

# Accessibility of Sustainable Beef Cattle Business Development in Mattiro Bulu District, Pinrang Regency

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Received: August 17, 2024  
Revised: September 7, 2024  
Accepted: October 25, 2024  
Published: October 31, 2024

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DOI: [10.29303/jppipa.v10i10.9083](https://doi.org/10.29303/jppipa.v10i10.9083)

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**Abstract:** Beef cattle business development in Alitta Village, Mattiro Bulu Sub-district, Pinrang District, has great potential but also faces a number of challenges. In this context, this study aimed to assess resource accessibility in smallholder beef cattle farming based on the quality of farmers' human resources. Through qualitative methods and literature studies, primary data were obtained from interviews with farmers and business actors, while secondary data were obtained from relevant agencies. The results show that farmer characteristics, such as age, education, experience and training intensity, affect access to financial, technological and physical resources for beef cattle enterprises. Technology integration and innovation, smart marketing, and sustainable environmental maintenance are key strategies in developing this business. By implementing these strategies, Alitta Village can become a model for sustainable beef cattle enterprise development in the surrounding area, providing sustainable economic, social and environmental benefits to the community and surrounding environment.

**Keywords:** Beef Cattle; Business Development; Farmer; Resource Accessibility

## Introduction

Sustainable agricultural systems was agricultural systems that do not damage, harmonise, harmonise and balance with the environment, which can be implemented with four systems, namely 1) organic farming systems, 2) integrated farming systems, 3) low external input farming systems, and 4) integrated pest control systems (Salikin, 2011). Integrated farming system (IFS) is an agricultural system that combines two or more fields of agriculture (Channabasavanna et al., 2009; Ugwumba et al., 2010; Jaishankar et al., 2014), where input-output linkages between commodities occur and experience a biological recycling process (Prajitno, 2009; Changkid, 2013; Thorat et al., 2015), which use input from outside low (Devendra, 2011; Nurcholis & Supangkat, 2011; Hilimire, 2011) and efficient use of resources (Bosed, 2010; Balemi, 2012; Soputan, 2012), and applying various techniques so as to

increase production, productivity and farmers' income and sustainability (Gupta et al., 2012; Manjunatha et al., 2014; Thorat et al., 2015). One model of IFS is a Rice-Cattle Integration System (RCIS) farming.

Beef cattle are one type of ruminant livestock that plays an important role in the livestock industry. They are the main contributors in providing meat, a vital source of animal protein to meet human food needs. In addition, beef cattle also have a significant economic impact by being one of the leading commodities in the livestock business. With the demand for beef continuing to increase along with population growth, the development of beef cattle farming promises good prospects for farmers. This shows that beefcut not only plays a role in meeting food needs, but also in supporting economic growth in the livestock sector. Government Regulation (PP) of the Republic of Indonesia Number 6 of 2013 concerning the Empowerment of Livestock Farmers explains that

### How to Cite:

Rasyid, I., Wirawan, I., Sirajuddin, S. N., & Mukhlis, M. (2024). Accessibility of Sustainable Beef Cattle Business Development in Mattiro Bulu District, Pinrang Regency. *Jurnal Penelitian Pendidikan IPA*, 10(10), 7688-7695. <https://doi.org/10.29303/jppipa.v10i10.9083>

livestock empowerment is all forms (efforts) carried out by livestock empowerment efforts, namely through strengthening livestock institutions as a forum for livestock empowerment (Soetriono & Amam, 2020).

Livestock institutions play an important role in developing livestock businesses. Through livestock cooperatives, livestock associations, and support from government agencies related to the livestock sector, livestock farmers can gain access to various resources and assistance needed. This includes training, technical guidance, and market information that helps improve the productivity and quality of their livestock. In addition, these institutions also play a role in advocating policies that support the growth and sustainability of the livestock industry. With cooperation between stakeholders, livestock institutions create a conducive environment for the development of sustainable and superior livestock businesses, which can play a role in improving livestock human resources (Amam & Harsita, 2019).

