Livestock Research for Rural Development 22 (6) 2010 | Notes to Authors | LRRD Newsletter | Citation of this paper

Pigs, goats and chickens for rural development: Small holder farmer's experience in Uganda

A Ampaire and M F Rothschild

Department of Animal Science, Iowa State University, Ames, IA 50010, USA
aampaire@iastate.edu ; mfrothsc@iastate.edu

Abstract

Rearing small livestock has been established as a promising pathway out of poverty for rural farmers in developing countries. In this study personal interviews were conducted with 113 owners of pigs, goats and chickens in Uganda to find out why the farmers choose to rear these animals, what opportunities existed and what challenges/limitations they faced regarding livelihood improvement. The data were analyzed using descriptive statistics including frequency tables to summarize the data and cross tabulations to determine relationships between variables. Relationships between variables were examined using Chi square tests.

The major reasons given for why pigs were reared were all financially focused. Goats and chickens were reared for other reasons in addition to money. Only chickens were reared with eating and serving guests as a major reason. The farmer's objectives and resources dictated the choice of animal species and number of animals reared. The marketing structure did not favor the farmers. Many farmers (49.9%) determined the asking price based on size and appearance of the animal. The price varied depending on the farmer's need for the money and what the buyer was willing to pay. Farmers rarely slaughtered their animals to eat; they more frequently consumed products like eggs and milk. Points where intervention might improve the livelihood of these farmers are highlighted.

Key Words: Africa, livestock, livelihood, poverty

Introduction

Livestock rearing is an important pathway out of poverty (Randolph et al 2007; Peacock 2005), particularly the small livestock such as chickens, pigs and goats which are owned by the poor in rural areas (Kristjanson et al 2004). Poverty in Uganda is described as a rural phenomenon because most of the people (80%) live in rural areas (UBOS 2002), are heavily dependant on rain-fed agriculture, and are poor. Livestock keepers are generally better off than those who depend entirely on crop agriculture (De Haan et al 2001). Small livestock often require less start up capital and can easily be raised even by poor people with limited land resources. Many development organizations in rural areas promote rearing of small livestock to improve the income and nutrition status of the resource poor people (Randolph et al 2007).

VEDCO (Volunteer Efforts for Development Concerns) is one such development organization. VEDCO, in partnership with Iowa State University's Center for Sustainable Rural Development (CSRL), has set up a livestock development program in Kamuli district, one of the poorer districts in Uganda. The program seeks to improve the livelihoods of the farmers by increasing household income and nutrition status. The program supports farmers by giving to them pigs, goats and chickens, as well as training in animal management. Farmers choose which of the three livestock species to rear (CSRL 2010).

This study seeks to understand why farmers would choose one livestock species and not the other and the farmer's experiences in rearing the three species of livestock in light of improving income and nutrition, hence their livelihood. Understanding farmers' objectives, limitations and challenges in rearing livestock will highlight the areas where the program should intervene to further support the farmers. Working with the farmers and responding to their needs is

crucial to the sustainability of any development program.

Data collection and analysis

Open ended questions were used to guide personal interviews which were carried out as informal discussions between the researcher and farmers in the VEDCO/CSRL livestock development program. A total of 113 farmers who reared pigs, goats and/or chickens took part in the interviews at their homes. The interviews were conducted in the local language and recorded so that the researcher could fill in the questionnaires at the end of the day. This was done to mimic a visit by an advisor that the farmers would ordinarily receive, and ensured that the farmer was at ease, and not disrupted by the researcher constantly having to fill the questionnaire. Each interview lasted approximately 40 minutes. The data were analyzed using descriptive statistics like frequency tables to summarize the data and cross tabulations to determine relationships between variables. Relationships between variables were confirmed by Chi square tests using Predictive Analytics Software (PASW).

Results and discussion

Animal housing as a limitation to the number of animals reared

Many farmers interviewed did not have a housing structure in which to raise their animals. These were 50% of the goat owners, 32.8% of pig owners, and 55% of chicken owners. Of the pig owners who did not have a house for the pigs, 90% tethered the pigs nearby (< 5 minutes walk); the others left them to move freely. All the chicken owners who did not have housing left the chicken to move freely in the neighborhood, while 84% of the goat owners who did not have housing tethered the goats nearby. Only 18.7% of the goat owners tethered the goats far away (> 5 minutes walk) and none of the goats were left to move freely in the neighborhood. For each of the three species of animals, the number reared were related to whether a housing structure was present (P=0.01). The farmers who housed their animals reported that housing their animals saved them from a lot of potential problems. The farmers who did not house their animals had several problems which differed by animal species. The major problems are shown in Table 1.

