Socioeconomic Benefits of Traditional Beef Cattle Feedlots in the Lake Zone Regions of Tanzania

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Abstract: *More than 90% of the national cattle herd is found in the traditional sector, in which over 95% of the cattle originate from the small East African Zebu (EAZ) known as the Tanzania Shorthorn Zebu (TSZ). The system is faced by many challenges such as; poor animal nutrition, animal diseases, water shortage and the low genetic potential of the indigenous cattle and their entire dependence on seasonality and availability of grazing pasture and water. These contribute to the production of low quantity and quality meat which is locally consumed at low price and make the farmers being excluded from regional and international market. The traditional beef cattle feedlots emerged initially as coping strategy of the drought season where many cattle died due to lack of pasture. However the contribution of feedlots to the socioeconomic development of the operators has been under researched. A cross-sectional survey of 119 Traditional Beef Cattle Feedlot operators was employed by using open and closed ended questionnaires and focus group discussions (FGD) Traditional beef cattle feedlots benefits out of the operation as the respondents admitted to build modern house and purchase many plots. However lack of reliable market to sell their fattened cattle is a big challenge to them. Any efforts from government and non-government organization to address the reliable markets should not be ignored.*

Keywords: Traditional feedlots, socioeconomic benefits, Beef cattle

Introduction

Livestock production including beef cattle production in Tanzania has been taken as cultural and to some extent economic practices. That is, this practice is done in some societies as prestige, rituals and fulfilling household welfare. However the sector plays an important role to the economy of Tanzania as it is reported to grow at 2.8 percent and contributed 6.9 per cent to Gross Domestic Product (GDP) (TES, 2016). Total number of cattle has increased to over 30 M of which 98.1% from Tanzania Mainland and the rest 1.9% in Zanzibar (URT, 2017).traditional

system of production being the dominant sector. However the traditional system is faced by many challenges. According to LPRI, (1986; 1991), the major constraints to cattle productivity in the traditional sector of Tanzania, especially in the semi-arid areas includes poor animal nutrition, animal diseases, water shortage and the low genetic potential of the indigenous cattle. Another constraint is their entire dependence on seasonality and availability of grazing pasture and water (Niboye, 2010).

More challenges prevails the traditional beef production system as documented by (MLDF, 2010) are poor extension systems as well as lack of appropriate market information translated into limited access to markets. The consequences of these challenges are low quantity and quality meat which is locally consumed at low price and make the farmers being excluded from regional and international market. The traditional beef cattle feedlots emerged initially as a coping strategy during the drought season where many cattle died due to lack of pasture. The thin emaciated cattle who are almost about to die because of hunger are sold to feedlots operators who feed them concentrates made up of cotton husks, cotton seedcakes for three to six months and are later sold (Mlote*et al*,2012).

Worldwide Overview of Beef Cattle Feedlots; its Evolution and Development

Beef cattle feedlots operations started as early in the 1960's when the high plains area of Amarillo, Texas had vast amounts of grain sorghum and wheat produced that caused the grain to be sold at a price above the loan price plus storage (Rhoades, 2009). During this period most of this production was shipped to livestock operations in Arizona and California to the west coast for finishing. Various grain and cattle entrepreneurs saw the obvious opportunity with the added benefit of a favorable climate and began building feed yard facilities in the high plains area.

Once the building started the expansion was rapid and continued into the early seventies when over capacity and numbers of finished cattle caused a market crash lasting 19 months; at the time the longest in history.The development went further in 1970 where total cattle inventory was 112 million head and continued going up to a peak of 132 million. During the cattle feeding facility build up phase finished cattle had to be sold and shipped out of the area into Kansas or the, so called, river markets in the Midwest (Rhoades, 2009). In Texas as documented by Galyean, 2010 Cattle were fed to make "fatten" them for hundreds of years, but the feedlot industry as we know it today is a relatively

recent development. Corn feeding in the late 1800s in Iowa and other Midwestern states led to the development of Chicago as a major marketing location for cattle (Ball and Cornett, 1996). At the same time, cow-calf production was shifting westward, with a growing rail system supporting movement of cattle from Western rangelands to the Midwest for finishing. In the early 1900s, improved cattle genetics, introduction of silage as a major feed resource, and development of grain processing methods (grinding and cracking) resulted in improved performance. In addition, with the rapid expansion of land grant agricultural colleges and a research focus that led to a greater understanding of nutritional requirements for livestock, cattle feeding became increasingly based on science. By the late 1950s, application of technologies like feed-grade antibiotics and steroidal anabolic agents led to an even more sophisticated and science-based industry.

