

ADAPTATION TO THE HARSH CONDITIONS OF THE ARID AND SEMI- ARID AREAS OF KENYA: IS PASTORALISM THE BEST LIVELIHOOD OPTION?

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ABSTRACT

Pastoralism is a subsistence pattern in which people make a living through dependence on livestock. With the right social and political support the pastoral economy can thrive and contribute to the national economy. Droughts trigger livelihood crises, but the underlying causes of vulnerability in the pastoral areas are social and political not natural. Pastoralists have developed systems to mitigate the impacts of drought and other arid and semi-arid hardships and they range from; migration, livestock splits, reciprocal grazing, livestock loaning and cattle rustling. This article is grounded on two theories; the theory of survival strategies where people are not seen as victims waiting for aid but as actors whose survival depends foremost on their own activities and the theory of the characteristics of the natural environment determining the habitability of a region by humans and that the characteristics of people are shaped by the natural environment in the place in which they live.

Keywords: Droughts, Migration, Cattle Rustling, Resilience, Adaptation

INTRODUCTION

Pastoralism is a subsistence pattern in which people make a living through tending livestock. For the livelihood to thrive it requires a regular supply of pasture and water. The animals tended by pastoralists can provide an adequate supply of animal proteins required by humans. With the right support the pastoral economy can thrive and contribute to the national economy. Pastoralists have however suffered from a series of livelihood shocks, some natural and others political. As a result, and because rainfall in the horn of Africa have been low in recent years, questions are being asked about the sustainability of pastoralism as a livelihood system. Many people argue that, the system is dynamic and sustainable, but needs support and diversification to reduce livelihood vulnerability (UNOCHA-PCI, 2006).

Drought triggers livelihood crises, but the underlying causes of vulnerability in the pastoral areas of the horn of Africa are social and political and not natural. Droughts are part of the natural cycle in semi-arid areas, and local livelihoods are sensitively adapted to the certainty that can come but can be overcome. Vulnerability to drought can increase, if there is inadequate support to economic, social and political coping mechanisms, rather than increasingly frequent or abnormally severe drought events (Johnson, 1975).

Supporting viable livelihoods in pastoral economies requires expanding people's options, supporting the cooperation between pastoralists, agro-pastoralists, farmers, traders, and urban dwellers and maximising and not restricting their physical, economic and social mobility. It

requires that they are treated not as victims, as capable people already engaged in the light of continuous economic, political and social change (UNOCHA-PCI, 2006).

Periods of unusually low rainfall are part of the expected pattern of precipitation in semi arid Africa, and the common strategy for pastoralists in the past was to move to areas of higher rainfall where vegetation persists. A number of factors have made this increasingly impractical, including the establishment of national frontiers, the expansion of cultivation and a marked increase of total livestock numbers. The consequence is that droughts in Sub-Saharan Africa now cause significant humanitarian problems and localised degradation, since large numbers of animals converges on certain pastures especially around wells. This in turn causes long-term impoverishment among pastoralists since they must sell animals cheaply and cannot afford to re-buy them, when the droughts end (Blench and Marriage, 1999).

National governments, international governments and NGOs have successfully put in place effective mechanisms to deliver food aid to pastoralists in times of drought stress due to the perception that drought is a humanitarian problem. Instead of alleviating the suffering, food aid has had a negative effect on the ability of the pastoralists to naturally adapt to drought. There is considerable historical evidence that pastoralists who did not succeed in the difficult climatic condition or who lost their herds through disease simply left the agro-ecological zone. However food aid has the effect of keeping in place populations who would otherwise move on to initiate a new subsistence strategy (Berry *et. al.*, 1977).

The production of livestock remains a crucial element in the economies of African countries with substantial semiarid regions. Where the rainfall is extremely patchy and pasture resources must be exploited opportunistically, the producer with a high level of mobility can maintain a herd in land that is almost unusable for fixed territory or ranch production. Moreover mobile pastoralists do not have to pay any of the fixed costs associated with fenced pastures and grazing is thus essentially a free resource (Blench and Marriage, 1998).

