

Conference Paper

Empowerment of Sheep Farmers Groups and Increasing Their Economic Values

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Abstract.

The research was conducted at the Cinyurup Village, Juhut Village, Karang Tengah District, in the Pandeglang Regency, Banten Province in 2019. The research used a survey method. The study was conducted through interviews and questionnaires for 3 groups of farmers and one group of independent farmers: (1) Karya Mandiri farmers Group of 25 farmers, (2) Cinyurup Mandiri farmers group of 17 farmers, (3) Taruna Mandiri farmers group of 7 farmers (4) Independent farmers included 9 breeders, total number of respondents was 57 breeders. Based on the information that the sheep population was large, it becomes a criterion for consideration of the study area. Primary and secondary data are analyzed descriptively, quantitatively and economically. The purpose of this study were to determine the empowerment of sheep breeders and to increase their economic value. The results of the study showed that, the profit in the group I was IDR.3.101,625 with R/C of 1.5 higher, the profits of the group II and III amounted to IDR.2.339.875 with R/C 1.4, and IDR.1,174,000 with R/C 1.3 lower, respectively. The profit for independent farmers amounted to IDR.1,606,250 with R/C of 1.3 and there was an increase in the value of profits compared to the group III. Sheep business operated by both the 3 groups of farmers and independent farmers is economically feasible. Lambs are still maintained as a sustainable investment to produce offspring for the following year. To increase sheep business, it is necessary to empower farmers to be more active and move towards commercial businesses directly.

Keywords: sheep breeders, empowerment, and economic value

1. Introduction

Pandeglang Regency in Banten Province is a regency where the majority of the population has the main livelihood is agricultural business with a side business is raising sheep. Most of the population of Juhut Urban Village (around 76%) are farming businesses and sheep businesses and the rest are other businesses. Its produce some of agricultural products in the form of food crops, crops, horticulture and animal husbandry [1]. Most of the inhabitants of Juhut Village, around 76% of the population do farming and sheep businesses, and the remaining 24% work in other fields. Sheep are widely sought by groups of farmers in the highlands, because forage support is sufficiently available. Until now, there are two main products in Juhut, namely animal products from sheep and vegetable origin from taro beneng which are cultivated by sheep breeders. In 2010,

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farmers were empowered through technical guidance from other institutions ie. IRIAP and Agriculture and livestock services offices.

Now, some farmers switch their business to agriculture and independent sheep businesses, meaning they are not members of the farmers' groups. The impact is the number of breeders is reduced both independent farmers and members of sheep farmers groups as well as the ability of members of the farmers group in Juhut is also very lacking in managing sheep businesses, unlike in the era of 2010-2014. Therefore, the empowerment of farmers both as farmers group members and independent breeders needs to be more active and more direct towards commercial businesses by utilizing past experience to increase sheep population and increase the economic value of breeders. Although the profile of Juhut village as a sheep village is still visited by some visitors from outside the region, the number of visitors has decreased significantly unlike in the era of 2010-2014. Group of sheep farmers in one cage of group maintains between 3-7 head/farmer. Sheep that are reared by farmers play a dual role, namely as a savings business and a source of organic fertilizer for farmers' crops [2]. This indicates that Juhut is still suitable for sheep development, it is seen that farmers still keep sheep. Sheep business is integrated with the business of food crops, crops, corn, soybeans, taro Beneng and horticulture [3]; [4].

The main income obtained by farmers is from farming and sheep business. Nearly all sheep raised by farmers groups are kept in captivity and occasionally the breeders release their sheep to be angled (angon) for a while or when they are to be bathed. The development of sheep in farmers from the results of crossbreeding from IRIAP innovations is very dominant compared to pure local sheep. The selling value of sheep from crossbreeding with local sheep is quite different. Sheep that are kept by farmers groups are now mixed and are not the result of crossbreeding, but have become as Juhut sheep. Sheep traders, or called the Village Blantik, already know the potential of Juhut sheep that are superior in the area of Juhut, so the traders dare to pay dearly to get the desired Juhut sheep. Basically, the sheep farmers business group can support the needs of the farmers when the farmers need funds for economic costs.

