

Boer goat production in Kikatsi Sub County, Kiruhura District, Uganda

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Abstract

A study was conducted to assess the contribution of Boer goats to household incomes in Kikatsi Sub County, Kiruhura District. A total of 60 households were used for the study in five different parishes in the sub county. Data were collected using structured questions, observations, and interviews. Secondary sources of data were also reviewed.

Respondents (93.4%) who kept between 1 and 60 Boer goats were more than those (86.7%) who kept a similar number of indigenous goats. However, there was a small difference of 1.6% between respondents who kept 21 - 40 indigenous goats (43.3%) and those (41.7%) who kept a similar number of Boer goats. The number of Boer goats (78.3%) heavier than 26 kg was higher than that of indigenous goats (51.7%) with similar weights. The market price of the goats was dependent on the weight of the individual goat but not the breed type. Respondents (93.3%) who sold 1 - 4 Boer goats per month were more than those (86.7%) who sold a similar number of indigenous goats indicating that Boer goats contributed more to farmers' income than indigenous goats. The main limitations to Boer goat production were lack of capital (95%), shortage of established cultivated pasture and fodder crops (90%), poor goat management skills (81.7%), and lack of veterinary services (75%). The other source of income for farmers was cattle keeping (75%) although some farmers (13.3%) also grew crops such as bananas for income generation. The study showed that Boer goats contributed to household incomes and people adopted the new intervention of Boer goat production.

Key words: breed type, cattle, household incomes, intervention, limitations, market price

Introduction

Livestock forms the backbone of economic activity of Kiruhura District where animals kept include indigenous goats, Boer goats, hybrid goats (mixture of Boer goats and indigenous goats), Ankole cattle, exotic cattle breeds, and hybrid cattle (mixtures of exotic and Ankole breeds). Goat production plays an important role in Uganda, providing meat in the diets of people and income from local sales and in the markets of urban centres. In Uganda, goat meat ranks second to beef in quantity but it is preferred to beef in terms of palatability and delicacy (Matthewman 1980). Goats also have roles in traditional, cultural and social sectors of the Ugandan small scale farmer where they are used as bride price in marriages (Kusiluka 1995). The population of goats in Uganda was estimated to be 12.5 million in 2008 where the Western Region that includes Kiruhura District had the highest number (MAAIF 2010). The population of goats in Uganda has

increased in recent years from 12.5million in 2008 to 13.2 million in 2010 (MAAIF 2011). The steady increase of goats from 2008 to 2010 is shown Table 1.

Table 1: Estimated goat and other livestock numbers (in millions) in Uganda

Animal type	Year '08	Year '09	Year '10
Goats	12.5	12.8	13.2
Sheep	3.4	3.5	3.6
Cattle	11.4	11.8	12.1
Pigs	3.2	3.3	3.4
Chicken	37.4	38.6	39.7

Source: MAAIF Statistical Abstract Year 2011

The increase of goats over the years in Uganda is due to their ability to thrive under diverse conditions, namely their versatility in adapting to semi-arid, humid, cold, and mountain conditions. Commercialization of goat production is promoted by the government of Uganda especially for resource-poor, peri-urban producers who raise goats on a small scale for income generation. The government designed a Plan for Modernization of Agriculture (PMA) whose objective was to transform subsistence farming into commercial farming as a way of ensuring food security and improving household incomes. Although the popularity of small ruminants (goats inclusive) among the rural households is high, small ruminant production systems receive little attention compared to cattle (Matthewman 1980). As a result, goats lag behind cattle in terms of numbers.

Presently, a number of goat meat and dairy breeds have been imported into the country by the government, non-governmental organizations (NGO) and private sector. The Boer goats distributed in Uganda are mainly imported from South Africa. Cross breeding indigenous goats with exotic breeds of meat and dairy goats has been practiced but breeding practices are often not planned and coordinated. Since Boer goats were introduced in Kiruhura district by National Agricultural Advisory Services (NAADS), there is lack information on their profitability and income contribution to the rural households. Availing this information will be useful to the government and other stakeholders on how best they can improve household incomes through Boer goat production. Therefore, this study was conducted to assess the contribution of Boer goats to household incomes in Kikatsi Sub County, Kiruhura District. The other objectives were to establish the population numbers of Boer goats; contribution of Boer goats to the household incomes; limitations to Boer goat production; and other sources of income for farmers.

