

MCP Modernization: Efforts to Empower Farmers by Increasing Milk Production and Price Acceptance During the FMD Pandemic

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ABSTRACT: Foot-and-Mouth Disease (FMD) attacks dairy herds, causing high economic losses. The decline in productivity has affected the production system and reduced milk production and quality. Efforts that can be made to encourage milk productivity include empowering farmers through mentoring and training so that behavioral changes occur in cognitive, emotional, and psychomotor aspects related to milk yield. The research method is a survey. Sampling used a saturation sample of 194 respondents. The analytical method used is descriptive quantitative to show that farmer empowerment is sufficient (70%) based on capacity, strength, and independence dimensions. The lowest milk yield in July 2022 is 689/Kg/15 days/farmer; by December 2022, it will increase to 1,068.1/Kg/15 days/farmer. This occurred because PMR had a slope, and respondents understood how to manage PMR. Farmers' income from January 2022 to December 2002 fluctuated due to PMK. The increase in milk prices is not proportional to the decrease in milk output, so farmers' total income decreased sharply during the PMK period. Empowering farmers through MCP modernization does not automatically improve fresh milk quality, but it effectively motivates farmers to produce better-quality milk and accept milk prices.

Keywords: Empowerment, milk collection point, milk production, milk price acceptance

1. INTRODUCTION

The dairy cultivating commerce has essential esteem and tall openings for improvement; even though the dairy farming trade is still overseen customarily, this trade is still the pillar of people's dairy ranchers. The characteristics of the people's dairy trade appear to be giving negligible nourishment, which implies that the quality of generation isn't ideal and the populace scale is moo. Moo residential drain generation is still incapable of meeting residential drain utilization needs. Looking at BPS information [1], it appears that the utilization level of cow's drain in Indonesia in 2020 was 16.27 kg/capita/year and was able to meet 18% of household needs. The remaining 82% was imported (Service of Industry, 2018). The government has made awesome efforts to proceed to extend drain generation and efficiency, one of which is modernizing the MCP at the South Bandung Ranchers Agreeable (KPBS) Pangalengan Locale, Bandung district.

The Foot and Mouth Illness episode, shortened as FMD, which assaults cloven-hoofed creatures, one of which is dairy cattle, causes exceptionally tall financial misfortunes [2][3]. The effect of FMD malady was felt by agriculturists at KPBS Los Cimaung; there was a diminution in efficiency, which influenced the generation framework and brought about a diminishment in drain generation and quality [3].

In common, people's dairy cattle businesses have moo proprietorship characteristics (a normal of 2-3 cows/farmer), great cultivating hones have not been executed well, capital is missing, and help isn't ideal [4] to portray conditions that are not distinctive, to be specific that national dairy cattle efficiency has stagnated, with average drain generation extending from 8-12 liters per day, and the scale of support per rancher family coming to 2-3 calves [5].

Most smallholder ranchers don't consider the subtle elements of their commerce, such as bolster, cleanliness, and cage plan. From the item side, the issue by and large confronted by smallholder dairy ranchers is the moo quality of the drain, which is affected by the beginning number of microbes in the new drain, usually calculated utilizing the *Total Plate Count* (TPC) strategy. The starting number of microbes in new gutters at the rancher level mainly surpasses the Indonesian National Standard (SNI), specifically, a maximum of 10 million cfu/ml (BSN 2011).

The strengthening approach places the community not as a question but as a subject or operator of advancement and will direct the community to analyze existing issues and find arrangements. Community strengthening isn't as the government carried it out but incorporates commitments from community organizations [6]. One exertion that can be made to empower drain efficiency is by engaging dairy ranchers [7]. Strengthening of agriculturists can be done through counseling and preparation to change cognitive behavior, full of feeling and psychometric angles related to drain efficiency. Most smallholder ranchers don't consider the subtle elements of their commerce, such as bolster, cleanliness, and cage plan. From the item side, the issue confronted by smallholder dairy ranchers, by and large, is the poor quality of the drain, which is affected by the beginning number of microbes in the new drain, usually calculated utilizing the Whole Plate Check (TPC) strategy. The starting number of microbes in new gutters at the rancher level mainly surpasses the Indonesian National Standard (SNI), specifically, a maximum of 10 million cfu/ml (BSN 2011).

