Value chain of indigenous cattle and beef products in Mwanza region, Tanzania: Market access, linkages and opportunities for upgrading

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ABSTRACT

The potentials of the traditional beef cattle sector in Lake Victoria Basin (LVB) have only been utilized marginally. The sector still suffers from limited access and linkages to premium markets, lack of entrepreneurial dynamisms by actors, as well as, use of poor production and processing technologies. This paper applies the results of participatory market analysis and questionnaire surveys to map the value chain and assess profitability in each node. The study findings suggest that the value chain was generally operating inefficiently. Overall, cattle producers received lower prices and profit margins. Vertical integration of livestock farmers, beef processors, and traders was limited. The paper recommends tailor made campaigns and training that will sensitize producers to treat beef cattle keeping as a business, set aside at least few animals for sale in each year, fatten them using locally available feeds and produce animals of good quality which will earn them good money.

Key words: Value chain mapping, profit margins, agro-pastoralists, beef cattle, livestock marketing, Lake Victoria Basin

INTRODUCTION

The indigenous beef cattle in Tanzania comprise a rich livestock resource base with current population estimated at 19.5 million. This makes the country to be ranked as the first country in the Southern Africa Development Community (SADC) and Eastern Africa Community (EAC) regions with largest number of cattle and third in the whole of Africa, following Ethiopia and Sudan (MLFD, 2010). The sub-sector is also an important source of meat in the country contributing about 53% of the total national meat production (ibid).

The Lake Victoria regions of Mwanza and Shinyanga are endowed with about 32% of the total beef cattle population in the country (ibid). They constitute the major sources of beef cattle in Tanzania. Overall, beef cattle keeping, trading and retailing of beef products are important economic activities undertaken by many residents in these regions. Even though, the potential of the beef cattle sector in these regions and in Tanzania as a whole is yet to be fully realized. Currently, the indigenous beef cattle subsector in Tanzania contributes only 4.8% of the real national Gross Domestic Product (GDP) against 56% of the overall contribution from agriculture (ibid). This contribution is relatively very small calling some sectoral reforms at different levels of the subsector.

Of utmost importance is perhaps the emergence of evidence which indicates a strive for some actors in the beef cattle value chain to shift from subsistence to more commercialized businesses (Mlote et al., 2012; Mkonyi et al., 2007). Some participants in the value chain, especially traders of live cattle are adopting improved production systems such as beef cattle fattening and a few commercial producers are responding to the demand for quality beef by selling to niche and export markets. Yet, many bottlenecks still exist including the underutilization of existing genetic potential of the indigenous cattle, poor rangeland management, and limited resources and feeding technologies, as well as, poor financing and access to extension services, just to mention few. Based on this
ground a Lake Victoria Research Initiative (VicRes) Inter-
University Council for East Africa (IUECA)'s funded
research project entitled “Improving Beef Cattle
Productivity for Enhanced Food Security and Efficient
Utilization of Natural Resources in the Lake Victoria Basin”
which was launched in early April 2012. The project was
implemented in three countries namely; Tanzania, Uganda
and Rwanda. It addresses four research components
namely: effects of climate variability on natural resource
base, livestock productivity and food security of the agro-
pastoralists in semi arid areas of LVB; coping strategies of
agro pastoral communities to the effects of climate change;
rates of adoption of existing technologies for improved
cattle productivity and efficient utilization of natural
resources; introduction and monitoring of innovative
technologies for improving quantity and quality of beef
production as well as reducing rangelands degradation; and
improvement of market access, opportunities and linkages
in the cattle and beef products value chain.

In particular this paper presents some key preliminary
findings emanating from the last component of the research
project which embraces issues of markets and beef cattle
value chain. The study idea springs from the general
recognition that many agro-pastoralists in the LVB have the
problem of selling animals at appropriate age and weight
for obtaining good quality beef. In addition, the availability
of market that is ready and customers who are willing to
pay better prices for the produced good quality beef cattle
and products is also a problem. The study is therefore
intended to analyze the beef supply chain, by studying the
structure, conduct and performance of the beef markets
and business support services, their roles, constraints, and
opportunities.