The sustainability and development of livestock businesses cannot be separated from the support provided by various resources. These resources include financial, technical, and market knowledge aspects. Financially, access to capital and financing is very important to start and develop livestock businesses. The Indonesian government has implemented various efforts to develop beef cattle businesses in order to realize national meat self-sufficiency. The main focus of these efforts is to improve the upstream to downstream sectors in the livestock industry. The steps taken include improving the quality of beef cattle seeds through collaboration with research institutions, improving infrastructure such as building adequate roads and slaughtering facilities, and providing training and education to farmers on best practices in raising beef cattle. In addition, the government also encourages the use of modern technology in livestock businesses, provides subsidies and assistance to farmers, and runs a strict livestock health monitoring program. All of this is done with the aim of increasing the productivity, efficiency, and competitiveness of the Indonesian beef cattle industry, both in the domestic and global markets.

These efforts certainly also support the development of smallholder beef cattle farming businesses, because smallholder beef cattle farming businesses on a household scale can contribute 6.8% to the total income of livestock farmers (Setiawan et al., 2014). Smallholder beef cattle farming also plays a role in improving the economy of Indonesia, but ironically, smallholder livestock farming businesses are not fully business-oriented, so the number of livestock owned is small (Sunarto et al., 2016), which is why the supply of local beef from smallholder farms is inefficient (Widiati, 2014). (Sunarto et al., 2016), which is why the supply of

local beef from smallholder farms is inefficient (Widiati, 2014). Such conditions also occur in Alitta Village, Mattiro Bulu District, Pinrang Regency, South Sulawesi Province.

Alitta Village is one of the villages in Pinrang Regency with a priority on developing livestock, especially beef cattle, considering the large number of farmers who raise beef cattle as savings with an average ownership of 1-3 beef cattle. Efforts to support the empowerment of farmers and the development of beef cattle businesses in Petung Village cannot be separated from the three pillars of livestock businesses. Amam & Harsita (2019) stated that there are three pillars of livestock businesses, namely breeding, feeding, and management. Focusing on the third pillar, namely management, the purpose of this study is to examine the accessibility of resources in the people's beef cattle business based on the quality of livestock human resources. Resources play an important role in the development of livestock businesses (Amam et al., 2020). This is the basic for researchers to study the Beef Cattle Business Development Strategy in Alitta Village, Mattiro Bulu District, Pinrang Regency.

Based on the background and research problems, the purpose of this study is to analyze the level of sustainability of wetland rice business using a composite index of farmer perception Likert scale data.

## Method

This research was conducted in Alitta Village, Mattiro Bulu District, Pinrang Regency in May 2024. Most of the data collection techniques used Observation and Interviews with Questionnaires. Basically, the sampling technique used is purposive sampling where the sample is selected based on certain characteristics based on the research objectives to be achieved.

The method of writing this scientific article is with qualitative methods and literature studies or library research. Reviewing theories and reviewing literature books that are in accordance with the theories discussed, especially regarding strategies for increasing business and the potential of beef cattle in South Sulawesi Province. In addition, it also analyzes reputable and un reputable scientific articles and journals. All scientific articles are sourced from Google Scholar.

Primary data were obtained from respondents in the field, namely beef cattle farmers as well as livestock business actors, both small and medium capacity and large business actors. Primary data collection was carried out by going directly to the field using interview and survey methods of livestock farmer groups, livestock extension workers and local government officials. So that information was obtained about group

member data, number of livestock, area of grass land, and strategies for improving and developing beef cattle farming businesses in Alitta Village in particular and Pinrang Regency in general. Secondary data were obtained from related agencies or institutions, namely the Alitta Village/Sub-district office, Mattiro Bulu District, Pinrang Regency and the Central Statistics Agency. Secondary data include information on agricultural and livestock potential in Alitta Village, Mattiro Bulu District, Pinrang Regency.