Materials and Methods

The data on the population of Boer goats, Boer goat contribution to household incomes, limitations to Boer goat production, and other sources of income for farmers were obtained using structured questions, observations and interviews. Secondary sources of data were also reviewed especially from the district and sub county headquarters. Comparisons between households, weight of goats, and goats sold were determined using One-sample t-test.

Results and discussion

Population of Boer goats and indigenous goats

Population numbers of Boer and indigenous goats are shown in the Tables 2 and 3. The majority of respondents kept 21 - 40 Boer goats while the minority respondents kept more than 60 Boer goats (Table 2). The number of respondents who kept 21 - 40 indigenous goats was higher than that which kept more than 60 indigenous goats (Table 3). Many respondents kept 21 - 40 indigenous goats, more than those who kept a similar number of Boer goats although the difference was not very high. Generally, the number of respondents who kept 1 - 60 Boer goats did not differ much from those who kept a similar number of indigenous goats.

Table 2: Population of Boer goats¹

No. households	% of households	No. of Boer goats
15	25.0	1-20
25	41.7	21-40
16	26.7	41-60
4	6.7	60+
Total 60	100	-

Table 3: Population of indigenous goats¹

No. households	% of households	No. of Boer goats
19	31.7	1-20
26	43.3	21-40
7	11.7	41-60
8	13.3	60+
Total 60	100	-

¹ $t_{3,0.05} = 3.18$ (two-tailed); $t_{\text{calculated}} = 0.00487$; standard deviation = 10.3; standard error of the difference = 5.13

The majority of respondents kept between 21 and 40 Boer and indigenous goats probably because it was the most manageable number considering the labour scarcity pasture and fodder, and shelter (housing) involved in goat production (Figure 1 and Table 8). The number of farmers rearing more than 60 Boer and indigenous goats was small because managing high number of goats was labour intensive and also required high housing costs. Additionally, farmers lacked skills and veterinary services, which limited them to a few numbers of goats. The fact that the number of respondents keeping 1 - 60 Boer goats did not differ much with those who was higher than the number which kept indigenous goats indicated that Boer goats were gaining popularity in Kiruhura District. The popularity of Boer goats was also shown by the small difference of 1.6% between farmers who kept 21 - 40 indigenous goats and those who kept a similar number of Boer goats.

Contribution of Boer goats to household incomes

The results of the contribution of Boer and indigenous goats to household incomes are shown in the Tables 4, 5, 6 and 7. There was high number of Boer goats with weights more than 26 kg and the least number had weights between 16 and 20 kg (Table 4). However, the number of Boer goats heavier than 26 kg was higher than that of indigenous goats with similar weights (Tables 4 and 5). The market price of the goats was dependent on the weight of the individual goat but not the breed type. Many Boer goats were heavier than indigenous goats because Boer goats have

good feed conversion efficiency, and big body frame that accommodates more meat than indigenous goats (Figure 1). This agrees with Lu 2002 who reported that Boer goats are known to have superior traits for goat meat production, heavier body weight and fast growing rate compared to other goat breeds. Since the market price of the goats was dependent on the weight of the individual goat (Tables 4 and 5), Boer goats had the potential to earn more income to farmers than indigenous goats.

Table 4: Weights of Boer goats and corresponding prices²

Weight of Boer goats (kg)	No. of Boer goats	% of Boer goats	Market price /goat (UGX '000') ¹
16-20	5	8.3	80-100
21-25	8	13.3	150-225
26+	47	78.3	230+
Total	60	100	-

¹ 0.01US\$ = UGX 25

Table 5: Weights of indigenous goats and corresponding prices²

Weight of Boer goat (kg)	No. of Boer goats	% of Boer goats	Market price /goat (UGX '000') ¹
16-20	12	20.0	80-100
21-25	17	28.3	150-225
26+	31	51.7	230+
Total	60	100	-

¹ 0.01US\$ = UGX 25

² $t_{2,0.05} = 3.18$ (two-tailed); $t_{\text{calculated}} = -0.00187$; standard deviation = 23.1; standard error of the difference = 13.4



Boer goats



Indigenous goats

Figure 1: Boer goats and indigenous goats in relation to body frame

The majority of respondents sold 1 - 2 Boer goats per month while few respondents sold more than 6 Boer goats (Table 6). Many respondents sold 1 - 2 indigenous goats while a few sold more than 6 indigenous goats (Table 7). Generally, the number of respondents who sold 1 - 4 Boer goats was higher than those who sold a similar number of indigenous goats. Majority of the farmers sold 1-2 Boer goats and indigenous goats monthly because many of them kept few goats. They wanted to sustain their goat flock and only sold a few goats when there were needs such as school fees, buying clothes and socializing. The higher number of respondents who sold 1 - 4 Boer goats per month than those who sold a similar number of indigenous goats indicated that farmers were self-motivated to raise Boer goats. More dynamic farmers adopted Boer goat genetics more readily and also had the management skills to raise larger flocks and, therefore, sold more animals per month.