Table 1. Problems associated with lack of animal housing

Species	Problem	% of farmers per species
Pigs	Hygiene issues e.g. mud, rooting	30.8
	Rope injury	15.4
	Break loose and destroy crops	15.4
	Others	38.4
Goats	Feeding problems e.g. not enough grass nearby, not enough time to cut branches	64.5
	Break loose and destroy crops	23.7
	Others	11.8
Chickens	Loss of chicken through predation, theft and loss of chicks	47.0
	Disease spread	25.0
	Others	30.0

The problems associated with raising pigs without a housing structure are likely to cause poor farmers who cannot afford housing to shun them or to keep just one or two (74% of the farmers had 2 pigs or fewer). It was reported that pigs cause unhygienic conditions when left to roam around, especially in the wet seasons because of mud. The rooting behavior is also a problem as they can uproot crops, destroy the farmer's house, especially the mud and wattle houses. Rope injury is common in tethered pigs and farmers just do not like to see the wound caused to the leg. Some of the tethered pigs break loose and destroy crops, so do some housed pigs in poorly constructed structures.

Traditionally goats were grazed out in the open fields like cows usually by the young boys in the family. Times have changed and most young boys go to school (Siefert and Opuda-Asibo 1994) so they have to tether the goats, preferably near the homestead where someone at home can keep an eye on them. Many farmers do not have land with enough grass available to them to tether their goats. Some of them tether the goats far from the homestead where they are at risk of being stolen, harmed by dogs etc. Other farmers tether the goats in their housing compound and cut tree branches and bring leaves to them. Many times goats break loose and destroy crops which can cause conflicts with neighbors. These feeding problems limit the number of goats that a farmer can keep.

The major problems caused by not housing chickens i.e. loss of chicken due to predation, theft or disease spread are likely to be tolerated. Rural farmers periodically experience losses of their crops and livestock because of factors like drought, disease and theft, but they seldom give up farming because of them. These farmers are resilient and persistent. They are willing to set free their hens which have chicks knowing that some of them will not return in the evening. Probably that is why backyard chickens are common in rural areas. Chickens are somewhat like pets in rural Africa; they sometimes ride in public transportation buses and are welcomed in the owner's houses. Some farmers 14.5%, of chicken owners who did not have housing for their chickens shared living quarters with the chickens and 76.4% of the chicken owners who did not have housing for the chickens had then spend the nights in the kitchen.

Why do farmers rear pigs, goats and chickens?

To understand why a farmer would choose one livestock species and over the others, we asked farmers what their reasons were for rearing livestock. The results are summarized in the Table 2.

Table 2. Reasons why farmers rear livestock

Species	Reason	% for each species
Pigs	Income	53.0
	Meet basic needs	33.4
	Fast returns	13.8
	Easy to raise	7.9
Chickens	Eating and serving guests	70.0
	Income	40.0
	Meet basic needs	38.8
	Easy to raise and quick to sell as needed	12.1
	Exchange for goats	3.3
Goats	Meet basic needs	40.7
	Income	39.1
	Easy to raise and to sell as needed	8.6
	Exchange for cows	8.5

For purposes of this study income was defined as money earned that is not necessarily used to meet an urgent basic need; such as buying an animal, building a house etc. Money for basic needs means that the farmer needs the money from the sale of the animal to meet an urgent and pressing need such as taking an ill family member to a hospital or immediate payment of school fees.

There was a relationship between the reasons for rearing pigs and the number of upgraded pigs (P=0.05) but not the total number of pigs which included the local and upgraded. For goats and chickens which were reared for other reasons in addition to money, the relationship was with the total number and not with the total upgraded animals. These results seem to suggest that upgraded pigs are reared mostly for the money, and that local goats and chickens are important for other uses not just the income.

The characteristic common to all three species of livestock which the farmers appreciated was that they were easy to raise, requiring few inputs. Most of the animals reared were local; few people had upgraded animals as shown in

Table 3.

Table 3. Farmers with upgraded animals (%)

Number	Pigs	Goats	Chicken
0	59.0	90.0	89.4
1-5	36.0	10.0	0.0
6-10	4.0	0.0	0.0
10-50	1.0	0.0	3.6
>50	0.0	0.0	7.0

The local animals are known to be well suited for resource poor households as they are able to produce even with minimal inputs. (Ashley and Nanyeenya 2005). Typically rural farmers do not sell their livestock at maturity; they keep raising them to sell when they get a serious financial need (Ashley and Nanyeenya 2005). They would not be able to do that if they reared high input requiring animals. Many development organizations like VEDCO encourage farmers to rear high producing improved breeds which often require more inputs (Ashley and Nanyeenya 2005). It is imperative that when the farmers are given the improved animals, there is a market strategy in place so that the animals can be sold as soon as they mature to prevent overspending money on them which would reduce the farmer's profits. The farmers also need to be taught new savings strategies to prepare for and anticipate financial needs since they may not have the option to sell animals when they have a financial need.

