive taxation of the livestock sector is discouraging many poor pastoralists and investors.¹⁴ As Aklilu mentioned in his study 'Sudan probably applies the most excessive and complex fees and taxation system on livestock trading in the region.' Taxes are levied at various levels and in various amounts from the livestock production areas to the consumption areas. Governments regularly collect taxes

¹⁴ Desta, M. (2007:8)

from the livestock sales in Kassala ranging from \$1 to \$3 per head of the animal depending on the type of the animal. Such tax is a major burden for the majority of low income pastoralists who do not get any services from central government in-terms of animal health or other benefits for their livestock. Furthermore, the pastoralists (those who are Moslems) are also supposed to pay an annual religious tax (Zakat) to the religious leaders.

- **Transport costs:** Animals are trekked on hoof from the production areas to the main market in Kassala. Such distances range between 20 to 150 kms in one direction and animals lose a lot of body weight fetching lower prices once they arrive to Kassala market. If animals are not sold for any reason they have to be trekked all the way back to their settlements and the producers end up empty handed if not impoverished.
- **Shortage of animal feed during the dry season (hunger gap):** During the long dry season (January-June) large herds migrate seasonally to high potential grazing areas far away from Kassala market, while small stock (sheep and goats) remain around the homesteads. This is the period when there is high demand for livestock products both in urban and rural areas. However, the major livestock are not accessible, being in the far away grazing areas. Intervention by NGOs and the government to improve the animal fodder supply would enable migrant herds to stay for longer periods around Kassala thus supplying the market with livestock during the dry season.
- **Exploitation by middle men:** The pastoralists who produce the livestock get far less profit from livestock sales compared to merchants and trans-continental market dealers. Pastoralist bargaining power is so low because of their lack of understanding of how the regional and global livestock markets operate. Also they do not have agents or middle men who would promote their interests and put it as part of government policy agenda.
- **Reduced pastoral labour force and abuse of child rights:** The Region is a post conflict zone and is affected by human displacement which includes a large segment of the pastoralist population. Some of the younger men of pastoralist origin have abandoned pastoralism and taken up other occupations as traders, teachers, the army, migrant employment and so on as wage earners. This in-turn has meant fewer people are now available for tending livestock and hired herders have to be remunerated. Poor families cannot hire herders and their kids end up looking after the animals thus depriving them from education. A large number of nomadic children from poor families in Eastern Sudan are illegally trafficked by Arab merchants as camel jockeys and taken to Gulf countries to train camels for rich Arab families. All these alternatives have reduced family labour within the pastoralist households increasing their vulnerability and reducing food security.

6. Conclusion

The Horn Region still faces major environmental, food security and political problems which are impacting on the pastoralist livelihoods and their economy. The paper argues that pastoralists have shown high of resilience and adaptation as demonstrated by the case study. The central argument in the paper is that pastoralist livestock production system is significant to food security and reduced poverty. It provides nutritionally rich food stuffs and gears the market dynamism that creates positive spill-over on other sectors of the economy.

Based on the analysis, this paper concludes that given the contemporary challenges which are affecting the livestock system production (climate change, intra and interstate wars, policy deficiencies, etc), pastoralists have managed to develop multiple self-initiated coping mechanisms. There is a need for a new paradigm shift in our understanding of the emerging pastoralist livelihood systems in the Horn of Africa. The new circumstances are pushing pastoralist families to a semi-sedenterized but partly mobile way of life is helping them to use both opportunities which exist in permanent settlements and mobile livelihoods. The adaptation strategy is used by the communities of the Horn of Africa in general and Kassala in particular and helps the pastoralists to remain pastoralist while gaining access to social services, increasing their bargaining power and owning permanent residential land which they might otherwise lose in the future due to the land grabbing and other forms of encroachments. Moreover, the new system is also allowing strong rural-urban livelihoods linkages and a change in the role of women in their families and communities as they started to hold more responsibility and authority in the absence of their husbands.

The paper concludes by stating that when governments design their Poverty Reduction Strategies do not take into account the contribution of pastoralism makes to their economies and the authors make specific recommendation for action in the next section.

7. Way forward:

To boost household food security status and the right to food, the following actions would be worth considering by all the stakeholders concerned about pastoralist wellbeing:

- Understand the evolving processes, current trends and pastoralists' adaptive strategies. This would lead to responsive policies and appropriate interventions.
- Recognize the contribution of pastoralist livelihoods as a means towards food security and economy of communities.
- Support for animal health services particularly in bordering areas to minimize the cross-border transmission of animal diseases and increase productivity.
- Stronger lobbying to curtail land grabbing in pastoral areas by the States and international companies by creating stronger alliances and synergies among pastoral peoples.
- Help maintain the biodiversity of the range lands by controlling *Prosopis Juliflora* - and finding alternative uses for *Prosopis*, including animal feed, fire wood, construction materials and other uses.

- Conduct proper studies on livestock market chains in the border areas in order to understand the opportunities for trade available for pastoralists locally, nationally and internationally thus enhancing the pastoralist bargaining power.

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