

Socio-economic transformation among Traditional Cattle Keepers in the Kafue Flood Plain in Namwala District, Zambia

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ABSTRACT

Objectives and Study Design: A study involving ninety-eighty traditional cattle keepers was conducted in Namwala's Baambwe and Maala areas with the objective of assessing changes in the value of cattle with respect to shifts in production goals, constraints, coping strategies and the introduction of markets, and government interventions in the promotion of livestock sector. The hypotheses were that different categories of cattle keepers within rural agro-pastoral communities are likely to respond differently to opportunities and constraints from cattle markets and that successful cattle keepers are likely to expand their production opportunities by ploughing capital obtained from proceeds of cattle sales while less successful ones withhold animals from the market unless there is an urgent need in order to realise a longer goal of stock accumulation.

Results: The results showed that financial security was ranked the first by 35.7 percent of the sample as the most important primary objective for keeping cattle. This is due to the changing economic environment resulting in an increase in the demand of money in the rural economy with available markets. In addition, following the establishment of commercial cattle buyers, the socio-economic situation among the traditional cattle keepers has changed from mere accumulation of cattle for prestige and social standing in society to entering into the market economy. Increased cattle marketing has encouraged transformation in production goals for keeping cattle to acquiring universally accepted and prestigious items such as solar panels, television sets, vehicles, dip tanks, houses, fencing, retail shops etc. However, livestock production remains below its potential due to the effect of recurrent cattle diseases and climatic variability in which government and other stakeholders have come on board to help sustain livestock production.

Conclusions: It was concluded from the study that cattle keepers are rational economic actors whose production goals and strategies are determined not only by cultural and

ideological considerations, but by constraints and opportunities imposed by the wider social, political and economic environment. Transformation has occurred, particularly among successful cattle keepers, accumulating both money and assets. They have responded positively to the introduced cattle markets by selling the surplus of their herds.

STUDY BACKGROUND

Introduction and Literature Review

Cattle have been kept for a long time by most tribes in Zambia's Southern, Western and Eastern provinces and those living in the extreme northeast near the Tanzanian border (Beerling, 1986). Livestock play an important role in the livelihoods of many people particularly in poorer communities of Zambia in which their role is even more critical [Government of the Republic of Zambia (GRZ), 2000]. There are more cattle in the hands of traditional herders than commercial farmers in Zambia. This marked difference in numbers arises from the value that the traditional herders place on the quantity and not quality of their livestock (Rootselaar and Bwalya, 1990). However, in spite of the efforts of government to increase production of beef, the response from traditional herders remained conservative. It is estimated that the traditional cattle keepers sell three percent of their animals whereas commercial farmers sell about fifteen percent of theirs [Central Statistical Office (CSO), 2005].

In Namwala's Baambwe and Maala areas, cattle have traditionally been an object of accumulation rather than economic gain among the Ila people, who equate the accumulation of cattle in traditional Ila and Tonga society with accumulation of capital investment in capitalist societies (HODI, 2009). This is because cattle contribute more significantly to the rural livelihoods as a source of draft power and fresh milk and used in various social roles such as payment of bride price, initiation ceremonies, funeral rites and religious rituals and in meeting financial and other obligations (Jaspan, 1953). In addition, Fielder (1973) reported that a corollary of the concept of cattle complex of 'target selling income' has been used to contend that because of their cultural attachment to cattle, traditional cattle keepers are unwilling to sell their animals unless there are specific income targets to be met.

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Since people in Namwala are traditionally cattle keepers from time immemorial, accumulation has led to the proportion of households owning livestock higher compared to other places in the province and the country at large (Smith and Dale, 1920). The District has the highest number of traditionally owned cattle in Zambia with more than 120, 000 heads with improved breeds. The prosperity of the cattle economy in Namwala is based on the cycle of flooding on the Kafue Flood Plain (CSO, 2007). For this reason, Mapani (2008) pointed out that cattle rearing in the area rather than crop farming have taken a centre stage. However, livestock production remains below its potential due to the effect of recurrent cattle diseases and climatic variability as in many other African cattle keeping areas (Scoones, 1995).

Until the early 1990s, prices of all agricultural inputs and products, including their marketing were determined by the state. However, with the change in the macro-economic policy in 1991, there has been a shift towards moving the economy to private sector-driven initiatives and free market policies (Yambayamba, 2006). With recurrent cattle diseases and ban in livestock movements, this scenario led to the establishment of commercial livestock buyers in 2005 and 2008. These have provided readily available rural markets in Namwala as opposed to selling to 'briefcase' traders who used to take cattle to Lusaka and the Copperbelt to fetch for higher prices. With respect to cattle markets, Zambia could raise about US \$1.5 billion per annum if it matches Kenya cattle production by exporting its products to neighbouring countries such as the Democratic Republic of Congo (DRC) and Angola which are huge potential markets (Sinha, 2010). At the moment, world beef and dairy trade are worth about US \$50 billion, a share which Zambia could be part of if all is put in place.