Consumption of animal source foods

Consumption of animal source foods provides micronutrients which are important especially in children (Murphy et al 2003, Murphy et al 2007). Focusing on nutrition is one way to develop the human resource for greater productivity (Neumann et al 2003).

Farmers in the study area do not regularly slaughter their livestock for food. When asked what the most frequently consumed animal source food was, the most common responses were; cows milk 50.4%, eggs 19.5% and fish 9.7%. The three most commonly consumed animal source foods are a 'renewable resource'. Milking a cow or eating the eggs from a hen does not kill the goose that lays the golden egg. Analogously, their fishing does not deplete fish from the river Nile and Lake Kyoga where most of the fishing is done (Dolan 2005). The most common reasons given for why cow's milk, eggs and fish were most frequently consumed were; we have it, it is easy to get (61%), we like it (11.5%) and it is cheap (9.7%). Cow's milk was an important animal source food in Kamuli, the study area. Although VEDCO does not support farmers with cows, 8.5% of the goat farmers reared goats so as to exchange them for cows and 2.2% of chicken owners reared chickens so as to exchange them for goats. About 6-12 chickens could be exchanged for a goat and 6-10 goats could be exchanged for a cow.

Rural farmers generally rarely slaughter their animals, they consider it to be unaffordable except for special occasions, like honoring a special guest, religious festivities and when the animal is sick (Aklilu 2007). It is unlikely that the farmers in the study purchased animal source foods after selling their livestock because many of them reported that they consumed more home grown animal source foods (63%) than purchased animal source foods (37%). Although 62.7% of all the farmers felt that their households consumed enough livestock products, this is likely not the case because of the high incidence of malnutrition among children in Kamuli (Nonnecke et al 2010).This seems to suggest that these farmers are not aware of the levels of dietary intake of protein recommended for good health.

Marketing livestock

Many farmers (87.6%) have sold livestock in the last few years since they joined VEDCO. A total of 56.8% of all the farmers who had sold livestock and /or livestock products sold them to traders who re-sold them in the trading centers or other towns, 3.6% sold them to butchers who owned small roadside butcher shops in towns or trading centers and 39.5% sold them to fellow farmers and other people in the neighborhood who purchased them for home consumption or to raise them. More chickens and eggs (54.1%) had been sold than either goats (24.4%) or pigs (29.3%). The

chickens were mostly sold to traders (43%) and other farmers (25.9%) whereas there was no recognizable preference for where pigs and goats were sold (P=0.01). It was relatively easy to sell livestock, as 44.2%, 61%, 60.8% and 53.9% of the people who had sold pigs, goats, chickens and eggs, respectively, rated the ease to sell between 8-10 on a 1-10 scale with 10 the highest or most favorable rating. However, the conditions of sale did not favor the farmers. The price was subjectively based on the size and appearance of the animal, and it was settled after haggling with the buyer (Table 4).

Table 4. How did you determine the price to sell your animals?

Factor considered	% of farmers
Size and appearance of the animal	49.9
Going price for similar animals in the village	19.3
Take buyer's price after haggling	19.3
My current money needs	6.2
The investment in the animal	5.3

Usually farmers sell their livestock because of an urgent financial need; therefore they are prone to exploitation by buyers and often get low prices for their animals (Dolan 2005, Turner 2005). Another problem the farmers faced was, although buyers could be found, they were not necessarily available to buy at the time the farmers needed the money which was frustrating to the farmers. It was easier to sell a few animals; it was a problem to find buyers who would buy in bulk. Availability of buyers, price, number of animals that could be sold and whether they could get immediate cash were the factors farmers considered important when selling livestock (Table 5).

Table 5. Factors farmers considered important in selling livestock

Factors	% of farmers
Availability of buyers	73.0
Price	19.7
Whether they could sell many animals at ago	4.7
Whether they could get immediate cash when they needed it	2.6

Conclusion and recommendations

- Farmers choose the type and number of livestock to rear based on their individual circumstances, their resource base and the needs of the household therefore it is important to consider these factors in dealing with the farmers

- Livestock play an important role not only as a source of long term income but also as a source of quick cash when the household has a financial emergency. Unlike crops which are seasonal, farmers count on livestock to always be there when they need to sell them.

