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Factors Limiting Smallholder Cattle Commercialization in Zambia

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Key Points

Beef markets are highly seasonal, thinly traded, and extremely concentrated. The combination of these factors limits the effectiveness of cattle markets to achieve transformation impacts on rural poverty reduction. The paper highlights the following limiting factors:

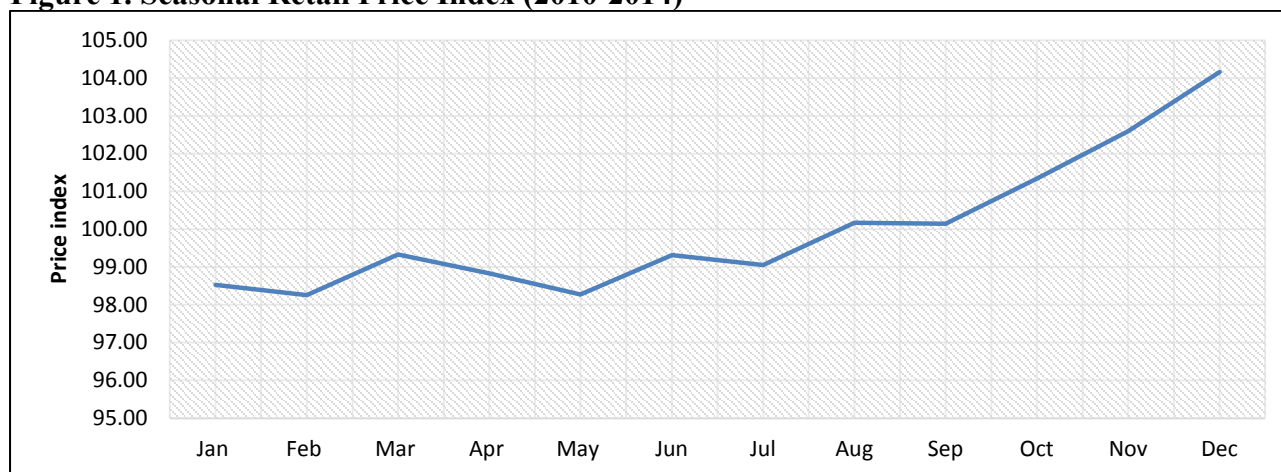
- Farmers often perceive cattle to be a safer store of value than money and only convert to cash when pressing needs arise.
- Multiple ownership of cattle within extended families contributes to the seasonal supply and price fluctuations, as multiple people have to agree to a sale that supports only specific needs.
- Majority of farmers have limited number of marketable surplus due to small herd sizes and farmers often sell old oxen, which tends to limit commercialization, as there are only a limited number of animals available within a herd that can be sold in a given year.
- Disease outbreaks and regional quarantines affect investments in cattle markets as limited number of cattle are sold through formalized channels.
- Lack of quality and price variations within the standard beef sector leads to substantial underinvestment in herd management and limits commercialization. In addition, too many marketing charges coupled with a lack of marketing centers increase the transaction costs
- There is need to train farmers on the importance of maintaining a targeted breeding stock with the remainder earmarked for sale, increased investment in cattle health management to reduce transboundary diseases outbreaks, dissemination of price information, and what factors determine beef quality.

INTRODUCTION: Rapid urbanization and population expansion, coupled with sustained income growth and the emergence of an urban African middle class are triggering an increase in the consumption of animal protein in developing countries. The sustained increase in the consumption of animal proteins creates a host of new development opportunities to synergistically link smallholder livestock producers with the economic growth processes from which they have largely been excluded. However, the expanding markets for animal proteins create a host of new development opportunities and challenges.

The beef sector in Zambia provides a useful case study for exploring the challenges of utilizing livestock markets to link smallholders to rapidly

changing consumer markets. The Zambian beef market is currently segmented between standard beef produced by smallholder farmers under generally low intensity production system, and choice beef produced primarily by commercial farmers and fattened in feedlots. Standard beef contributes 80% to total beef demand, highlighting the existing linkages between smallholder beef producers and urban consumer markets. Despite this linkage, the standard beef market is characterized by high levels of seasonal supply fluctuations, leading to significant seasonal variations in consumer prices (Figure 1). The seasonal beef supply variations are considered by livestock industry experts to be the major constraining factor to improving the performance of the beef market and limit the potential of the sector to act

Figure 1. Seasonal Retail Price Index (2010-2014)



Source: CSO monthly price data various dates; authors' computation.

as an engine of growth for smallholder producers. This policy brief therefore, highlights the factors that are limiting smallholder beef commercialization.

