

SHORT NOTE [NOTA CORTA]

*Tropical and  
Subtropical  
Agroecosystems*

**PROMOTING GOAT MARKETS AND TECHNOLOGY DEVELOPMENT IN SEMI-ARID ZIMBABWE FOR FOOD SECURITY AND INCOME GROWTH**

**[PROMOCIÓN DE MERCADOS PARA CAPRINOS Y DESARROLLO DE TECNOLOGÍA EN ZIMBABWE PARA LA SEGURIDAD ALIMENTARIA Y EL CRECIMIENTO DEL INGRESO]**

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**SUMMARY**

An increasing demand for livestock products including goat meat offers small-scale farmers in semi-arid Zimbabwe opportunities for increased market participation. However, existing goat markets are largely informal, with poorly developed inputs and services. Transaction costs are high, resulting in low prices. In addition, access to market information is limited and negates informed decision-making. Also, farmers are unable to realize the full potential of their herds because of insufficient investment in management practices. Farmers use the cash from goat sales for food, education and human health. Yet, they lose up to 26% of their goat herds to mortality, attributed to dry season feed shortages, animal health and inappropriate housing. While farmers do react to market development, it is not in a consistent enough manner to realize the returns from their investments. More needs to be done to improve production, reduce transaction costs and increase market access to ensure growth within the sector. We hypothesize that improved market access will provide farmers with the incentive to invest in management technologies to enhance offtake and increase the quality of their goats. Innovation Platforms, forums that facilitate communication between farmers, market players, input and service suppliers around local production and marketing systems, were established in two locations in Zimbabwe. The stakeholders meet to identify challenges and opportunities with regards to both production and marketing and collectively identify and evaluate improvements in management technologies and markets. This new approach places technology and market development in a local context based on common interests and strong partnerships between the private and public sectors. It builds local capacity, aligns production with market demands, and improves the overall efficiency of the system, thereby increasing

food security and income growth and supporting the development of sustainable impact pathways.

**Key words:** Goat production, market development, innovation, value chain, Zimbabwe, Southern Africa.

**INTRODUCTION**

During the past 25 years, livestock production has tripled and per capita consumption has doubled in the developing world. Developing countries accounted for 80% of the growth in global livestock production during this period (FAO, 2005). Yet this “revolution” (Delgado *et al.*, 1999) has largely by-passed southern Africa. Livestock production in the region needs to double to fulfill demand during the period to 2020. For this to happen the small-scale livestock producers need to be better integrated into the commercial market.

Zimbabwe has an estimated 3 Mio goats, of which the vast majority is owned by small-scale farmers in mixed crop–livestock systems. Although these low input systems are not highly productive, households do realize most on-farm income from livestock. Goats, specifically, are utilized to supplement household food requirements and sold to purchase food items and fund educational expenses (Homann *et al.*, 2007). The recent collapse of the commercial livestock sector in Zimbabwe provides a unique opportunity for small-scale farmers to make use of existing infrastructure, local and regional markets to commercialize goat production.

However, at present the commercial market for goats remains grossly underdeveloped. Weak public and private sectors are failing to provide necessary inputs and know how (Hargreaves *et al.*, 2005) and the erratic climate and frequent droughts often result in dry season feed shortages and high mortalities.

Our major objective is to shift more small-scale farmers from low input to more competitive market-oriented goat production systems. We hypothesize that if markets are better developed and market linkages are strengthened, small-scale farmers will invest in improved technologies to increase production, improve animal quality and consequently increase market-related offtakes. We expect that this will yield immediate (income growth, food security) as well as longer-term benefits (reducing environmental degradation, improved sustainability of agro-ecosystems) and will improve the livelihoods of small-scale farmers.

### **The regional perspective – why goats?**

#### *Supply:*

Cattle numbers in most of southern Africa has remained constant during the last 20 years and per capita ownership is dwindling. Growth in this sector is constrained by the long-term investments required for cattle production, frequent die-off during drought, low rates of recovery after population crashes, and poor buying power of rural households to purchase new stock. On the other hand, goat numbers are steadily increasing in most Southern African Development Community (SADC) countries most probably because of their high intrinsic rate of increase, adaptability to various habitats and their relatively low purchasing prices compared to cattle. Goat populations therefore recover quicker after population crashes and households are able to build goat herds faster than cattle herds.

#### *Demand:*

Although goat markets are poorly developed within the region, local informal markets do exist and goats are locally bought, sold, processed and consumed in both rural and urban areas. Goat meat prices are often comparable to that of beef and many retailers indicate frequent shortages in local markets. Within the SADC region large volumes of goats and goat meat are exported from Namibia to South Africa, which is the largest importer of livestock products in the region.

Livestock production in the region needs to double to fulfill demand during the period to 2020 and the only

real opportunity in small-scale livestock production systems in southern Africa lies with goats in especially the mixed systems in Zimbabwe. There is thus a significant existing and growing local and regional demand for goat meat.

