The implementation of a profit-sharing system between beef cattle farmers and the Maiwa Breeding Centre in Enrekang, South Sulawesi, Indonesia

by St Nurani Sirajuddin

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Abstract. The purpose of this research was to understand the characteristics of the farmers who join the profit-sharing system. This research used observation and interview method and the population was the farmers who joined the sharing system with MBC. This research was conducted from March to April 2018 in the Maiwa Sub-district, Enrekang Regency. The data were analysed using descriptive statistics with frequency distribution and income analysis. A total of 44 beef cattle farmers who had a profit-sharing system with MBC and were located in Maiwa Subdistrict, Enrekang Regency were used as the research sample. The research was descriptive, analysing primary and secondary data, qualitatively and quantitatively. The results showed that the age of the farmers who joined the system was in the productive age (95%), predominantly male (95%), most of them had graduated from junior high school (45.5%), had 5–6 dependent people in household (47.7%). The income earned in the 6-month maintenance period was more preferred by the farmers than the income in the 12-month maintenance period.

1. Introduction

Development planning established by the Indonesian government in the agricultural field aims at advanced, efficient, and resilient agricultural development using integrated, sustainable agribusiness systems. The livestock subsector is an integral part of the agricultural field, nowadays playing a critical role in national development and increasing the income and standard of living of farmers. Increases in income and standard of living are typically accompanied by increases in the quantity and quality of the livestock product. A growing population and increase in nutrition awareness by consumers, especially in terms of consuming meat and its processed products, has created a great business opportunity for the development of beef cattle rising in Indonesia. In general, the increase in demand for meat and its processed products has not been accompanied by an increase in the beef cattle population itself. Thus, domestic meat production is unable to keep up with the demand, which has resulted in meat importing by the government.

Domestic beef supply cannot fulfil beef demand because of the low rate of population increase and livestock productivity [1]. The low rate of increase of the beef cattle population is mostly due to the fact that most cattle are kept by small-scale farmers with limited available farmlands and funds [2], the production cost is a limiting factor in beef production. Thus, at this time, the overall level of livestock

ownership in general per farmer is relatively small, i.e., 1–3 cows on average, 3–5 goats and 5–20 for poultry.

Livestock has increasingly become an additional source of income, especially in rural areas [3]. However, the income of beef cattle farmers is still not enough to fulfil the life needs of the farmers and their families. Moreover, most farmers are still concentrating on cow breeding and enlargement of calves, with only a small number of farmers specializing in fattening; meaning the income of beef cattle farmers is still low. Therefore, it is important to manage beef cattle through the partnership system in order to provide sustainable benefit to the farmers [4].

Partnership systems or cooperation systems have previously existed in farmer communities in South Sulawesi. The partnership system was known as Tesang (originating from "teseng" a term from the Bugis language), which implemented a profit-sharing system between the farmer and the owner of capital not based on contract but strong bonds of trust with each other.

Business cooperation based on partnership system is the main choice at this time. Business cooperation in the partnership system is manifested in contracts that bind the parties to the agreement. The contract contains a number of clauses to be obeyed by the parties but still must follow a number of ethical principles and applicable regulation. The contract must consider the principle of equality and balance the benefit to both parties. In addition, the contract should not also violate the principle of business competition or raise monopolistic practices.

One of the grazing areas managed by Hasanuddin University is Maiwa Breeding Centre (MBC) in Maiwa district, Enrekang Regency. About 250 ha area was established as a centre for the development of local cattle industry, especially polled cows, based on science and technology. In addition, contract-based partnership systems have been initiated by Hasanuddin University with communities around the MBC, especially in Bangkala Sub-district, District of Maiwa, and Enrekang Regency. With the implementation of this system, the MBC is expected to become the business unit of the surrounding livestock farmer groups and support the availability of beef cattle to realize self-sufficiency in meat production in South Sulawesi Province and Indonesia in general.

With the advent of partnership system between the MBC and the beef cattle farmers, it is necessary to know the characteristics of beef cattle farmers who join this profit-sharing, partnership system with the Hasanuddin University in Maiwa Breeding Centre (MBC).and the income earned by farmers from these partnership systems.

