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**Small - Scale Livestock Farming in Developing Areas of
Swaziland and South Africa**

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Abstract

This study investigates smallholder livestock farming system in developing areas of Africa focusing on Swaziland and South Africa. The study's objectives were first to characterize smallholder livestock farming by identifying problems, challenges and constraints they face, and second to describe the role and contributions of livestock to agricultural sector for economic development. Secondary data used were obtained from various sources, namely: Swaziland and South African government reports, including FAO, United Nations, and International Food Policy Research Institute reports. The data were organized and were qualitatively analysed. The findings suggested that the main livestock species kept by smallholders include cattle, sheep, goat, and chicken, used as investment in agricultural

production, income needed and for meat consumption. The main constraints to livestock farming included access to capital, disease and parasite, shortage of feed, poor breeding practice, lack of production skills, poor infrastructure, livestock theft, inadequate veterinary services, poor marketing services, and poor extension services.

Key words: Small scale farmer, livestock farming, agricultural development, socio-economic development, developing areas, Swaziland, South Africa.

Introduction

Small-scale farming is the backbone of developing country's rural economy. It plays an important role in food production for both rural and urban populations by providing incomes and employment to rural people. However, small scale farmer has no access to available amount of developmental resources (Krishna, 1977). Livestock production plays an important role in the farming system of most developing areas. It provides small scale farmer with security for investment in subsistence agriculture. For a small-scale farmer, livestock represents a store of wealth, and animals are sold to provide for cash flow needed. Although subsistence agriculture is witnessed by low productivity, livestock is seen as a sound investment that has the potential to increase the annual rate of return on income from agricultural activities (Brimer, 1999). In this paper, small-scale farmer is defined in terms of agricultural activity in whatever form. There is ample international evidence that small-scale agriculture has the potential to generate employment and income opportunities in developing areas (Kirsten and van Zyl, 1998).

About 75% of small-scale farmers in developing areas own livestock. A typical herd of small-scale farmer in Swaziland and South Africa includes cattle, sheep, goat, pig, poultry, donkey and horse to some extent. Cattle are important for draught power used in crop production by small-scale farmer. Other livestock species such sheep, goat, and poultry are used mainly as an investment, a source of needed cash, consumption, supply of meat consumed in domestic markets, including the provision of manure used in crop production. Donkeys are mainly used to transport goods such fetching water, fire woods including equipments, while horses are mainly used for human transportation (Gryseels, 2000).

A traditional dish in developing areas includes cereals, beans, maize flour, potatoes, suit potatoes, meat and fish (and cassava in some other areas). However, meat consumption in some developing areas (such as India) is

much reduced because of religious beliefs, while in some areas (like Ethiopia), meat consumption is largely confined to feast-days. The annual rate of return on investment in livestock by small-scale farmers is estimated to be about 30% for sheep and 40% for cattle (Gryseels, 2000, Central Bank of Swaziland, 2009). Even if small-scale areas of production are characterised by different patterns of ecology, there seems to be a direct correlation between cattle/ox ownership and farm production. Cattle provide almost 80% of the draught power used for farming in developing areas (Chawatama, et al, 2005).

The problem

Over 70% of the small-scale farmers depend on livestock for meat, cattle milk, draught power, manure, hides, and income. Small-scale herd is currently an underutilised resource for beef production, although it has the potential to reduce beef imports in these countries (Cox and Varpama,2000; Simela et al , 2006). From the literature point of view, indigenous livestock's beef production is inferior to be imported because of their small-frame (Bester, et al, 2003). However, evidence suggests that indigenous cattle (like Nguni cattle) are well adapted to small-scale farmers' management levels, who require disease resistant multipurpose animals with low-maintenance feed requirements and relatively high beef output (Muchenje, et al,2008). This requires output increase and off-take which presently stands at about 5% from small-scale farmer areas (FAO, 2007). The role of livestock in both agricultural production and in improving the quality of life of small-scale farmer has always been emphasized for agricultural development (Mapiye et al, 2007). Millions of people living in developing areas have their livelihoods from agriculture and rural development. The majority of these people suffer from malnourishment, essentially due to underproduction of agriculture, uneven distribution of land and crop production. This is an indication that increased foods production (using draught power) has a definite positive impact on the lives of both rural and urban populations in developing countries (Chawatama et al, 2005).

