

Animal production through a women's group – goat – sharing scheme

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Summary

A goat-sharing scheme with women's groups was set up in three villages in Yogyakarta, Java, Indonesia with the objective of improving small ruminant production in the rural community. The members of the groups consisted of 30 to 35 women. The number of goat kids kept by the participants depends on the number of kids born from the first two pregnancies, after which the participants also own the original female goat and all subsequent offspring. Another benefit is the production of manure, which has great value as a fertilizer for crops. At the present time, the total number of goats in the three villages is 808 heads. When the compost produced was applied to marginal land, around 47 ha was improved per year by utilization of the organic fertilizer. The program of animal production through the goat-sharing scheme, is able to give rural women access to resource, information, and enables them to increase goat productivity leading to better household security.

Introduction

The goat-sharing scheme in Kwarasan, Gombang and Wonolagi villages in Gunungkidul, Yogyakarta, Java, Indonesia was developed during the economic crisis in Indonesia, 1997-1998. The economic pressure, such as rupiah devaluation led to increases in prices of various agricultural products. The high inflation also led to an increased cost of living (Booth, 2002) and the number of poor people in Indonesia increased in 1999. Almost one third of the population was below the national poverty line (World Bank, 2004). According to FAO (2002), women are responsible for over half of the world's food production. In many less developed countries, women produce between 60 and 80 % of the food, and play a large role in household food security. Women, however, have less access to resources, such as land, education or information from extension services (Wahyuni et al., 1992).

The goat-sharing scheme was set up to give rural women access to resources and information and to enable them to increase goat productivity (Kustantinah et al., 2002). The long term aim was to alleviate poverty and the specific aims to increase the goat population in the villages, to increase motivation for good goat management, to give training in self reliance, to increase decision making ability and to give access to legume trees to be used for feeds.

Material and methods

Members of a group of female farmers were chosen from three villages in Gunungkidul, Yogyakarta, Java. Kwarasan village is situated in Nglipar with a population of 2,389 people divided into 513 households. The Kwarasan women's group consists of 32 members with an average age of 47 years. The formal education of the members is mainly primary school, and only 27% have completed primary school. The second village is Gombang in Ponjong, with 150 households and a population of 500 people. The Gombang women's group, so called Lestari, consists of 30 members, 25 to 55 years old and with 17% of the members with completed primary school education. The third village, Wonolagi, is situated on the bank of "Oya" river, Playen, on a slope of a hill next to the district woodland area. There are 45 households with 130 people in Wonolagi and the women farmers group, "Sumber Rejeki", has 35 members.

At Kwarasan, the goat-sharing scheme started in January 2001, while Gombang and Wonolagi started in April 2003. The goat management system, based on the principle of Gaduhan (sharing) was set up within the women's group, in which the majority of the women were given either one or two female goats in Kwarasan and two females in Gombang and Wonolagi. For each ten females there was one buck. Each member of the group had to sign a legal agreement stating the age, sex, weight and price of goat received from the project, that they agreed to the system of goat sharing and that they will manage the goats to the best of their ability. Before the female goats reached their second pregnancy, the Animal Nutrition and Feeds Science Department/Gadjah Mada University (ANFS/GMU) are the principles owner of the goats, and the participants are the second owner. After second pregnancy, the farmer becomes the sole owner of the female goats and half of the number of kids.

The systems include introduction of legume trees, improvement of goat pens and introduction of goats.

Result and discussion

In Kwarasan the group has a head man and meets once a month. In this area, the Forestry department, Yogyakarta, has given the group access to woodland, in which they grow King grass, Cassava and Peanut (the leaves are used to feed their goats). Individual members are responsible for managing their own plot within this group area of woodland. In Gombang village, a similar system to Kwarasan was used.

Plantation of legume trees and improvement of pens

All members of the women's group were given tree legume seeds, *Gliricidia*, *Calliandra*, *Leucaena* and *Sesbania*. The majority of these trees were growing very well, although with the increasing goat population in the village, there is still lack of feed during the dry season. It was expected that farmers will collect the seeds produced for further seeding in other areas. The goat sharing scheme has given the opportunity for each member of the women's group to borrow two hundred thousand rupiah, equivalent to 18 euro, free of interest, from ANFS/GMU to build or repair existing goat pens. Each month, members who borrowed money, pay back 10,000 rupiah, equivalent to 0.90 Euro. This fund will be transferred to other new member to build or repaire goat pens. So far, there have not been any problems with repayment of the loan given to group members. When the group has finished paying back, the goat sharing scheme will be offered the last two-months of monthly repayment to the groups as a cash support.

The sharing system

The number of kids kept by the participants depends on the number of kids produced from the first two pregnancies, after which the participants also own the original female goat and all subsequent offspring. Table 1 and 2 show the allocation system of kids to the farmer and to the scheme, depending on number of kids produced from each pregnancy. Any difference in cash received is given to the participants, and the participants should give 10% of the price to the women's group. The 50% of the cash received will be given to the participants, 10 % for women's group and 40 % for the scheme. This system is built on trust between members and ANFS/GMU staff.