Specifically the study maps the value chain for beef cattle;
assesses profitability in each node and factors affecting
profitability and willingness to adopt improved production
technologies in the study area. Two major working
hypotheses are tested. Firstly is the assumption that
efficient cattle and beef product marketing value chains can
translate into increased market margins of cattle for
farmers. The study therefore identifies market
opportunities and linkages for selling cattle and beef
products to inform policies and decisions on which parts of
the beef cattle value chain need strategic interventions.
Secondly, the introduction and use of appropriate
production technologies and marketing strategies for beef,
which includes proper grading of the animals, production of
beef cuts, processing and packaging, is likely to add value to
the beef products, ensure attractive prices to livestock
keepers and make them sell animals with high market
demand.

**Theoretical framework**

Value chain analysis in the indigenous beef cattle sector is
increasingly becoming a subject of interest for many
researchers in developing countries (Mbote et al., 2012;
Neves et al., 2012). These studies use the value chain
concept to analyse the conducts and performance of the
beef cattle sector and generate knowledge about the
magnitude of socio-economic development of the
production chain in the indigenous beef cattle sector.

The value chain approach addresses principles related to
various theoretical streams including market linkages and
market orientation, power relationships and bargaining
position, distribution of value added or margins,
arrangements between actors and information asymmetry
in the value chain. The term value chain was first brought
up by Michael Porter (1985) alongside similar approaches
like the French ‘filière’ approach and the commodity chain
concept that originated from World Systems Theory
(Raikes et al., 2000), reflecting the value adding character
of business processes within the borders of the firm.

The ‘filière’ approach was proposed by Morvan (1985)
and it considers a chain (“filière”) as linked operations in
the transformation of a good. It is an important tool for
describing systems, for defining the role of technology in
the framing of production systems, for organizing
integration studies, and for analyzing industrial policies,
firms, and collective strategies (Morvan, 1985). The
Commodity System Approach (CSA) was developed by
Goldberg (1968) in the USA in studies of citrus, wheat, and
soybean production systems. The approach emphasizes the
sequence of product transformations in the system.

Important in value chain analysis are the relationships
between different actors in the chain (producers, traders,
processors etc.), vertical relationships (upstream or
downstream in the chain) as well as horizontal
relationships (between firms in the same link of the chain).
This paper borrows this interpretation with a major focus
on activities at the producer or livestock keeper level as far
as these are directly connected to the production of value
for a certain market. Similarly, the paper also covers some
specific horizontal relationships by making comparisons of
market shares between small-scale producers and traders
of beef cattle and beef products with a special focus on the
identification of opportunities for upgrading of the value
chain of the indigenous beef cattle in the study area.

The term upgrading and its options are defined and
specified differently by different authors (Gibbon et al.,
2008; McDermott, 2007; Guliani, 2005; Nadvi, 2004;
Humphrey and Schmitz, 2002; Kaplinsky, 2000; Gereffi,
1999). McDermott (2007) defines upgrading as “the shift
from lower-to higher-value economic activities by using
local innovative capacities to make continuous
improvements in processes, products and functions”.
Gereffi (1999) defines upgrading as “a process of improving
the ability of a firm or an economy to move to more
profitable and/or technologically sophisticated capital and
skill-intensive economic niches”.

Mitchell (2009) identifies four categories of upgrading:
contractualization (which can be horizontal or vertical); functional; product or process (which may involve technological and organizational reforms to increase efficiency and/or quality standards); and volume upgrading. Most of upgrading options found in literature relate to upgrading of value-added production. Humphrey and Schmitz (2002) elucidate that upgrading of value-added production can take various forms which include the upgrading of products and packaging; upgrading of processes; functional upgrading (in-sourcing production or distribution functions); and inter-sectoral upgrading (product differentiation). Upgrading may further focus on improving market access and improving arrangements (e.g. contracts) between actors in the chain (ibid).

