

STRENGTHENING MODEL FOR DAIRY CATTLE BREEDERS WITH PROFIT-SHARING SYSTEM IN TRENGGALEK REGENCY

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ABSTRACT

The Government of Trenggalek Regency is strongly committed to advancing the dairy cattle industry and boosting milk production in the region, with particular emphasis on Dompyong Village, Bendungan District. This research aims to assess the capital requirements for dairy cattle farming and develop a model to strengthen the position of breeders using a profit-sharing system. A survey method, incorporating both quantitative and qualitative descriptive approaches, was employed to gather comprehensive data. The study revealed that independent dairy cattle farming requires a total capital of IDR 23,150,000. However, under the profit-sharing system, breeders need only IDR 9,900,000 due to shared costs for purchasing dairy cows. The profit-sharing arrangement generally involves a 50:50 split between breeders and investors, including income from the sale of calves and milk, resulting in a total profit-sharing value of IDR 23,000,000 per year. Additionally, breeders receive 10 to 20 percent of the revenue from the sale of dairy cows, depending on the agreement. The proposed model for strengthening breeders focuses on developing their character and credibility to build investor trust, advocating for written profit-sharing agreements to prevent disputes, and enhancing institutional support to improve business efficiency and provide technical guidance.

Keywords : dairy cows; livestock, profit-sharing system.

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INTRODUCTION

Milk serves as a crucial source of animal protein worldwide. More than 80 percent of the milk consumed globally is sourced from cows (Faye dan Konuspayeva, 2012). In Indonesia, the population of dairy cows producing milk amounted to 578,579 heads in 2021 (Badan Pusat Statistik, 2022a) with a production volume of 962,676.66 tons (Badan Pusat Statistik, 2022b). However, this figure only fulfils a small portion of the national milk demand (Badan Pusat Statistik, 2021), with the majority still needing to be imported from various countries worldwide (Pusdatin, 2019), such as the USA, New Zealand, Australia, the European Union, and Argentina (Aratchilage, 2021).

Dairy cows require specific conditions to thrive, including a location with low or cool temperatures, sufficient feed availability, and adequate capital (Bahar et al., 2022). These factors pose considerations for farmers and can be considered as inhibiting factors for the dairy cattle agribusiness development. Data from the Central Bureau of Statistics (Badan Pusat Statistik) (2022a) indicates that currently, national dairy cow ownership is predominantly held by smallholder farmers. While it is recommended for optimal productivity that

each farmer owns and maintains 7 to 10 dairy cows, the reality for most smallholder farmers is that they typically manage an average of only 2 to 3 dairy cows due to financial and resource constraints.

Data from the Badan Pusat Statistik (2022b) reports that East Java Province is the largest producer of fresh milk nationally, with a dairy cow population of 302,300 heads and a milk production of 558,758 tons (Dinas Kominfo Provinsi Jawa Timur, 2022). The regencies, districts, and cities in East Java contributing the most include Pasuruan, Malang, Tulungagung, Blitar, and Batu City (BPS Jawa Timur, 2019).

Although not the largest milk producer in East Java Province, the Trenggalek District Government has been actively facilitating the development of dairy cattle farming and milk production in its region. The local government established the Trenggalek Milk House, a showcase or venue to display and standardize various milk processed products with the hope of creating communal branding for local milk products (Sujarwoko, 2019). The milk commodity in Trenggalek District is dominated by producers in Bendungan Sub-district, with a dairy cow population of 5,555 heads and fresh milk production of 10,179.35 tons in 2020 (Dinas

Penanaman Modal dan Pelayanan Terpadu Satu Pintu Kabupaten Trenggalek, 2021). Villages in Bendungan Sub-district are situated in highland areas. This location results in relatively cold daily temperatures, making it suitable for dairy cattle development.