Mobility was a perfectly rational strategy in regimes of variable rainfall and that the subsequent structural instability of social groups was a regrettable but predictable result of this. Indeed after the droughts of the early 1970s, highly mobile pastoralists preserved their herds far better than their agro-pastoral cousins; pastoralists were making productive use of otherwise extremely marginal land (Behnke and Scoones, 1993), as these arguments formed their opinions based on 'Tragedy of the Commons'(Hardin's, 1968).

Vulnerability to weather is a function of preparedness as well as of the event itself. Migration of pastoralists to areas of higher productivity alleviates stress on less productive or exhausted land. Conversely if movement of pastoralists is restricted, already marginal land becomes more overused. If pastoralists face a long journey, stock death increase, and they must weigh likely losses from the migration against comparable losses were they to stay in suboptimal land (Johnson, 1975). Herders prepare for drought by lending their animals to relatives or friends in exchange for looking after some of their friends or relatives animals in return. This serves as an insurance against drought. When the lending is not done, relatives would always come in handy to help in restocking by lending animals. A third form of restocking among pastoralists in the arid and semiarid areas is cattle raiding, though unpopular with authorities it is used to build depleted stock after a drought. The diversification of income as well or engagement in paid labour is an indirect means of restocking. Money gained in other sectors is channelled into pastoralism; particularly after a drought when animal numbers are low and prices high (Horowitz and Little, 1987).

CONCEPTUAL FRAMEWORK

Hippocrates and Aristotle believed that characteristics of the natural environment determined the habitability of a region by humans and that the characteristics of people are shaped by the natural environment in the place in which they lived (Livingstone, 2000). Archaeologist Fagan (2004) suggests a number of examples from pre-history and early civilization where climate is suspected of playing an influential role in human settlement patterns. In China for example where written records have been kept many centuries longer than in most western nations, there exists documented evidence that movements of human populations, particularly nomadic pastoralists responded closely to changes in climate (Smit and Cai, 1996). Research therefore has shown that rural communities have adopted strategies to cope with recurring drought that incorporate migration exhausted (Meze-Hausken, 2000). The theory of survival strategies where people are not seen as victims waiting for aid but as actors whose survival depends foremost on their own activities. There are both long-term and short-term strategies. Many writers argue that in pre-colonial times, nomadic economies were well adapted to the climatic conditions of the Sahel. Due to the implementation of a variety of survival strategies people were able to reduce the effects of famines and in some cases to prevent them altogether. In the colonial and post-colonial times, the structures on which these survival strategies were based were destroyed. Instead of being active participants coping successfully with drought and famine, the nomads became victims of colonial and post-colonial economies (Watts, 1983).

PASTORALISM AND THE ENVIRONMENT

There is a link between pastoral peoples, the ecosystem in which they live and the animals that they breed, that makes them have a significant role to play in the conservation and sustainable use of the biodiversity. Pastoralists often rely on locally adapted local breeds that are able to resist disease outbreak, drought and other dry land pressures. Many ecosystems have evolved as a result of interaction with grazers. Pastoralism makes an important contribution to livestock genetic diversity since pastoralism often takes place in areas such as dry lands, conventionally defined as water stress regions; locally adapted livestock are critical for productivity. Such breeds tend to have higher resistance to disease drought and parasites since they have evolved parallel to such pressures. Despite being viewed as having limited productive potential dry lands maintain 46% of global livestock diversity (Secretariat of the Convention on Biological Diversity, 2010).

When practiced sustainably, pastoralism also encourages plant and landscape diversity. When pastoralists use native livestock breeds and relies on mixed fodder types, a number of benefits are realized for plant and landscape diversity. Compared to large scale enclosed grazing practices; pastoralism can be much closer to the grazing patterns of wildlife, thereby mimicking natural ecosystem interactions and functional roles. When compared to agricultural practices elsewhere that extensively drain water lands in order to convert them to croplands, the contribution of pastoralism to plant and landscape diversity becomes clear (Widstrand, 1975).

