

The development of intensive beef cattle farming system in North Sulawesi with strategy management concept approach

by Jolanda K. J. Kalangi 4

Submission date: 29-Jun-2023 10:14AM (UTC+0700)

Submission ID: 2124192678

File name: .The_development_of_intensive_beef_cattle_farming_system_in.pdf (250.95K)

Word count: 4626

Character count: 25229

PAPER • OPEN ACCESS

The development of intensive beef cattle farming system in North Sulawesi with strategy management concept approach

5

To cite this article: J K J Kalangi *et al*⁶ 2021 *IOP Conf. Ser.: Earth Environ. Sci.* **788** 012204

View the [article online](#) for updates and enhancements.

The development of intensive beef cattle farming system in North Sulawesi with strategy management concept approach

J K J Kalangi, J Lainawa and C A Rahasia

Faculty of Animal Husbandry, Sam Ratulangi University, Manado, Indonesia

Email: jolandakalangi@unsrat.ac.id

Abstract. Beef cattle production in North Sulawesi needs to be increased because its growth was very slow, unable to keep up with the rate of consumer demand. The intensive system approach to beef cattle development was intended to increase production by increasing the ability or optimizing the productivity of the available production factors, where the current conditions for beef cattle development in North Sulawesi were generally maintained traditionally (extensively). This study aimed to obtain the concept of a long-term planning strategy from an intensive system of beef cattle development in North Sulawesi. A qualitative research method was used to determine farmers' perceptions and formulate development strategies using a four-stage qualitative analysis approach, a Likert scale, and a three-stage strategy formulation for the David Fred model. The results showed that farmers in North Sulawesi were less interested in the application of the intensive farming system in developing beef cattle, because the traditional (extensive) farming system have been considered beneficial for the farmers. Therefore, to achieve the development of intensive farming systems, the strategy had to be built for driving force in the market and consumers.

1. Introduction

Intensification of beef cattle farming systems is intended in order to increase production by increasing the ability or maximizing productivity of available production factors. The factors of production in question are land, capital, human resources, technology, managerial ability or cultivation ability.

Beef cattle production in North Sulawesi needs to be increased because its growth is very slow, unable to keep up with the rate of consumer demand. According to Lainawa et al. [1], beef production in North Sulawesi annually decreases by an average of 13.33 percent. While consumption needs each year increase by an average of 3.39 percent. This condition is caused by the traditional maintenance system with an extensive business maintenance system, namely raising cattle by farmers is still as a side business. The main business is agriculture. Furthermore, the purpose of farmers raising cattle is only to be used as agricultural labor, namely to manage agricultural land and transportation tools to transport agricultural products.

Indicators suggesting limited beef production in North Sulawesi are; (1) there is a continuous increase in prices with an average increase of 20 percent every year. (2) imported beef products are widely sold in the market, especially in the modern market (super market). (3) many beef traders in traditional markets stop selling because of limited supply and are unable to compete with imported beef because the cost leadership is controlled by imported beef.

The results of previous studies, It was revealed that the traditional livestock raising system carried out by farmers in North Sulawesi was proven to be able to improve the welfare of farmers, so they



recommended that this breeding system be a business model for beef cattle breeding in North Sulawesi [2-4]. However, other studies refused this, where put forward, that intensification (agribusiness) of cattle raising systems was better compared to extensification systems (traditional) in terms of increasing production and productivity [5-8].

There were 5 observational variables, namely: (1) Feeding Conditions, (2) Feed Sources Carrying Capacity, (3) Potential Areas, (4) Farmers' Perceptions and (5) influences of External and Internal Environments. The strategy to develop intensification of beef cattle farming systems in North Sulawesi used a strategy management approach model. The concept of strategy management was to determine the position of the strategy, determine alternative strategies, and determine the chosen strategy.

The objectives of this research were to know farmers respond to the two maintenance system and the strategy to intensify the beef cattle raising system in North Sulawesi so that production increased faster so that the gap between the availability of production and consumption needs was getting smaller.