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Drain Collection Point (MCP) in Los Cimaung may be a modernization of TPK to make strides in the quality of benefit to members with an advanced framework so that the method of storing drain takes to put more rapidly, minimizing the number of microorganisms contained in the gutter and expanding the precision of estimations stored utilizing advanced drain weighing, perusing, and input drain information so that ranchers are fortified to actualize SOP appropriately and accurately. The contrast in drain generation sometime recently and after the MCP is the assurance of drain costs from bunches to people, separated from the accessibility of advanced offices for gear and drain care.

Conceptually, MCP is an advancement to move forward the administration of fresh drain items delivered by agriculturists. With an advanced framework that's still moderately modern in Indonesia, it is trusted that it'll make it simpler for dairy ranchers to induce advanced get to their drain information, counting investigation of TPC information and drain composition. The computerized standardized identification framework is anticipated to be able to dodge perusing and contributing drain information in a more advanced way, and a framework with an exactness of 0.01kg so that it is more exact decreases the event of human mistakes in entering information

and diminishes paper squander. The presence of MCP keeps up sterile drain quality so that when PMK is delivered, drain quality and agriculturist acknowledgment are more controlled. The points of this composition are a) analyzing agriculturist strengthening, b) analyzing the generation and income from drain, and c) analyzing the strengthening of ranchers in expanding generation and income from drain costs.

2. Literature Review

Fortifying may well be a planning of community mindfulness carried out in a transformative, participatory, and doable way through extending capabilities in overseeing principal issues gone up against and moving forward living conditions in assertion with wants—methods to realize community capabilities and independence. Community

reinforcing is to enable and make the community accessible, especially from dejection and backwardness/inequality/powerlessness

s. An activity that's viable, lively, and synergistically energizes the consideration of all existing potential in a formative way with the care of all potential and community affiliation inside the handle of evaluating the changes that happen. The measures of community reinforcing that must be executed commonly and financially are the measures of correspondence, participation, self-reliance, and viability. The scope of community fortifying can be categorized based on the field of community reinforcing and based on the strategy.

One of the capacities and parts of cooperatives concurring with UUD No. 25 of 1992 Article 4 is to develop and make people's budgetary potential and capacities in a particular society every day to advance their money-related and social welfare [8]. This shows that cooperatives must develop and make the potential of people, one of which is through the establishment of MCP, which is one of the progressions made for KPBS agriculturist people. The advance of the dairy developing commerce must be maintained by appropriate development so that it can maximally increment generation in an

In this case, conditions inside the field show that farmers cannot utilize this advancement.

FMD may be an outstandingly fundamental ailment since it ambushes ruminants with an in-general seroprevalence of 11.48%. Cattle are more likely to be sullied with FMD, with a seroprevalence of 14.48%, than sheep, with a prevalence of 7.07%, and goats at 7.10% (Benefit of Cultivating of the Republic of Indonesia, 2022). In bovines and goats, illnesses of the udder and areolas can cause mastitis, which can cause enduring mishaps of the areolas, coming about in a reduced-depleted era [9] [10]. Sullied animals remain uncommonly frail for an extended period, and this FMD contamination can cause incidents with the changeless hardship of effectiveness [2]. Consequently, paying attention and maintaining cleanliness amid the depleting arrangement is imperative to provide quality cows [3]. The nearness of MCP and reinforcement from KPBS minimizes the impact of PMK [5].

3. Methodology

This investigative strategy could be studied at MCP Los Cimaung, Margamukti Town, Pangalengan District, Bandung Regency. Testing utilizing soaked testing could be a test determination strategy if all individuals of the population are sampled, as numerous as 194 individuals [11]. The explanatory process utilized may be an expressive quantitative approach.

4. Result and Discussion

4.1. Respondent Identity

The respondents' identities were assessed based on their characteristics, namely breeder's age, formal education, farming experience, and scale of ownership.

