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Farmer Empowerment in Improving Beef Cattle Farming Business in Tonsewer Village, Regency Minahasa

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ABSTRACT

The research objective was to examine the relationship between social engineering, economic engineering, technological engineering, and value-added engineering with beef cattle business development in Tonsewer Village, West Tompaso District, Minahasa Regency based on farmers' perceptions. Descriptive data analysis was used to describe clearly and systematically the data in order to obtain a complex picture by looking at respondents' responses. The analysis found that there is a significant relationship between the engineering variables and the variable of beef cattle business improvement. The level of relationship strength falls into the "strong relationship" category. Furthermore, this relationship is unidirectional, which means that if engineering increases, then the beef cattle farming business will increase. Farmer empowerment strategies through; strengthening farmer institutions, counseling, and human resource development, access to capital, markets, achieving agreement on recommended technology with farmer habits, vertically and horizontally coordinated off farm business development.

Keywords: Cattle, Empowerment, Engineering, Farmers, Relationship

INTRODUCTION

The process of empowering farmers is how to increase the role of extension workers as motivators, educators, and facilitators with the support of the strength of the role of communicators so that the hope of changing the behavior of farmers in developing their agricultural business towards independence and achieving farmer welfare can be achieved. We conducted this study in Tonsewer Village in Minahasa Regency, which is bordered by Sendangan Village, Touure Dua Village, South Tonsewer Village, and South Pinabetengan Village. The Distance from the Sub-district government center is 2.5 Km. Meanwhile, from the District government center is around 28 Km and 51 Km from Provincial government center.

Farmers in Tonsewer's village, Minahasa Regency, raise beef cattle semi-intensively where the number of livestock is still at the nominal unit per family. The livestock are kept in cages when farmers are active on the farm until the harvest season ends. However, when the harvest is complete, the cattle are released freely in the former food crop field area. The productivity of beef cattle as a food source is very concerning because the volume is far from the target required by consumers. This means that the demand for beef consumption is not proportional to the availability of products. There are several contributing factors, including low population, low production, and poor seed quality. Beef cattle farming still has obstacles in its development, including; the maintenance system of beef cattle is still traditional, the lack of land utilization for forage planting, the absence of quality animal feed such as a fermented feed from agricultural waste, and the cages that are not up to standard. There is no provision of appropriate vitamins and concentrates, there is no processing of the utilization of livestock waste economically, and farmers do not understand more efficient livestock marketing. Thus, empowerment is a solution to change the existence of farmers and their families so that they know and have the willingness and ability to solve their own problems in an effort to improve their results and level of life. This aligns with Sumual, Arham, Kawulurm, and Rimbing (2021), who state that empowerment in an organization will strengthen management and professionalism. The meaning of empowerment is a concept of development models and industrial models.

Thus, this study shows how to manage the empowerment model so that farmers can be independent and prosperous. Based on the problems and understanding of the external conditions of farmers, then from several farming models, cooperative farming can be used as an alternative to minimize the weaknesses faced by beef cattle farmers in Tonsewer Village, Regency Minahasa. Thus, the research objective is to test whether there is a relationship between social engineering, economic engineering, technological engineering, and value-added engineering with the development of beef cattle business in Tonsewer Village, West Tompaso District, Minahasa Regency based on farmers' perception.

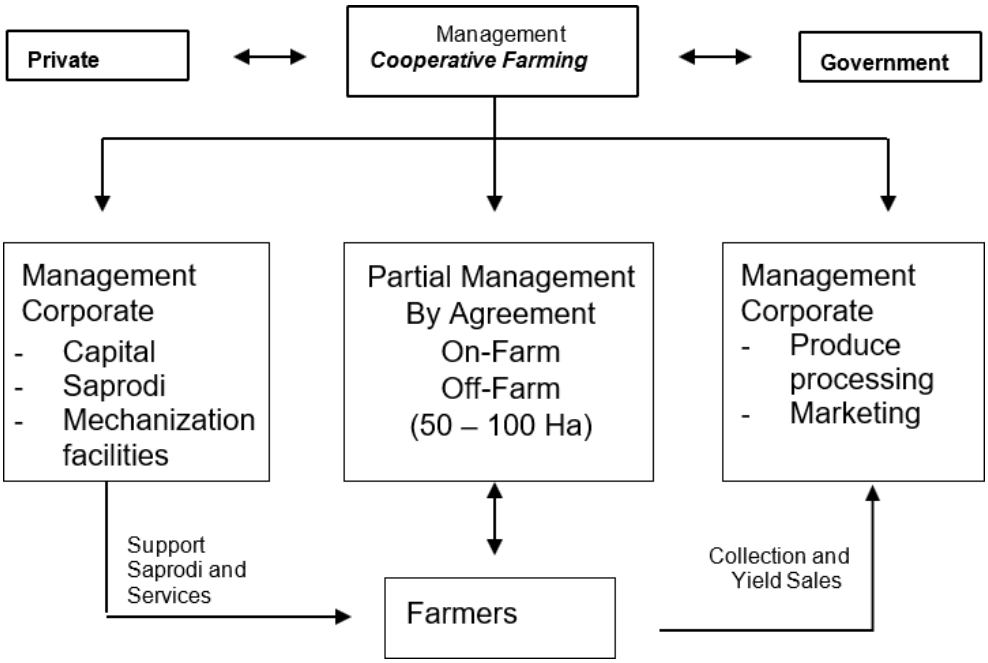
LITERATURE REVIEW

The opinion of Huraerah (2011); Mardikanto and Soebianto (2012); Handoko, Suliaman, and Akbar (2014); Faizal (2015); Sulaiman, Lubis, Susanto, and Purnaningsih (2016); Suswanto, Windiasih, Sulaiman, and Weningsih (2018) that empowerment carries out participatory practices that involve all parties, utilize local resources, provide motivation, knowledge, experience, skills, and access to partnerships, both by parties outside the community. Bhinardi (2017) states that empowerment is giving power, transferring power, or delegating authority to other parties and efforts to provide ability or empowerment. Empowerment is a comprehensive process, which is an active process between motivators, facilitators, and community groups that need to be empowered through increasing knowledge, skills, providing various facilities, and opportunities to

