

The effect of goat-sharing system on the performance of farmer groups raising Etawah cross bred goats – a case study in ‘Sukorejo’, Girikerto, Turi, Sleman¹

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ABSTRACT: The case study was conducted in a farmer group keeping Etawah Cross Bred goats at the village of Girikerto, Turi, Sleman. The objective of the study was to evaluate the effect of a goat-sharing system on the performance of farmer groups and their goats. This system was set up by giving one or two pregnant goats to a farmer and 1 buck was provided for 10 females. The farmer had to return 2 adult females from the first and the third pregnancy. The first goats were rolled to another farmer. After passing the period of sharing system, the farmer became the sole possessor of the initial does and all the kids from all subsequent offspring. The result showed that this sharing system had increased the number of goats (from 49 to 137 within 2 years), improved sanitation and supported farmers to produce milk. The group produced 10 to 12 litres milk/day. The physical characteristics of the goats were below those of the standard Etawah Crossed Bred goat. However, the birth weight, weaning weight and body weight at the age of puberty and mortality was normal. The system could be appraised to have empowered farmers and increase their income. However, since the physical characteristics did not satisfy the standard of Etawah Crossed Bred goat, a scheme of breeding program was needed in order to attain better performance.

Key words: sharing system, etawah crossed bred goat, milk production

INTRODUCTION

The majority of Etawah Crossed Bred goats in Yogyakarta Province are raised by multipurpose smallholders breeding goats to produce milk, meat, manure and in some cases for saving. Many of the goat farmers are organized in a system that is referred to as a communal farming system. According to Masika and Mafu (2004), in that system a large area of land is used communally by farmers for keeping their goats. The group forming was advantageous for farmers. As reported by Haryadi and Tsuya (2002), farmer grouping functioned as a media of providing more information, disseminating innovation and activating the members to improve productivity.

Goat farmers generally have small investments and it is difficult to obtain bank loans. Therefore, their welfare improved very slowly. To solve this problem there was need to assist them by giving soft loans, micro-credit or sharing system. According to Sinn *et al.* (1999) a micro credit mechanism in the form of providing small ruminants was found helpful in solving the problem of poverty, because the ruminants are valuable agricultural resources to produce food and income.

Increasing goat production can be achieved by improving its management and giving assistance such as investments and providing know-how to farmers. A previous study by Kustantinah, *et al.*, (2004) showed that a type of goat-sharing scheme that was implemented in the women’s group has improved women access to information, goat productivity and leading to better household security prosperity.

The objective of the study was to assess the contribution of the sharing system on the performance of a farmer groups who kept Etawah Crossed Bred goats in the communal goat houses.

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MATERIALS AND METHODS

In this study the data were collected through questionnaires. The sharing system used 27 female goats and 3 bucks, cash money and equipment to investigate the goat's production (scales, measuring tapes, plastic bags and buckets).

We interviewed 20 members of "Sukorejo I" farmer group at the village of Girikerto, Turi, Sleman, to collect data pertaining to the group performance (the questions included the number of goats owned, the aims of raising, health conditions and problems faced by the farmers) prior to the set up of the goat-sharing system. The system was started by giving one or two pregnant Etawah Crossed Bred goats (either multi or first parity) to a farmer. One buck was provided for 10 females. Farmers who had an interest in taking part in the sharing system had to provide a slatted pen and agreed to do their best to manage the goats. For each goat, a farmer had to return 2 adult females, 1 from the first pregnancy, which had to be rolled to another farmer and another one from the third pregnancy. The kids that were delivered from the second pregnancy became the property of the farmer. After passing the period of sharing system, farmer became the sole possessor of the initial does and all the kids from all subsequent offspring.

Monitoring of the sharing system was conducted every month from August 2008 to March 2010 by measuring the goat performance (reproductive activity, number of kids, body weight gain and health condition) and providing more information on farming management. Staff and students of the Faculty of Animal Science, Universitas Gadjah Mada involved in the monitoring activities.

RESULTS AND DISCUSSION

The Initial Condition of the Farmer Group

The communal goat housing of Sukorejo I occupied a 3 ha area. In that area farmers built their goat houses and conducted daily activities of keeping goats. The group had 38 members at the beginning of the program, but only 20 farmers participated actively in the commencement of the sharing system.

Farmers had been keeping goats since the establishment of the groups in 1991. The average possession ranged from 1 to 5 goats / farmer and among them, 5 farmers have no goat. This was smaller than that in the other villages of Turi, Sleman, averaging 5.3 (Suranindyah *et al.*, 2009). Therefore, the sharing system was expected to increase the number of goat possession per farmer.