Table 1. Respondent Characteristics

No	Respondent Characteristics	Amount	
		People	Percentage (%)
1	Age		
	15 - 64	147	76
	>65	47	24
		194	100
2	Education Level		
	Elementary School	112	58
	Junior High School (JHS)	50	26
	Senior High School (SHS)	32	16
		194	100
3.	Farming Experience (Year)		
	10 – 20	27	14
	21 – 30	120	62
	31 – 40	47	24
		194	100
4.	Livestock Ownership Amount		
	1 – 3	108	56
	4 – 6	52	26
	≥ 7	34	18
		194	100

Source: Interview Results Data

Conditions within the field appear that the lion's share of respondents are of profitable age; this indeed bolsters their exercises since they require physical quality. Most formal instruction levels are only elementary school; this can be due to monetary impediments and breeders' mindfulness of the significance of education. Most of the cultivating encounter is very long (62%), within the extent of 21-30, respondents have had to cultivate encounter with their guardians for eras, and the respondent's cultivating involvement impacts the level of ability to oversee their trade and has good potential for the animals commerce they are running. The small number of animal owners may be a characteristic of people's animal businesses, explicitly having a small commerce scale. This agrees with the conclusion [12], which states that most dairy-cultivating companies in Indonesia have a low level of animal possession (1-3 tails).

4.2. Empowerment of Respondents

The empowerment process applied to respondents is generally well understood (58.61%), which is explained by the indicators: a) ability, b) strength, and c) independence.

Table 2. Empowerment Category

No	Empowerment Dimensions	Amount (people)	Percentage (%)	Score (%)
1	Ability	90	46	82
2	Strength	60	31	62
3	Independence	44	23	60
	Amount	194	100	70

Information:

Low: scor < 55% from the maximum expected score

Enough: scor ≥ 55% - 77,8% from the total standard score

High: scor > 77,8% from the top due score

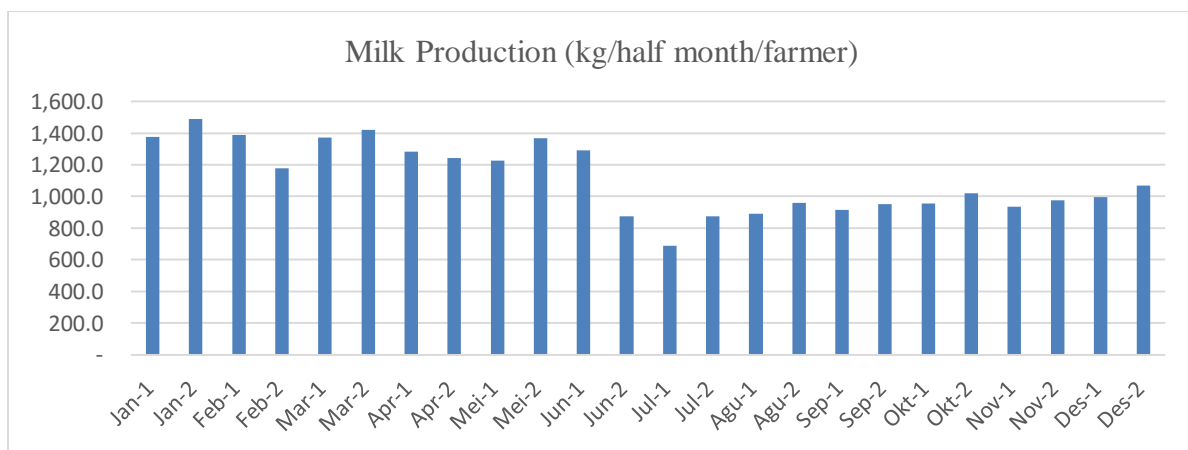
Table 2 shows that the strengthening handle connected to respondents is within the adequate category (70%) of the most extreme anticipated score depicted by the pointers: a) capacity, b) quality, and c) freedom [13][6]. The capacity measurements are evaluated based on cognitive, love, and psychomotor markers concerning support and draining administration. The respondents' understanding of the support of tall-category dairy cattle (breeding, nourishing, and administration) is bolstered by the "exchange of information" from guardians and counseling from KPBS. The moo level of formal instruction is additionally one of the causes of respondents being less versatile to modernization [14]. Be that as it may, the modernization of the TPK requires respondents to execute the SOPs submitted by the KPBS.

The quality measurement creates quality in implementing the MCP SOP, and they want to extend drain generation. Respondents have executed the SOP with teaching so that the number of microbes decreases and generation increments[5] [3]. Freedom is the farmer's capacity to meet their needs, self-control, and keep up and keep up their vocation. Autonomy may be an organization of strengthening preparations carried out chronologically as an exertion to alter communities that are less or less enabled. This handle goes through changes in the information, states of mind, skills towards the authority of knowledge, attitude-conscious behavior, and psychomotor aptitudes. Respondents' freedom is within the adequate category; this can appear by the indicator of assembly needs that the dairy cattle trade can fulfill their family's lives on the off chance that their animals' proprietorship surpasses seven heads (tall possession scale). Subsequently, the respondents' attitude to proceed to extend the scale of proprietorship (Nurdiyansah et al., 2020), [13].