Table 6: Boer goats sold monthly²

No. households	% of households	No. of goats sold	Income (UGX '000') ¹
50	83.3	1-2	100-200
6	10.0	3-4	210-400
3	5.0	5-6	410-600
1	1.7	6+	600+
Total 60	100		

¹ 0.01US\$ = UGX 25

Table 7: Indigenous goats sold monthly²

No. households	% of households	No. of goats	Income (UGX '000') ¹
42	70.0	1-2	100-179
10	16.7	3-4	180-259
7	11.7	5-6	260-339
1	1.7	60+	420+
Total 60	100	-	-

¹ 0.01US\$ = UGX 25

² $t_{3,0.05} = 3.18$ (two-tailed); $t_{calculated} = -0.0053$; standard deviation = 9.3; standard error of the difference = 4.72

Limitations to Boer goat production

Most respondents indicated that lack of capital, shortage of cultivated pasture and fodder crops and poor goat management skills were the major limitations to Boer goat production (Table 8). However, a good number of respondents also showed that they lacked veterinary services. Few respondents pointed out that climatic changes and predators were responsible for limited Boer goat production. Many farmers lacked established cultivated pasture and fodder crops for their goats because people were reluctant to grow these feedstuffs since the area was semi-arid. Lack of feedstuffs coupled with tethering goats (Figure 1) limited them to a particular number of goats. Many respondents lacked initial capital to purchase the Boer goats because they were costly. Poor goat management skills also posed serious a challenge to Boer goat production. Lack of feedstuffs resulted into poor growth rates of goats while lack of shelter made kids vulnerable to unfavourable weather conditions leading to their mortality. Lack of shelter also made goats especially young ones to be prone to predators such as wild dogs, leopards and pythons.

Table 8: Limitations to Boer goat production

Limitation	No. of households	% of households
Scarcity of pasture and fodder	54	90.0
Poor goat management skills	49	81.7
Poor veterinary services	45	75.0
Climatic changes	20	33.3
Lack of capital	57	95.0
Predators	15	25.0

Other sources of income for farmers

The other sources of income for farmers are shown in Table 9. Goats are also included for comparison purposes. Majority of respondents kept cattle for income generation while a minority of respondents did other activities, which included crop production such as bananas. Many respondents kept cattle because the area being in the cattle corridor (semi-arid climates not conducive to crop production without irrigation and sparsely populated), their main activity was cattle rearing. The market for cattle and cattle products was available where trucks always moved around collecting live cattle and milk. The ready market and inadequate rainfall encouraged people to rear more cattle than either growing crops or keeping goats. Crop production was also not a significant a minor economic activity probably because many farmers did not settle in one place. They usually moved from one place to another looking for grazing land for their cattle on expense of growing crops. Some respondents declined to give information on their economic activities probably because they felt insecure. Some farmers did not trust investigators for fear of being robbed of their property and money.

Table 9: Other sources of income for farmers

Source of income	No. of households	% of households
Cattle	45	75.0
Goats	5	8.3
Crops	3	5.0
Non-responsive	7	11.7
Total	60	100

Conclusions

- Respondents who kept between 1 and 60 Boer goats were more than those who kept similar number of indigenous goats meaning that people had adopted Boer goat production.
- Boer goats were heavier than indigenous goats because Boer goats had good feed conversion efficiency and big body frame than indigenous goats.
- Boer goats contributed more income to farmers than indigenous goats because Boer goats were heavier (better price), and more Boer goats were sold per month compared to indigenous breeds.

- Lack of capital, shortage of established pasture and fodder crops and poor goat management skills were the main limitations to goat production
- The other main source of income was cattle because the market for cattle and cattle products was readily available while climate (rainfall) was not conducive to crop production without irrigation.

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