Pietrobelli and Saliola (2008) specify the following upgrading options: entering higher unit value market niches, entering new sectors, undertaking new productive functions and in all cases enlarging the technological capabilities of the firms. In their study of the Indian grape cooperative Mahagrape, Roy and Thorat (2008) conclude that upgrading was largely related to the combined attention for innovative marketing in export markets and concurrent provision of technical assistance, inputs and (market) information to the farmers.

In this paper we recognize the importance of improving the technological capacity and identification of niche markets in the value chain of indigenous beef cattle in developing countries. The basis of this understanding is in line with Roy and Thorat (2008) and Trienekens and van Dijk (2012) who pinpoint the key issue for producers in developing countries as related to functional upgrading. This calls for the need to perform value adding activities at the country level instead of just being commodity producers of products to be upgraded in the North.

An important condition for upgrading is the consistent ability to meet standards as defined by the market. In sense, this implies upgrading of market access possibilities which in turn may also entail upgrading of both horizontal as well as vertical relationships by taking part in the right market channel (Trienekens and Van Dijk, 2012; Roy and Thorat, 2008; Bijman, 2007; Fisman and Khanna, 2004; Rammohan and Sundaesan, 2003). However, as Trienekens and Van Dijk, (2012) argue, it is difficult in particular for small producers to move to another market channel. Alternatively, producers in developing countries might look for channels to easier accessible markets, such as lucrative markets in developing countries. This is the major thrust of the study from which this paper was developed.

In a nutshell, the study underscores the need for upgrading the value chain of the indigenous beef cattle in the study area based on the understanding that the sub-sector has the potential to lift many actors out of poverty, including the poor producers at the base of the value chain. The adoption of feedlots and fattening schemes, for example, is widely reported to have significantly contributed to the achievement of multiple objectives of enhancing food security and generating adequate cash income to meet other household requirements (Picas-Camarca et al., 2011; Ceyban and Hazneci, 2010; Muth et al., 2008; Umar et al., 2008; Moll, 2005). Most important in this regard is perhaps the desire to add value through the production of quality beef cattle and meat products which will enhance the competitiveness of the beef cattle subsector in Tanzania. Evidence elsewhere in the literature suggests that “value addition” in the subsector can be secured by converting the locally available raw materials (of low value in their natural form) into a superior value added product (of acceptable quality and standards) for which there is a good demand that will ultimately ensure a premium price for the product (Mucharo, 2011).

**RESEARCH APPROACH AND METHODOLOGY**

**The study area**

The study is conducted in two districts (Ilemela and Magu) of Mwanza region (Figure 1). The region is located in the northern part of Tanzania just south of Lake Victoria. The Lake Victoria waters separate the region from the neighboring countries of Kenya and Uganda. To the east, north and West are the sister lake-dominated regions of Mara and Kagera. To the south the region is boarded with Shinyanga region. Mwanza region lies between latitude 1° 30’ and 3° 0’ south of Equator and the longitudes 31° 45’ and 34° 10’ east of Greenwich.

The economy of the region is dominated by smallholder agriculture employing about 85% of the region’s population followed by the fisheries sector. Mining and Livestock sectors also command a recognizable share in the economy of the region. Livestock keeping is the third leading economic activity of the majority of people in the region making Mwanza to be the second region with the highest number of livestock in the country after Shinyanga region.

**Data collection and analysis**

Data collection for this study started in early August 2012 with a reconnaissance survey and identification of stakeholders, during which time the research team had an opportunity to meet and hold discussions with various stakeholders in the study area. The preliminary visits and discussion with stakeholders also facilitated the selection of study sites and samples in both districts (Table 1).