Traditional feedlots operations established in the lake zone regions of Shinyanga and Mwanza aimed at improving the beef cattle productivity in terms of quality of meat and quantity of meat. Most of these feedlots are individually owned with animals ranging from 10 to 800 per feedlots. Initially they started as coping strategy to dry season when pastures become scarce and limited to number of cattle raised in the areas. During this time most of cattle become emaciated as results they don't meet slaughter market quality. This makes them to be sold at low market price and then taken to feedlots for fattening for three months and then later sold at a price. Use short sentences. The most common feed ingredients used are cotton seed hulls, cotton seed cakes, polished rice and minerals salts which are available at their localities (Mlote*et al*, 2012).

Benefits of Traditional Beef Cattle Feedlots Production

Benefits of improved traditional beef cattle production have been demonstrated and witnessed to contribution of macroeconomics in different countries worldwide. In West Java Indonesia, 13 beef cattle fattening enterprises were able to absorb 1,024 workers. This means that the value added to the farm was big enough and widely felt by many people and the macro level will contribute to the economic development of West Java.. Economically of the thirteen firms had an increase in domestic investment, in the stable investment value of more than Indian Depository Receipt (IDR) 375 billion (*Setiadi et al*, 2010). In Tanzania, the reported general performance of traditional beef cattle fattening in the lake zone has contributed to the rising demand for high-protein foods in the country and plays a great role in: (i) ensuring food security, (ii) providing households with employment, income, investment opportunity and a store of value, and (iii) providing draught power and

manure for sustainable agriculture and fulfilling cultural roles (Mlote *et al,* 2012). Thus to conclude there is identified underdeveloped beef cattle supply chain with higher gross margin of beef cattle fattening operators compared to farmers (Mlote*et al*., 2012). This study focused on the benefits that have direct effects on the socioeconomic status (improved income and life standard of the feedlots operators which trickled down to the people in Mwanza and Kahama. The study intended to following answer two principle questions:

> What could be the socioeconomic benefits of Traditional Beef Cattle Feedlots to the operators and also to the surrounding communities in the study areas?
> What is the perception of operators on challenges facing Traditional Beef Cattle Feedlots operations?

Methodology

Population and Study Area

The study was conducted in Mwanza and Shinyanga regions located in Lake Victoria involving 119 respondents (traditional beef cattle feedlots owners/ attendants). The respondents were sampled from six districts in Mwanza and Shinyanga named Nyamagana, Ilemela, Sengerema, Kwimba, Magu and one in Kahama (Ushetu, kahamamji and Msalala). These regions were selected for the study due to the following reasons: The presence of large livestock population specifically cattle, the regions are among the leading in the country.

According to the National Sample Census for Agriculture (NSCA) latest figures of October 2017, Mwanza and Shinyanga regions in the Lake Zone have the largest population of cattle in Tanzania. Shinyanga region had a total of 4.3 million cattle. Mwanza had 2.4 million cattle equivalent to 7.9 percent of the total cattle populationin the Tanzania mainland. Shinyanga region and some part of Mwanza are prone to drought, the feedlots production system is highly practiced as coping strategy for saving cattle and a viable commercial activity. There are about 240 feedlots in Mwanza and Shinyanga regions (Preliminary survey, 2012). The target population for this study were; feedlots operators, and community people.

Research Design

The study was a cross-sectional research design which is the most common design that involves observation of all population, or a representative subset, at one specific point in time i.e. it takes place at a single point in time. In effect, we are taking a 'slice' or cross-section of

whatever it is we're observing or measuring (Trochim, 2006). The study was descriptive in nature. The sampling procedure was multistage sampling involves a purposively and snow ball sampling. Mwanza and Shinyanga regions and their respective districts were selected purposively while feedlots operators were obtained through snow ball technique. The feedlots operators were obtained by snow ball method of sampling since there was no sampling frame. The snow ball method was appropriate due to lack of comprehensive information on number and locations offeedlots farmers (preliminary survey, 2012).

Both qualitative and quantitative data were collected. Quantitative data were collected through questionnaire while qualitative data were collected through Focus Group Discussion and key informant interview. One hundred and nineteen (119) questionnaires were administered and about twenty six focus Group Discussions were discussed in Mwanza and Shinyanga. The questionnaire with both open ended and closed ended questions on the success of traditional beef cattle feedlots operators was used. The focus group discussion checklist and interview checklist were also used.

Data Processing and Analysis

Data collected through structured questionnaire were sorted coded, processed and analysed using SPSS Descriptive Statistics, mainly frequencies, were main methods of data analysis for presenting results for each research question of the study.

