

Implementation and Contribution of Sekolah Peternakan Rakyat (SPR) Towards the Success of Brahman Cross Cattle Maintenance in Bojonegoro Regency

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Abstract. *This study evaluates the implementation and contribution of the Sekolah Peternakan Rakyat (SPR) Program to Brahman Cross cattle farming in Bojonegoro Regency. A mixed-methods approach with a sequential explanatory design was applied, involving surveys, in-depth interviews, field observations, and document analysis of 20 SPR farmers. The results show that the program effectively improved farmers' knowledge and technical competencies (knowledge scores ranging from 4.35–5.00). However, business expansion aspiration remained very low 1.15, indicating structural constraints beyond individual capacity enhancement. Technical performance of Brahman Cross cattle was fluctuating, particularly in reproductive indicators, and institutional capacity within the farmer group remained limited in managerial coordination and collective decision-making. These findings demonstrate that improvements in individual capacity do not automatically translate into sustainable business performance. Institutional strengthening and alignment between program design and smallholder conditions are essential to ensure long-term program effectiveness.*

Keywords: *Brahman cross cattle, Breeder capacity, Smallholder livestock*

INTRODUCTION

The development of the livestock subsector plays a strategic role in supporting national food security, particularly through the provision of animal protein that contributes to improving nutritional quality and human resources development. The government's commitment to livestock development is reflected in the 2025–2035 National Livestock Development Roadmap, which positions this subsector as one of the key drivers towards the Golden Indonesia 2045 vision, with targets focused on sustainable growth and strengthening the foundations of smallholder livestock systems (Agus et al., 2024). However, various policy studies indicate that achieving national livestock development targets continues to face persistent challenges, particularly at the smallholder livestock level, including limited human resource capacity, weak livestock economic institutions, and low livestock business efficiency and competitiveness (Muladno, 2015; Kurniawan & Lestari, 2022).

In this context, East Java Province holds a strategic position as one of the main centers for national beef cattle production, with Bojonegoro Regency contributing significantly to the regional cattle population. Nevertheless, Bojonegoro also faces structural challenges in beef cattle development. Based on data from the Bojonegoro Regency Animal Husbandry and Fisheries Service in 2025, the development of the beef cattle population fluctuated from 231,120 in 2018 to 240,519 in 2024. This condition confirms that the increase in the livestock population is not only determined by the potential of natural resources and the number of livestock, but also by the effectiveness of farmer development, institutional strengthening, and the ability of farmers to manage their businesses sustainably (Lumban Toruan, 2013; Lestari et al., 2017).

As a policy instrument designed to empower smallholder farmers, the Sekolah Peternakan Rakyat (SPR) Program was developed using a collective learning approach and strengthening farmer institutions. The implementation of the SPR Program in Bojonegoro Regency, particularly in the management of Brahman Cross cattle, indicates a gap between the program design and the actual capacity of local farmers. Various studies report that although SPR can improve the social and managerial aspects of farmers, the economic impact and institutional sustainability are not consistent, especially when the scale of the business and the complexity of management are not balanced with

the readiness of the knowledge, attitudes, and skills of farmers (Meilani, 2018; Thawaf, 2018; Handayata et al., 2016).

Although previous studies have shown improvements in farmers' knowledge and institutional participation through the SPR Program, limited attention has been given to the long-term sustainability of business scale and group performance. Preliminary findings in Bojonegoro reveal a contradictory condition in which knowledge levels increased significantly (scores of 4.45–5.00), yet the willingness to expand the business remained very low (1.15), indicating the presence of structural barriers beyond individual capacity improvement. This situation raises important questions about how effective the SPR Program truly is in encouraging changes in smallholder livestock systems, not only in improving farmers' capabilities but also in strengthening business and institutional sustainability. Therefore, this study aims to evaluate the implementation and contribution of the SPR Program by integrating social aspects (KASA), technical performance, and institutional dimensions through a mixed-methods approach.

This study offers novelty by integrating social, technical, and institutional dimensions through the KASA (Knowledge, Attitude, Skill, Aspiration) approach to comprehensively evaluate the implementation of the SPR Program in raising Brahman Cross cattle at the local level.