Although farming plays an important role in the economy of developing areas, the most important factor limiting its development is mainly unavailability of water in rural areas, because rainfall is unevenly distributed across the regions. Agriculture contributes to both gross domestic product (GDP) by providing formal employment in rural areas, it also provides income to almost 75% of the population by contributing to over 40% of the

national earnings from exports (Gryseels, 2000; Villavicencio, 2006). Animals are important sources of protein, income, employment as well as foreign exchange.

The consumption of livestock products in developing areas is growing rapidly. In Swaziland and in South Africa, including in other developing areas of Africa, Asia and Latin America, small-scale livestock farming is parts of agricultural development (Bernet, 2000). Both areas produce about 75% and 85% of own meat and dairy product requirements by employing more than 60,000 farm workers respectively. Dairy products are complementary strategies to improve livelihood security (South Africa online, 2004). Milk production is an important income source for small scale farmers with limited options for other activities (Julca,2000; Central Bank of Swaziland, 2009).

Given the above description, this paper contributes to the existing literature by exploring issues related to small-scale livestock farming in developing areas for poverty alleviation and food security. The overall objective of this study was to characterize small scale livestock farming by describing the contribution of livestock to agricultural development in developing areas, and by identify problems, challenges and constraints facing small- scale farmers.

Methodology

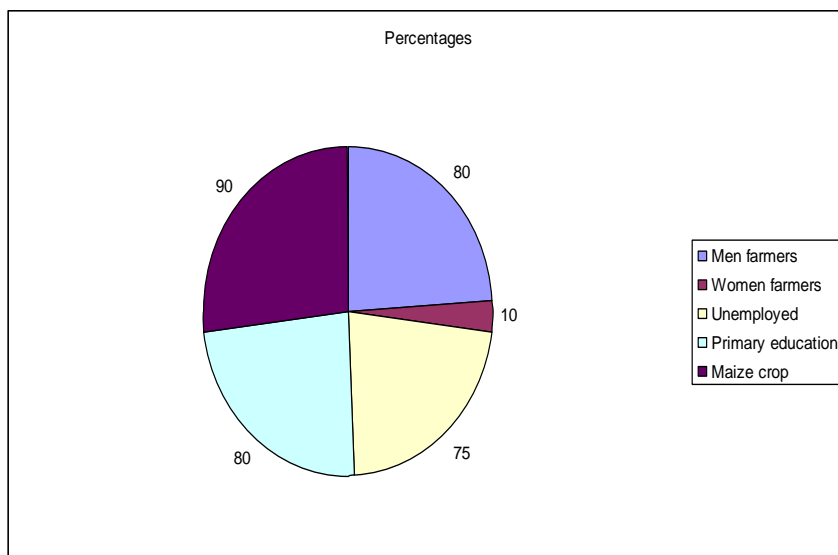
The study sample and data

This paper forms a descriptive survey study involving small scale livestock farming system in developing areas of Swaziland and South Africa. The study sample includes 74 small scale farmers selected randomly from different lists of participants in various study areas. Secondary data were obtained from various sources and were used for the purposes of this study. The data provided information on livestock production, characteristics, and farming system by small scale farmers in Swaziland and South Africa. The process of data collection included thorough search for information from available reports and on internet. Data were further organised and analysed using the Excel Programme on the Microsoft Office, especially for the production of tables, frequencies and diagrammes. Farmers' socio-economic characteristics, resources available, livestock ownership, cattle feeding, health and breeding management practices were assumed to be similar in both countries and were provided as average values as captured and in section under results and discussion below.

Results and discussion

Overall, the majority (90%) of small-scale farmers in both countries were men and the remaining (10%) were women. The average household size was about 4 to 7 members. The majority of small scale farmers living in communal areas (75%) were unemployed and were belonging to different church denominations. These farmers were advanced in ages and relied more on livestock and few crops for survival. The majority (80%) of small scale farmers have attended at least (some years) of primary education, but had no information about the land owned. Crop such as maize was the main field crop reported by almost (90%) of the farmers, mostly for domestic consumption (FAO, 2004; South Africa online, 2004). A background to socio-economic characteristics of the small scale farmers is summarised in Figure 1.

Figure 1: Small scale farmer’s socio-economic characteristics



Information on the different types of livestock production system, rangeland type, average annual rainfall, average annual temperature, average annual altitude and soil types found in most developing areas are given in Table 1.