2. Research method

This survey research was used a qualitative method with a case study approach and aimed describe, summarize the various conditions, situations, or various problems of the reality of beef cattle farming systems in North Sulawesi. In this study, the selected events were further referred to as cases, as real-life events, which being ongoing, not something that was past. Case studies were research that seeks to describe a particular setting, object or event. Case studies were the strategy chosen to answer the question of how to implement or implement something [9].

Primary data were collected and obtained directly through observation, interviews by parties who were considered to understand about the problems of beef cattle farming in North Sulawesi, which consisted of 3 persons of beef cattle agribusiness researchers, 3 persons who actively provide assistance to beef cattle farmers in North Sulawesi. The persons involved in this study were active lecturers and researchers in the Faculty of Animal Husbandry, Sam Ratulangi University, who have national and international reputations, and are active in seminars and scientific publications on the subject of agribusiness beef cattle. In addition, 90 beef cattle breeders were selected from several regions, namely: Bolaang Mongondow Regency, Minahasa District, and South Minahasa Regency, where as a requirement for these breeders, that they have been raising cattle for more than 5 years with an average livestock ownership 2 -5 adult livestock. Furthermore, one experienced staff member was also selected to be responsible for beef cattle farming projects at the Office of Agriculture and Animal Husbandry of North Sulawesi Province. Meanwhile, secondary data were obtained from relevant journal articles and recent development research, internet and electronic media and the Central Bureau of Statistics. The data collection methods were used in this study, namely; Interviews, Observations, Focus Group Discussion (FGD), Questionnaires, Documentation and Combination / Triangulation.

A qualitative model was used in the stage of analyzing qualitative data, starting from the data approach, data reduction, data presentation, and data retrieval. Meanwhile, farmers' perceptions were measured using a Likert scale. Measurement of perception was to determine the assessment of farmers on the concept of intensification of cattle raising in North Sulawesi. Furthermore, for strategy planning a three-stage analysis of strategy formulation (the concept of strategy management) was carried out with an analytical framework of a comprehensive strategy formulation where stage one was input, stage two was matching, and stage three was decision.

3. Results and discussion

3.1. Maintenance situation

3.1. Maintenance situation

The beef cattle farming system in North Sulawesi, for the most part was still "traditional-extensive", using the "integrated farming" model with an average scale of 1-5 small businesses and "non-commercial farm", accompanied by low productivity (low use of inputs and technology). Of the 90 farmers interviewed, only 5 farmers did intensive maintenance, namely maintenance with a commercial fattening system, where the cattle were kept in pens. The source of calves was obtained either from artificial insemination (AI) or from natural mating. The use of animal feed was carried out

systematically, specifically maintained on land that has been provided with a good care system. Meanwhile, 85 other breeders were still doing traditional cattle rearing, where cattle were only released to find their own food on affordable farms and plantations, then farmers only rotated about every 6 hours, which farmers called "moving cows". Nevertheless by farmers, this was felt to have a significant contribution in supporting agricultural business activities, where cattle were kept as labor and agricultural transportation.

Farmers felt comfortable with this traditional farming system because it was not burden them. This was evidenced by the maintenance process that has lasted a long time and has been regarded as a legacy from generation to generation. However the impact was on the slow development of the livestock population that affects the availability of beef production in North Sulawesi.

Table 1. Development of North Sulawesi and National beef production [10].

Year	North Sulawesi			National		
	Production Amount (ton)	Percentage of total production	Growth per year (%)	Production Amount (ton)	Percentage of total production	Growth per year (%)
2012	4,501	18.642	-	508,906	16.59	-
2013	4,565	18.907	1.40	504,818	16.45	-0.81
2014	4,587	18.998	0.48	497,670	16.22	-1.44
2015	3,611	14.955	-21.28	506,661	16.51	1.77
2016	3,431	14.210	-74.50	518,484	16.90	2.28
2017	3,450	14.289	0.62	531,757	17.33	2.50
Total	24,145	100	-93.28	3,068,296	100	4.30
Average	3,45		-13.33	438,328		0.72

3.2. Feed sources carrying capacity

The potential carrying capacity of feed in North Sulawesi Province was relatively low at 771,640 ha (88.01%), medium at 68.952 ha (7.86%), and high at 36.194 ha (4.13%). Furthermore, regions that have high potential for animal feed carrying capacity were found in Bolaang Mongondow Regency (14,565 ha) and Minahasa (7,872 ha) [11].