The superior and non-superior sheep productivity for farmers is not important at the moment and the most important is that the sheep are abundant and can be sold easily. The mindset, resulting in a quality sheep product to be reduced, so that the selling value of sheep is low in compare to the last era [5]. Sales of sheep are still mostly conducted by farmers through sheep middlemen, so far farmers and middlemen feel that they are mutually beneficial to one another. The sale of sheep is carried out by the head of the farmers group, so the profits are partly for the sheep farmers group and other profits for

the cooperative. Based on the above problems, the sheep business is still being done but it is still simple. The sale value of sheep can be adjusted to the condition (weight) of sheep, gender male and female and age of sheep. The purpose of this study was to determine the empowerment of sheep farmers and to increase their economic value.

2. Materials and Methods

2.1. Time and location of research

The research was conducted in Cinyurup Village, Juhut Village, Karangtengah Subdistrict, Pandeglang Regency, Banten Province in 2019. The research location is a dry land area that is used as an agricultural area for food crops, crops, including cassava, sweet potatoes, vegetables and horticulture which have great potential on sheep development business. The main consideration in choosing the location of this study is because the initial information obtained that the sheep population is quite large, and almost all sheep farmers have become members of the breeders' group. Both of these are the main criteria for consideration as research areas.

2.2. Material and data collection

The study was conducted using a survey method through interviews and questionnaires for 3 groups of farmers and one non-farmer group, namely: (1) Karya Mandiri Farmers Group of 25 farmers, (2) Cinyurup Mandiri farmers group of 17 farmers, (3) Taruna Mandiri farmers group of 7 farmers (4) Independent farmers non group are 9 farmers, total number of respondents is 57 farmers. Research respondents are sheep breeders who are classified into 4 (four) business models of sheep based on the grouping of farmers and the business scale of male and female sheep at various ages. Primary data obtained directly through interviews with farmers in the field referring to the questionnaire that has been prepared to obtain a variety of quantitative and qualitative information needed in the analysis of income economics. Secondary data were obtained from the local agriculture and animal husbandry department to complete and to support the development of primary data that has been obtained (Department of Agriculture and Animal Husbandry, 2019).

2.3. Economic analysis

Material or data collected are all primary and secondary data on the use of production inputs in sheep business, from farmers, local agencies and additional information from various other research results. Farmers have initiated pioneering innovations from the Ministry of Agriculture, which began in 2010 by the Indonesian Research Institute of Animal Production (IRIAP) together with the relevant local agriculture and animal husbandry agencies. Farmers conduct sheep business by intensive rearing, fattening and breeding. The business is for the purpose as a producer of breeding stock of male and female sheep and sheep specifically for slaughter. The current condition of sheep farming in the research location is only selling sheep according to the agreement between the buyer and seller and the breeding stock qualifications are no longer available. The ability to produce output at a certain quality level with lower costs and optimize the utilization of local feed. Economic efficiency is a combination of technical efficiency and price efficiency. The efficiency of production costs can be compared with the acquisition of revenue for one year. To find out what are the benefits and costs, during the economic life of the sheep business (in the future) [6], the data were analyzed using the formula:

$$\Pi = TR - TC$$

Where:

Π = Benefit of sheep farmers/year

TR = Total Revenue/year

TC = Total Cost/year

It is known how much revenue earned from each rupiah spent by sheep livestock, so it can be calculated based on the ratio of revenue to production costs. The calculation is done using the general economic formula:

$$R/C \text{ ratio} = TR/TC$$

Where: R/C = Balance of revenues and costs incurred/year

TR = Total revenue/year

TC = Total cost/year

The technique of drawing research results on sheep farmers is used through recording sheep production data for one year including primary data and secondary data as previously described. Primary and secondary data are analyzed descriptively, quantitatively and economically. According to [7] to calculate the economic value of sheep business through the approach of technical aspects and social-economic aspects. Sheep

expenditures and business revenues can be calculated based on the R/C value, profit balance and production costs [8]. According to [9], the advantages and disadvantages experienced by farmers in sheep business so that the sheep business can be analyzed to illustrate business profit factors.