Results and Discussion

Demographic and Socioeconomic Characteristics of Respondents

The respondents of this study were the traditional beef cattle feedlots operators living in Mwanza and Kahama. They were all men, due to the reason that a cattle rearing is the work of men and little boys in most of the lake zone areas. Shayo and Martine (2009) have reported that Men assume that a woman's primary commitment is to carefor a family at home, in the 'reproductive' sphere of life; and that each woman dependson a male provider for cash needs.The age of the respondents' were grouped into six groups at the interval of 10 starting from 16 years as minimum and mean age being 35.7 years. Majority of them are at the 36 to 45 age group as presented in Table 1. Education level of the respondents is presented in Table 1 the majority of them have attained primary school education with few at college. This could be the reasons that, the value of education is substituted with cattle, i.e. you are valued by the number of cattle that you have and not the level of education you

attained. Possessing a large number of cattle in the homestead is a prestige to them, the number of cattle that respondents keep ranges from one to above 141. The number of cattle that the respondents owned was grouped into four groups at the interval of approximately to the mean which is 36.8, the minimum being 1 and the maximum 140.Majority (83.2%) of the respondents have the experience of 0 to 5 years, this indicate that this business is real emerging one. This is also emphasized or supported by the category of economic activities the respondents perform. Most of the respondents admitted to be involved in Livestock keeping and business. That means there is transition from the livestock keeping as prestige to livestock keeping as business.

Table 1: Demographic and Socioeconomic Characteristics of Respondents

Demographic &socio-economic characteristics	Frequency(n=119)	Percentage
Sex		
Male	119	100
Age		
16 to 25 years	23	22.8
26 to 35 years	26	25.7
36 to 45 years	34	33.7
46 to 55 years	13	12.9
56 to 65 years	4	4
Above 66 years	1	1
Number of cattle owned by respondents in groups		
1-36 cattle	70	58,8
37-73 cattle	41	34.5
74-110 cattle	5	4,5
> 111 cattle	3	2,5
Education level		
Below primary school	23	19.3
Primary	82	68.9
Secondary	9	7.6
College	4	3.4
Experience (years)		
0 to 5	99	83.2
6 to 10	16	13.4
11 to 15	2	1.7
16 to 20	2	1.7
Economic activities		
Livestock Keeper and business	59	57.8
Livestock keeper and crop farmer	37	36.1
Livestock keeper, crop farmer and business	4	3.9

Salaried employed. livestock keeper &business	2	2.0

Socioeconomic Benefits of Traditional Beef Cattle Feedlots in Mwanza and Kahama

The socioeconomic benefits out of the traditional beef cattle feedlots operations has be analyzed into two ways; the direct benefits to feedlots operators and indirect benefits to people in community surrounding the feedlots operations. The direct benefits of feedlots operators were derived from the questionnaires and presented in Table 2, in the categories of asset accumulation, social benefits, business benefits and services benefits. At the category of assets accumulation, the construction of a house was leading benefit, it is obviously since in Tanzania house is the common and valued asset than others. Nearly half of the feedlots operators in this category have managed to construct a urban house (concrete house with iron sheet roofed and varnished) out of the feedlot operation indicating that, this business is of profitable.

However the buying a field and cultivating was the last mentioned asset accumulation is obvious since these people don't prefer cultivation, they did for survival only. In the social benefits majority admitted that, this business help them to send their children to schools (English medium school). Improvement of capital from the business benefit category is the leading benefit as it was also proved during discussion with one of the young (25 years old) feedlot operator, who said that,

> *"I use more than 90% of the interest from this business to buy more cattle for fattening"*

The increase of capital will increase inputs per fixed costs of production i.e. economies of scale and hence maximize the profit. The profit out of the business has been also used for investment of other business. Moreover the feedlots operators have been able to appreciate that business has been a source of employment to them as well as attendants from different part of the lake zone regions.

Table 2: Socioeconomic Benefits of Running Traditional Beef Cattle Feedlots Operations

Socioeconomic benefits	Frequency (N = 253)	Percentage %
Assets accumulation (N=105)		
Construction of a house	56	22.1
Purchasing plots	38	15.0
Purchasing a motorcycle	6	2.4
Purchasing a car	2	0.8
Crop cultivating	3	1.2
Social benefits (N=72)		
Sending children to school	36	14.2
Fulfilling family needs	22	8.7
Purchasing ordinary cattle to keep	12	4.7
Paying dowry	2	0.8
Business benefits (75)		
Improvement of capital	65	25.7
Building lodge foe business	1	.4
Opening new business	3	1.2
Developing other business	6	2.4
Service benefits (N=1)		
Source of employment	1	0.4

On the other hand of socioeconomic benefits i.e. indirect benefits to people living around the feedlots operations have been derived from Focus Group Discussion with them. Table 3 present the responses of these people of which has been based on knowledge and skills and material benefits. The table 3 shows that, these people are benefiting directly out of traditional beef cattle feedlots operations. However during discussion they expressed the existence of discomforts such as spreading of cow dungs and dusts in the streets and disturbance of the water sources.