As opposed to many studies that focused on the role of livestock particularly cattle in generating rural income and their associated impacts on household food security, social status etc, this study focused on the socio-economic changes, the increasing demand for money and the introduction of markets in rural areas such as Namwala. The aim of the study was to find out shifts among traditional cattle keepers with respect to production goals in cattle value as a result of the newly introduced livestock markets and how the government is promoting this transformation.

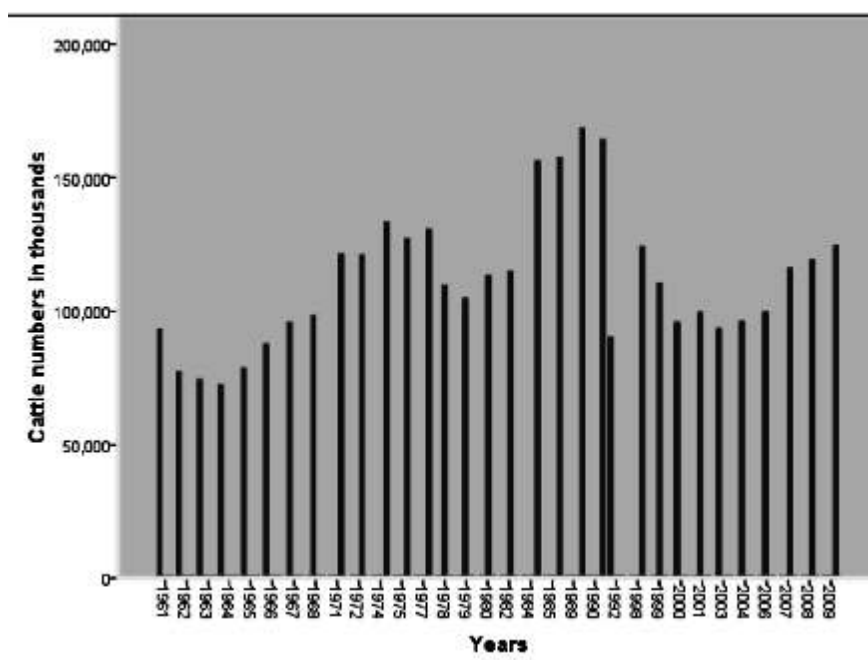
Cattle in Namwala's Baambwe and Maala areas are central to the rural economy and play an important role in the livelihoods of the people. However, due to inadequate intervention measures by the government, such as insufficient and ineffective extension services and restocking of cattle stock,

poor livestock marketing system, expensive veterinary drugs and sometimes their non-availability coupled with poor management practices among traditional cattle keepers, the recurrent cattle diseases and climatic variability have resulted in reduced cattle numbers and food insecurity. It was therefore necessary to conduct a study to investigate the responses of these agro-pastoral communities to cattle losses and the recent establishments of commercial livestock buyers and how these markets have transformed the rural economy in Baambwe and Maala areas in Namwala District.

MATERIALS AND METHODS

Namwala District is about 2,175,064 hectares in extent. It is found within latitude 15°45' and 15°55' and longitude 26°22' and 26°35'. Namwala is located 170 km North West of Choma town and 158 km from Monze and 350 km from Lusaka. Namwala District has four chiefs namely: Mukobela, Mungaila, Muchila, and Nalubamba with 82,810 people. The two study areas; Baambwe and Maala have a combined population of 30,332. They lie along the Kafue flood plain with seasonal flooding being prevalent (Sheppe and Osborne, 1971). They also have the highest number of cattle with more than 41,409 heads and people there have kept cattle from time immemorial (Figure 1).

Figure 1: Trends in Traditional Cattle Numbers from 1961-2009 in Namwala



Source: Namwala District Veterinary Office (2010)

Collection of data was done through the use of secondary and primary sources. Secondary data was collected through literature review, while primary data through questionnaires and interview guides from local cattle keeper respondents and

key informants respectively. Since most cattle keepers belong to cooperatives under the government sponsored Farmer Input Support Programme (FISP), complete lists/registers of all the farmers, who are also cattle keepers, were utilised. In this regard, Interval or Systematic Sampling was used. This technique was based on the selection of elements (names) at equal intervals, starting with a randomly selected name on the population/cooperative list. The targets were household heads; wife or husband. In an event where both were absent, the eldest member of the family was interviewed. The population in the areas is concentrated or clustered with a few farmers having their farms on the outskirts of the villages. Carrying out of research during rain season was timely and the clustering patterns saved time on reaching the respondents.