The data analysis method used is descriptive qualitative analysis using a triangulation technique approach. Triangulation technique is an analysis technique to test the validity of data with methods, sources, and theories. The steps in data analysis are: a) Reduction; From the data/information that has been collected, sort out which information is appropriate and not in accordance with the research problem, focusing on simplifying, abstracting, and transporting rough data that emerges from written notes in the field; b) Presentation; After the information is selected according to the research needs, the results are presented in the form of tables or explanatory descriptions; c) Conclusion; Conclusion is the process of finding the meaning of data that aims to understand the interpretation in its context with the overall problem. Data analysis used 5 W (who, what, where, when, why) + 1 H (how) (Mukhlis et al, 2023).

**Result**

*Overview of Alitta Village, Pinrang Regency*

Alitta Village or Sub-district is a village in Mattiro Bulu District, Pinrang Regency, South Sulawesi Province, Indonesia. The area of Alitta Village is 45.00 km<sup>2</sup>, with a percentage of the area of the sub-district. Mattiro Bulu, namely 33.96% (BPS, 2022). The boundaries of the area are as follows in Table 1.

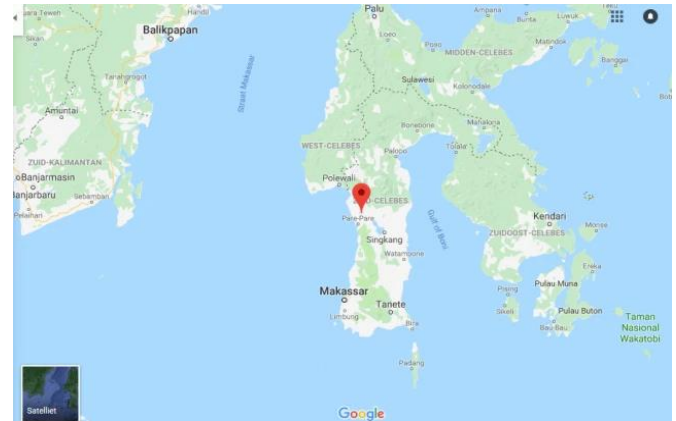
**Table 1.** Boundaries of Alitta Village, Mattiro Bulu District, Pinrang Regency in South Sulawesi Province

North	Pammase Village, District. Tiroang, Kab. Pinrang
East	Lawawoi Village, Watangpulu District, Sidrap Regency
South	Tellumpanua Village, Suppa District, Pinrang Regency
West	Pananrang Village, District. Mattiro Bulu, Kab. Pinrang

In Figure 1 above, it is explained that most of the boundaries of Alitta Village are the Pinrang Regency area itself. However, a small part of the Sidrap Regency area is located on the eastern side which borders

Lawawoi Village, Watangpulu District, Sidengreng Rappang Regency (Sidrap).

In addition, to see the position of the Village in general on the map of South Sulawesi Province, it can be seen in Figure 1.



**Figure 1.** Map of Alitta Village Area in South Sulawesi Province

*Potential for Beef Cattle Farming in Alitta Village*

Beef cattle farming in Alitta Village has very promising potential to be developed. Alitta Village is located in a fertile area with extensive land, suitable for raising beef cattle. In addition, a stable climate and the availability of adequate water sources make environmental conditions very supportive of cattle growth. The potential cattle population from 2021 - 2022 according to data from the BPS of South Sulawesi Province is an increase of 31,800 to 32,690.

The people of Alitta Village also have knowledge and experience in cattle farming. They have inherited the tradition of cattle farming from generation to generation, so they have the skills needed to care for and manage beef cattle farms. With the support of technology and assistance from related parties, this potential can be maximized to increase the production and quality of beef cattle produced. The results of research by Mukhlis et al (2022) explained that important production factors in the integrated rice-cattle farming model include: cowsheds, cattle breeds, cattle feed, cattle medicine and vitamins, labour and capital.

The large local and regional market is an attractive opportunity for beef cattle farming in Alitta Village. The demand for beef continues to increase along with population growth and changes in people's consumption patterns. With the right marketing strategy, beef cattle farming in Alitta Village can supply high-quality beef to local and regional markets, increase farmers' income and advance the local economy.