DATA AND METHODS: The study used both qualitative and quantitative data. The qualitative data were collected through guided interviews with beef value chain actors in ten districts namely: Kafue, Chibombo, Mumbwa, Monze, Choma, Kalomo, Namwala, Kaoma, Mongu, and Senanga. The quantitative data comes from different national representative surveys.

RESULTS: The study highlights four factors limiting smallholder cattle commercialization and investment in the beef sector

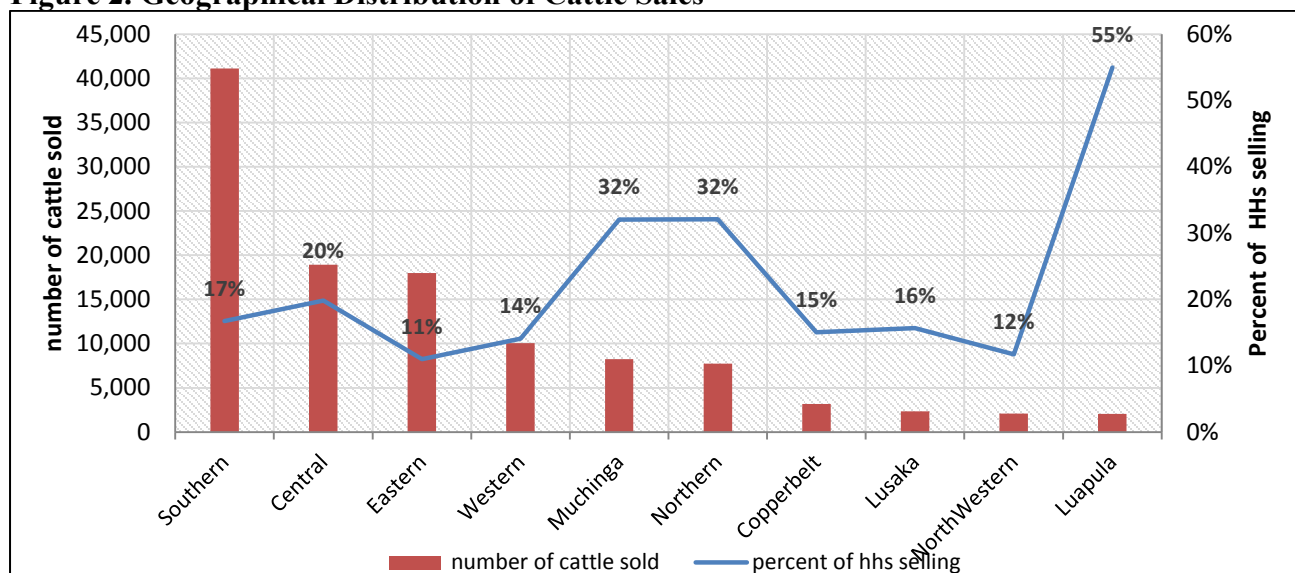
Cultural and Economic Motivations of Rearing Cattle: The cultural and economic motivation surrounding cattle ownership and marketing decisions severely affect the commercialization potential of cattle and contribute to the seasonality of smallholder cattle marketing. Within smallholder livestock production systems, cattle perform such functions as asset and livelihoods security. Farmers often use cattle as saving accounts from which they draw to address specific types of family needs.

Furthermore, cattle are frequently owned by multiple people within extended families because of the bride price (*lobola*) or damage payments, which are an important transaction channel. This ownership structure prevents people from participating in the market. To get

multiple people to agree to a sale requires that the sale support a family event (funeral, wedding) or crisis (hunger, school fees, medical payment, or purchase of farming inputs). Many of these family needs are seasonal, which contributes to the seasonal fluctuation in supplies and prices.