In term of production, none of the respondents milked their goats for consumption or sale. The goats were mainly kept to produce manure. The utilization of goat manure was mainly to support fruit (*Salak Pondoh*) production. Referred to Otte *et al.* (2005) and Soedjana *et al.* (1993) this system was similar to the common production system in other regions where small ruminants played a role to generate multi products. In this study, since Etawah Crossed Bred is a dual purpose goat, farmers need to be encouraged to produce milk besides manure.

The goats in the "Sukorejo I" group were raised in 'floor based' pens. This practice had induced skin disease, caused high mortality and consequently discouraged several farmers to continue the activity. There was also very low participation in the part of farmers in the group particularly in meetings.

The Group Performance after Implementation of the Goat-Sharing System

Farmers who participated in the sharing system received 1 or 2 goat and a loan to assist them to repair their goat pens. The goats which were distributed to the farmers had 60 cm body length, 75 cm of hearth girth and 38.4 kg of body weight on the average. In term of quality, the goats did not pass the standard of Etawah Cross Bred. The size was smaller than that in other villages of Turi, Sleman, with the average body length of 66.5 cm; 80.5 cm hearth girth, and body weight of 43.0 kg (Suranindyah *et al.*, 2009). According to Sumadi and Prihadi (2002), Etawah Cross Bred goats should have the standard body length of 72 to 80 cm and body weight of 50 to 65 kg. Although the quality of

goats did not satisfy the requirements of standard Etawah Crossed Bred, the sharing system was beneficial in term of increasing the number goats in the group.

The goats were in about 1 to 2 months pregnancy when they were distributed to the farmers, so within a year 15 females delivered their kids (14 of them were kidding twins and 1 triplet). By the end of the second year of the sharing system the total number of goats was 137 (Table 1).

Table 1. Performance of the “Sukorejo I” Farmer Group Before and After the Sharing System

Variables	At the beginning	After 2 yr
Number of goats	49	137
Number of farmers participating	20	29
Farmers using slatted goat pens	20	29
Type of products	Manure and saving	Manure, kids, milk
Milk production in the group	0	10-12 litres/d

The increase was 175% of the initial number. Birth weight of kids ranged from 2.6 to 3.0 kg while weaning weight was 11.0 to 20.0 kg. Body weight of goat at the age of puberty ranged from 28 to 36 kg. The weaning weight of kids of Crossed Bred goat was in the range of the previous reports by Abdel-Rahman and El Kaschab (1998); Setiadi *et al.* (1997) as 8.7 to 16.4 kg. Kid mortality was around 6 to 10%. The level of mortality was lower than the finding of Ndlovu and Simela (1995) ranging from 35 to 60% for kids under small holder management.

Body weight of does distributed at the commencement of the project increased from 38.4 to 48.5 kg during the period of sharing system. This gain weight indicated that farmers had managed the goats properly. According to Masika and Mafu (2004) farmers allowed their does to kid at least 5 times. In this study, with the average litter size of 2.0, the does could be expected to produce 10 kids during the sharing system period. Based on the agreement, farmers had to return only 2 females. Therefore, the sharing system could be appraised as having empowered farmers because for each goat they get 8 kids and the initial does and indirectly contributed to increase goat population. As previously had been achieved a women group of Kwarasan, reported by Kustantinah *et al.* (2004), the goat-sharing scheme here had improved goat productivity and leading farmers to better household prosperity.

After 2 years of the goat-sharing system implementation, there were 9 farmers who already returned and rolled the goat to others. The condition of the communal goat houses had improved. Farmers preferred to use slatted goat pens, enabling them to keep the goats better and make the environment clean. The type of goat pens was healthy for producing milk and made it easier to collect manure.

The group produced 12 litres goat milk / day. Milk was collected in the morning and sold to other villages that processed it to make milk products. The study showed that farmers had shifted from producing manure to mainly producing milk. Although the level of production was low, this condition enabled the farmers to increase daily income. This condition was supported by a report of Lebbie (2004) showing that in general goats do not contribute much to direct income earning in rural households. As a tangible financial asset, however goat product consumption and sales enhanced the household economy.

In this study, providing loans to repair the goat pens had motivated farmers to improve their management in manure handling. In the group, composting manure has been centralized in the place where farmers worked together to process it. Manure was collected from individual farmers, 1 bag (around 50 kg)/farmer/process. Therefore, apart from processing individually as “*pupuk kandang*”, the group produced a large quantity of compost to sell. By this practice harvesting and utilization of manure would be enhanced and become more efficient as they could provide fertilizer but also received income by selling compost. This system promoted cooperation and information sharing and made the farming counselling more effective.

CONCLUSION

The goat sharing system which was implemented in the “Sukorejo I” farmer group had increased the number of goats in the group, improved the goat housing practice and shifted the purpose of

keeping goats from mainly manure production to milk production. Since the goat physical characteristics did not satisfy the standard of Etawah Crossed Bred goat, there was need to provide a breeding program scheme of in order to achieve better performance.

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