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Factors Affecting Profit Efficiency among Smallholder Beef Producers in Botswana

SIRAK BAHTA, ALEC MAKGEKGENENE

International Livestock Research Institute (ILRI), Botswana

Abstract

The livestock sector is an important component of Botswana's economy, contributing about two thirds of total agricultural value added. Climate constrains intensive arable farming in most of the country. Within the livestock sector, beef production remains an important sub sector in the rural economy as a source of income and employment, and it represents a significant investment opportunity. In addition, beef is the major agricultural generator of foreign exchange and provides about 80% of agriculture's contribution to GDP.

Beef productivity has recently been stagnant, however, and there are concerns that its competitiveness has been eroded over the last decade. This is vital to the generation of benefits from preferential access to the EU market. Causal factors are likely to include many supply side constraints manifest as low off take rates and high mortality. There is significant overcapacity in processing, with consequent low profitability in processing operations. Moreover the reduction of EU beef support prices and the high cost of Sanitary and Phytosanitary (SPS) compliance have had adverse demand-side effects on competitiveness.

Farm level cross sectional data of 556 from randomly selected livestock producers were used to investigate the competitiveness of small holder livestock farmers in Botswana. A translog stochastic frontier production function is estimated, in which profit inefficiency effects are modeled in terms of household specific characteristics and transaction costs. The Log likelihood test showed strong rejection of the OLS, indicating presence of inefficiency.

The mean profit efficiency level of 0.56 suggests that with in the current production technology there is still a substantial room for beef profitability improvement in Botswana. Significant profit efficiency drivers include, among others, age, access to information, proximity to market and access to income from crop production. Considering the importance of livestock sector for wealth creation and poverty eradication in the rural areas where poverty is more pronounced, there is a need for appropriate development strategies and policies directed towards addressing these factors.

Keywords: Botswana, competitiveness, inefficiency, profit efficiency, Stochastic frontier function