3. Results and Discussion

3.1. Empowerment of sheep farmers

Empowerment of sheep farmers in Juhut is still played by the leader of farmer groups, and sheep farmers who have left the group can still receive guidance and assistance from the head of the sheep farmer groups, because they still live in one Kampung. Even though each sheep farmers has led to commercial independent business, but the way to maintain it is still low between 3-7 heads/farmer. The lack of sheep raised by each farmer is caused by, among others: (1) guidance from outside institutions is no longer available, (2) lack of visitors to purchase sheep (3) visitors turn to tourism sites around Juhut (4) and many sheep sold before producing optimally by brokering (blantik) and middlemen (tengkulak) as well as the mating method for the purification of superior lamb blood resulting from the IRIAP innovation is no longer carried out. Sheep that are raised by farmers have become local sheep due to inbreeding and interbreeding with many local sheep so that the predicted rate of inbreeding increases and the level of blood purity decreases, these sheep are known as Juhut sheep. However, there are sheep that are kept even though a little, so that the income of sheep has been much reduced, thus the main effort of farmers to switch to food crops. Characteristics of farmers in sheep business in Juhut underwent many changes, but basically it still leads to sheep businesses to get optimal profits. Characteristics of sheep farmers are shown in Table.1.

TABLE 1: Characteristics of farmers in sheep business.

Description	Farmers group			Non Farmers group
	I(n-25)	II (n-17)	III (n-7)	
Age of farmers (year)	44,67 + 0,34	44,78 + 0,32	44,56 + 0,28	44,88 +0,17
Farming practices (year)	22,31 +0,10	22,31 +0,10	22,43 +0,10	22,31 +0,03
Family dependents (people)	3,21 +0,03	3,22 +0,02	3,19 +0,03	3,23 +0,02
Farmers employment (people)	1,0 +0,05	1,1 +0,04	1,0 +0,05	1,3 +0,04
Farmers land (ha)	0,42 +0,18	0,43 +0,02	0,43 +0,02	0,44 +0,02

Farmers can still receive a touch of technology if someone gives it, both directly in the field and in theory, because viewed from the age of the breeders are still productive and experience of breeding is long enough. Almost all of the sheep farmers in Juhut Village, Pandeglang District, Banten, keep the sheep with candles, providing forage feed in the form of field grass, corn straw and agricultural waste products. Occasionally breeders remove sheep to be bathed and dried in the sun around the home or cage environment. The goal is as a savings and side, the main business is farming and agricultural labor. The results of this study are almost similar to those of [10] that, sheep farmers aim for business as a side business and the main business is agriculture. Empowerment of breeders in sheep business both in groups and as independent farmers without groups can be seen in Table 2.

TABLE 2: Empowerment of farmers group and non farmers groups are the same.

Description business of sheep in farmers group and non farmers group	At Juhut Village, Karangtengah District, Pandeglang Regency, Banten
Farmer Group cages and non group cages of farmers	- simple cages, made of wood, bamboo and zinc, - made in 2009, - repair 4 times in 10 years, - the location of the cage near the side of the house between 2-7 m, - size between 4 x12m ² -6x12 m ² (depending on the number of sheep)
Maintenance system	in the cages
Conditions of the sheepfold -	- Group cages and non group cages that belong to themselves - simple cages, made of wood, bamboo and zinc, - made in 2009, - repair 4 times in 10 years, - the location of the cage near the side of the house between 2-7 m, - cages size between 4 x12m ² -6x12 m ² (depending on the number of sheep)
Forage feeding	- Cut and carry - forage feed including: grass, corn straw and other agricultural waste products, - feeding 3 times per day (<i>ad libitum</i>) is not counted - morning, afternoon and evening.
Sheep when pulled out of the cage	- removing sheep indefinitely, - sometimes once a week to be bathed and sun-dried around the environment of the house or cage
The purpose of raising sheep	- The main business, as a savings, side, - additional livestock household economy. - and education
Technology innovation in 2010-2011 AI Natural Mating Forage cultivation of animal feed	- AI has been done - Ratio of Natural mating 1 (ram) : 6 (lamb) - <i>Indigofera</i> sp.
Sheep ownership status - Ownership (%) - Noise (%) - Average sheep ownership	- 100% of your own - 0% noise 3-7 heads / farmers