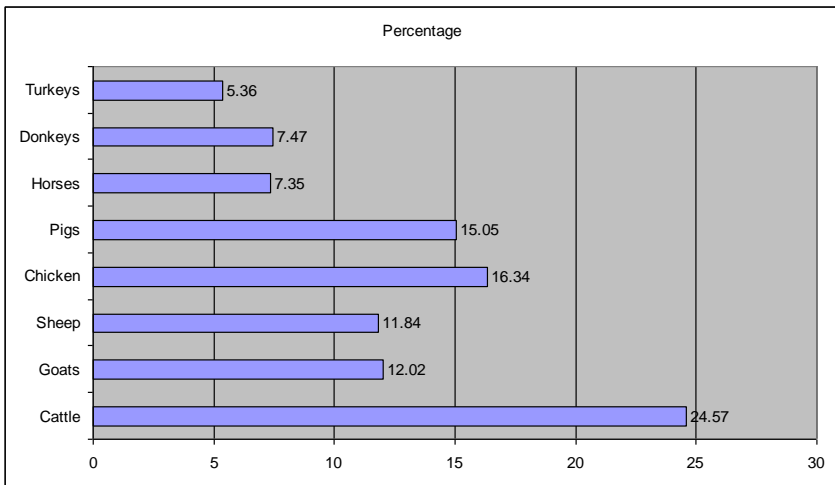
Table 1: Typical pedo-climate conditions in developing areas.

Production System	Rangeland Type	Average Rainfall (mm)	Annual Temperature	Altitude (m)	Soil type
Communal	Sweet	450-600	16	500-550	Loam
	Sweet	450-600	20	300-500	Sandy
	Sour	300-500	18	600-1400	Loam
Small Scale	Sour	300-500	20	500-800	Loam
	Sweet	450-600	16	1000-2000	Sandy
	Sour	300-500	16	400-800	Loam

Source: Acocks, 1988; FAO, 2007

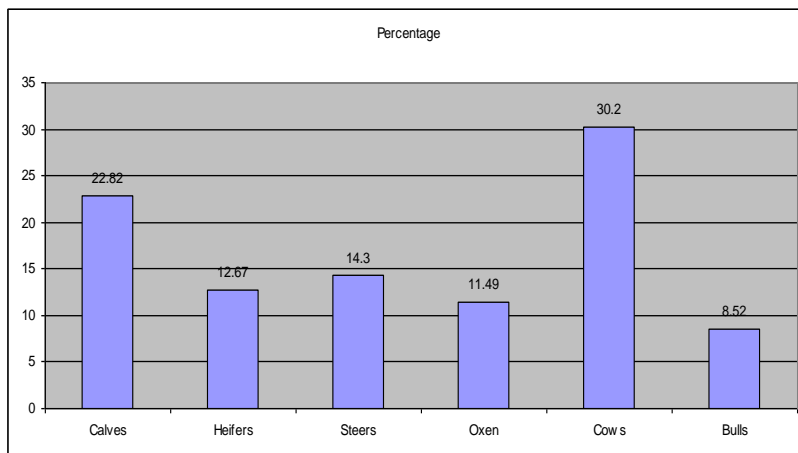
Table 1 shows that the most important small-scale livestock production system focuses on communal and small-scale areas. The most important rangeland includes sweet and sour types, while the main types of soil include loam and sandy. These are typically the main characteristics of pedo-climate conditions experienced by small-scale farmers in the majority of developing countries. The average percentage of livestock species owned by small scale farmers in both Swaziland and South Africa is given in Figure 2a.

Figure 2a: Average percentage of livestock species by small scale farmers



The study found that the most important livestock species included cattle which are owned by the majority of small-scale farmers (24.57%), chickens (16.34%), pigs (15.05%), goats (12.02%), sheep (11.84%), donkeys (7.47%), horses (7.35%), and turkeys (5.36%) as indicated in Figure 2a. In terms of cattle herd composition owned by small scale farmers, cows are in the majority with 30.20%; followed by calves (22.82%); steers (14.30%); heifers (12.67%); oxen (11.49%) and bulls (8.52%) as shown in Figure 2b.

Figure 2b: Cattle herd composition and respective average total percentages.



Small-scale livestock ownership patterns in both countries suggests that overall men dominate (90%) and women (10%). Information gathered on this issue suggested these farmers acquired livestock through various ways such as (a) purchasing (75%), (b) inheritance (20%) and (c) other means (5%). The majority of small scale farmers (60%) who inherited livestock in both countries were female widows, children (17%) and relatives (23%). Overall, men dominate all livestock farming activities which include feeding, herding, breeding, milking, purchasing, treating, slaughtering and selling. Also male youths and hired labour participate in livestock activities more than women (Table 2). Women are sometimes involved in activities such as purchasing, slaughtering, and selling to some extent (Reardon et al,2009).