Primary information was obtained from the local respondents in the area and officials in various institutions through questionnaires and Observations. The questionnaires focused on the contemporary production goals among the traditional cattle keepers, impact of regularised markets, shifts in cattle accumulation, recent forms of cattle acquisition, herd management practices and the amount of beef exported from Namwala. The District Veterinary Officer (DVO), Chiefs/Headmen, Abattoir Managers and Non Governmental Organisations (NGOs) were targeted as key informants. The key informants were purposively drawn and interviewed using **interview guides**. Observations were based on capital projects that have been undertaken after 2005. Assets focused on during field work among other things included the following: Solar panels, houses, vehicles bought, dip tanks, business enterprises, hummer-mills, boreholes and fencing.

Data was analysed qualitatively as well as quantitatively through the computer's Statistical Package for Social Sciences (SPSS) and Minitab software. Veterinary data on cattle censuses and marketing records helped in computing and comparing cattle numbers and off-take rates, past and present trends using tables and figures. Marketing records and cattle populations for the period 2005 to 2009 were complemented by the interpretation of a number of case studies to compare the marketing behaviour of a few selected households before and after 2005, while noting changes in production goals, coping strategies and value of cattle. Case studies provided a deeper insight about how rationales and priorities are enacted at household level decision making process. The methodological assumption is that an examination of a number of case studies can be used to derive broader inferences which apply to the general population in the district.

MAIN STUDY FINDINGS

Demographic characteristics of Cattle Owners

Out of 98 respondents in the study area, 77 respondents (78.6 percent) were males while 21 (21.4 percent) were females. More males and females between

41 and 50 age groups accounted for 52.1 percent of those owning cattle, followed by those in the 31 to 40 age group who accounted for 30.6 percent. There are fewer people below the age of 30 and above 60. These own 10.2 percent since they are often just starting their families and are still settling down. In addition, those above 60 represented 7.1 percent only since there are few surviving household heads considering the low lifespan in Zambia. About 61(62.24 percent) attended primary school, 10(10.2 percent) attended secondary school, 5(5.1 percent) attended tertiary education and 22(22.46 percent) never attended formal education. In addition, the majority of the people (89.8 percent) interviewed were natives in the study area and owned more cattle. Tribal cousins such as *Lozis, Luvalas, Mbundas*, and *Luchazis* constituted 7.1 percent of the sample and many other tribes such as the *Bembas, Tumbukas, Ndebeles* accounted for 3.1 percent and these settled in the study area after retiring from formal employment.

Changes in Production goals for keeping cattle in Namwala

Financial security was ranked the first and most important primary objective with 35.7 percent of the sample due to an increase in the use of money. Social status represented 22.5 percent of the total farmers. Provision of draught power accounted for 16.3 percent of the total respondents and this remains an important objective for keeping cattle. The use of manure represented 14.3 percent of the sampled cattle keepers who cited it as an increasingly vital primary objective for keeping cattle due to high cost of fertiliser. Other secondary objectives that were cited were the need to slaughter cattle during funerals, marriages, traditional and initiation ceremonies and this accounted only for 5.1 percent among farmers as indicated in Table 1. Milk and meat production were also cited as other (5.1 percent) reasons for keeping cattle for both home consumption and sale as a source of 'small' income. This is because unlike selling the entire cow, milk or sour milk can easily be sold and thus, constitute a fast and ready source of income in a rural setting.

Table 1: Changes in Objectives for Keeping Cattle in Namwala

Objective	Percentage	Main Reason
Financial security	35.7	Changing economic environment resulting in an increase in the use of money in the rural economy
Social status	22.5	Prestige, status, respect and wealth. Leads to accumulation - surplus sold
Draught power	16.3	Crop production, hiring oxen for income and general transport
Manure	14.3	Infertile soil and high cost of fertiliser. Longer usage depending on the duration cattle is quarantined on a particular piece of land
Bride price	6.1	Tradition, although money is increasingly used
Other- Funerals, Milk and Meat	5.1	Instead of slaughtering cattle on funerals, many farmers reserve them to buy items such as agricultural inputs. In addition, unlike selling the entire cow, milk or sour milk can easily be sold and thus, constitute a fast and ready source of income
TOTAL	100	Transformation among cattle keepers has occurred

Source: Field Data (2010)

Constraints to Cattle Production in Namwala

Two major constraints that hinder livestock production in Namwala were identified. These include presence of cattle diseases and parasites; poor nutrition and husbandry practices. From early 1990s, livestock diseases have continued to pose a challenge to the development of the livestock industry in Namwala (GRZ, 2005). Despite the measures that the government has been putting in place, cattle numbers have continued to decline from 109,746 in 1999 to 95,287 in the year 2000, 92,975 in 2003 to a slight increase of 95,581 in 2004 as indicated in Figure 1.