Limited Marketable Surplus of Cattle: Small cattle herd size, herd composition, and limited management practices limit the available marketable surplus. Over 80% of smallholder households raising cattle own less than 10 cattle and only less than 10% own more than 20 cattle. Within these small herds, farmers tend to sell old oxen that have ceased to perform non-market functions. In more commercial cattle systems, farmers maintain targeted breeding stock from which offspring are selected for replacement of bulls, heifers, and training as oxen, with the remainder earmarked for sale when they have grown to an appropriate age/weight for income. However, smallholder farmers in communal grassland production systems usually do not consider such practices that increase the value of cattle. The tendency of selling old oxen, coupled with small herd sizes, limits commercialization as there is only a limited number of cattle within a herd that can be sold within a given year. This further leads to a high concentration of commercialization, as only households with large herds participate in cattle markets. For example, in a major cattle-producing area (Southern Province) only 17% of cattle owning households participate in markets (Figure 2).

Figure 2. Geographical Distribution of Cattle Sales



Source: Author's field notes.

Limited access to feed, water, and animal health services contributes to small herd sizes. Natural vegetation and crop residues form the main feed resources for cattle. However, the availability of both quality and quantity of natural vegetation during the dry season is limited, which results in seasonal nutritional stress. Nutritional stress contributes to delayed onset of estrus in cows, which reduces the reproductive period. As a result, the growth of the herd size is equally limited. Water is an important input in cattle production. However, the scarcity of watering holes poses another challenge in cattle rearing as cattle move long distances in search of water. This often results in watering cattle at longer intervals, which in turn affects metabolic activities and inhibits weight gain. The loss of weight tends to reduce the market value of cattle.

Disease Outbreaks and Regional Quarantines: The outbreak of transboundary diseases, such as Foot and Mouth Disease (FMD), Contagious Bovine Pleura Pneumonia (CBPP) and anthrax, is one of the major concerns that leads to under investments in the cattle value chain. Lubungu and Mofya-Mukuka (2012) show that over 60% of smallholder owning cattle indicate that their cattle have been affected by diseases.

Transboundary disease outbreaks affect the inter-provincial trade of live animals. As a result, farmers are forced to restrict their sales within home provinces, which in turn severely limits their available market options. In most

cases, farmers opt to sell to local butcheries and fellow farmers in their communities at lower prices than would be the case if they could engage in formal market channels for live animals. Selling through this channel affects the number of cattle traded through formalized channels that require health inspections. The limited number of cattle filtering through the formal channels, thus limits the downstream investments especially for inter-provincial traders who sell live animals. This is worse for the traders in districts with no abattoirs as they have to deal with regulatory (disease procedure testing) challenges when livestock movement is banned.

Other major cattle health problems apart from transboundary diseases are parasites, with liver fluke and giant worms being the major internal parasites, and ticks the major external parasite that cause Black Quarter (BQ), hemorrhagic septicemia (HS), and Trypanosomiasis in some areas. Liver fluke and worm infestation have negative effects on the market value of cattle due to unthriftiness. Over 70% of the livers from the slaughtered animals, especially from cattle reared in the plains, are condemned during carcass healthy inspection.

Ticks are also a source of concern in cattle production, as they transmit numerous diseases that cause anemia, weight loss, and subsequently death. Though there are several ways of controlling ticks, dipping of animals is the most effective way. However, less than 20% of cattle owning households dip their animals.

As part of the efforts to contain the outbreak of FMD and CBPP, the government, under the Livestock Development and Animal Health Project funded by the World Bank, has been conducting vaccination campaigns to contain FMD and CBPP. However, provisions for animal health services have several challenges. First, the public sector has limited qualified veterinary personnel to conduct vaccination campaigns. Second, lack of transport at camp level hampers mobility of veterinary assistants. Third, lack of livestock service centers in most rural areas makes it difficult to centrally conduct vaccinations. Fourth, there is poor flow of information from veterinary office to farmers due to uncertainty by the veterinary officers as to when they would actually receive the vaccines. Fifth, challenges with storage of vaccines due to lack of cold storage facilities in rural areas.