In addition to independent farming, dairy farmers in Bendungan Sub-district, especially in Dompjong Village, adopt the subleasing farming or profit-sharing system. This system refers to farmers who care for other people's cattle under specific agreements, especially regarding cooperation rules and profit sharing. Due to financial constraints, these farmers are not yet able to become independent farmers. They choose to adopt the subleasing system to increase income and meet family needs. This system is also implemented in several other dairy cattle-producing areas in Indonesia and represents an opportunity for dairy farming without the need for large-scale financial investment by farmers (Wahyuni dan Hidayati, 2020). A drawback of the subleasing system is that often, farmers and investors do not formalize their agreements solely based on trust, without official written agreements.

Given the above explanation, this research aims to investigate the profit-sharing pattern in the subleasing farming system to determine the share obtained by farmers. Furthermore, it aims to determine strengthening models that can be applied to enable farmers to earn higher income with the labor and time invested, especially as the number of cattle they raise increases.

This study introduces novel insights into the dairy cattle subleasing system by focusing on its application in Trenggalek Regency, an area previously underexplored in this context. It uniquely combines qualitative and quantitative approaches to offer a comprehensive analysis of both the financial and relational aspects of subleasing models. Unlike previous research that mainly addresses financial metrics or production efficiency, this study emphasizes the importance of character development, formal agreements, and institutional support as critical factors in strengthening the subleasing system.

The proposed model, which includes the establishment of farmer cooperatives and

formalized profit-sharing agreements, addresses specific regional challenges and provides practical recommendations for improving farmer-investor relationships. This research not only fills a gap in the literature but also offers actionable insights tailored to the unique conditions of Trenggalek Regency, contributing significantly to the understanding and enhancement of dairy farming practices in similar settings.

RESEARCH METHOD

This research employs a survey method with a qualitative-descriptive and quantitative approach. The study involves an in-depth analysis of a case, process activities, and individuals involved, with detailed information collected according to established procedures and timelines (Yin, 2017). The quantitative approach is used to classify supporting variables for dairy farming, while the qualitative approach is employed to explain quantitative data.

The research location, Dompjong Village in Bendungan Sub-district, Trenggalek District, East Java Province, was purposefully selected due to its prominence as a key area for dairy cattle development. Unlike other villages in Trenggalek or East Java, Dompjong Village has demonstrated a strong commitment to advancing dairy cattle farming, supported by local policies and initiatives aimed at increasing milk production. This village serves as a central hub for dairy farming in the region, providing a representative setting for studying the implementation of profit-sharing systems. By focusing on Dompjong Village, the research aims to explore the specific challenges and opportunities within a well-established dairy farming area, offering valuable insights into the effectiveness and impact of subleasing models in a context where dairy farming is already significantly developed.

The research employs a saturated sampling method, selecting 40 dairy farmers in the population who meet the criterion of owning at least 2 cattle. Data collection methods include interviews, observations, and literature studies. Observed variables include production facilities, resulting production, prices, and habits related to the ownership system of either self-owned cattle or subleasing.

Table 1. Financing of dairy farming in the subleasing and independent systems at the research site

No	Capital Description	Farming Systems	
		Independent	Subleasing
1.	The establishment of barns with a maximum capacity of 2 dairy cows and its supporting equipment	3,850,000	3,850,000
2.	Purchase of ready or nearly ready-to-produce dairy cows per head	8,750,000	-
3.	Concentrate feed/manufactured feed	5,900,000	2,950,000
4.	Green fodder feed	4,500,000	3,000,000
5.	Medications and vitamins (including herbal remedies)	100,000	100,000
6.	Cost of artificial insemination	50,000	-
Total (IDR)		23,150,000	9,900,000

Source: Primary data

RESULTS AND DISCUSSION

Financing of Dairy Farming in the Subleasing System

The capital required by dairy farmers includes the cost of constructing barns and supporting equipment sufficient for livestock growth and sanitation, the purchase cost of cattle, the cost of concentrate feed and green fodder along with livestock medicine or vitamins, and the cost of artificial insemination needed from the beginning to the end of production, within a period of approximately 1 year. The range of capital needed by farmers in the research location is tabulated in Table 1.