Some diseases include Foot and Mouth Disease (FMD), Heart water, East Coast Fever or Corridor Disease, Bovine Tuberculosis (TB), Lumpy skin and many others. These diseases have deprived particularly those that have not accumulated more cattle a source of income as cattle can be sold to raise money to purchase available drugs, grain and other requirements on rural markets. The effect of cattle diseases are depressing productivity and also results into low milk yields, poor animal weight gains, low animal conception rates and long inter-calving intervals and high mortality rates. The failure by traditional cattle keepers to control cattle diseases result from two factors namely; high cost of drugs to either treat or control cattle diseases and inadequate coverage by veterinary officers.

The causes of poor nutritional status in the traditional herds are shortage of both feed and water during the dry season (CSO, 2001). The ability to feed livestock adequately throughout the year is perhaps one of the most widespread technical constraints limiting increased cattle productivity among traditional cattle keepers. Nutrition as a constraint involves lack of provision of quality indigenous pastures, crop residues and feed. Since Zambia has a uni-modal rainfall pattern, major problems facing the traditional cattle keepers in Namwala is feeding cattle during the dry season, which normally lasts for six months. In addition, poor nutrition leads to susceptibility to diseases and parasitism. Shortage of water due to drying of streams and absence of water reservoirs and boreholes comprise a serious constraint contributing to poor nutritional status of cattle in the dry season.

Livestock health is also affected by poor husbandry practices resulting from poor extension system. Farmers lack sufficient knowledge about modern husbandry practices such as good housing practices, feed supplementation, and breeding which improves the vigour of calves hence more resilience to diseases, and internal parasite control (de-worming). Cattle are grazed in big herds on the Kafue flood plain and in the bush on the plateau during rain season when the flats are flooded. The sizes of these herds sometimes lead to overgrazing particularly in drought years. Big herds of cattle are also difficult to control and very often cattle wander freely, becoming easy prey for hyenas and crocodiles. Losses due to the depredations of these carnivores are frequent, and sometimes described as large. Some established practices among traditional cattle keepers do not seem to favour stock improvement because too many bulls are still allowed to run with the herds. It is also still common to

castrate the best bulls so that they would become large oxen for showing off at traditional ceremonies.

Coping Strategies to recurrent Cattle Diseases and frequent Droughts/Floods

For a long time now, people in Baambwe and Maala have been facing various problems pertaining to recurrent cattle diseases and climatic variability resulting in cattle losses, frequent droughts and floods. These have affected people's livelihoods that they have enjoyed for decades. The socio-economic situation of the people has changed and indeed food security has been threatened. The coping strategies people have assumed in the areas are; fishing, poaching, bee keeping, lumbering, vaccination, diversifying with mixed crop/animal production and keeping different animal species.

While other tribes such as *Lozis* and *Bembas* are involved in fishing, the *Ilas* use the plain for grazing purposes. About seventeen respondents stated that they have become fishermen while six are involved in **poaching/bee keeping/lumbering** respectively. They stated that they catch fish and sell it within Namwala town or dry it and take it to urban centres such as Choma and Lusaka, and now more increasingly to Kasumbalesa. For many, the money realised is used for meeting various demands and for purchasing steers and heifers in an effort to re-establish themselves in the Ila way of life. They have not completely embraced fishing as a permanent way of life.

Treating cattle which involves dipping and spraying is one of the most important coping strategy farmers have assumed aimed at preventing cattle deaths. About 12 cattle keepers dip or spray their animals weekly or regularly in Baambwe while in Maala were 18 respondents. About 31.9 percent cattle keepers and 68.1 percent in Baambwe and Maala stated that they spray their cattle fortnightly, 32 percent and 68 percent monthly, 36.8 percent and 63.2 percent after three months and 30.8 percent and 69.2 percent yearly respectively. Meanwhile, 28.6 percent and 71.4 percent from Baambwe and Maala respectively do not dip or spray their animals at all. The weekly, fortnightly and monthly spraying and dipping is usually done in the months of November to March when tick infestation is high.