Pastoralists play an important role in the flow of ecosystem goods and services in dry lands. Pastoralists depend on provision of fodder as livestock feed as well as water cycling in the water scarce areas. The activities of pastoralists contribute to the production of and stability of ecosystem services. Pastoralism is typically based on local management systems for sustainable use of wild and domesticated species. Grazing land management, especially in drought prone areas is a complex process requiring a balance between the use of water, food, fodder, and fuel. As users of the grazing lands who are reliant upon the continued provision of such ecosystem services, pastoralists have a unique knowledge of how a balance between

conservation and sustainable use can be achieved and maintained. This is often reflected in local management practices which largely emphasize long term horizons in decision making in order to maintain culturally important elements of the ecosystem (Blench, 2000).

Pastoralism has historically been a sustainable livelihood option. However increased environmental stresses and changes in policies and practices, including restricting access to land and water have increased the environmental impacts of pastoralism leading to overuse of water resources, overgrazing and livestock wildlife-conflict. The value of pastoralism has often been undermined. Studies have shown that desertification has occurred where policies undermine the pastoralist system, while where pastoralism has been supported by appropriate policies, biodiversity and ecosystem integrity have usually been enhanced (Hatfield and Davies, 2006).

SECURING LAND AND WATER RIGHTS

Many pastoral systems are based on transhumant livestock production. Such systems are dependent upon the maintenance of access to land and water resources. When access to land is blocked, or user rights are uncertain, overuse and degradation often occur (Stanford, 1983). For many years, much of the literature has depicted pastoral production as economically irrational and nomadic livestock management systems as environmentally destructive. The old orthodoxy and dominant approach in terms of pastoral development described herders as individuals without economic rationale using harmful land tenure systems (Lane and Swift, 1989). They were inspired by the theory of “tragedy of the commons”. This theory has influenced many policy-makers in Africa, can be summarized as follows:

In pastoral areas, the herds are owned individually and the trekking routes belong to everybody; the pastoralists suffer from “the cattle complex” and irrationally accumulate herds for social and religious purposes rather than for economic purposes (Herkovits, 1926).

‘Tragedy of the commons’ confused the common property regime, defined as a collective property, with the free access regime where common property is a thing that does belong to anyone, a public property and which he characterized, in the pastoral context, by the absence of rule regarding the use of the resources and the absence of institutions able to impose sanctions and enforce them (Laird, 1996). This confusion legitimized the imposition of modern range management systems such as the grazing blocks among the Somali of Northeastern Province of Kenya (Helland, 1980) and even privatization of rangelands amongst the Maasai of the Kajiado district in Kenya (Rutten, 1992).

The pastoral communities’ territories are closely associated to their permanent water point. It has been differentiated that large “territories of transhumance” from the more restricted “territories of anchorage”, which enclose strategic resources such as permanent wells and riverside grazing and specific areas bearing palatable salty species. The resources, found in dry grazing areas, representing secure areas of withdrawal, are subject to more defined access rights, which give priority to a restricted community and can even evolve toward individual appropriation (Thébault, 1995).

Most pastoral lands have traditionally been communal with local institutional structures and governance preventing a ‘tragedy of the commons’. These structures can take a number of forms; in some systems, communal ranches have been established in which a number of families are granted ownership over a single large plot of land. In other cases high value land (e.g water sources), are managed communally within a landscape of individually owned lands in lower value lands (Hay and Beniston, 2001).

COPING WITH DROUGHT AND DISEASE AMONG PASTORAL COMMUNITIES

If contemporary trends in land use patterns are allowed to continue unchecked the vulnerability of both farmers and pastoralists to drought will increase. In areas with recurrent drought, the inhabitants have developed strategies for coping with its effects. These strategies mediate between drought and famine and only when they are unable to cope with the effects of drought does famine occur (Myers, 2002). A breakdown in the strategies to cope with a drought may explain the inability of a population to respond to it (Berry *et al.*, 1977). Some of the land use patterns common in arid and semiarid areas include; wildlife conservation in national parks and coming in of cultivation which give pastoralism an unhealthy competition. As population pressure increases the process of cultivation of more isolated areas with favourable soil and water conditions is likely to increase. The parks on the other hand enclose grazing resources and water resources which are available all year round and the exclusion of pastoralists from the parks has reduced the dry season grazing resources available to them and increased the pressure on remaining resources (Barnett, 2003).