The reconnaissance survey and stakeholder identification was followed by a Value Chain Workshop which was held on 31st October 2012. The workshop was attended by a total of 40 participants representing different actors, including livestock keepers, beef cattle fatteners and traders, inputs suppliers, researchers and local government officials (e.g., hydrologists, natural resources officers,
veterinary officers, livestock officers, environmental officers and meat inspectors). During the workshop a participatory SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis was done to identify key issues in the beef cattle value chain. This was considered important as it would help the researchers to identify potential areas for upgrading the value chain for beef in the study area.

The end of value chain workshop marked the commencement of field Participatory Rural Appraisal (PRA) and questionnaire surveys which started in early November
2012 up to January 2012. Different actors in the value chain, including agropastoralists, cattle traders and fatteners, sellers of beef, operators of butcheries and sellers of livestock inputs were interviewed. Various PRA protocols were adopted to gather general information about the conduct and performance of the value chain. These included the Informal Meetings; Focus Group and Key Informant Discussions using checklists of information. The PRAs enabled the analysis of markets and existing marketing functions in a participatory manner. Actor-specific information was gathered during the household interviews using structured questionnaires. Specifically, the questionnaire survey covered three categories of actors (that is, agropastoralists, cattle traders and fattening unit operators) and a total number of 186 actors were interviewed (Table 1).

The data which were collected during the reconnaissance survey, PRA and questionnaire survey was analysed using both qualitative and quantitative methods. The qualitative analysis of markets benefitted from participatory markets analysis during the PRA and value chain workshop. The qualitative analysis was complemented by a quantitative data analysis using the Gross Margin Approach.

RESULTS AND DISCUSSION

The beef cattle value chain

The value chain map

The information gathered during the study enabled the longitudinal mapping of the beef cattle value chain in the study area as presented in Figure 2. The value chain map illustrates the way in which beef cattle and their products flow from production areas in the study areas to end markets and how the overall beef cattle sector operates. It is a visual representation of the structure of the value chain and its main characteristics or “a narrative description of the main characteristics of the value chain” (UNIDO, 2012). In the value chain map (Figure 2) the marketing functions are represented on a vertical axis on the left hand side of the diagram and the existing actors are represented using boxes with solid outlines, which may encompass several vertically integrated functions. Missing functions are represented by dashed lines. The potential new actors, markets and linkages are represented by dotted lines. The product and/or service flows between nodes are represented by arrows; for example, from production to wholesaling, from wholesaling to retail or export, or from primary wholesaling to secondary wholesaling (in the case of a series of ‘middlemen’). The movement of a good or service between nodes implies that value is added to the product. The end market segments are placed at the top of the diagram and represented by ellipses. There are several channels, or ‘strands’, in the value chain. These are denoted by numerals at the top of the diagram and defined by product types, routes to market and end market segments. The number of actors in each segment, the flow volumes and profit margins constitute an important input to the value chain. While more quantitative data collection and analysis is ongoing to inform the process of value chain mapping, yet there are interesting findings emerging from the initial mapping that are worth discussing in this paper. These are presented in the proceeding sub-sections.

Marketing, value chain governance and financing

Marketing of cattle is carried out at various levels of livestock markets, where pricing is mainly through negotiation and to some extent based on grading and weights normally based on visual estimation. The retailing of beef is mostly done through privately owned butcheries. The butchers face serious shortage of appropriate tools and equipment used in meat handling and cutting. Marketing information on beef, which include different marketing channels for beef and beef products, is limited. Domestic processing is considered to be insignificant. The domestic demand for quality beef is met by imported products, including premium beef cuts, sausage and canned beef. Still a big proportion of the local demand (estimated at more than 95%) is for warm “mixed beef” (UNIDO, 2012).