Diversification with mixed crops/animals is another strategy that is used as a coping measure. More than 30 percent of the respondents in Baambwe and 50 percent in Maala are engaged in mixed crop-livestock production. Crop residues are used to feed the animals and excreta from the animals are utilised as nutrients for the crops due to high prices of organic fertiliser. Donkeys have also been introduced as beasts of burden, particularly for transport and draught power. This form of livestock farming is seen by many respondents as a risk-minimising strategy especially in Baambwe where more farmers lost cattle than in Maala. Farmers in the two areas have praised non-governmental organisations such as Heifer International for coming to their aid in giving out livestock in form of goats.

Socio-economic Transformation: Rural Livestock Markets and contemporary changes in the value of cattle

With established abattoirs for cattle in Namwala, there is an increased opportunity to engage in rural livestock markets especially among successful cattle keepers. Rural markets are vital for opening up an area for business and other commercial activities. In recent years, there has been a significant decline in 'briefcase' livestock traders who used to buy cattle from traditional cattle keepers at cheaper prices to re-sale at higher prices in urban centres such as Choma, Mazabuka, Lusaka and the Copperbelt. There are three slaughter days in a week; Monday, Wednesday and Friday. Zambeef slaughters 100 cattle but has the capacity of slaughtering 120 animals with 30 local people employed and 63.26 percent farmer preference whereas Starbeef slaughters 80 with 25 local people employed and 29.59 percent farmer preference. Most cattle keepers expressed gratitude that the coming of Starbeef raised the amount per kilogram to at least K11, 000. This price fluctuates depending on supply and demand. The price is also said to be as low as K8, 000 between December and March owing to many people taking their animals for slaughter. This leads to a glut on the market since most farmers by this time have diminished their maize stock.

About 540 animals are slaughtered per week, 2,160 per month and over 25,920 per year. This shows an increase in traditional off-take of 1,800 in 2000, 1,920 in 2001, 2,030 in 2002, 2,210 in 2003 and 2,642 in 2004. The establishment of Zambeef saw the number rising sharply to 14,400 in 2005, 14,605 in 2006 and 14,905 in 2007 and almost doubled to 26,125 and 26,330 in 2008 and 2009 respectively following the coming of Starbeef in the district (Figure 2). This is far more than 1991 commercial sales of 1,700 outside the district and 205 within the district. In addition Zambeef has also opened a Supermarket where it sells a wide range of beef products. However, for some people, they have taken advantage of this ready market to rustle cattle but Namwala Police is ensuring strict inspection of animals before slaughter, hence three slaughter days in a week to ensure close supervision and checking of documents.

Out of the total 98 households, 62.2 percent have bought radios, 58.2 percent have solar panels whereas 36.7 percent have television sets from proceeds of cattle sales. Those that have bought vehicles constituted 29.6 percent and 25.5 percent constructed dip tanks. Most farmers have bought utility vehicles such as pick-ups and canters. These are believed to be dependable to use on the rough plain and sandy plateau. Increasingly, many people who have sizeable herds have bought motorbikes before purchasing a vehicle since their fuel consumption is minimal. The demand and need to build houses has equally spread to rural towns like Namwala with 12.2 percent of the respondents having built houses. Those who have invested in fencing accounted for 11.2 percent and those with shops/guesthouses/restaurant constituted 9.2 percent. Other projects such as hammer-mills and bore-holes were accounted for by 6.1 percent of the traditional cattle keepers.

A few wealthy individuals (9.2 percent) have opened up retail shops and have access to Digital Satellite Television in their

homes. Those that have built shops lamented that shops only help them meet 'small' financial needs as opposed to selling the whole cow. For richer households, cattle are now increasingly seen as commodities, avenues of investment, and this reconceptualisation has led to a gradual shift in production goals, to a reworking of production relationships between different households, and to a redefinition of economic ideologies and cultural beliefs. Apart from direct conversion of livestock wealth into commercial assets, proceeds from cattle sales also help to prop up the commercial sector by bringing large amounts of cash into circulation. Hence, the strategic importance of the traditional livestock sector and marketing to the overall development of the District cannot be over-emphasised.

When cattle assume a high market value, traditional networks of animal redistribution such as giving stock to another person, usually a relative or close friend, to look after them and stock gifts tend to decline. New forms of reciprocity which do not involve the transfer of live animals become more important. This practice of traditional network of animal redistribution is more pronounced in Baambwe than in Maala. This is because many farmers in Baambwe have smaller herds and fall prey to traditional cattle gifts. In Maala where farmers have bigger herds, giving out cattle is a lesser practice hence farmers take full advantage of markets themselves.