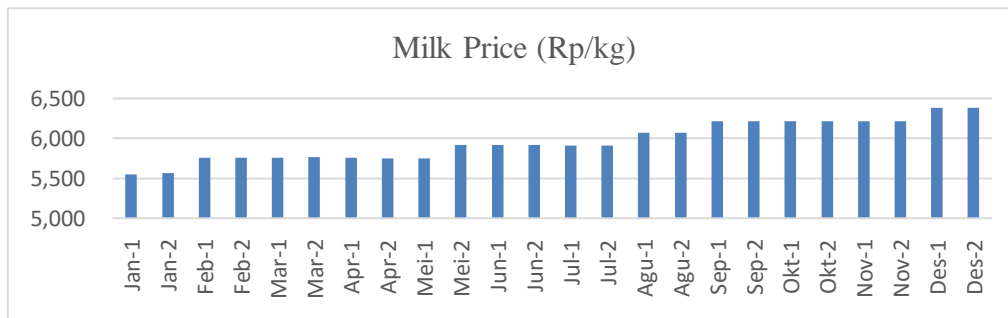
4.3. Implementation of MCP

The FMD episode caused most dairy ranches, counting Los Cimaung, to experience a population decrease of 48%, and as a result, drain generation diminished. The TPK modernization carried out by KPBS points to guarantee that agriculturists get tall drain costs by moving forward drain quality in line with cognitive, emotional, and psychomotor enhancements through coaching and preparing on the proper application of draining SOPs and giving supporting offices for the draining prepare. Based on the overview, the accessibility of offices and the usage of draining SOP from a total sample of 194 are within the excellent category. It appears that agriculturists are attempting to execute draining SOP and utilize offices to create significant-quality drains to get drain costs that give benefits to ranchers and are more pleasant since they are by the quality of milk kept per person and are measured employing a computerized framework that encompasses a tall level of precision. 0.01, so the estimation is more exact. TPK modernization program: MCP also gives other offices such as cooling units, the drain can washing stations, card peruses, as well as applications that agriculturists can utilize to discover the sum of drain that has been stored, drain generation comes about, drain quality, and the cost of drain gotten by agriculturists.