- Improved nutrition did not necessarily result from livestock rearing There is need to determine how much animal source protein the households consume and to educate them on how much they need in order to meet the goal of improved nutrition. There is a need to encourage farmers to purchase more livestock products especially during periods when they do not have eggs or milk at home. Education on the importance of animal source foods and quantities required for improved nutrition status has to be provided before the farmers fully exploit their livestock resource for better health and wellbeing.

- Farmers need organized marketing channels to help them get the best price for their animals. Farmers should be encouraged to sell their animals and save the money for emergencies instead of keeping the animal and selling at the time the money is needed because it is unlikely that they will get a competitive price in the latter scenario. Better marketing strategies than what exist presently could position the farmers to profit more from their

activities and their farming would have a greater impact on their lives.

Acknowledgements

We gratefully acknowledge Mr. Paul Wanjala for the help rendered during data collection, Dr.David Acker, Dr. Robert Mazur, Dr. Mark Honeyman and Dr. Dorothy Masinde for their helpful suggestions.

References

Aklili H A 2007 Village poultry in Ethiopia; Socio-technical analysis and learning with farmers. PhD thesis, Wagenigen University, Wagenigen, The Netherlands. http://library.wur.nl/wda/dissertations/dis4246.pdf

Ashley S and Nanyeenya W 2005 More than income-pro poor livestock development policy in Uganda. In: Rural livelihoods and poverty reduction policies (Editors: Ellis F and Freeman H A) Routledge.New York, USA Pages 215-234

CSRL (Center for Sustainable Rural Livelihoods) 2010 Livestock. Iowa State University. http://www.srl.ag.iastate.edu/News/livestock.php

De Haan C, VanVeen S T, Brandenburg B, Gauthier J, Le Gall F, Mearns R, and Simeon M 2001 Directions in development. Livestock development implications for rural poverty, the environment and global food security (Directions in Development). The World Bank, Washington D.C

Dolan C S 2005 Household composition and rural livelihoods in Uganda. In: Rural livelihoods and poverty reduction policies (Editors: Ellis F and Freeman H A) Routledge.New York, USA Pages 215-234

Kristjanson P, Krishna A, Radeny M and Nindo W 2004 Pathways out of poverty in western Kenya and the role of livestock. Pro poor livestock policy initiative working paper No. 14 http://www.fao.org/ag/AGAinfo/programmes/en/pplpi/docarc/wp14.pdf

Murphy P S and Allen H L 2003 Nutritional importance of animal source foods. Supplement: Animal source foods to improve micronutrient nutrition in developing countries. Journal of nutrition 133: 3932s-3935s

Murphy P S, Gewa C, Grillenberger M, Bwibo O N, Neumann G C 2007 Designing snacks to address micronutrient deficiencies in rural Kenyan school children. Journal of nutrition 137: 1093-1096

Neumann C G, Bwibo N O, Murphy S P, Sigman M, Whaley S, Allen L H, Guthrie D, Weiss R E and Demment MW 2003 Animal source foods improve dietary quality, micronutrient status, growth and cognitive function in Kenyan school children; Background, study design and baseline findings. Journal of Nutrition 133: 3941s-3949s. http://jn.nutrition.org/cgi/reprint/133/11/3941S

Nonnecke E, Musasizi B, Schalinske K and Reddy M 2010 Assessing the nutritional status of pregnant women in rural Kamuli District Uganda. A poster in; Establish and Grow student projects: Assessment of children in Kamuli District of Uganda. http://www.ag.iastate.edu/students/service_learning/establish_and_grow/studentprojects.html

Peacock C 2005 Goats-A pathway out of poverty. Small Ruminant Research 60:179-186

Randolph T F, Schelling E, Grace D, Nicholson CF, Leroy JL, Cole D C, Demment M W, Omore A, Zinsstag J and Ruel M 2007 Role of livestock in human nutrition and health for poverty reduction in developing countries. Journal of Animal Science 85:2788-2800 http://jas.fass.org/cgi/reprint/jas.2007-0467v1.pdf

Siefert L and Opuda-Asibo J 1994 Intensification of goat production in Uganda and associated health risks. Ruminant Research and development in Africa. Proceedings of the second biennial conference of the African small ruminant research network. AICC, Arusha, Tanzania

Turner R L 2005 Livestock liberalization and democracy; constraints and opportunities for rural livestock producers in a reforming Uganda.Pro-poor livestock policy initiative.PPLPI working paper No.29. http://www.fao.org/ag/againfo/programmes/en/pplpi/docarc/wp29.pdf

UBOS (Uganda Bureau of statistics) 2002 Population and housing census. http://www.ubos.org/onlinefiles/uploads/ubos/pdf%20documents/2002%20Census%20Final%20Reportdoc.pdf

Received 31 March 2010; Accepted 6 April 2010; Published 10 June 2010

Go to top