In Kwarasan, the goat population increased by more than 400% from the beginning of the scheme. When the scheme started 53 head were given, and at the present time, the goat population is 396 head. There was a high mortality in the kids, mainly after parturition and before weaning, and in the beginning of the rainy season. In Gombang and Wonolagi, the present goat population is 248 and 225 head, compared to 63 and 73 head at start, respectively. The mortality of the kids was lower compared to Kwarasan. The goats kept is on average around 5 to 11 head per member for Gombang, and 3 to 10 for Wonolagi (Table 2).

The manure production is also one of the benefits of keeping goats. The production of manure is made easier by housing the goats in a raised goat stall. Goat faeces were not sold for cash because the manure was more valuable as a fertilizer for crops. The manure is part of the impact of the goat-sharing scheme. In 2004, the total number of goats in the three villages was 808 head. The manure production is around 400 g/head/day, so the manure available is $400 \times 808 \text{ goats} \times 365 \text{ day} = 117,968 \text{ kg/year}$, which when converted to compost equal to $2 \times 117,968 \text{ kg} = 236 \text{ tons}$ of fertilizer. If one hectare needs 5 tons of compost/year as organic fertilizer, around 47 ha of marginal land can be improved per year by utilization of the goat manure.

Table 1. Nine scenarios out lining the possible combinations of the number of kids kept by a farmer and/or given back to the goat– sharing scheme from the first two pregnancies of one goat.

Scenario	Number of kids produced in pregnancy I or II		Number of kids kept by farmer in pregnancy I or II		Total number	Number of kids kept by scheme in pregnancy I or II		Total number
	I	II	I	II		I	II	
1	1	1	0	0	1 (1*+0)	1	1	2
2	1	2	0	1	2 (1*+1)	1	1	2
3	1	3	0	2	3 (1*+2)	1	1	2
4	2	1	1	0	2 (1*+1)	1	1	2
5	2	2	1	1	3 (1*+2)	1	1	2
6	2	3	1	2	4 (1*+3)	1	1	2
7	3	1	2	0	3 (1*+2)	1	1	2
8	3	2	2	1	4 (1*+3)	1	1	2
9	3	3	2	2	5 (1*+4)	1	1	2

Note: * number of does (females)

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Table 2. List of female members in the co-operative groups

Gombang village				Wonolagi village			
Farmer	Number of goats			Farmer	Number of goats		
	2003	2004	Died		2003	2004	Died
Surati Hardjito	3	9	-	Parinem Wagiyono	2	7	-
Siti Mahtukiyah Bilal	2	9	-	Sutiyem Sakiman	2	5	2
Muinah Jumino	2*	7	1	Surani Wakiman	2	7	-
Suparmi Sukin	2	6	-	Ningsih Tumino	2	7	-
Suwarsi Pudjisuwarno	2	7	-	Wakinem Sagimin	2	6	1
Partilah Karsiyo	2	8	-	Rubinem Ngatiman	2	6	-
Mukirah Sugiyo	2	9	-	Marmorejo Saiman	3	10	-
Sudarmi Kismorejo	2	5	-	Pawirodimejo Ngadiman	2	7	-
Satinah	2	10	1	Tukiyem Jaimin	2	8	-
Riyanti Amino	2	11	-	Jumiyem Sabari	2	3	1
Suparsih Wahyono	3	9	-	Tarti	2	9	1
Mujilah Widyohartono	2	6	-	Purwanti Sudarso	2	5	-
Surtini Purwanto	2	11	-	Ngadiyah	2	5	-
Wakirah Sugiarto	2	7	-	Painah Poniran	2	5	-
Kinah Pujowardoyo	2	10	-	Supin Samingin	2	6	-
Sanem Sarjono	2	10	-	Tarmi Sumiyanto	2	10	-
Tumi Sumantorejo	2	9	-	Marinem Kawikan	2	3	-
Sumini Wajiyono	2	8	-	Pardiyem Sukardi	3	9	-
Ponem Wasgiyono	2	7	1	Warini	2	10	-
Wasilah Martoyo	2	9	-	Sukarti	2	6	-
Tatik Ngatman	2	10	-	Karsinem Sukiran	2	8	-
Watirah Paidi	2	8	-	Musinem Samani	2	6	-
Tukilah Gianto	2	10	1	Saryati Dalijo	2	5	-
Satirah Wastorejo	2	8	-	Ciptowiyono	3	7	-
Lasmi eko	2	7	-	Suminem	2	4	1
Lastri Muh. Tamami	2	8	-	Poniyem	2	6	-
Wiyem Mulyorejo	3	9	-	Ngadiyah	2	4	-
Sarti Sarwito	2	10	-	Wiriyorejo	2	8	-
Sutiyem Adisuprpto	2	11	1	Wajiyem Wagiran	2	8	-
Raminten Mantosuwito	2	6	-	Iyem/Wahiyem Ngadiyo	3	9	-
Total goats	63	248	5	Samiyem Muhadi	2	6	-
				Karsoutomo	2	9	-
				Suparmi Sugiyono	3	7	2
				Imorejo	2	4	-
				Total	73	225	8