2. Methods

This research was conducted between March and April 2018 in Bangkala Sub-district, District of Maiwa, and Enrekang Regency. This research was quantitative descriptive. The subjects of this research were 44 farmers who have already joined the partnership system with MBC. The data in this research were obtained through observation and interview. The resultant data can be categorized as quantitative and qualitative. The data were analysed using descriptive statistics with frequency distribution and income analysis.

3. Results

3.1. Beef cattle farmer characteristic

Beef cattle farmer characteristics that may influence the livestock management are age, education level, the number of family members, business scale and the duration of farming [5] and [6]. The characteristics farmers who joined the profit-sharing system with MBC is presented in Table 1.

The ages of beef cattle farmer who joined the profit-sharing system were within the productive age (15–64 years) (Table 1). It indicates that beef cattle farmers should have the physical ability to manage the beef cattle business. The age of a farmer has a significant influence on the ability to provide livestock feed from the garden whose distance is relatively far away from the livestock cage. The most productive farmers usually have a dynamic mindset and great physical abilities in managing their businesses [7].

Younger productive age farmers give the optimal effort to be more responsive toward changes. These farmers always want to try something new in an effort to improve their knowledge and business skill.

Table 1. Characteristics of farmers who had joined the profit-sharing system with MBC in Maiwa Sub-district, Enrekang Regency.

Characteristic		Number (persons)	Percentage (%)
Age	0-14	0	0.0
	15-64	40	95.0
	65	4	5.0
Education	Senior High School	5	11.4
	Junior High School	20	45.5
	Elementary School	17	38.6
	None	2	4.5
Gender	Male	38	95.0
	Female	6	5.0
Family members	1–2	8	18.2
	3–4	15	34.1
	5–6	21	47.7

3.2. The application of profit-sharing system at Maiwa Breeding Centre (MBC)

The earned income includes all results obtained from the sale of cattle and the maintenance of profit-sharing system in the maintenance period of 6 months and 12 months. The production cost is the total cost incurred by the farmer and consists of fixed cost and variable cost. The fixed cost of beef cattle maintenance and the profit-sharing system are the cost of the cage and material shrink, while the variable costs are the cost incurred by farmer which the numbers are influenced by the scale of business. The variable cost component of beef cattle maintenance and profit-sharing system are labour, feed cost and cost of return of the livestock. The income is the income earned by farmer minus the total cost incurred by the farmer with profit-sharing system with the university. The income earned can be seen in Table 2.

Table 2. The income of beef cattle farmers who joined the profit-sharing partnership with MBC

Maintenance period (month)	The average of earned income (IDR/cattle/month)	The average of the total cost (IDR/cattle/month)	The average of income (IDR/cattle/month)	R/C
6	2,100,000	648,500	1,541,500	2.3
12	2,300,000	912,000	1,388,000	1.5

Table 2 shows that the average earned income obtained by a farmer in the maintenance of beef cattle with profit-sharing system was greater at maintenance period of 12 months because the number of cattle was not balanced with the length of the beef cattle maintenance with profit-sharing system, while the total cost was greater at maintenance period of 12 months. It indicated that longer livestock maintenance was affected by the high cost of production. It can be stated that the income earned by beef cattle farmer from profit-sharing system with Maiwa Breeding Centre was profitable and the system of profit-sharing can be continued.

4. Discussion

4.1. Beef cattle farmer characteristic

In this study, beef cattle farmers who joined the profit-sharing system were mostly junior high school graduates (45.4%). Beef cattle farmers in the profit-sharing system have to understand the advantages

of joining the profit-sharing system with MBC. According to [7], the education level of farmers could affect the way of thinking, learning ability, and intellectual level. Formal and informal education was expected to improve the farmer's knowledge and create a profitable innovation for their business. [8] also reported that the formal and informal education could push farmers to give optimal effort to improve their business knowledge and to be more responsive to create new innovations.

This study showed that the highest number of family members was 5–6 people (47.7%). According to [9], the number of family members may influence the business activity of farmers because the family member can supply the availability of labour to help their business activity.