The other aspect of cattle management which has changed with increased commercialisation and market prospects is the degree to which herd owners tend to invest into the herd. Richer herd owners tend to buy more veterinary drugs than poor herd owners. In addition, very rich herd owners (those who own more than 2,000 heads of cattle) stated that they sell more than 50 beasts annually for vaccines and dip chemicals. Such rich cattle owners manage to minimise the impact of the flood and drought by using several hired herders who trek their animals over long distances in search of grazing pastures. Such farmers make substantial investments into the herd in form of drugs and in most cases, sink bore-holes and fence their paddocks. In addition, they provide supplementary feed to their pure bulls bought outside the district. Poor cattle keepers (those with less than fifty heads within which the majority are gifts from traditional networking) cannot make such investments.

In addition, the study established that small herd owners, although with varying herd sizes, tend to milk all their lactating animals while at the same time stripping more milk than richer herd owners. During rain season, a cow can be milked three times per day, while allowing the calf to suckle intermittently to stimulate further milk-let down. The three stages are morning, noon and late afternoon. Small herd owners, particularly women who have their direct sources of income from milk selling, tend to milk in the morning and at noon while the poorest may even milk late afternoon. On the other hand, richer herd owners only milk a proportion of their lactating cows, letting most calves to nurse their entire dam's milk. More than 70 percent of the cattle keepers in Maala only milk 20 percent of all the lactating cows invariably and milking

is only done early in the morning. In addition, most people cross-breed and fetch pure breeding bulls from places along the line of rail such as Choma, Mazabuka, Lusaka, Chisamba and as far as Mkushi from commercial farmers. This has greatly improved the local traditional breeds with improvements in practices such as the use of rubber bands instead of knives, deworming, de-horning and frequent dipping/spraying.

During the last few years, marketing strategies of bigger and small herd owners have been markedly different due to drought, and this has resulted in a net flow of livestock from the latter to the former. Under normal circumstances, one would expect small cattle keepers to sell fewer animals while bigger cattle keepers are expected to sell more. On the contrary, it was established that small cattle keepers have tended to sell more animals during the drought years, not as a deliberate economic strategy but as a coping strategy to meet their staple requirements. During this period, the market value of cattle considerably drops in relation to the market value of grain. Thus, these small cattle keepers fall prey to local speculators and long-distance grain traders who take advantage of the situation by dictating the terms of exchange unfavourable to them.

From several first-hand accounts during this study, it was established that small cattle keepers had exchanged the whole animal for two 90 kilogram bags of maize, which were valued at K90, 000 each in 1997/8 farming season. In times of flood, especially those of the 2007/08 farming season, fifteen percent of the respondents from food-deficit households in Maala area exchanged cattle with maize from Chief *Muchila's* area. However, bigger herd owners pointed out that they have responded to the drought situation in the following ways; they withdrew their animals from the depressed local livestock market; they transport their animals either with their own transport or with hired trucks to the line of rail where they fetch higher prices; and they also dominate on the local livestock market by buying animals at very cheap prices from the poor cattle owners who are usually desperate for cash.

Government Interventions to Promote Sustainable Livestock Production in Namwala

The government through the District Veterinary Office (DVO) has developed a number of interventions such as intensifying vaccination exercises and disease surveillance, farmer awareness/trainings and seminars and restocking programme among others (GRZ, 2006; GRZ, 2008). In 2009, more than 114,000 heads of cattle were vaccinated against FMD following the increase in veterinary camps from nine to twelve. The District has been a beneficiary of the Digital Pen Technology (DPT) administered by *Extra Cellular Fluid* (ECF) immunisations under Smallholder Livestock Investment Project (SLIP). Under this project, the government immunised 3, 315 calves against corridor the district in 2009. To supplement government efforts, a number of stakeholders have come on board. These programmes were conceived as a response to the large number of cattle deaths due to diseases.

In 2006, the District was given 800 heifers for restocking and more than 500 households benefited although this number is