The development of beef cattle farming in Alitta Village can also provide a broad positive social and economic impact on the local community. With the

presence of new jobs and increased income from livestock businesses, the level of community welfare can be improved. In addition, environmental sustainability can also be maintained through environmentally friendly and sustainable livestock farming practices. By utilizing this potential optimally, Alitta Village can become a center for the development of sustainable and successful beef cattle farming.

Bali Cattle Maintenance System Cattle maintenance by farmers in Alitta is still a sideline according to Purwantara et al (2012) Bali cattle are the most widely kept cattle on small farms because of their good fertility and low mortality rate. added that people who only keep 2-5 cattle are a sideline business. While the main business is farming and gardening. Cattle

*Characteristics of Livestock Farmers and Entrepreneurs in Alitta Village*

Characteristics are something that concerns the nature that is in a person when carrying out and managing his business (Risma, 2012). The characteristics of farmers include age, education level and experience which have a correlation with the management of beef cattle businesses. Beef cattle farming in rural areas is one of the sources of the economy in the community. Simamora (2020) stated that beef cattle farming that is managed properly will provide income and increase welfare. Beef cattle farming businesses will be successful if they are able to contribute to increasing family income sources. Thus, managerial skills are needed in managing beef cattle businesses so that they provide optimal results or profits. Beef cattle farmers are encouraged to have good managerial skills. Managerial skills are skills possessed by beef cattle farmers in planning a business to marketing the results of the business. The results of research by Mukhlis et al (2019) show that the greater the scale enterprises of the Rice-Cattle Integrated Farming System (RCIS), the greater the RCIS income and the more feasible RCIS farming. Then, Mukhlis et al (2023) emphasised that the cattle farming model of integrated corn-cattle farming in Payakumbuh District is very feasible to be cultivated and developed because farmers can get higher profits than the prevailing bank interest rates.

Alitta Village is one of the villages with a beef cattle farming base in Pinrang Regency. The characteristics of beef cattle farmers are all the traits found in the farmers and have implications for their business activities. Characteristics are parts of oneself that have been attached to a person since birth. The characteristics of farmers studied in this study were age, education, experience and training intensity. Simamora and Luik (2019) stated that characteristics are one of the important factors determining business success. The results of the

study related to the characteristics of beef cattle farmers in Alitta Village are presented in Table 1.

**Table 1.** Characteristics of Livestock Farmers and Business Actors in Alitta Village, Mattiro Bulu District, Pinrang Regency

Category	Number of Respondents	Percentage
<b>Age (years)</b>		
Very Easy (21 - 29)	2	10
Young ( 30 - 45)	4	20
Medium ( 46 -55)	6	25
Old ( 56 - 65 )	10	55
<b>Formal education</b>		
Graduated from elementary school	11	20
Graduated from junior high school	6	30
Graduated from high school	4	24
Graduated from PT	-	0
<b>Livestock Experience</b>		
Low ( 1-3)	4	3
Medium (4 - 7)	13	34
Height (8 - 11)	4	4
<b>Training Intensity</b>		
Very low (2-12)	17	60
Low (13-23)	3	4
Medium (24 - 34)	1	2
Height (35 - 45)	-	-

The age of the farmer is one of the factors that influences the level of physical ability of farmers in managing their business (Simamora, 2020). According to Suwarta et al (2012) older farmers will affect the decline in productivity of beef cattle farming. Another thing related to the age of farmers is the ability to adopt innovation. Older farmers will be slower in applying innovations in beef cattle development. This is influenced by reduced physical strength and thinking to respond quickly to every livestock innovation. The results of the study showed that the characteristics of age, education, and experience of beef cattle farmers influenced the application of artificial insemination innovations.