The distribution of the potential carrying capacity of feed was classified as moderate to high according to the Ministry of Agriculture (2016), generally in the volcanic and alluvial areas with the form of flat to undulating areas (<15%) in the lowlands (altitude <700 m asl). South Minahasa Regency and North Bolaang Mongondow have high potential for animal feed carrying capacity, so that the potential for the development of beef cattle farms.

3.3. The potential area.

Potential development of beef cattle farming areas in North Sulawesi Province was based on animal husbandry centers and feed carrying capacity in an area. Further based on this shows that North Sulawesi Province has 3 regencies of beef cattle breeding development areas, namely Bolaang Regency Mongondow, Minahasa an Minahasa Selatan, covering an area of 29,696 ha.

According to the assessment, Bolaang Mongondow Regency is a district with the potential to develop a large area of beef cattle farming in North Sulawesi Province. This showed that the potential for feed carrying capacity in the district was quite high [11].

Furthermore, based on the Map of Potential Development of National Agricultural Areas, North Sulawesi Province was an area of lowland rice and corn, so that the integration of livestock with lowland rice and corn was possible. Potential districts for the integration of livestock with lowland rice and corn are Bolaang Mongondow and South Minahasa.

14

The most livestock farm in the districts of Bolaang Mongondow and South Minahasa were PO cattle types (Ongole crossbred), so in the agribusiness development strategy, it was recommended to be used as the "branded" cow of North Sulawesi with the labels "Mongondow beef" and "Minahasa beef" [1].

3.4. Farmers' perception.

Farmers' perceptions of the intensive farming system (modern) were vary widely. Based on a Likert scale calculation, farmers' perceptions of "dislike" answers were more than "like" answers. The reason farmers were not interested in intensive maintenance systems were more due to limited capital, lack of knowledge of farmers, lack of mastery of technology and limited marketing access capabilities. In addition, the institutional and extension system have not functioned well. So we need a strategy of how to empower farmers in the countryside.

Table 2. Farmers perceptions about intensive maintenance by maintenance scale

Maintenance Scale	Has no appeal	Neutral	Has appeal
1-2 head	2	4	33
3-5 head	8	7	17
Above 5 head	11	3	5
Total	21	14	55

Empowerment strategies can be done by engineering the social habits of farmers, engineering the ability to access capital for farmers (banking access), engineering of mastering reproductive technology and animal feed, digitizing livestock, engineering product processing systems, as well as access to marketing systems and local cattle competitiveness. against imports.

11. Analysis of the external-internal environment

Based on the analysis of the external environment (opportunities and threats) and internal environment (strengths and weaknesses) [1], the main factors that open up opportunities for the development of beef cattle farms in North Sulawesi were the increased demand for beef at the market, followed by increased interest in beef cattle agribusiness investment, availability of human resources farmers in the countryside. While other opportunity factors were; information technology development, infrastructure development, support of its agroecosystem and support of government development regulations and programs.

The threats that must be anticipated were related to competition with fisheries products where North Sulawesi is one of the centers of fisheries development in Indonesia, local cattle products were low competitive, the threat of competition for liberalization, especially the threat of imported beef products, the decline in the labor force in the livestock sector, especially the rural young generation of farmers, climate change has an impact on feed quality and animal health, low reproductive control systems, many changes in the function of agricultural land into residential and industrial development and were still dependent on imported production facilities. While, on internal factors, the main strengths for the development of maintenance systems were the development of processed and reproductive industry technology (artificial insemination), farmers' independence has been tested, the potential of culinary business, the potential of land and forage feed, the potential of agricultural products as animal feed, social conditions and the experience of farmers in raising cattle, counseling, the use of capital and institutional institutional.

Table 3. EFE matrix (external factor evaluation).