LITERATURE REVIEW

The People's Livestock School (SPR) was developed as a model for empowering small-scale livestock farmers that integrates technical learning and community-based institutional strengthening. A study by Darmawan and Saleh (2017) showed that the SPR functions as a participatory learning space that not only improves the technical capacity of livestock farmers but also strengthens institutional roles through the Livestock Owners Representative Group (GPPT). Their empirical findings indicate that democratic leadership styles within the SPR institution are positively correlated with performance effectiveness, particularly in terms of time discipline, although communication patterns have not shown a consistent relationship with overall performance effectiveness. Sari et al., (2025) also stated that the People's Livestock School (SPR) is a community-based livestock farmer empowerment model designed to improve the knowledge, skills, and independence of livestock farmers in managing beef cattle businesses, while simultaneously strengthening local institutions as a basis for developing breeding and

increasing livestock reproductive efficiency. Nugroho (2012) and Nainggolan (2017) showed that education level, livestock farming experience, and limited capital influence business scale and livestock management patterns, with cattle farming often treated as a sideline

Brahman Cross (BX) cattle are a crossbreed designed to combine adaptability to tropical climates with good meat production performance. Various studies have shown that BX cattle have the potential for relatively high daily weight gain, especially when raised intensively (Adhianto et al., 2024). However, this performance is significantly influenced by management factors, particularly feed and husbandry systems.

The evaluation of SPR success is generally designed using an input-process-output-results approach, which allows for assessment not only of skill and productivity improvements, but also of economic impacts and institutional strengthening among farmers (Muladno, 2015; Director General of PKH, 2018). Evaluation of Brahman cross cattle maintenance using key performance indicators (KPIs) and strategic analysis such as SWOT helps identify strengths, weaknesses, opportunities, and threats in program implementation (Parmenter, 2015; Kurniawan & Abidin, 2019). However, most studies still assess these aspects partially, so studies are needed that integrate social, economic, technical, and institutional dimensions within a comprehensive evaluation framework.

RESEARCH METHODS

This research was conducted at the Mega Jaya Sekolah Peternakan Rakyat (SPR) in Bojonegoro Regency, East Java Province. The population consisted of 100 Brahman Crossbreeder cattle and five bulls at the beginning of the study period. The entire study lasted for eight years, from January 2017, when Brahman Cross cattle were raised, to November 15, 2025. Respondents in this study were 20 breeders who are members of the SPR Program and raise Brahman Cross cattle in Bojonegoro Regency. This study used a mixed-methods approach with a sequential explanatory design, followed by qualitative data analysis to deepen and explain the quantitative findings. This approach was chosen to gain a comprehensive understanding of the implementation and contribution of the SPR Program to Brahman Cross cattle husbandry.

Data Collection Methods

Data collection was conducted using several techniques to ensure the completeness and depth of information. Quantitative data were obtained through a structured questionnaire used to identify the socioeconomic characteristics of livestock farmers, the level of SPR program implementation, and changes in livestock behavior, including knowledge, attitudes, skills, and aspirations (KASA). Measurements were conducted using a five-point Likert scale to facilitate statistical analysis.

Qualitative data were collected through in-depth interviews with livestock farmers, SPR facilitators, and relevant parties from local government agencies. Interviews focused on the program implementation process, livestock farmers' perceptions of SPR and IACCB collaboration, and the factors that support and inhibit program success. Informants were selected purposively to obtain rich and contextual information (Kvale & Brinkmann, 2015; Palinkas et al., 2015). Field observations were conducted to directly observe Brahman Cross cattle husbandry practices, the implementation of SPR training materials, the use of supporting infrastructure, and the group's institutional dynamics. Observations served as a means of verifying questionnaire and interview data (Emerson et al., 2011). Documentation and literature review techniques were used to supplement the primary data through a review of SPR activity reports, livestock group production and financial records, partnership documents, and relevant academic and policy literature.