Dairy farming over a one-year period requires a capital investment of IDR23,150,000. The largest expense is for purchasing dairy cows that are either ready to produce or nearly ready to produce, costing between IDR8,000,000 and IDR9,000,000 per cow, with an average price of IDR8,750,000. These ready-to-produce dairy cows are those that are either ready for mating or for artificial insemination. The implementation of the subleasing system aids farmers in terms of capital for purchasing dairy cows. Farmers who will adopt the subleasing system will still incur costs for barn construction, a portion of the costs for concentrate feed and green fodder, and the cost of livestock medicine or vitamins, with a total capital of IDR9,900,000 or approximately 42 percent only of the capital required for independent farming.

The cost of barn construction can vary depending on the size and materials used. Dairy cattle barns require a floor base to maintain animal cleanliness and water drainage. The types of barns used by farmers are quite diverse, ranging from those made of wood, bamboo, to those with permanent flooring.

Bamboo materials are cheaper, but their durability is not as long-lasting as wooden barns. Farmers incur a minimum cost of IDR3,500,000 and a maximum of IDR4,000,000 for barn construction. For small-scale farmers, these costs can be burdensome, so they often build barns themselves and use some materials for the framework and roof obtained from the surrounding forest to reduce expenditure.

Profit-Sharing System in the Subleasing Farming of Dairy Cattle

Almost all respondent farmers are also small-scale farmers. Some of them have small agricultural land (0.3-0.1 hectares), while others are merely agricultural laborers. Household needs pressure them to seek additional income. According to Amam et al. (2019), dairy farming in rural Java generally serves as a side business, usually on a small scale or subsistence-oriented. In addition to the relatively small amount of money spent during production, subleasing farmers believe that having a large family is a source of labor for farming. However, from the observation results of the research, it can be presumed that the human resources available are still inadequate in terms of formal education levels and lack of skills. Harianto (2011) and Nurtini dan Anggriani (2018) reveal that dairy farming significantly contributes to fulfilling family needs because dairy products are profitable, economically valuable, and can be harvested daily.

The primary daily tasks performed by respondent farmers include cleaning the barn, cleaning the bodies of dairy cattle, providing green fodder, feeding, milking, checking the condition of the cattle from time to time as they mature, and selling milk. If there are differences in tasks among respondent farmers, it is because some farmers want their cattle to generate added value quickly, such as

making and giving additional feed, such as special herbs for lactating cattle to ensure the quality of their milk is good and not acidic. Farmers generally pay close attention to milk quality because milk that is acidic or, according to cooperative terms, "spoiled," will not be purchased by the cooperative. Eventually, farmers have to sell milk to households at low prices and may not even sell all of it.

The profit-sharing system between farmers and investors or cattle owners in the research location operates on a 50:50 basis. This arrangement includes sharing both the proceeds from the sale of calves and a portion of the milk sales. Initially, the profit-sharing system was designed primarily for the sale of calves, but over the course of a year, it also incorporates milk sales as an additional component.

Under this system, farmers receive 50% of the revenue from the sale of calves, which ranges from IDR4,500,000 to IDR5,000,000 per calf. Additionally, farmers receive approximately IDR16,000,000 from the milk sales over the same period. Consequently, the total profit-sharing value for the year ranges from IDR 20,000,000 to IDR 21,000,000. This total includes both the income from calves and milk sales, reflecting the comprehensive nature of the profit-sharing arrangement. Furthermore, when the dairy cows are sold, farmers typically receive 10 to 20 percent of the proceeds, depending on the specific agreement made with the investor. Details of the profit-sharing in tabular form can be seen in Table 2.

As long as the parent cows remain productive and are not sold, if they give birth again, the farmers still receive the same share, and so forth until the parent cow is no longer productive. Respondent farmers who apply the subleasing system believe that this profit-sharing system is beneficial for them.

Moreover, the income from milk sales can be obtained daily to purchase daily family consumption needs. Some farmers earn additional monthly income not shared with the cattle owner, which is the sale of cattle manure for organic fertilizer. Sudaryanto dan Hermawan (2014) captured this opportunity, stating that it could be even more significant as animal manure can generate energy for lighting or cooking through biogas production.