	Factor Opportunity	Weight (%)	Rating	Score	Priority / Ranking
1	Food independence program	0.091	1.000	0.091	VII
2	Investment interest in the livestock sub sector	0.082	3.000	0.246	II
3	Demand for beef cattle products	0.103	3.000	0.309	I
4	Infrastructure development and technical services.	0.098	2.000	0.196	IV
5	Development of information technology (agricultural digitalization)	0.098	2.000	0.196	IV
6	Potential of farmer hr in rural areas	0.112	2.000	0.224	III
7	Agro 9 osystem support	0.098	2.000	0.196	IV
8	Law of the republic of indonesia no.16 of 2006 concerning agricultural, fisheries and forestry extension system	0.103	1.000	0.103	VI
9	17 v of the republic of indonesia no.19 of 2013 concerning the protection and empowerment of farmers	0.103	1.000	0.103	VI
10	Ind. 16 sian minister of agriculture regulation. No.13 / permentan / pk.240 / 5/2017 about the livestock business partnership	0.113	1.000	0.113	V
	Sub-Total			1.777	
	Factor Threat	Weight (%)	Rating	Score	Priority / Ranking
1	Low competitive products	0.084	2.000	0.168	II
2	Competition and liberalization	0.091	2.000	0.182	III
3	Decrease in labor force in livestock sub sector	0.097	2.000	0.194	IV
4	Land use transfer	0.110	2.000	0.220	VIII
5	Climate change that influences feed procurement and animal health	0.102	2.000	0.204	V
6	Dependence on imported production facilities	0.112	2.000	0.224	IX
7	Barriers to the implementation of intensive business systems	0.106	2.000	0.212	VI
8	Potential of fishery products	0.079	2.000	0.158	I
9	Farmer's bargaining ability	0.113	2.000	0.226	X
10	Obstacles to the reproductive supervision system among farmers. Inbreeding / in relation (inbreed)	0.107	2.000	0.214	VII
	Sub-Total			2.002	
	Total Score (Opportunity + Threat)			3.779	

Source: [1]

Table 4. IFE matrix (internal factor evaluation)

	Factor Strength	Weight (%)	Rating	Score	Priority / Ranking
1	Institutional system	0.083	3.000	0.249	IX
2	Agricultural counseling	0.093	3.000	0.279	VII
3	Availability of business capital	0.084	3.000	0.252	VIII
4	Farmer's independence	0.101	3.000	0.303	III
5	Potential land and forage	0.098	3.000	0.294	V
6	Potential agricultural products	0.096	3.000	0.288	VI
7	Reproductive technology	0.114	3.000	0.333	II
8	Farmer's social experience and situation	0.096	3.000	0.288	VI
9	Development of processed industrial technology	0.119	3.000	0.357	I
10	Culinary business potential	0.100	3.000	0.300	IV
	Sub-Total			2.943	
	Factor Weakness	Weight (%)	Rating	Score	Priority / Ranking
1	Extensive business pattern	0.090	1.000	0.090	IX
2	Limited capital access	0.094	1.000	0.094	VI
3	Land limitations	0.092	1.000	0.092	VII
4	The reproductive system is still natural	0.091	1.000	0.091	VIII
5	Not yet entrepreneurship oriented	0.107	1.000	0.107	III
6	Forage management system	0.111	1.000	0.111	II
7	Farmer group management system	0.122	1.000	0.122	I
8	Marketing support capacity (animal market)	0.097	1.000	0.097	V
9	Application of cultivation technology and ib	0.100	1.000	0.100	IV
10	Slaughterhouse rph carrying capacity	0.090	1.000	0.090	IX
	Sub Total			0.994	
	Total Score (Strength+Weakness)			3.937	

Source: [1].

For its weaknesses; in the farmer group management system, forage management system, entrepreneurship-oriented business, not yet fully implementing artificial insemination (AI) technology for reasons of maintaining the authenticity of PO cows, not having a village animal market, limited access to capital especially in banking access, limited land where most of them still use land others, still relying on the natural reproductive system, cattle farming is only part of the agricultural business (not a major business). Based on this external and internal environmental analysis, it can be explained that the development of cattle raising system in North Sulawesi still depended on the empowerment strategy for farmers. This was related to social engineering strategy, economic engineering, technology engineering and marketing engineering.