### **Facilitating the development of competitive goat production systems in Zimbabwe**

Most livestock projects in the past have focused on specific technologies and have failed because they ignored socioeconomic and institutional issues (LID, 1999). We have followed a more integrated approach by investigating challenges (and opportunities) from production to consumption along a value chain, while also addressing policy and institutional factors affecting goat production.

Table 1 represents a simple goat value chain in Zimbabwe, based on a reconnaissance survey conducted with goat market players in September–October 2005. Further analysis, based on key person interviews, household surveys and participatory rural appraisals identified the challenges at each stage of the value chain. The development objectives to address these challenges and probable impact pathways to achieve the overall goal are also included. An analysis of Table 1 reveals two critical factors – increased production and improved markets – as first steps to ensure more competitive goat production.

### **Production constraints**

*High Mortality Rates:* The majority of households in Zimbabwe (52%) have herds of fewer than 8 goats and 30% have between 8 and 20 goats. Only 18% of households surveyed had more than 20 goats. Given the relatively small herd sizes, farmers in Zimbabwe cannot afford to lose many animals through mortalities. The study showed however that farmers lose 26% of their goats to mortalities while only 11% were sold and 5% slaughtered for home consumption (Figure 1). Even though the total outflows from the herds are large (>40%), only 16% of goats are gainfully utilized. Reducing mortality rates has thus been identified as the most effective strategy to increase productivity and herd sizes.

Table 1. Goat value chain challenges, development objectives and impact pathways in Zimbabwe.

Players	Challenges	Development objectives	Impact pathways
Farmers	<ul style="list-style-type: none"> <li>❖ High mortalities</li> <li>❖ Low off-take rates</li> <li>❖ Poor animal quality</li> <li>❖ Low product prices</li> </ul>	<ul style="list-style-type: none"> <li>❖ Improve access to input and support services (health, feeding / water, housing, marketing)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Higher goat production levels</li> <li>❖ Higher incomes &amp; food security</li> </ul>
Input suppliers	<ul style="list-style-type: none"> <li>❖ Lack of inputs, technology &amp; information</li> <li>❖ Limited service capacity</li> <li>❖ Lack of policy &amp; advocacy</li> </ul>	<ul style="list-style-type: none"> <li>❖ Improve targeting &amp; access to inputs &amp; technologies</li> <li>❖ Create enabling legal frameworks</li> </ul>	<ul style="list-style-type: none"> <li>❖ Higher impact on technology uptake &amp; production systems development</li> </ul>
Market players	<ul style="list-style-type: none"> <li>❖ Poor market access, organization, facilities &amp; infrastructure</li> <li>❖ Lack of market information, pricing, grading, weighing &amp; control systems</li> </ul>	<ul style="list-style-type: none"> <li>❖ Improve access to market services &amp; infrastructure</li> <li>❖ Reduce transaction costs (transport, bureaucracy)</li> <li>❖ Improve communication between stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>❖ Competitive markets</li> <li>❖ Investments in market development</li> <li>❖ New public private partnerships sustain market activities</li> </ul>
Processors & retailers	<ul style="list-style-type: none"> <li>❖ High processing costs</li> <li>❖ Inconsistent product supply (volume, quality)</li> <li>❖ Product demand not met</li> </ul>	<ul style="list-style-type: none"> <li>❖ Evaluate market potentials</li> <li>❖ Develop markets for low cost &amp; high quality products</li> <li>❖ Align supply &amp; demand</li> </ul>	<ul style="list-style-type: none"> <li>❖ New niche markets</li> <li>❖ Investment in value addition &amp; product diversification</li> </ul>
Consumers	<ul style="list-style-type: none"> <li>❖ Lack of information on consumer preferences &amp; willingness to pay</li> </ul>	<ul style="list-style-type: none"> <li>❖ Higher flows of livestock products within rural and to urban areas</li> <li>❖ Improve low cost &amp; high quality protein supply</li> </ul>	<ul style="list-style-type: none"> <li>❖ Supply of low cost &amp; high quality products ensured</li> </ul>

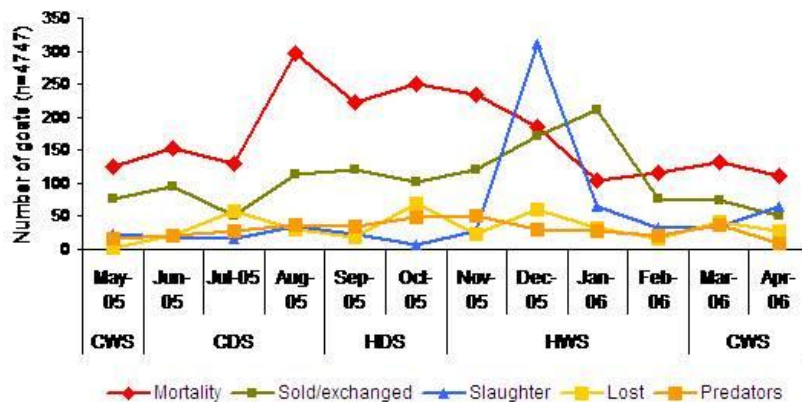


Figure 1. Monthly outflows in goat herds in Zimbabwe.