Table 3: The Socioeconomic Benefits of Traditional Beef Cattle Feedlots to the People Living Around the Feedlots

Benefits	Focus Group Discussion with people living around TBCF in Mwanza and Kahama
Knowledge and skills	• Have seen these cattle brought very thin and emaciated but after sometimes they become fat. • Have learned how to feed these cattle by going several time observing when feeding. • I have learned how to mix the feeds (cotton husks, cotton seed cakes, rice polishing and mineral water.

Material benefits	• We get meat at low price when it happen they slaughter • I get milk frequently • Availability of manure for our field • Sometime if you have a celebration, you can talk to the feedlots operator, they sell to us cattle at reduced price.

Presentation of FGDs is not proper.

Challenges for running Traditional Beef Cattle Feedlots in Mwanza and Shinyanga

The respondents were asked to air their views on the challenges that they face which hinder the improvement of the business. This was important sincethe voice of the main stakeholder is vital for development of the sector. Table 4 present the respondents perception on the challenges face the Traditional beef cattle feedlots operations in Mwanza and Shinyanga.

Table 4: Respondents' Perceptions on the Challenges for Traditional Beef Cattle Feedlots

Challenges	Frequency (n=299)	Percentage (%)
Unreliable Markets for fattened beef cattle	68	22.7
Lack of grazing land	53	17.7
Lack of clean water for cattle drinking	46	15.4
Unreliable feed supply and high price	43	14.3
Lack of capital	38	12.7
Lack of education and skills	12	4.0
Inadequate of veterinary services	8	2.7
Lack of association	8	2.7
Uncontrolled taxes and levies	7	2.3
Disease eruptions	7	2.3
High price of cattle for fattening	6	2.0
Uncontrolled theft	2	0.7
Absence of dip Tank	1	0.3
Total	**299**	**99.8**

Lack of reliable market is the critical challenge since markets are the among the main determinant of profit making in any business. It is markets that lead to commercialization (scaling up) of any business as emphasized by Argwings-Kodhek*et al*., (2011) that, commercialization as the degree of participation in the (output) market, with the focus very much on cash incomes. On the other hand absence of Dip Tank for Ecto parasite control and treatment would be expected to be the leading challenge on contract was the least challenge. This could be the reason that most of the traditional beef cattle operators prefer spraying as means of controlling ectoparasite than dip tank, due to they operate at temporary premises. Fortunately the feedlots operators were able to provide suggestions for the improvement of the mentioned challenges as presented in Table 5.

Table 5: Suggestions for Improvement of the Traditional Beef Cattle Feedlots Operations

Ways for improvement	Frequency (n=310)	Percentage (%)
Provision of enough and suitable land	70	22.6
Provision of soft loan	59	19.0
Reliable markets	47	15.2
Improvement of livestock infrastructure	40	12.9
Availability of clean water for livestock drinking	32	10.3
Formation of farmers cooperatives	27	8.7
Provision of Training	21	6.8
Establishment of feeds factory	8	2.6
Removal of non-official taxes and levies	3	1.0
Improvement of extension services	3	1.0
Total	**310**	**100.1**

The traditional feedlots operators suggested ways for improvement of their productivity and probably will lead them to the direction of marketing transformation of tradition beef cattle into contract farming and commercialization. The provision of enough and suitable land perceived to be the best way of improving production and hence increasing productivity. It is true that suitable land is vital for production as written by Wightman *et al.*2013, the production area for a cattle facility should also include; pastures, drainage ways, ponds, feed and manure storage structures, loading /unloading areas, feeding areas, animal housing, and dead animal disposal facilities.

Traditional Feedlots Operations in Life Sustenance and Improving the Standard of Life

Life sustenance simply is the ability of the people to meet their basic needs (Todaro and Smith (2 006). Basic needs are food, shelter and clothing (Denton, 1999), not only those but alsosanitation, education and healthcare. The above basic needs are components of socioeconomic status. NCES, (2008) define socioeconomic status as an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation. The socioeconomic benefits from the feedlots operations in terms of assets accumulation, social benefits, business benefits and services benefits are attributes of life sustenance.

Conclusion

The Traditional beef cattle feedlots operations in Lake Zone regions particular in Mwanza and Kahama are of great socioeconomic benefits to both operators and people living near the feedlots. These benefits contribute to their life sustenance and improvement of the standard of life. However the operations are faced by many challenges lack of reliable markets to sell their produce being the leading challenges. These challenges hinder the scaling up of the production and hence development of the beef industry at large. This true due to the fact that, marketing opportunity is a potentially favourable condition in which a business can capitalize on a changing trend or an increasing demand for a product by a demographic group that has yet to be recognized by its competitors.Therefore a call to improve beef cattle feedlots production in Lake Zone through provision of suitable land for feedlots operations and supportive infrastructure and improving markets is crucial.

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