3.6. Results of internal-external matrix analysis (IE)

This Internal-External Matrix (IE) was used to determine the strategic position of beef cattle agribusiness development in North Sulawesi.

The strategic position of the beef cattle business in North Sulawesi was included in cell I, based on the total IFE weight score on the x-axis and the total EFE weight score on the y-axis, can be explained that the business have been growing and developing. This proves that beef cattle intensification can be done by the farmers because the development of beef cattle agribusiness systems in North Sulawesi has a high industrial appeal.

Table 5. Internal-external matrix (IE) beef cattle business in north sulawesi.

		Total value IFE		
		Strong 3.0-4.0	Medium 2.0-2.99	Weak 1.0-1.99
Total value EFE	High 3.0-4.0	i (grow and build)	ii (grow and build)	iii (maintaining and maintaining)
	Medium 2.0-2.99	iv (grow and build)	v (maintaining and maintaining)	vi (panen atau divestasi)
	Low 1.0-1.99	vii (maintaining and maintaining)	viii (harvest or divest)	ix (harvest or divest)

Source: [1]

3.7. Alternative strategies

The purpose of making alternative strategies was in order to gather a variety of feasible strategies and then choose the best strategy, because not all of these alternative strategies will be chosen to be implemented.

This strategy used in evaluating strengths, weaknesses, opportunities and threats in the development of beef cattle agribusiness in North Sulawesi consisted:

1. *Aggressive strategy/grow*; where this strategy used internal power to benefit from opportunities such as:
 - 1) Towards the commercialization business process that was related to how to conduct full scale production, set prices, build distribution networks, and promotions.
 - 2) Towards the business process of the partnership pattern of the stakeholders (farmers, private and government) in a corporate farming.
 - 3) Towards the process of creating reliable HR farmers who master technology and information and management systems.
 - 4) Towards the process of creating reliable HR farmers who master technology and information and management systems.
 - 5) Selling fresh meat products in packaged forms is guaranteed ASUH status (safe, healthy, whole and halal).
2. *Diversification Strategy*; covering production and marketing strategies, where this strategy was to get benefits by minimizing weaknesses and utilizing opportunities:
 - 1) Increase and strengthen the capacity (quality) of animal husbandry and animal health human resources.
 - 2) Enhancing the role of universities in the development of technology and human resources for farmers.
 - 3) Innovate by creating a "brand" of competitive beef food products (learning from beef wagyu).
 - 4) Develop intensive cattle breeding patterns (modern).

- 5) Build village animal market facilities with local wisdom characteristics that were supported by price regulation and animal health.
3. *Differentiation strategy*, where this strategy utilizes the power possessed by trying to minimize threats. The points were as follows:
 - 1) Arrange land management by providing opportunities for beef cattle breeders to become HGU users especially in production centers.
 - 2) Make regulations so that all farmers form farmer institutions.
 - 3) Stimulate investors to build a beef processing industry.
 - 4) Developing beef cattle business with the principle of capital independence (capital was obtained from farm income).
 - 5) Improve research and counseling.
4. *Defensive strategy*; where this strategy was to minimize weaknesses and threats, with the following points,
 - 1) Strengthening the farmer institutional system so that it has a high bargaining power.
 - 2) Develop commercial businesses, but still maintain local characteristics as social capital.
 - 3) Developing beef cattle breeding business by building a "village breeding center (VBC)".
 - 4) Develop a white PO cow as a reliable mainstay product.
 - 5) Improving agricultural education for young people in rural areas.

3.8. Preferred strategy.

The Chosen Strategy was an extract from various strategy formulations obtained from the analysis results and then becomes the implementation of the intensification system maintenance strategy in beef cattle agribusiness in North Sulawesi. The chosen of strategy based on priority ranking were as follows;