The beef cattle value chain in the study areas is dominated by traders and butchers – few of them actually are of considerable size and financially endowed with access to credits – who are able to exercise market power vis-à-vis a large number of small-scale livestock farmers and traditional herders. Integration (both vertical and horizontal) is an important concept of a net chain or “a set of networks comprised of horizontal ties between firms within a particular industry or group, such as these networks (or layers) are sequentially arranged based on the vertical ties between firms and different layers” (Lazzarini et al., 2001). The driving force is the recognition that each member of a net chain can enhance its performance and the product quality by integrating its goals and activities with other organizations to optimize the results of the entire net chain (ibid). If the performance of the total net chain increases, the individual links will benefit more than in case of one individual link being optimized in isolation (Van der Vorst, 2000). Unfortunately, integration, especially the vertical integration of livestock farmers, beef processors, and traders, in the value chain of beef cattle is limited. This calls for more strategic action steps to be taken, especially by the Tanzania Meat Board (TMB) to bring together stakeholders who can articulate their needs and jointly get to build solid business relationships and a better organization of the chain.

Finance is insufficient in each and every segment of the beef cattle value chain. Formal financing from banks and financial institutions is constrained due to limited
Figure 2. The beef cattle value chain in Ilemela and Magu districts.
understanding of livestock rearing, feed looting, trading, butchering and processing businesses and inadequate conditions that are applied to the granting of loans. Informal financing, through individual, family and friends, and through delayed and advanced payments in the value chain are prominent. To reduce credit access difficulties in the value chain, special credit and guarantee schemes both by banking and microfinance sector and the government agencies are required.

**Gross margins**

**Beef cattle producers (agro-pastoralists)**

The initial analysis of profitability of beef cattle keeping addresses a comparison of gross margins from the beef cattle keeping enterprise at the producer level. Two periods are evaluated – that is, beef cattle kept for 4 to 7 years and those kept for more than 7 years before they are sold. The types of costs that are commonly incurred by beef cattle producers include; labour for herding, drugs and costs of dipping services (Figure 3). Other costs relate to unexpected costs like fines when the cattle graze on farmers’ farms. Pastoralists may also incur costs of trekking to cattle markets but this is atypical in the study area as this cost will normally be covered by middlemen who buy cattle from producers.

Table 2 presents a summary of costs, revenues and gross margins earned by pastoralists and agro-pastoralists in Magu and Ilemela districts respectively. These were computed and compared for beef cattle sold at three different ages of raising (that is, 7, 6, and 4 years) using information gathered during the Focus Group Discussions (FGDs) and questionnaire interviews with producers or agro pastoralists. The comparisons of average raising costs by cost item and age of sold beef cattle (for the pooled sample) and gross margins by district and age of sold beef cattle are depicted in Figures 4 and 5 respectively.

The results of analysis of the profit margins at the producer level suggest that returns are greater if cattle are kept for short periods (fewer years) than longer periods. On average, the sale price of a 7-years old bull, for both Ilemela and Magu districts, was reported to earn a margin of TZS 185 762.5 which is equal to 53.5% of the value of sales. Meanwhile the sales of a bull aged 6 and 4 years old resulted in average gross margins of TZS 249 225 and 306 150, equivalent to 64 and 76.5% of the sales value, respectively. This supports the assertion that costs of keeping cattle for many years are much higher than that of keeping the animal for fewer years. Overall, the costs of drugs and treatment constitute the largest cost element in the pastoral system of both Ilemela and Magu districts. This is followed by the cost of labour for herding. Interesting was an observation that production costs were higher in an urban setting (Ilemela District) than in a rural area (Magu district). While this could be attributable to many other factors, the inadequacy of grazing area was considered to have played a major role. The Ilemela district is located in the city of Mwanza which is growing fast and is now overpopulated. Land resource is therefore more limiting in this area than in Magu district.

**Beef cattle traders and fattening unit operators**

Cattle traders in the study areas also incur several costs in bringing beef cattle from the production area to the markets. These costs include, among others, the costs of feeds for traders who practise beef cattle fattening, treatment costs, market fees, costs of acquisition of permits (buying and selling permits) and transport cost, as well as, the unofficial costs and fines incurred en-route, especially to the terminal market of Pugu in Dar es Salaam. Table 3 provides a summary of the costs, revenue and gross margins for beef cattle trading, both un-fattened and fattened beef cattle.