Data Analysis

Quantitative data were analyzed descriptively to describe the characteristics of farmers, the level of program implementation, and trends in behavioral changes and the success of Brahman Cross cattle farming. Qualitative data were analyzed using a thematic analysis approach to identify patterns, meanings, and dynamics of program implementation, as well as factors influencing its success. The results of the quantitative and qualitative analyses were integrated to gain a comprehensive understanding of the effectiveness of the SPR. As part of the strategic evaluation, internal and external factors influencing program implementation were analyzed using a SWOT approach, thus formulating a picture of the strengths, weaknesses, opportunities, and threats in the development of SPR at the smallholder farmer level.

RESULTS AND DISCUSSION

1. Overview of the Research Location

This research was conducted in Kasiman District, Bojonegoro Regency, which is the location for the development of the Sekolah Peternakan Rakyat (SPR) and the raising of Brahman Cross cattle. This area has an agro-climate that supports smallholder livestock farming, characterized by the relatively abundant availability of animal feed sourced from local greens and agricultural waste, its location amidst teak forests, and a fairly large population of female cattle. These conditions make Kasiman District a potential area for the development of a small-scale beef cattle production system. The limited knowledge and skills of farmers in managing livestock businesses remain a major challenge. The relatively remote character of the area and its base in smallholder livestock farming make this location relevant for evaluating the implementation and contribution of SPR to the raising of Brahman Cross cattle in the real context of a smallholder livestock production system.

2. Social Sekolah Peternakan Rakyat (SPR)

The social characteristics of farmers participating in the SPR are a supporting factor in the successful development of livestock businesses, particularly in the implementation of husbandry practices, business decision-making, and SPR program development. Understanding these characteristics is essential as a basis for analyzing the behavior and capacity of farmers in managing Brahman Cross cattle. The social characteristics of farmers are presented in Table 1.

Table 1. Social Characteristics of Breeders Who Raise Brahman Cross Cattle

No	Characteristic Dimensions	Indicator	Frequency (n)	Persentation (%)
1	Gender	Man	20	100
		2 persons	9	45
2	Number of Family Dependents	4 persons	8	40
		6 persons	2	10
		7 persons	1	5
		21-30 years	2	10
3	Age Group	31-40 years	6	30
		41-55 years	9	45
		>55 years	3	15
		Elementary School	10	50
4	Last Formal Education	Junior high school	4	20
		Senior high school	5	25
		Bachelor	1	5
5	Livestock Experience	5-10 years	9	45
		>10 years	11	55
6	Land Ownership Status	Owner	17	85
		Tenant	3	15
		≤ 0,30	7	35
		0,34 – 0,45	7	35
7	Land Area (ha)	0,50 – 0,70	2	10
		0,80 – 1,50	2	10
		> 1,50 (2,00 – 2,50)	2	10
		1 tail	3	15
8	Number of Brahman Cross Cattle Ownership	2 tails	11	55
		3-5 tails	4	20
		9-10 tails	2	10
Total Number of Respondents (n)			20	100

Source: Primary data 2025

The characteristics of SPR Mega Jaya cattle farmers demonstrate the dominance of men as primary decision-makers. The majority of farmers are of productive age (average age 44.6 years), with 2–4 dependents in their household, at least five years of livestock farming experience, and own land measuring 0.15–2.50 hectares. Education levels are relatively low (70% have completed junior high school), while most Brahman Cross cattle are owned by 1–2 cattle. These conditions create social capital and practical experience essential for innovation adoption. However, limited education, land holdings, and business scale pose structural challenges to business development (Rohani et al., 2023; Sutarno et al., 2023; Sahala et al., 2025). These findings underscore the need for adaptive SPR interventions, including hands-on learning in the field, feed optimization through the

utilization of marginal land and agricultural waste, and group institutional strengthening to support collective management and the implementation of Good Farming Practices. Analysis of the social characteristics of livestock farmers is an important basis for mentoring strategies, capacity building, and sustainability of livestock businesses, while also providing insights into obstacles to innovation adoption and the dynamics of livestock farmer behavior (Harlina et al., 2024; Maulinas et al., 2024; Suhardiyanto et al., 2024).