The subleasing system, according to Efendi et al. (2021), also applied to beef cattle farming, successfully increases the livestock population and benefits farmers. The presence of milk cooperatives in the research location, despite rigorously maintaining the quality of dairy products, can motivate farmers for the sustainability of the subleasing farming system (Ishak et al., 2017).

Strengthening Model for Subleasing Dairy Farmers

The implementation of the subleasing dairy farming system requires mutual trust between cattle owners and farmers. However, varying character traits among individuals can lead to unethical practices. Observations and interviews at the research site revealed issues such as farmers selling calves without informing the capital owner and replacing the owner's productive dairy cows with less valuable ones.

Despite Law No. 2 of 1960 offering clear regulations for profit-sharing systems in agriculture, verbal agreements are common at the research site, leading to frequent misunderstandings and disputes. The absence of written agreements allows for potential misconduct, such as farmers diverting funds intended for profit-sharing to cover personal emergencies, thus depriving cattle owners of their rightful share. This situation underscores the need for a robust model that includes formal written agreements to ensure fair practices and protect the interests of both parties.

Table 2. Profit sharing in the subleasing farming system at the research site

No	Components	Profit Sharing Percentage (%)	Quantity (IDR)
1	Calf sales	50	4,750,000
2	Milk sales	50	16,000,000
3	Cattle sales	10-20	2,250,000
Total			23,000,000

Source: Primary data

To address these issues comprehensively, the strengthening model for the subleasing system should include the following components:

1. Character Development and Screening: Emphasize the importance of selecting farmers and investors based on their integrity and work ethic. Strong character traits, including honesty and responsibility, are crucial for maintaining trust and ensuring fair dealings (Farhan dan Firmansyah, 2017; Hamzah, 2017). Establishing clear criteria for selection can help mitigate risks associated with dishonest behavior (Firmansyah et al. 2017).
2. Formalizing Agreements: Implementing formal, written agreements with clearly defined terms and conditions is essential (Solikin et al., 2021). These agreements should include specific clauses related to profit-sharing, penalties for breaches, and procedures for resolving disputes. This formalization will help prevent misunderstandings and ensure that both parties adhere to their commitments.
3. Strengthening Farmer Cooperatives: Establishing or enhancing farmer cooperatives or associations can significantly improve farmers' bargaining power. Cooperatives can negotiate better input prices, secure fair contracts with buyers, and provide collective support (Amam et al., 2020). They can also offer technical training and resources to improve production efficiency and resilience against market risks (Amam et al., 2019).
4. Institutional Support and Training: Cooperatives should play an active role in advocating for farmers' interests and facilitating their capacity-building (Gandhy dan Kurniawati, 2018). Riswara et al. (2015) mention the importance of farmer coaching. Training programs should cover essential areas such as feed management, dairy cow care, and artificial insemination. By improving farmers' skills and knowledge, cooperatives can enhance overall business efficiency and stability.

In summary, a comprehensive strengthening model for the subleasing system should integrate character development, formal agreements, cooperative support, and targeted training. These measures will address current weaknesses, improve trust between stakeholders, and foster a more effective and sustainable dairy farming system.

CONCLUSION

In Dompyong Village, Bendungan Sub-district, Trenggalek District, East Java Province, the subleasing system in dairy farming plays a significant role in supporting local farmers. This study aimed to assess the capital requirements for dairy farming and to develop a model for strengthening farmers who adopt the subleasing system. Over one year, the total capital required for independent dairy farming is IDR23,150,000. However, farmers utilizing the subleasing system can reduce their capital expenditure to IDR9,900,000, which is approximately 42 percent of the capital required for independent farming. The 50:50 profit-sharing agreement between farmers and investors, which includes the division of calves born and a share of the milk sales, yields a total production profit-sharing value of IDR23,000,000. Furthermore, farmers typically receive 10 to 20 percent of the revenue from the sale of dairy cow offspring, based on mutual agreements.

To strengthen farmers within this subleasing framework, our study proposes a model that includes enhancing farmer character and credibility to build investor confidence, increasing awareness and understanding of written profit-sharing agreements, and establishing farmer institutions to improve business efficiency and provide technical guidance. These measures are essential to ensuring the sustainability and profitability of dairy farming in the region.

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