Overall, cattle traders who add value to beef cattle
Table 2. Costs, revenues and gross margins from raising beef cattle in the study area.

<table>
<thead>
<tr>
<th>Value by age of sold cattle</th>
<th>7 years</th>
<th>6 years</th>
<th>4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>I) Magu District</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Costs (TZS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour for herding</td>
<td>36,225</td>
<td>31,050</td>
<td>20,700</td>
</tr>
<tr>
<td>Dipping/Spraying</td>
<td>10,500</td>
<td>9,000</td>
<td>6,000</td>
</tr>
<tr>
<td>Drugs</td>
<td>63,000</td>
<td>54,000</td>
<td>36,000</td>
</tr>
<tr>
<td>Others</td>
<td>35,000</td>
<td>30,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Total costs</td>
<td>144,725</td>
<td>124,050</td>
<td>82,700</td>
</tr>
<tr>
<td>b) Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average selling price (TZS)</td>
<td>350,000</td>
<td>390,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Gross Margins (GM) (TZS)</td>
<td>205,275</td>
<td>265,950</td>
<td>317,300</td>
</tr>
<tr>
<td>GM as % of sales</td>
<td>59</td>
<td>68</td>
<td>79</td>
</tr>
<tr>
<td>II) Ilemela District</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Costs (TZS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour for herding</td>
<td>45,500</td>
<td>39,000</td>
<td>26,000</td>
</tr>
<tr>
<td>Dipping/Spraying</td>
<td>15,750</td>
<td>13,500</td>
<td>9,000</td>
</tr>
<tr>
<td>Drugs</td>
<td>77,000</td>
<td>66,000</td>
<td>44,000</td>
</tr>
<tr>
<td>Others</td>
<td>45,500</td>
<td>39,000</td>
<td>26,000</td>
</tr>
<tr>
<td>Total costs</td>
<td>183,750</td>
<td>157,500</td>
<td>105,000</td>
</tr>
<tr>
<td>b) Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average selling price (TZS)</td>
<td>350,000</td>
<td>390,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Gross Margins (GM) (TZS)</td>
<td>166,250</td>
<td>232,500</td>
<td>295,000</td>
</tr>
<tr>
<td>GM as % of sales</td>
<td>48</td>
<td>60</td>
<td>74</td>
</tr>
</tbody>
</table>

Figure 4. Average costs of raising beef cattle in the study areas by cost category and age.

through fattening before selling earned more gross margins (averaging at TZS 190 700, which is equivalent to 27.2% of the total value of sale) than their counterpart beef cattle traders who did not fatten their animals (TZS 79 000, which is equivalent to 16.5% of the total value of sale). The major cost element for traders was that of purchasing cattle (76.56% for traders who fattened their trading herd and 97.26 for traders who did not fatten their cattle), followed by costs of feeds (17.68%). Market fees, transportation costs, as well as the costs of acquiring movement permits and unofficial payments en-routes were proportionately less (< 1%). Fattened cattle found their final destination at
Figure 5. A comparison of gross margins by age of sold animals and district.

Table 3. Gross margins for beef cattle traders and fatteners.

<table>
<thead>
<tr>
<th></th>
<th>Non fattened cattle</th>
<th>Fattened cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TZS/head</td>
<td>% of total cost</td>
</tr>
<tr>
<td>Purchasing price (cattle 290kg)</td>
<td>390 000</td>
<td>97.26</td>
</tr>
<tr>
<td>Buying/Movement permit</td>
<td>1 500</td>
<td>0.37</td>
</tr>
<tr>
<td>Market fees</td>
<td>3 000</td>
<td>0.75</td>
</tr>
<tr>
<td>Buying/transportation cost</td>
<td>1 500</td>
<td>0.37</td>
</tr>
<tr>
<td>Feeds</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Treatment</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Food</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Labour (header wages)</td>
<td>3 500</td>
<td>0.88</td>
</tr>
<tr>
<td>Selling/movement permit</td>
<td>1 500</td>
<td>0.37</td>
</tr>
<tr>
<td>En-route fines/unofficial payments</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total cost</td>
<td>401 000</td>
<td>100</td>
</tr>
</tbody>
</table>