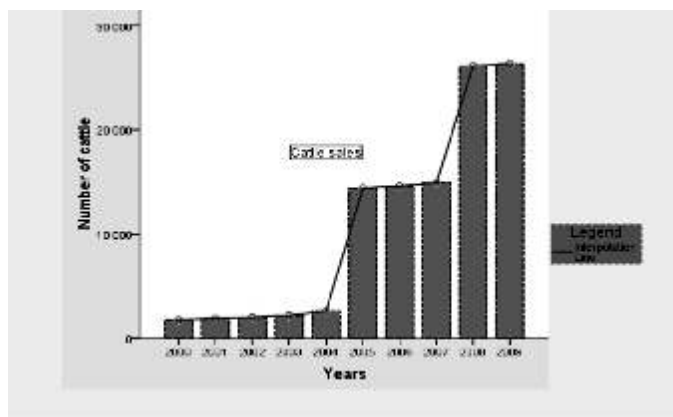
small considering the number of cattle lost to diseases. Apart from cattle, other forms of livestock are promoted by Heifer International (HI) which gave out 600 goats in 2009. Table 2 shows that cattle is the most important form of livestock kept by the people in Namwala, especially in Baambwe and Maala areas with 20,313 and 21,096 in 2009 respectively. Maala has the highest number of cattle in the district in all years from 2006 to 2009 than Baambwe. There is also an increase in the number of other forms of livestock such as donkeys. Increase has also been recorded in the number of sheep, donkeys, goats and pigs as these are required as 'income target selling' as opposed to selling cattle. Thus, the above increase of cattle in Namwala District as whole is as a result of disease control measures undertaken by the District Veterinary Office. Note in Table 2 that more cattle numbers are concentrated in the two study areas of Baambwe and Maala. Namwala has since pre-independence days remained somewhat backward in the development of infrastructure and other social amenities particularly roads. Most used feeder roads such as Maala-Namusonde, Muchila-Niko and Ngabo-Baambwe connecting to the main Namwala-Choma road are in a bad state and become impassable during rain season. Apart from the completed Choma-Chitongo road, the Niko-Monze road has also been in such a deplorable state particularly during rain season. Poor state of road infrastructure has affected the economy of Namwala. This has affected the livestock industry in transporting drugs, beef and other essential items within and from urban centres such as Choma, Monze and Lusaka. The situation is worse during the rainy season when outbreaks of dreadful diseases are most prevalent.

Table 2: Namwala District Livestock Census in 2009

Camp	Cattle	Goats	Sheep	Pigs	Donkeys	Poultry
Namwala Central	8 812	909	30	437	30	18 157
Baambwe*	20 313	3 050	210	2 059	64	20 037
Kantengwa	10 415	364	20	442	5	9 216
Katantila	18 306	540	42	595	69	29 440
Chitongo	13 303	2 048	8	905	0	21 730
Ndema	4 166	1 476	6	567	24	6 531
Muchila	13 156	6 212	10	3 069	116	22 639
Maala*	21 096	672	123	320	8	12 913
Nakamboma	14 171	3 228	04	2 053	9	30 234
Total 2009	123 738	18 499	453	10 447	325	170 897

Source: Namwala District Veterinary Office (2010)

Figure 2: Trends in cattle sales from 2000-2009 in Namwala among traditional cattle keepers



Source: Field Data (2010)

DISCUSSION

Following the introduction of abattoirs in 2005 and 2008 by Zambeef and Starbeef respectively, the production goals or specific objectives for keeping cattle have changed in both areas. This is due to socio-economic changes among traditional cattle keepers from keeping cattle for prestige and as a symbol of wealth to redefinition of goals. In this study, financial security was ranked the first and most important primary objective of those interviewed. This is due to the changing economic environment resulting in an increase in the demand for money in the rural economy. Many cattle keepers are now market oriented and money acquired is used to purchase necessities ranging from social needs to agricultural inputs. The reliability on cattle among farmers as a source of income was found to be very significant. This suggests that cattle are perceived to be more important than their actual contribution to household cash income. This position agrees with the study undertaken by Hermitte (1974) in Western Province, which revealed that when new trade was monetarised, goods could be obtained by converting surplus animals into cash with which to buy prestigious European goods, especially by the Lozi aristocracy. This became the most important objective for keeping cattle since surpluses were used for financial gain to purchase other items as opposed to using cattle to forge political and social networks.

For successful cattle keepers, cattle accumulation has opened unprecedented opportunities to engage in regularised livestock markets. The findings from both areas established that with the expansion of markets, cattle keepers have taken advantage of the opportunity to convert stock wealth into monetary value, and to transform this value into other economic investments. This has enabled them to acquire universally accepted items such as radios, solar panels, television sets, and vehicles among others. The propensity for successful cattle owners to be regularly involved in cattle markets is in line with information presented by Lutke-Entrup (1971), in his study in Western Province of Zambia. He concluded that traditional off-take rates were linked to the sizes of the herd among different categories of cattle keepers in Western Province, particularly in Mongu and Senanga where first abattoirs were established. The bigger the herd, the more surplus cattle sold. Hence, for successful cattle owners in Namwala, cattle are increasingly seen as commodities that can congeal with increase in value holding it in a stable social, economic, political and disease-free environment.