4.4. Production, Milk Prices, and Revenue from Milk Distributed by Farmers in 2022

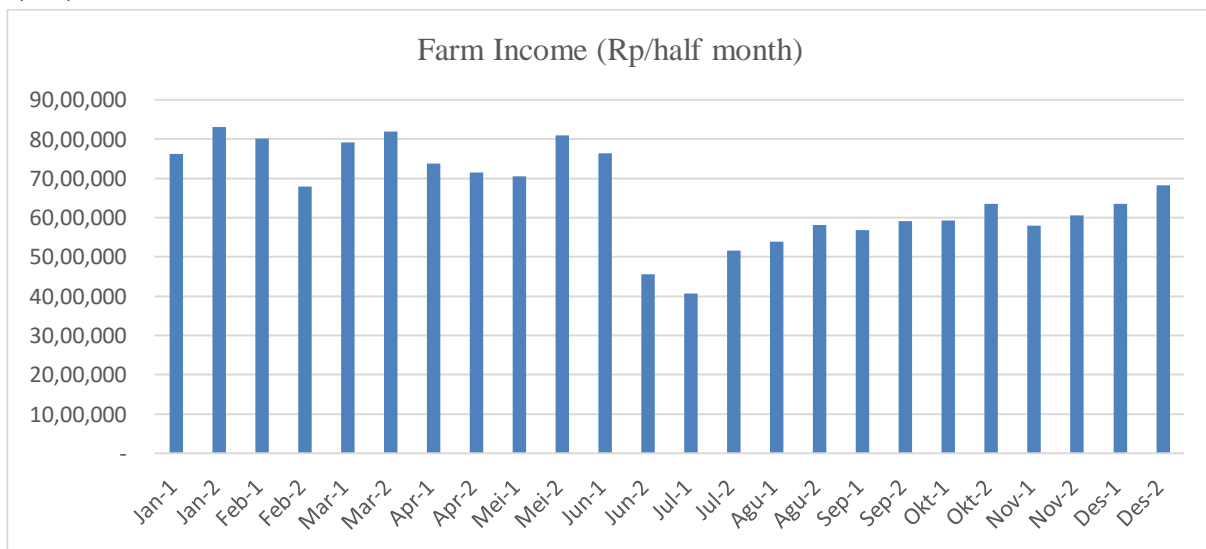


It is usual for each farmer to fluctuate in milk production, depending on their herd structure, which changes from dry to lactating or vice versa. During the FMD pandemic, there was a severe decline (June-July 2022) due to cow deaths, forced culls due to disease, and the impact of FMD on dairy cattle productivity. Almost the entire dairy herd in this area has foot-and-mouth disease, leading to reduced milk production. The lowest milk yield in July 2022 is 689/Kg/15 days/breed; by December 2022, it will increase to 1,068.1/Kg/15 days/breed. This occurred because PMR had a slope, and respondents understood how to manage PMR.



In 2022, KPBS will implement a policy of increasing milk prices five times compared to the introductory price IDR. 4,550 - to 7,020.45 Rp. - This policy was created to minimize the impact of PMK on farmers' income. Milk prices obtained at the farmer level range from Rp 5,551.57. to Rp 6,385.09. This shows that farmers can increase milk prices above the base price in January 2022, while in December 2022, it will still be below the regulated base price.

Farmers' income from January 2022 to December 2022 fluctuates due to PMK. The increase in milk prices is not proportional to the decrease in milk output, so farmers' total income decreased sharply during the PMK period. The lowest revenue was recorded in July at Rp 4,073,323; in December 2022, the payment will increase to Rp 4,073,323.



4.5. Empowering Farmers to Increase Milk Production and Price Acceptance

Empowering KPBS herders by 2022, in collaboration with DDP Frisian Flag Indonesia, includes education and training using “door-to-door” methods, group discussions, and dissemination through the media ; leaflets, posters, and radio broadcasts. Documents presented include maintenance management and milking management. Furthermore, “system integration with enterprise resource planning (ERP) is carried out in the form of 1) digitization of milk receipts; 2) digitize services that meet the business needs of farmer members; 3) digitization of veterinary services; 4) limb scanning; 5) cooperative financial integration system; 6) member service and business monitoring system and 7) online information. Extension activities focus more on treating

sick animals or preventing infection when foot-and-mouth disease occurs. Provide vaccines for livestock that have not yet had foot-and-mouth disease. SOPs for acceptance and inspection by MCP staff include 1) alcohol testing; 2) temperature test; 3) filter milk before sedimentation; 4) the condition of the milk container must be clean and closed; 5) the breeder presents a card with a barcode; 6) weigh and take individual milk samples; 7) milk is put into the cooling tank (Anugrah et al., 2021).

Based on the capacity empowerment aspect, it shows that breeders have a good understanding of animal husbandry, feeding, and

brood management, and KPBS training and development. Farmers' strengths are demonstrated through the methodically implemented application of MCP SOP, shown by the benefits that can increase milk production and income from milk warehouses. The existence of MCP does not automatically improve the quality of fresh milk, but it effectively motivates farmers to produce better-quality milk. The independence of sufficient breeders can be understood as the fact that breeders as members of cooperatives currently depend very much on the existence of KPBS, so independence has not been appropriately achieved. optimal (Susilowati et al., 2019). Increasing the autonomy of dairy farmers is part of community empowerment efforts [15].

5. Conclusion

Farmer empowerment appears adequate (70%) based on capacity, strength, and independence dimensions. Milk output kg/person/15 days fluctuates. The lowest milk yield in July 2022 is 689/Kg/15 days/breed; by December 2022, it will increase to 1,068.1/Kg/15 days/breed. This occurred because PMR had a slope, and respondents understood how to manage PMR. Farmers' income from January 2022 to December 2002 fluctuated due to PMK. The increase in milk prices is not proportional to the decrease in milk output, so farmers' total income decreased sharply during the PMK period. Empowering farmers through MCP modernization does not automatically improve fresh milk quality but effectively motivates farmers to produce better quality milk and accept milk prices.