3. SPR Program Implementation

The implementation of the SPR program demonstrated that the quality of program input was in the very good category. Farmers considered the competence of facilitators, the relevance of the curriculum, and the availability of supporting infrastructure as factors that strongly supported program implementation. This finding aligns with previous research, which confirmed that the quality of mentoring and facilities are key determinants of the initial success of farmer empowerment programs (Kusumastuti & Minarsih, 2023; Hasbi et al., 2023). The study revealed a gap between the quality of program input and the consistency of implementation of husbandry practices in the field. Despite the availability of facilities and mentoring, the implementation of operational standards for husbandry was not consistently implemented by all farmers. This situation indicates that high-quality input does not automatically guarantee successful implementation if it is not accompanied by strengthening the managerial and institutional capacity of the group.

4. Technical Impact of Brahman Cross Cattle Maintenance

The technical performance evaluation of Brahman Cross cattle maintenance revealed significant dynamics. Medium-term reproductive and growth indicators fluctuated and fell short of established performance targets. Conception rates and calving rates exhibited instability between periods, indicating challenges in maternal nutritional management, particularly during the pregnancy and lactation phases. These findings align with Ratnawati (2018), who emphasized that the reproductive success of beef cattle is strongly influenced by adequate feed and the body condition of the mother. Meanwhile, the significant increase in weaning weight was not accompanied by consistent weaning rates, indicating that farmers adjusted weaning practices in response to the calf's growth conditions.

These results indicate that technical interventions were able to improve performance in the early growth phase but were unable to maintain sustainable performance in the later phase. The decline in the maternal population over time reflects household economic pressures and the lack of a sustainable breeding system. This confirms that technical success does not always translate into business sustainability without the support of farmer managerial and economic capacity.

5. The KASA (Knowledge, Attitude, Skill, Aspiration)

Increasing livestock farmer capacity is the program's primary achievement, although its implementation has shown varying levels of success in each aspect developed. The results of the study are shown in Table 2.

Table 2. Increasing the Capacity of Livestock Farmers Based on the KASA Approach

KASA dimensions	Indicator	Score	Category
Knowledge	Understanding the advantages and needs of Brahman Cross cattle	4.45	Baik
	Understand the principles of feed management	4.35	Good
	Understand reproductive techniques	5.00	Very good
	Understanding disease prevention and treatment	5.00	Very good
Attitude	Confidence in managing a business	2.80	Enough
	Open to new technologies and innovations	5.00	Very good
	Viewing livestock as a commercial venture	5.00	Very good
Skill	Able to meet feed needs	2.80	Enough
	Able to detect heat and mating season	3.20	Enough
	Able to provide first aid to sick livestock	5.00	Very good
	Able to operate cage equipment	5.00	Very good
Aspiration	Planning to increase the scale of the business	1.15	Very less
	Making livestock farming a main business	5.00	Very good
	Implementing new techniques of mentoring	3.05	Enough

Source: Primary data 2025

The results of livestock farmer capacity measurements using the KASA approach indicate that the Sekolah Peternakan Rakyat (SPR) Program significantly contributed to improving individual livestock farmer capacity, although achievements across aspects were not fully balanced. In the knowledge dimension, all indicators were in the good to excellent category, with the highest scores for understanding reproductive techniques and disease prevention (each with a score of 5.00). This finding indicates that SPR training and mentoring effectively transferred technical knowledge that was applicable and directly related to livestock business risks. Meanwhile, understanding of feed

management (4.35) and the advantages of Brahman Cross cattle (4.45), although classified as good, indicated that implementing knowledge that requires adaptation to local resource limitations remains a challenge, as also reported by Indey et al. (2022).