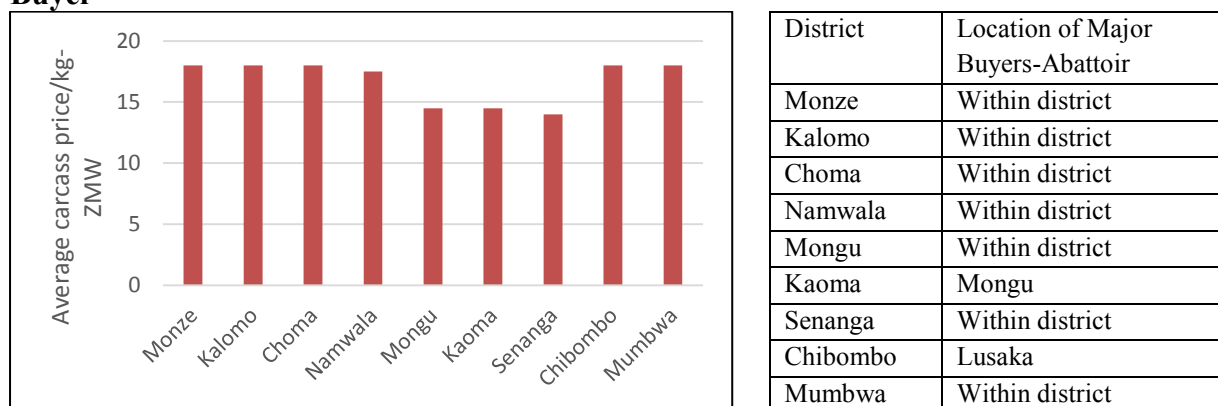
Lack of Smallholder Beef Market Segmentation: The Zambian beef market is currently segmented between standard beef produced by smallholder farmers, and choice beef produced by commercial farmers and fattened in feedlots. The beef from smallholder farmers is further categorized as standard or commercial based on the presence of fat on the carcass, though this categorization is not practiced in all the areas. For example, all the beef cattle in Western Province were categorized as commercial beef, (which fetches a lower price) regardless of quality. The beef traders and abattoirs attribute this to the low quality of beef from Barotse breed (the main breed kept in Western Province). An alternative view is that there is little understanding of what constitutes

quality. In addition to quality segmentation, there is no variation in terms of the price that the farmer receives for standard beef in producing and consuming areas. For example, Southern Province a producing area and Lusaka a consuming area offer the same price to the farmers (Figure 3). One would expect higher prices of beef cattle in a beef consuming area, compared to a producing area. A one size fits all pricing for smallholder beef cattle in certain regions, to some extent, tends to inhibit commercialization within the smallholder cattle sector, as this discourages farmers from investing in herd improving practices. Lack of proper cattle management practices, in turn, limits the quality and herd size of marketable surplus.

CONCLUSION: The policy brief highlights critical issues that need to be considered in addressing the challenges that limit smallholder commercialization. The following recommendations are proposed:

To address the problems associated with herd size, there is a need to deal with factors affecting the reproductive system such as low conception rates, delayed estrus cycles, and disease management. Extension education in cattle husbandry should, therefore, emphasize the importance of animal nutrition, such as forage management. Furthermore, there is a need to equip farmers with business skills on the importance of maintaining a targeted breeding stock from which a replacement stock is selected with the remainder earmarked for sale when they have grown to an appropriate age/weight for income.

Figure 3. Average Dressed Price/Kg Reported by Farmers (ZMW) and Location of Main Buyer



Source: Author's field notes. Note: Monze, Kalomo, Choma and Namwala districts are in Southern Province; Mongu, Kaoma and Senanga are in Western Province; Chibombo and Mumbwa are in Central Province

Dealing with the outbreak of diseases and regional quarantines requires the expansion of investment in healthy cattle management including: strengthening of veterinary services delivery through scaling up current vaccination campaigns; addressing the challenges associated with vaccination campaigns such as improved transport for veterinary assistants; reducing the veterinary extension-farmer ratio; timely delivery of vaccines; construction of centrally located livestock service centers; increased investment in dip tanks; and a review of the dipping policy in each region.

Addressing challenges of beef market segmentation requires coping with the bottlenecks of sharing and/or disseminating market information such as prices and knowledge of what constitutes quality. There is also a need to invest in marketing centers in order to reduce transaction costs.

Lastly, effective implementation of the proposed recommendations requires increased and sustained public and private sector investment to support smallholder cattle production and marketing, including investments in physical infrastructure, technology innovations through research and development, and information dissemination through improved extension service delivery.

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The full report of this policy brief can be accessed at:

<http://www.iapri.org.zm/images/WorkingPapers/wp103.pdf>

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