Studies show that human populations have used migration as an adaptive strategy to adverse environmental conditions and that migration of 'environmental refugees' are possible consequences of land degradation and conflict (Glantz and Ausubel, 1988). To cope with drought which is the most common occurrence that affects pastoralists beyond their capacity, most pastoralists move their animals away from current residence in search of pasture and water; there is a considerable increase in intra-family assistance in terms of livestock loans and reciprocal grazing arrangements during droughts, the power of the supernatural is also invoked through prayer and there is seen a profound increase in the utilisation of alternative food supplies such as grain and wildlife meat among pastoralists. Where there are massive livestock losses pastoralists tend to keep large numbers of animals as a preparedness measure so that in the event of a severe drought, there are animals that die and those that survive to facilitate restocking mainly through splitting of herds to keep some with relatives living in better places at that time (Campbell, 1978).

Livestock systems in Africa are predominantly oriented towards subsistence production. A variety of animals are kept and managed to produce different outputs, milk, meat, and hides, in areas with severe environmental constraints (Pratt and Gwynne, 1977; ILCA, 1983) rainfall is low in amount and is unreliable over time and space. This imposes limits on the availability of water and pasture such that migrations over wide areas are necessary to ensure productivity of the herd throughout the year. To provide for the needs of the populations, herding societies have developed complex management strategies (Widstrand, 1975). These involve keeping a herd of different species with a composition and size which can provide for the various requirements of the community. The herd must be of a size sufficient to meet subsistence needs, needs associated with trade and social obligation and to allow for a risk factor to cope with the effects of disease and trade (Baker, 1974; Dahl and Hjort, 1976). This herd must have access to an area which provides grazing and water throughout the year without endangering the long-term productivity of the land resources (Western and Dunne, 1979).

Traditionally pastoralists use Cattle rustling to cope with the impacts of drought and disease in arid and semiarid areas of Kenya; cattle rustling occur most of the time after a severe drought that might consume large herds of cattle. Cattle rustling argued to be a traditional mechanism for restocking depleted herds (NCCK, 2009).

Cattle rustlers use traditional weapons including bows and arrows, spears and shields and the traditional military prowess. Rustling is done in two distinct ways; one where rustlers sneak without the knowledge of the herd owner and still animals without using force, the second approach is one in which the rustler come in full force and make it known to the herd owner their intended raid and using military power forcefully take possession of their opponents animals. Raids though not frequent in the traditional sense, did actually disrupt the lives of the communities involved (Campbell, 1978).

CONCLUSION AND RECOMMENDATIONS

Pastoralism as a livelihood system can make possible the habitability of the arid and the semiarid areas. The characteristic of the arid and semiarid areas is that of severe drought where water and plant life becomes scarce. In such difficulties, other livelihood systems such as cultivation, hunting and fishing cannot thrive. The mobility of the pastoral property makes pastoralist better suited to the harsh conditions of the arid and semiarid lands.

Pastoralists have managed to put in place strategies to cushion themselves against the adverse climatic conditions characterised by; scanty plant life, inadequate water supply and hostile neighbourhoods. The strategies so put in place by pastoralists include; adoption of drought tolerant animals such as camels and goats, raiding of neighbourhoods to re-stock after a drought calamity, introduction of sophisticated weapons for security in areas where government security machinery is not accessible and regular migrations and livestock movements.

To optimally utilize the resources in the arid and semiarid areas, there is need to continually utilize the traditional coping mechanism in the development of modern strategies that will increase resilience of the communities in arid and semi arid areas to drought and conflict.

There is need to develop national pastoralist policies that will support the development of pastoralism as a major contributor to the national economy and the improvement of the arid and semi arid environments. Being the only livelihood system suitable to the harsh conditions of the arid and semiarid areas, pastoralism requires concerted structural support.

External aid cannot necessarily alleviate the problems of the arid and semiarid areas, but instead, it enhances the vulnerability of the pastoral populations in such areas who will keep expecting external aid whenever they are faced by calamity and thus fail to activate available coping mechanisms.

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