Revenue from sale of one cattle

<table>
<thead>
<tr>
<th></th>
<th>Non fattened cattle</th>
<th>Fattened cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle selling price</td>
<td>480 000</td>
<td>700 000</td>
</tr>
<tr>
<td>Gross Margin Fattened</td>
<td>79 000</td>
<td>190 700</td>
</tr>
<tr>
<td>Gross margins % of sales</td>
<td>16.5</td>
<td>27.2</td>
</tr>
</tbody>
</table>

Butchery operators and meat shop owners

Owners and operators of butchery/meat shops act as a bridge between traders and consumers. As for the previous actors, they also incur costs which include the costs of purchasing beef cattle, holding pen fee, slaughtering fee, market fees, meat transportation fee and movement permit (Table 4). The results of analysis of the gross margins for operators of butchery/meat shops are summarized in Table 5.

Overall, the largest share of gross margins was earned by butchery and meat shop owners who generated an average daily gross margin of TZS 306 000. These were followed by traders who fattened their beef cattle before selling who earned an average gross margin of TZS 190,700 per cattle. The latter would on average transport their trading stock and sell at the terminal market of Pugu three times a year with an average stock of 25 cattle per trip. Of all actors in the value chain, pastoralists earned the least, average gross margin of TZS 295 000 for a period of 4 to 5 years.

Conclusion

Most pastoralists still undertake livestock keeping largely
Table 4. Average costs for butchery operators.

<table>
<thead>
<tr>
<th>Item</th>
<th>TZS per cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasing price</td>
<td>480 000</td>
</tr>
<tr>
<td>Market fee</td>
<td>3 000</td>
</tr>
<tr>
<td>Transportation from market to slaughtering area</td>
<td>2 000</td>
</tr>
<tr>
<td>Holding pen fee</td>
<td>2 000</td>
</tr>
<tr>
<td>Slaughtering fee</td>
<td>5 000</td>
</tr>
<tr>
<td>Meat transportation fee from slaughtering area</td>
<td>4 000</td>
</tr>
<tr>
<td>Labour (meat seller)</td>
<td>10 000</td>
</tr>
</tbody>
</table>

Table 5. Gross margins for butchery/meat shop operators.

<table>
<thead>
<tr>
<th>Item</th>
<th>TZS/head</th>
<th>% of total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasing price</td>
<td>480 000</td>
<td>94.86</td>
</tr>
<tr>
<td>Market fee</td>
<td>3 000</td>
<td>0.59</td>
</tr>
<tr>
<td>Transportation from market to slaughtering area</td>
<td>2 000</td>
<td></td>
</tr>
<tr>
<td>Holding pen fee</td>
<td>2 000</td>
<td>0.40</td>
</tr>
<tr>
<td>Slaughtering fee</td>
<td>5 000</td>
<td>0.99</td>
</tr>
<tr>
<td>Meat transportation fee from slaughtering area</td>
<td>4 000</td>
<td></td>
</tr>
<tr>
<td>Labour (meat seller)</td>
<td>10 000</td>
<td>1.98</td>
</tr>
<tr>
<td>Total costs</td>
<td>506 000</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Revenue from one cattle
- Carcass 200 kg @4000: 800 000
- Head: 7 000
- Hide: 4 000
- Legs: 1 000

Total revenue: 812 000
- Gross margin: 306 000
- Gross margin as percent of sales: 37.7

The access to credits: to become commercial, pastoralists need tailor made lending institutions or arrangements.

Last but not least, the need to strengthen the vertical integration of livestock farmers, meat processors, and traders needs not be overemphasized. This requires that more strategic action steps are taken, especially by TMB to bring together stakeholders who can articulate their needs and jointly get to build solid business relationships and a better organization of the chain.

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