In the attitude and skills dimensions, SPR encouraged a shift in livestock farmer orientation toward openness to innovation and a view of livestock farming as a commercial enterprise (a score of 5.00), but this was not fully followed by confidence and complex technical skills. Skills in operating barn equipment and initial management of sick cattle were categorized as very good (5.00), while the ability to provide sufficient feed (2.80) and detect estrus (3.20) remained in the adequate category. In the aspiration dimension, commitment to making livestock farming a primary business was categorized as very good (5.00), but the desire to scale up the Brahman Cross cattle business was very low (1.15). This pattern indicates that capacity building through SPR has been more successful in shaping knowledge and orientation, but has not fully translated into business development actions, influenced by limited support systems, risk perceptions, and low agribusiness literacy among farmers (Suryana et al., 2020; Andaruisworo, 2022; Fariyanti et al., 2024).

The findings of this study reinforce the conceptual value of the KASA approach, which shows that increasing farmer knowledge and skills does not automatically translate into increased business aspirations. Although farmers understand technical aspects and demonstrate a positive attitude toward innovation, low aspirations for business development reflect persistently strong risk perceptions, limited capital, and weak support systems within smallholder livestock farming.

6. Institutional Dynamics and Implementation Challenges

The findings indicate that institutional capacity within the SPR group remains limited, particularly in managerial coordination, collective decision-making, and business planning. Although the program enhanced individual knowledge and skills, institutional strengthening did not progress at the same level. Field observations and interview results show that group operations were still highly dependent on external facilitators, reflecting limited internal leadership and governance capacity. This institutional weakness constrained collective business expansion and reduced the long-term sustainability of the

program, indicating that improvements at the individual level were not automatically translated into institutional resilience.

CONCLUSION

The implementation of the Sekolah Peternakan Rakyat (SPR) Program in Bojonegoro Regency has successfully enhanced individual farmer capacity, particularly in knowledge acquisition, technical skills, and commercial orientation in Brahman Cross cattle husbandry. Nevertheless, these improvements were not consistently followed by stable technical performance or sustainable business expansion. Reproductive indicators fluctuated, business scale growth was minimal, and institutional capacity within the farmer group remained limited, especially in governance, managerial coordination, and strategic planning. The study confirms that capacity building alone is insufficient to ensure smallholder livestock transformation. Program effectiveness is strongly influenced by institutional resilience and structural alignment between program design and farmers' socioeconomic conditions. Integrating social, technical, and institutional dimensions is therefore essential for achieving sustainable livestock development outcomes.

REFERENCES

- Agus, A., Suganda, A., Makmun, Hutasoit, S. H. M. T., Zainudin, N., Melasari, T., Saptahidayat, N., Guntoro, B., & Widyobroto, B. P. (2024). Peta Jalan Pembangunan Peternakan Nasional 2025-2035. Pertanian Press.
- Andaruworo, S. (2022). Karakteristik Peternak Sapi Potong di Kecamatan Badas Kabupaten Kediri, pasca pandemi. *SINKESJAR*, 2(1), 17–27. <https://doi.org/10.29407/seinkesjar.v2i1.2987>
- Daramawan & Saleh. (2017). Hubungan Gaya Kepemimpinan dan Pola Komunikasi dengan Efektivitas Kinerja Gugus Perwakilan Pemilik Ternak. *Jurnal Sains Komunikasi dan Pengembangan Masyarakat*. 1(4), 467-478.
- Director General of Livestock and Animal Health Services (PKH). (2018). *Guidelines for Sekolah Peternakan Rakyat implementation*. Ministry of Agriculture, Republic of Indonesia.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing Ethnographic Fieldnotes*, Second Edition. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226206868.001.0001>
- Fariyanti, A., Muladno, M., Rachmina, D., Suharno, S., Burhanuddin, B., Adhi, A. K., Setiadi, D. R., Sukmawati, A., Atabani, A., Dewi, T. G., Herawati, H., & Burhani, A.-M. A. I. (2024). Pengembangan Kapasitas Agribisnis Sapi Potong melalui Bimbingan Teknis Kelembagaan dalam Upaya Inisiasi Terciptanya Sekolah