The level of education of farmers also has an impact on their ability to think for the development of beef cattle businesses. The level of education is the length and level of formal education taken by farmers. The higher a person's level of education, the more mature their thoughts and behavior will be and their ability to make decisions. Thus, the level of education has an impact on the ability of farmers to manage beef cattle businesses. Experience in raising beef cattle plays a crucial role in determining the success of the business. Farmers who have been involved in this industry for a long time have in-depth knowledge of the entire livestock process, from

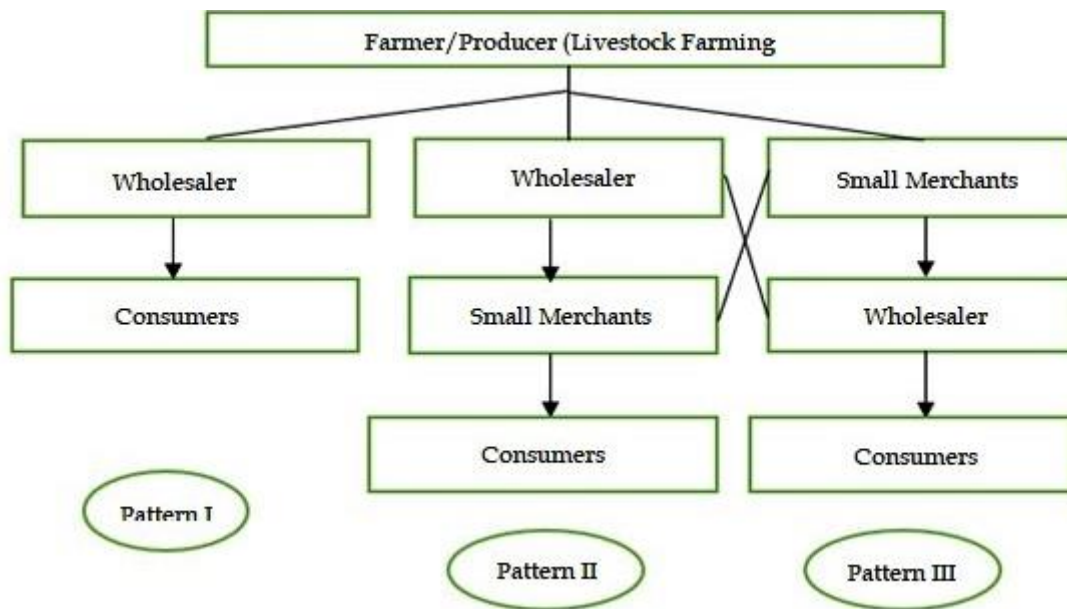


seed selection to feed management, health care, and reproductive management. This experience allows them to make more informed and effective decisions in running their businesses. In addition, experience also helps farmers to better understand the dynamics of the beef cattle market, allowing them to take smarter strategic steps to increase profitability. Another advantage of experience is the ability to face challenges that may arise in raising cattle and the ability to adapt to changes in the environment and technology. The networks and relationships built over the years in the industry are also valuable assets, helping to smooth daily operations and expand marketing opportunities.

*Beef Cattle Business Line Trading Scheme in Alitta Village*

The livestock trade is a system that regulates the management and distribution of livestock products

from producers to end consumers. It involves various aspects, including marketing, distribution, and supply chain management. In practice, farmers work with various parties, such as distributors, retailers, and animal feed producers, to bring their products to market. Marketing livestock products requires an effective strategy to promote and sell products to consumers, involving advertising, promotions, and the use of online platforms. Product distribution is carried out through various channels, such as wholesale distributors, traditional markets, pet stores, or direct sales from farms. Supply chain management is also important, including inventory management, transportation, and logistics. With the right marketing strategy, efficient distribution, and good supply chain management, livestock can succeed in a competitive market.



**Figure 2.** Beef Cattle Trading Flow in Alitta Village

In Figure 2 above, it can be seen that all existing patterns will always involve livestock breeders and large traders. Basically, large farmers are livestock breeders and traders who have gone through 3 generations. Large traders in Alitta village generally only consist of 5 large groups spread across all villages. This group has been running the livestock farming, cultivation, and marketing process for at least 30 years - 50 years because it has gone through 3 initial generations. In other words, to become a major player in each pattern, farmers need to develop the existing business scale starting from community livestock farming to a business scale that has a livestock ownership scale of more than 30 heads, so that the sales turnover in 1 year, the sales margin that can be obtained ranges from 60 million in 1 year. As for Pattern II and

Pattern III that occur in the Alitta Village community, they are partnership and cooperation patterns between large traders and small traders in providing livestock and meat needs that will be distributed to the market or directly consumed by the community.