6. References

- [1] Direktorat Jenderal Peternakan dan Kesehatan Hewan Kementerian Pertanian, "Statistik Peternakan dan Kesehatan Hewan 2022/ Livestock and Animal Health Statistics 2022," *Issn 2964-1047*, vol. 1, pp. 1–276, 2022.
- [2] A. Firman, I. Trisman, and R. H. Puradireja, "Dampak Ekonomi Akibat Outbreak Penyakit Mulut Dan Kuku Pada Ternak Sapi Dan Kerbau Di Indonesia," *Mimb. Agribisnis J. Pemikir. Easy. Ilm. Berwawasan Agribisnis*, vol. 8, no. 2, pp. 1123–1129, 2022, doi: 10.25157/ma.v8i2.7749.
- [3] Y. Arifa and N. Humaidah, "Perbandingan Produksi Susu, Kadar Protein, dan Solid Non Fat (SNF) Sapi perah Pasca PMK," *J. Din. Rekasatwa*, vol. 6, no. 1, pp. 170–176, 2023.
- [4] A. F. Anisi, U. Yunasaf, and S. Winaryanto, "Hubungan Dinamika Kelompok Dengan Keberhasilan Usaha Ternak Kambing Peranakan Etawah," *Student e-journal Univ. Padjadjaran*, vol. 5, no. 3, pp. 1–13, 2015.
- [5] I. S. Anugrah, T. B. Purwantini, and N. Erwidodo, "Milk Collection Points: Inovasi Kemitraan Usaha Ternak Sapi Perah Di Pangalengan-Bandung Selatan," *Anal. Kebijak. Pertan.*, vol. 19, no. 1, p. 1, 2021, doi: 10.21082/akp.v19n1.2021.1-18.
- [6] B. K. Ardiansyah and A. Ma'rifah, "Pemberdayaan Peternak Sapi Perah Di Desa Galengdowo Kecamatan Wonosalam Oleh Dinas Peternakan Kabupaten Jombang," *J-3P (Jurnal Pembang. Pemberdaya. Pemerintahan)*, pp. 103–125, 2020, doi: 10.33701/j-3p.v5i2.1292.
- [7] Jatipermata and F. M. Purnomo, "Peran Komunikasi Penyuluh dalam Pemberdayaan Peternak Sapi Perah pada," *J. Ilm. Ilmu Sos. dan Ilmu Polit.*, vol. 12, no. 1, pp. 52–66, 2022, [Online]. Available: <https://doi.org/10.33366/rfr.v%25vi%25i.2694>.
- [8] R. Tang, "An Analysis of Traditional ecological knowledge's status and conservation options." *Thesis*, p. 383, 2012.
- [9] M. Yusriadi, Saidna Zulfiqar bin Tahir, M. Awaluddin, "PENGENTASAN KEMISKINAN MELALUI SOCIALPRENEUR Yusriadi1," 2020.

- [10] P. A. Pamungkas, P. D. P. Putra, G. W. A. Nugraha, P. P. Candrayani, C. S. De Jesus, and I. W. Batan, "Kajian Pustaka: Faktor-Faktor Risiko Penyakit Mulut dan Kuku pada Hewan Pemamah Biak (Ruminansia) Kecil," *Indones. Med. Veterinus*, vol. 12, no. 1, pp. 140–149, 2023, doi: 10.19087/imv.2023.12.1.140.
- [11] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta, 2013.
- [12] I. Nurdiyansah, D. Suherman, and H. D. Putranto, "Hubungan Karakteristik Peternak dengan Skala Kepemilikan Sapi Perah di Kecamatan Kabawetan Kabupaten Kepahiang," *Bul. Peternak. Trop.*, vol. 1, no. 2, pp. 64–74, 2020, doi: 10.31186/bpt.1.2.64-74.
- [13] A. Mahmud *et al.*, "Attitudes and Knowledges of Dairy Farmers toward Forage Canning Tecnology," *SOCA J. Sos. Ekon. Pertan.*, vol. 16, no. 1, pp. 748–758, 2022.
- [14] M. Sulistyati, L. Herlina, and S. Nurachma, "Peran Pola Bantuan Ternak Domba Dalam Rangka Meningkatkan Fungsi Kelembagaan (Role of Sheep Support Model on Increasing of Institution Function)," *J. Ilmu Ternak*, vol. 10, no. 2, pp. 102–104, 2010.
- [15] A. Susilowati, I. Hambali, and S. Wahyuni, "Kemandirian Peternak Sapi Perah dalam Upaya Pemberdayaan Masyarakat Pedesaan," *J. Pendidik. Nonform.*, vol. 14, no. 2, p. 76, 2019, doi: 10.17977/um041v14i2p76-84.

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