4.2. The application of profit-sharing system at Maiwa Breeding Centre (MBC)

In general, profit-sharing is a system by which investors provide capital to other people and share the profit. Profit-sharing systems are applied from the pre-production to the production process until the marketing process and are mutually beneficial and profitable for the investors and farmers. This mechanism has been applied to the farmer with low-cost loans for their business. Furthermore, this mechanism was very helpful because the farmers could sustain family economic needs without the need to support high production costs [10]. The profit-sharing system in cattle farming is not separated from community cost in the cattle farms.

The implementation of profit-sharing system by MBC managers and beef cattle farmers entailed the following steps:

a. Determine the livestock purchasing system before applying the profit-sharing system. MBC manager and farmer creating the agreement about the livestock price. After that, the initial cost will determine the relationship between the MBC and the farmer. [11] stated that profit-sharing systems had shown the relationship between the owner or person which has assets (land, livestock, crop, and others) with the employee or farmer. The cooperative relationship is very diverse, especially in traditional profit-sharing, which depends on the agreement between owner and employee. The profit-sharing agreements in the livestock business were divided as follows: first, an agreement about delivery of livestock to the farmer to maintain for a defined period and then selling it and sharing the profit; second, an agreement about selling of a calf and sharing the profit.
b. The profit-sharing by MBC is a mutual agreement with the ratio of profit-sharing 60:40, 60% of the cattle value to the farmers and 40% to MBC. The profit will be shared when most of the cattle are sold. To obtain the gross income, we could subtract the cattle initial price from the sales results of the cattle sold; then the gross income will be divided as per the 60:40 ratios. [11] stated that the aim of profit-sharing system was essential to obtain the profit from livestock business and determining the return on the cattle should encourage the farmer to develop their business independently. The aim of the system is indirect to disseminate and preserve the potential of the beef cattle farmer, improve the utilization of rural resources and increase farmer income.
c. The risk for farmers who joined the MBC profit-sharing system could be minimized if sick or dead livestock are immediately reported to the MBC. In this case, the farmers do not need to compensate for the loss of livestock. [12] stated that the most important thing in livestock business was the economic value, how to manage it and who will be responsible for covering the risk of livestock death losses. If there is a risk in the profit-sharing system, the owner of livestock should be responsible to bear the risk, while the farmer or cow keeper will not bear the risk that is caused by accident. However, if the risk is caused by intentional factors and the negligence of the farmer, the farmer should be responsible for compensating the loss of the whole or half of the cattle price. The problem of this condition could be solved through discussion between farmer and investor. There are several factors that cause this problem, such that disputes are not resolved by the court including [10]: The existence of 'karma'; God will wreak revenge on the farmer if they cheat; Pity feelings; A close relationship such as partner, family, and neighbour.
d. The existence of profit-sharing institutions provides an opportunity for the farmer to optimize their resources and obtain additional income. The institution of profit-sharing between the farmer and investor has been applied for a long time. In general, the variation of profit-sharing received by

farmer is based on previous agreements. These variations may be based on: (1) the percentage of fattening value after deducting the initial value. The sharing systems are varied and range between 60–70%. (2) The increasing of body weight converted based on local market price [13]. In the providing feed by MBC to the farmer groups, the feed could be indirectly purchased by the farmer to minimize the several free riders at that stage. For this, the farmer should join with the certain institutions such as cooperative institution. The institution is expected (1) to increase the capacity of the maintenance business management so that it has more potential related to the market (output/input), and (2) to decrease costs and increase technology access. The institution has a great effect to increase the productivity, share equity, accuracy to control the market and also decrease the direct cost of elephant grass provided by MBC but instead the farmer pays the worker who helped the MBC.

e. The cooperative system is an authentic agreement by farmer and MBC with the MBC requirements authentically authorized by two partnerships. The farmer should know their rights and obligations of their business so that there is trust between MBC and beef cattle farmer who joined the profit-sharing system.

5. Conclusions

From the result about, characteristics of farmers who join the profit-sharing system with MBC were of the productive age, male, finished education in junior high schools and 5–6 family members. The profit-sharing system that is applied consists of a cow purchasing system, risk coverage, feed provision, and cooperation agreement. The income earned by farmers from the 6-month maintenance period is more profitable than the 12-month maintenance period. The suggestion of this study is the profit-sharing system should be applied in 3-month breeding periods so that profits can also be obtained more quickly by both breeders and MBC. In addition, the criteria for farmers to join the profit-sharing system should be clarified in the contract.

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