The main cause of high mortality rates is poor animal husbandry, and more specifically lack of dry season feed, poor animal health and housing. Addressing these three factors individually or collectively can substantially reduce mortalities. However, we argue that farmers will be unable or unwilling to invest in

improved management strategies without appropriate incentives.

**Market constraints**

*Input markets and production support:* Inputs, technologies and information have to a large extent been focused on the large-scale commercial producer. Therefore, apart from a lack of know-how (knowledge and information), inputs such as vaccines, acaricides, and commercially produced animal feeds are not accessible to the small-scale producer, because of high procurement costs, transport and bulk packaging.

*Output markets and market intermediaries:* Producers often do not have access to markets – this is a function of distance to a market place, market places with inadequate infrastructure, lack of information regarding the market process, rules of trade, pricing grading and control systems. On the other hand, buyers/traders/processors face challenges of low product quality and inconsistent and/or low product supplies, making continuous flow to the consumer impossible.

**Can market-led technology development enhance the adoption of improved technologies?**

Results from this study suggest that increased goat sales will increase managerial investment and that market access improves offtakes.

*Goats sales increase managerial investment:* Farmers who sold more goats invested more in certain management components (disease prevention/treatment, breeding quality bucks, culling/castration for higher performance and roofed housing) than those who sold fewer animals.

*Market access improves offtakes:* More goats were sold in districts with better-developed goat markets (Gwanda and Binga) than where markets are weak (Table 2). In the districts with more market development, traders often buy goats in bulk for sale to urban areas. These traders play an important role in facilitating higher off-takes. In the districts with limited market development farmers largely depend on farmer-to-farmer sales.

There is thus some evidence of market-driven investment in improved management. However, considering the informal character of existing goat markets, and lack of clear incentives (low and erratic price structures), we conclude that farmers would further increase managerial investment and sell more animals if both input and output markets were to improve.

Table 2. Research districts clustered by the mean number of goats sold.

District	Market development		
	Less	Medium	Higher
Tsholotsho	0.56		
Nkayi	0.75		
Matobo	1.13	1.13	
Beitbridge		1.52	
Gwanda			2.83
Binga			2.91

**Way forward**

From the sections above it is clear that improved goat production and marketing can play an important role in food security and income growth for small-scale farmers, while providing options for local and regional market development. How does one implement such a process?

*Innovation Platforms: forums for participatory identification and implementation of strategies to develop competitive production systems and reduce transaction costs along the value chain.*

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and partners have developed a fresh approach that brings all value chain players together to collectively identify opportunities and challenges that need to be addressed to improve goat production and markets. These Innovation Platforms, consisting of stakeholders pertaining to an existing local market system, evaluate specific local constraints in production and marketing and suggest agreeable options for improvement through dialogue, implementation, evaluation and adaptation. With all role players present, buyers relate demand and quality expectations directly to producers, and producers and market intermediaries can articulate challenges and address these collectively. The R&D community suggests specific technologies to address these challenges and opportunities. These changes in production and marketing are then implemented and evaluated.

This process would allow the selection of the most appropriate technology packages (feeding, animal health care, and housing) and input delivery and improved marketing systems for a given location. Moreover, the approach engages public and private as well as policy players in a common vision and catalyzes a better understanding of how to achieve this. Keeping all players engaged and motivated requires a significant investment in facilitation during the initial phase, and ideally this role will be taken over by the key stakeholders during the course of the

development of the Innovation Platform, thus ensuring sustainability.

*Technology and market systems development for all*

Farmers can be placed within two categories: those with smaller herds who rely heavily on goats during times of distress and who need support in building herds and increasing production, and benefit from easy access to goat markets and those with larger herds who need support to improve both productivity as well as quality. An important consideration for the Innovation Platform approach is that research and development work should better target the specific needs of each category and better align production with market demands. This will improve the efficiency of the entire system and ensure that benefits are not trapped by stronger individuals within the system.

**REFERENCES**

- Delgado, C.M., Rosegrant, H., Steinfeld, H., Ehui, S. and Courbois, C. 1999. Livestock 2020: The next food revolution. Discussion Paper 28, IFPRI, Washington DC, USA.
- Hargreaves, SK, Bruce, D. and Beffa, L.M. 2004. Disaster mitigation options for livestock production in communal farming systems in Zimbabwe. 1. Background information and literature review. ICRISAT, Bulawayo, Zimbabwe. 56pp.
- Homann S, van Rooyen A, Moyo T and Nengomasha Z. 2007. Goat production and marketing: Baseline information for semi-arid Zimbabwe. ICRISAT, Bulawayo, Zimbabwe. 84 pp.
- LID (Livestock in Development). 1999. 'Livestock in Poverty-Focused Development'. Livestock in Development, Crewkerne, Somerset, United Kingdom.
- FAO. 2005. Agricultural Outlook, 2005 – 2014 Highlights. Food and Agriculture Organization of the United Nations (FAO) and Organization for Economic Co-operation and Development (OECD), Rome, Italy. 45pp.

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