1. Increase the competitiveness of beef cattle agribusiness in North Sulawesi by making white PO (Peranakan Ongole) cows as the mainstay branded business products (brand products) of North Sulawesi.
2. Developing PO industrial processed products for both local and export markets.
3. Develop a culinary business for local beef products (PO).
4. Developing beef cattle farm business patterns that were entrepreneurship oriented, leading to sustainable business development by consider risks.
5. Empowering rural farmers as the backbone of the development of the beef cattle industry which was regulated in regulations and government budget support.
6. Developing a partnership business pattern by involving the "stakeholders", especially three important elements, namely farmers, the private sector and the government in a corporate bond of beef cattle business.
7. Providing space for land use (utilizing idle land) for farmers in rural areas to develop beef cattle ranching businesses that were regulated by regulations.
8. Preparing young farmers in rural areas with the latest education and training to continue the development of beef cattle agribusiness in rural areas.
9. To build a market network for beef cattle farms (rural animal markets) along with other supporting infrastructure.
10. Strengthening farmer institutions and increasing the role of agricultural extension, with the aim to improve the ability of beef cattle breeders' human resources, cultivation technology innovation and reproductive technology-IB.

3.9. Managerial implications.

Managerial implications based on the results of research were the consequences or a direct result of the development of intensification of cattle raising systems to increase population, production, productivity (entrepreneurship) with high competitiveness, the long-term development strategy was to; (1) develop competitiveness of local cattle by making PO cattle (local cattle) as branded business products (brand

products or business brands), (2) develop the PO cattle product processing industry in synergy with farmers, (3) develop a culinary business of PO cattle products from farmers' farms, (4) develop beef cattle businesses run by farmers with an entrepreneurship pattern, (5) empowerment of farmers in rural areas for the development of farmer independence and hope as the backbone of the development of the cattle breeding industry in North Sulawesi.

4. Conclusion

It concluded that farmers in North Sulawesi were not interested in the concept of intensification in cattle raising systems. The strategy for intensifying beef cattle breeding systems for farmers were to build a driving force in the market and consumers, namely branded local cattle (PO cattle), building a processed beef products industry in synergy with farmers and developing the culinary business of beef products produced by farmers.

References

- [1] Lainawa J, Kindangen P, Rotinsulu T O and Tumbuan J F A 2019 Strategy for beef cattle agribusiness development in north Sulawesi *Int. J. Appl. Business and Int. Management* **4** 1-12
- [2] Elly F H, Sinaga B M, Kuntjoro S U and Kusnadi N 2008 Pengembangan usaha ternak sapi rakyat melalui integrasi sapi- tanaman di Sulawesi Utara (in Indonesian) *J. of Agric. Res.* **27** 63-68
- [3] Salendu A H S 2011 Insightful Local Cattle Development Environment in North Sulawesi *Proc. Sem. Nat. Conf. 2nd Ser.: Prospects and Potential of Local Animal Resources in supporting Animal Food Security* 356-36.
- [4] Oley F, Salendu A H S, Rundengan M L and Elly F H 2015 Cattle development under coconut trees to support animal competitiveness. *Proc. Sem. Nat. Ser.: Ani. Husbandry and Vet. Tech.* 258-262
- [5] Suryana 2008 Agribusiness oriented beef cattle business development with partnership patterns. South Kalimantan Agricultural Technology Research Center. *J. Agric. Res.* **28**
- [6] Suresti A and Wati R 2012 Beef cattle business development strategy in pesisir selatan regency *J. Indo. Anim. Husb.* **14**
- [7] Sanim B 2006 *Environmental Economic Analysis and Environmental Audit* (Bogor: Faculty of Economics and Management of IPB)
- [8] Sarma P K. and Raha S K 2015 Strategies of beef cattle development enterprise in selected areas of Bangladesh *Advances in Economics and Business* **3** 124-32
- [9] Bogdan, Robert C and Sari B K 1982 *Qualitative Research for. Education: An Introduction to Theory and Methods* (London: Allyn and Bacon)
- [10] Directorate General of Animal Husbandry and Animal Health 2017 *Animal Husbandry and Animal Health Statistics Book* Publisher Ministry of Agriculture Republic of Indonesia
- [11] Peraturan Menteri Pertanian Republik Indonesia Nomor:67/Permentan/SM.050/12/2016. Tentang Pembinaan Kelembagaan Tani.