*Analysis of Beef Cattle Business Strategy in Alitta Village*

Financial, technological, and physical resources of beef cattle farming in Petung Village are influenced by the human resources of livestock farmers in Alitta Village. Financial resources are influenced by the human resources of livestock farmers positively and significantly (significance level 5%), meaning that the higher the human resources of livestock farmers, the greater the access to financial resources. Livestock farmers who have high human resources, for example,

the requirements for cattle farming experience and have knowledge and skills generally have high access to financial resources, such as high income, ownership of more than 1 (one) head of livestock, so that they are able to meet family living needs, and even have family savings.

Human resource development can support the development of beef cattle farming businesses (Suresti et al., 2013). One of the efforts to support the development of livestock businesses is through an agribusiness partnership system (Ashary, 2016), for example a profit sharing partnership system such as a gaduhan or paron contract pattern (Amam et al., 2020) and a general trade pattern partnership (Amam et al., 2020). The partnership system or livestock business partnership according to Permentan No. 13/2017 is a collaboration between livestock businesses based on the principles of mutual need, strengthening, benefit, respect, responsibility, and dependence. Ironically, the role of livestock institutions in Indonesia is still weak and not optimal enough (Arifin & Riszqina, 2016).

Technological resources are positively and significantly influenced by livestock breeder human resources (significance level 5%), meaning that the higher the livestock breeder human resources, the greater the access to technological resources. Breeders who have high human resources, for example, the requirements for cattle breeding experience and have knowledge and skills generally have access to high technological resources, such as being able to select seeds, being able to process animal feed, understanding housing, understanding how to fatten cattle, and understanding cattle marketing management (Amam et al., 2020).

The motivation and satisfaction of livestock farmers have a positive and significant effect on the development of livestock businesses. The role of the Regional Government in supporting the development of livestock businesses in the region is one of which is by improving the quality of livestock human resources (Suresti et al., 2013), for example by training in processing livestock products (Amam & Harsita, 2019) and training in making organic fertilizers (Shintara & S. Arif, 2016) as an effort to reduce one of the main problems of beef cattle farming in Alitta village because the problem of waste is that livestock farmers in Alitta Village have not been able to manage it optimally.

## Conclusion

Considering the potential and challenges, the development of sustainable beef cattle business in Alitta Village, Mattiro Bulu District, Pinrang Regency requires a planned and sustainable strategy. First, the integration of technology and innovation in livestock management

is the key to increasing efficiency and productivity. Technical assistance and training for local farmers need to be improved to ensure the implementation of best practices in raising beef cattle.

Second, smart and targeted marketing will help expand market reach and increase product added value. Collaboration with related parties, such as local entrepreneurs, traditional markets, and supermarkets, can ensure the supply of quality beef to consumers. In addition, product promotion through social media and participation in agricultural exhibitions can be effective strategies to increase the visibility and popularity of beef products from Alitta Village.

Finally, sustainable environmental maintenance should be a primary focus in beef cattle business development. Environmentally friendly livestock practices, such as livestock waste management and natural resource conservation, need to be prioritized. By implementing this strategy comprehensively, Alitta Village can become a model for sustainable beef cattle business development in the surrounding area, providing sustainable economic, social, and environmental benefits to the community and surrounding environment.

## Acknowledgments

We would like to thank to all parties who assisted in data collection.

## Author Contributions

IR, IDW: Developing ideas, overseeing data collection, analyzing data, writing, reviewing, responding to reviewers' comments; SNS, MK: analyzing data, reviewing scripts, and writing.

## Funding

This research received no external funding.

## Conflicts of Interest

The authors declare no conflict of interest.

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