3.2. Average ownership of sheep in farmers

Sheep ownership in general, adult female parent, is expected to produce more children. In addition to the production of male lambs to be raised, even though they are kept small. But breeders have a hope that rams that are kept can have a higher sale value, so that they maintain it very well. Rearing young females in breeders does not show a high proportion of exports, but according to the number of male and female offspring. Young females are raised to adulthood and produce children. Then the parent after giving birth 3-5 times rejected or sold by farmers. Rams that are kept for the needs of the Eid al-Adha or other days and the sale value of rams aged 1-2 years is quite high. Adult male sheep are not only for pemacek but also for sale when farmers need money for the economic needs of the breeders. The average sheep ownership in the independent breeders and farmer groups is shown in Table 3.

TABLE 3: Average number of sheep ownership maintained by farmers in groups and in non-group.

Description	Farmers in group (I, II and III) and farmers Non group (IV)			
	I (n-25)	II (n-17)	III (n-7)	IV (n-9)
Adult female	37 (1,48 +0,060)	21(1,23 +0,072)	8(1,14 +0,16)	10(1,11 +0,123)
Young female	7 (0,28 +0,011)	4 (0,23 +0,014)	3(0,42 +0,061)	3(0,33 +0,037)
Female lamb	8 (0,32 +0,012)	9 (0,53 +0,031)	4(0,57 +0,081)	3(0,33 +0,037)
Ram	4 (0,16 +0,006)	3 (0,17 +0,010)	1(1,14 +0,020)	3(0,33 +0,037)
Young stud	6 (0,24 +0,010)	4 (0,23 +0,014)	2(0,29 +0,041)	2 (0,22 +0,025)
Male lamb	7(0,28 +0,011)	7 (0,41 +0,024)	2(0,29 +0,041)	4 (0,44 +0,050)
Total	69 (2,76 +0,11)	48 (2,82 +0,16)	20(2,86 +0,041)	25(2,77 +0,31)

3.3. The economic value of farmers in groups and independent farmer (not in group)

Based on field results, the technical and economic aspects of sheep business are calculated based on the number of sheep that are kept and the number of sheep sold. The price of sheep and jumha sheep sold affects the profit value of farmers. [11] and [12] stated that, to improve the economic value of sheep farmers, institutional roles and support for human resources and natural resources are available and can be utilized as much as possible. [13] stated to determine profits in sheep or goat businesses, calculated based on initial capital and final income. [14] state that, it is necessary to calculate the cost of depreciation of the cage and enclosure equipment, in order to maximize production costs. [15] and [16] state that, the size of the variable variable Sagat directly affect the amount of production costs that are spent during one year. To

see details of the value of independent farmer profits from each expenditure and each sale of sheep for one year, see in Table 4.

TABLE 4: Economic value of farmers in the group of farmers and independent farmers (not in the group of farmers).

Description	Farmers in group (I, II and III) and farmers Non group (IV)			
	I (n-25)	II (n-17)	III (n-7)	IV (n-9)
Production cost	5.920.875	5.178.875	4.476.000	4.568.750
Gross profit	9.022.500	7.518.750	5.650.000	6.175.000
Net profit	3.101.625.	2.339.875	1.174.000	1.606.250
R / C value	1,5	1,4	1,3	1,3

The cost of purchasing sheep seeds in the breeders and breeders' groups is not the same, but depends on the number of sheep raised and the number of sheep sold for one year. The sheep business is economically feasible for farmers. This means that the income of farmers who have obtained so far is not only from the sale of sheep, but from other agricultural businesses.

4. Conclusion

The results of the study can be concluded that, Juhut is very supportive for the development of sheep business, economically the sheep are worth damaging Farmer group profits I of IDR.3,101,625. with R/C of 1.5 higher and profits of farmers groups II and III totaling IDR.2,339,875 with R/C 1.4, and IDR.1,174,000 with R/C 1.3 lower. The profit of independent farmers amounting to IDR.1,606,250 with R/C of 1.3 there is an increase in the value of profits compared to the group of farmers III. It is expected that sheep farmers can maintain their livestock. To increase sheep business again, it is necessary to empower farmers to be more active and more directed towards commercial businesses.

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