Table 2: Division of labour in livestock farming between men and women in Swaziland and South Africa (%)

Activities	Swaziland		South Africa	
	Men (%)	Women (%)	Men (%)	Women (%)
Raising small animals	15	23	16	24
Raising larger livestock	30	7	30	6
Purchasing inputs	56	20	54	22
Marketing products	24	53	23	54
Household labour	3	86	3	85
Day labourer	16	41	17	43
Off farm activities	24	12	22	13

Source: Authors' own calculations, 2011.

Table 2 indicates that both women and men are involved in various activities for the benefit of the household. Women are responsible in fulfilling their role of family caretaker in raising children and maintenance of the household. On average 85.5% of the household labour for women suggests that they combine large number of activities during the day when they are at homes, before and after going to the field. They are also good in marketing of products (53.5%), day labour (42%), and in raising small animals (23.5%). The evening work at home is just the same as that of the morning time, but it is quite heavier because they are tired at that time. On average men are good in raising larger livestock (30%), purchasing inputs (55%), marketing products (23.5%), and off farm activities (23%).

Constraints to livestock production in developing countries

Small-scale livestock farmers in developing countries have been facing numerous constraints whose magnitudes are not the same to all small-scale farmers across farming systems. Nevertheless, there are few, if any, studies which have described linkages between small-scale livestock farmers' constraints, production parameters and farmers' socio-economic factors in developing areas (Botsime, 2006). While some of these constraints may be unique to each country, most of them are similar in nature, requiring common solutions to address them across countries. Constraints such as access and rights to land management (land ownership) and access to credit are not new, but rather long-standing and even chronic constraints (Haggblade and Hazell, 2010). Specific constraints related to the majority of small-scale farmers, women in particular; do not own large animal species like cattle because they lack capital to purchase them.

The reason why women cannot buy large cattle species was that men have control on all cash obtained from crop production. This is despite the fact that men contribute less to labour for crop production (Villavicencio, 2006). Since the majority of women do not own more cattle species, the researchers believe that drought power continues to be a serious constraint given its importance in agricultural production in developing areas. Specific constraints to small-scale farmers identified in this study included livestock disease and parasite, shortage of feed, poor breeding practice, lack of production skills, poor infrastructure, livestock theft, inadequate veterinary services, poor marketing services, and poor extension services. These constraints are among the main constraints facing small-scale livestock farmers in developing areas.

Conclusion

Over 70% of the small-scale farmers depend on livestock for meat, cattle milk, drought power, manure, hides, and income. Small-scale herd is currently an underutilised resource for beef production, although it has the potential to reduce beef imports in these countries. The role of livestock in both agricultural production and in improving the quality of life of small-scale farmer has always been emphasized for agricultural development. Both areas produce about 75% and 85% of own meat and dairy product requirements by employing more than 60,000 farm workers respectively. Dairy products are complementary strategies to improve livelihood security. Despite the fact that small scale farmers play a key role in agricultural sector, they have been neglected to some extent in planning and implementation of economic policies. This has undermined the role they play and the contributions they make to this sector. Overall, the majority (90%) of small-scale farmers in both countries were men and the remaining (10%) were women. The average household size was about 4 to 7 members. The majority of small scale farmers live in communal areas of which about 75% were unemployed, but belonged to different church denominations. Small-scale livestock ownership patterns in both countries suggests that overall men dominate (90%) while only 10% of women own livestock. Productive resources should be equally allocated to all small scale farmers in order to enhance their productive capacity in both livestock and crop production. For a small scale farmer, livestock remains a store of wealth. Although subsistence farming is witnessed by low productivity rates, livestock is still considered as a sound investment that has the potential to increase the annual rate of return to investment in farming activities.

Policy interventions

For small-scale livestock farmers, policy interventions should target the creation of a conducive environment for increased production and income. These people need access to productive resources to increase national production output, contribute to increased food production, food security and economic development. In order to ensure that planning considers small-scale farmer's concerns, planners should be provided with accurate disaggregated data. This type of data will provide them with an indication of their role in farming for national development, and will assist them in drafting appropriate policies to meet their specific development needs.

To promote an efficient livestock farming systems calls for an effective extension service, placing emphasis on livestock production, researching issues of concern to small-scale farmers and institutionalizing training programmes for field extension staff. Training programmes involving various components of the farming activities should be implemented and run for all staff members, including statisticians and planners in order to create awareness of small - scale farmer's involvement in farming.

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