Another observation made was that depending on the status of the cattle owner, surplus animals by different categories of farmers in Namwala are deployed to serve different socio-economic functions which secure material advantages for their owners. The situation today is that instead of using cattle surpluses to forge for social networks, prestige in society and patronage over others, successful cattle keepers have tended to withdraw their cattle from internal redistribution to acquire various items. Under the free market economy prevailing in Zambia, increased opportunity to engage in rural markets by

private buyers has led to some successful cattle keepers to withdraw animals from traditional internal redistribution to individual accumulation in order to participate in the ready rural markets without consulting anyone. This phenomenon has also been observed in a wide diversity of other African cattle keeping societies such as the Fulani of Nigeria (Sutter, 1987), the Masai of Kenya (Hedlund 1971; Grandin 1988), the Somali of central Somalia (Abdullahi, 1990). Closer to home, Solway (1986) and Behnke (1987), demonstrate this in the case of Botswana among the Tswana that the use of live animals for gifts tends to decrease with the level of increased market opportunities.

Off-take rates from traditional cattle keepers has expanded cattle keeper's production opportunities by ploughing capital into modern forms of investments such as retail shops with money realised ploughed back to buy more cattle stock. Increased commercialisation changes aspects of cattle management with and the degree to which cattle owners tend to invest into the herd in form of drugs, vaccines, supplementary feeding and fencing which controls and protects the spread of diseases and pasture. Apart from direct conversion of livestock wealth into commercial assets, proceeds from cattle trade have also helped owners to purchase pure breeds of bulls such as Brahman from Choma, Mazabuka and from places as far as Mkushi. Improvements in management have also occurred in which rubber bands are used (instead of using a burdizzo and knives), de-horning, de-worming, and cattle treatments with frequent dipping and spraying and fencing (grazing control).

Income from livestock plays an important role in enabling households' access to food during food shortages in Namwala. This underscores the importance of the role of government in which both formal and informal livestock markets can play in enhancing the food security from cattle sales. Before the establishment of current abattoirs, the marketing system inhibited the role of livestock in rural development. Hence, to encourage farmer's participation in livestock markets requires government intervention in developing an efficient and effective marketing system. In view of this, Scoones (1995: 84) pointed out that instead of creating new public organisations for livestock marketing, 'the focus should be on what the government can do to support, strengthen and facilitate private sector marketing to be responsive to variable supply and demand conditions to local livestock suppliers.'

Keeping different livestock species helps farmers with the supply of different products. Pigs and goats, and increasingly sheep tend to be slaughtered more often on weddings and traditional ceremonies rather than cattle. Major household expenditures are met by income raised from cattle sales, while medium and small expenditures are met by sheep, pigs, goats and chicken sales. An outbreak of disease may affect certain species, for example, sheep and goats, as these species or breeds are better able to survive droughts and thus help carry a family over such difficult periods. Advantages can also be taken from different reproductive rates of different species to rebuild livestock numbers after a drought. Chickens are the

most popular form of livestock kept by households followed by cattle while the majority keep a mixture of cattle and chickens. Chickens are commonly kept by women because of their small size which makes them easy to handle as compared to large livestock such as cattle.

From all the above situations, the DVO requires more support from the government and other stakeholders. A major subvention is needed to enhance capacity and reduce its total dependency upon the Ministry of Agriculture, Livestock and Fisheries and donors to new directions of sustainable livestock production in the District particularly in relatively more prosperous cattle keeping areas of Baambwe and Maala. Improvement of road infrastructure would open Namwala for investment and facilitate the controlling of the spread of livestock diseases. This would result in easy delivery of drugs to all parts of the district to avoid losses of livestock through preventable diseases. The beef industry has the potential to significantly contribute to economic growth given the right environment.

CONCLUSION

The central premises reached in this study is that cattle keepers are rational economic actors, whose production goals and strategies are determined not only by cultural and ideological considerations, but by constraints and opportunities imposed by the wider socio-economic environment. The shift among cattle keepers in Namwala became apparent in 2005 and 2008 when Zambeef and Starbeef respectively established abattoirs there. These provided regular markets for the local people which many saw as a relief in view of recurrent cattle diseases, droughts and prolonged floods that affected cattle husbandry. Well-established rural livestock markets have stimulated off-take rates from the traditional sector. This has encouraged change in objectives for keeping cattle from accumulating for prestige to embarking on acquiring universally accepted items. Whereas marketing is dependent on the private sector, the government has a critical role to play in the construction of a shorter all-weather road from Niko-Monze and maintenance of feeder roads. Improvement in road infrastructure outside and within the district, a better pricing mechanism, training smallholder farmers and diversifying with other forms of livestock are key pre-requisites to increased off-take rates from the traditional livestock sector. Hence, transformation has occurred among traditional cattle keepers in Namwala. They are selling their cattle, accumulating both money and assets and have responded positively to the introduced cattle markets by selling their surplus herds.

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