- Peternakan Rakyat di Kabupaten Blora. *Agrokreatif: Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 10(1), 67–75. <https://doi.org/10.29244/agrokreatif.10.1.67-84>
- Indey, S., Saragih, E. W., & Santoso, B. (2022). Karakteristik Peternak Sapi di Sentra Produksi Ternak Potong Di Kabupaten Sorong. *Jurnal Ilmu Peternakan Dan Veteriner Tropis (Journal of Tropical Animal and Veterinary Science)*, 11(3), 245. <https://doi.org/10.46549/jipvet.v11i3.257>
- Kurniawan, D. A., & Abidin, mohammad zaenal. (2019). Strategi Pengembangan Wisata Kampoeng Durian Desa Ngrogung Kecamatan Ngebel Ponorogo melalui Analisis Matrik IFAS Dan EFAS. *Al Tijaroh*, 5(2).
- Kusumastuti, A. E., & Minarsih, Y. A. (2023). Analisis Kepuasan Peternak terhadap Program Sekolah Peternakan Rakyat (SPR) di Kecamatan Kedungadem Kabupaten Bojonegoro: Pendekatan CSI dan IPA. *Jurnal Peternakan Indonesia (Indonesian Journal of Animal Science)*, 25(3), 324–338. <https://doi.org/10.25077/jpi.25.3.324-338.2023>
- Kvale, Steinar., & Brinkmann, Svend. (2015). *InterViews : learning the craft of qualitative research interviewing*. Sage Publications.
- Lestari, R. D., Baga, L. M., & Nurmalinga, R. (2017). Analisis Keuntungan Finansial Usaha Penggemukan Sapi Potong Di Kabupaten Bojonegoro. *SEPA: Jurnal Sosial Ekonomi Pertanian Dan Agribisnis*, 11(2), 207. <https://doi.org/10.20961/sepa.v11i2.14180>
- Meilani, S. (2018). Analisis Program Sekolah Peternakan Rakyat (SPR) dalam Meningkatkan Sumberdaya Peternak. <https://repository.ub.ac.id/id/eprint/168365/>
- Muladno. (2015). *Model Sekolah Peternakan Rakyat (SPR) untuk Pengembangan Peternakan Sapi Potong Rakyat*. Institut Pertanian Bogor Press.
- Nugroho, E. (2012). Status Sosial Ekonomi Peternak Sapi Perah Di Kecamatan Poncokusumo Kabupaten Malang. *Ternak Tropika. Journal of Tropical Animal Production*, 12(2), 44–51. <https://ternaktropika.ub.ac.id/index.php/tropika/article/view/112>
- Parmenter, D. (2015). *Key Performance Indicators: Developing, Implementing, and Using Winning KPIs* (3rd ed.). Wiley.
- Rohani, S., Hastang, H., Diansari, P., Darwis, M., Kurniawan, M. E., Astaman, P., Hikmah, A. N., & Basri, Z. (2023). Karakteristik Peternak Yang Bergabung Di Badan Usaha Milik Desa Unit Peternakan Sapi Potong. *Jurnal Riset Multidisiplin*, 1(2), 81–88. <https://doi.org/10.61316/jrma.v1i2.10>
- Sahala, J., Nahak, A., Imamora, T. S., Banu, M., & Dethan, A. A. (2025). Karakteristik Peternak Sapi Potong Rakyat di Kecamatan Malaka Barat Kabupaten Malaka. *Innovative: Journal Of Social Science Research*, 5(2). <https://doi.org/10.31004/innovative.v5i2.18367>

- Sari, D. A. P., Muladno, Said, S., Nahrowi dan Priyanto, R. 2025. Effect of Origin and Ownership Status on Beef Cattle Reproductive Performance and Development Strategies in Sekolah Peternakan Rakyat (SPR). *Jurnal Ternak (Animal Science Journal)*, 16 (1), 91-99, <https://doi.org/10.30736/jt.v16i1.256>
- Sutarno, S., Wati, N. E., & Setyowati, S. (2023). Karakteristik Peternak Sapi Peranakan Ongole Dan Keberhasilan Inseminasi Buatan Berdasarkan Service Per Conception Di Kabupaten Lampung Selatan. *JDP: Jurnal Dunia Peternakan*, 1(2), 106–117. <https://doi.org/10.37090/jdp.v1i2.1210>