The development of intensive beef cattle farming system in North Sulawesi with strategy management concept approach

ORIGINALITY REPORT

19%

SIMILARITY INDEX

15%

INTERNET SOURCES

14%

PUBLICATIONS

9%

STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to UIN Sultan Syarif Kasim Riau Student Paper	6%
2	repository.umy.ac.id Internet Source	3%
3	iopscience.iop.org Internet Source	2%
4	Submitted to Academic Library Consortium Student Paper	1%
5	J K J Kalangi, A K Rintjap, J Lainawa. "Cooperative Farming Concept as Business Development Strategy Model of Native Chickens in Province North Sulawesi Indonesia", IOP Conference Series: Earth and Environmental Science, 2020 Publication	1%
6	repository.unhas.ac.id Internet Source	1%
7	Erwin Wantasen, Sintya Umboh, Jein Rini Leke. "Market structure and price controller of beef	1%

cattle in North Sulawesi", E3S Web of Conferences, 2021

Publication

8	I Indrayani, Andri, Boyon. "Analysis of role and determinant factors development of beef cattle farming in Dharmasraya regency West Sumatera province", IOP Conference Series: Earth and Environmental Science, 2023 Publication	1 %
9	Submitted to Institut Pertanian Bogor Student Paper	<1 %
10	www.ijsr.net Internet Source	<1 %
11	www.studymode.com Internet Source	<1 %
12	journal.ipb.ac.id Internet Source	<1 %
13	Sutrisno Hadi Purnomo, Ayu Intan Sari, Shanti Emawati, Endang Tri Rahayu. "Determining strategy of beef cattle development in Karanganyar Regency, Central Java, Indonesia", IOP Conference Series: Earth and Environmental Science, 2020 Publication	<1 %
14	Dantje T. Sembel, J. Watung, Merle Shepard, Mike Hamming, Garry R. Carner. "CONTROL OF CACAO POD BORER, CONOPOMORPHA	<1 %

CRAMERELLA SNELLEN ON CACAO
PLANTATIONS IN NORTH SULAWESI USING
DEGRADABLE POLYMER SLEEVES", EUGENIA,
2011

Publication

15

D A P Sari, Muladno, S Said, Nahrowi, R Priyanto. "Evaluation and development strategy of cattle breeding area-based on smallholder farmers community in Jambi", IOP Conference Series: Earth and Environmental Science, 2021

Publication

<1 %

16

repository.ipb.ac.id

Internet Source

<1 %

17

Woro Estiningtyas, Perdinan, Adi Rahman, Suciantini. "Adaptation strategy for sustainable food sovereignty based on vulnerability and climate risk assessment : a case study of Sulawesi Island", IOP Conference Series: Earth and Environmental Science, 2020

Publication

<1 %

18

gsconlinepress.com

Internet Source

<1 %

19

pinpdf.com

Internet Source

<1 %

20

A S Harahap, Hasnudi, T Supriana. "Analysis of factors affecting beef cattle farming income (case study in Langkat Regency)", IOP Conference Series: Earth and Environmental Science, 2021

Publication

<1 %

21

Farra Safira, Muhammad Dimiyati, Astrid Damayanti. "Rice production and the empowerment of farmers in the subdistrict of Pallangga, Gowa Regency, South Sulawesi Province", AIP Publishing, 2019

Publication

<1 %

22

M Yuzan Wardhana, Lukman Hakim, Nailil Afkar, Ira Mayam Sari, T. Saiful Bahri, Zulkarnain. "Palm sugar production from Palm tree in Gerenggam village environment, Aceh", IOP Conference Series: Earth and Environmental Science, 2021

Publication

<1 %

23

N D Wahyono, N Hasanah, S B Kusuma. "Analysis up-stream agribusiness and counselling beef cattle development in Jember", IOP Conference Series: Earth and Environmental Science, 2021

Publication

<1 %

24

Submitted to School of Business and Management ITB

Student Paper

<1 %

25

S N Rahmatullah, A Sulaiman, Askalani, N M K Azizi. "Prospect development of local beef cattle from South Kalimantan as supporting to food sovereignty in Indonesia", IOP Conference Series: Earth and Environmental Science, 2018

Publication

<1 %

26

ejurnal.ung.ac.id

Internet Source

<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On