achieve access to resource systems in improving community welfare. Community empowerment includes three things, namely enabling, empowering, and creating independence. Laily, Ribawanto, and Nurani (2014) in their research explained that the main supporting factor for the success of farmer empowerment and increasing food security is the implementation of programs organized by the government, both central and regional, in accordance with previously established plans. Programs held by the government (central and regional) follow the previously set plan. According to Nuranto (2013), inhibiting factors are the low quality of human resources and limited agricultural equipment. In addition, Nuranto (2013) explained that the success factor of rice paddy farmer empowerment is due to technical training and improvement of the crop marketing system both individually and in groups conducted by the government. According to Trimo, Hidayat, and Budiman (2020), empowerment is both a process and a goal. As a process, empowerment is a series of activities to strengthen the power or empowerment of weak groups in society, including individuals experiencing poverty problems. Empowerment refers to the state or results to be achieved by a social change, namely a society that is empowered, has power, or has the knowledge and ability to fulfill its life needs (physical, economic, or social).

According to the results of Trimo et al. (2020), in order for community service to run well, these activities should be carried out sustainably. Nuryanti (2005) states that the cooperative farming model is a model of empowering farmers through groups by carrying out social, economic, technological, and value-added engineering. Social engineering can be done by strengthening human resource development, farmer institutions, and counseling. Economic engineering is done by developing access to capital for the procurement of inputs and market access. Technological engineering can be done by achieving agreement on recommended technology with farmers' habits. Finally, value-added engineering is done through the development of vertically and horizontally coordinated off-farm businesses. Vertical and horizontal coordination will involve many stakeholders in a partnership to implement the cooperative farming model (see Figure 1). Stakeholders that can be involved in cooperative farming include farmers, the private sector, and the government. Farmers will act as both members and managers. As members, farmers must actively participate in on-farm and off-farm business planning, as well as agree on the technology to be implemented and implement the technology. The private sector will act as investors through cooperative farming partnerships from upstream to downstream sub-systems. As an upstream sub-system partner, the private sector invests by providing agricultural inputs, namely seeds, fertilizers, and medicines for agriculture. As a downstream sub-system partner, the private sector is responsible as a production container and marketing partner. Meanwhile, the government will act as a facilitator and catalyst for planning activities, developing business strategy, efficiency location- specifically applied technologies, capital procurement, production facilities, and agricultural machinery, as well as facilitating the marketing process.

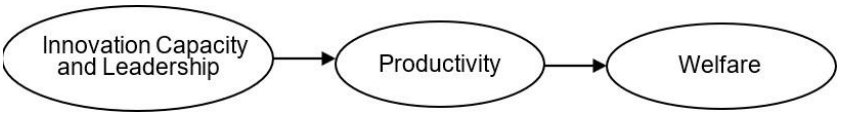
Figure 1. Design of Cooperative Farming Model Based on Rice-Crops



Source: Nuryanti (2005)

Nuryanti (2005), Cooperative farming has several criteria, namely more in line with characteristics of Indonesia agriculture, which has inter-spatial biophysical-socio-economic diversity which requires decentralized and bottom-up management. Previous program, such as corporate agriculture, is more top-down. Landowning farmers are still directly involved as farm managers on each of their lands. There is no absolute consolidation of land and farm management. It is bottom-up and is expected to serve as a motor of innovation and improve farmers' living standards (Figure 2).

Figure 2. Innovation and the Improvement of Living Standards



Source: Nuryanti (2005)

RESEARCH METHOD

The research was conducted in Tonsewer Village, Minahasa regency, from August to November 2022. Primary data was obtained directly by observation and interviews with respondents who had been prepared. Meanwhile, secondary data was obtained from previously documented sources. In this research, primary data was collected and obtained directly through observations and interviews with parties considered to understand the problem of beef cattle farming, namely farmers who have been raising beef cattle for more than three years. Meanwhile, Secondary data is obtained from relevant articles or literature. In Tonsewer village, there are 56 farmers who raise beef cattle. However, only 30 farmers meet the criteria as respondents, namely the number of livestock above three heads and have been raising beef cattle for more than three years. There are four variables measured in this study, namely farmers' perceptions of social engineering, economic engineering, technological engineering, and value-added engineering, using the Likert scale model data collection method. Data were analyzed using a descriptive approach and Rank Spearman correlation analysis. Descriptive data

analysis was used to describe clearly and systematically the data in order to obtain a complex picture by looking at respondents' responses. The average score is used to categorize respondents' answers to each criterion on the Likert Scale (scale 1 to 5). Rank Spearman correlation analysis is used to find relationships or test the significance of associative hypotheses when each of the variables connected is ordinal, and the data sources between the variables do not have to be the same (Sugiyono, 2017). Hypothesis testing using the Spearman Rank test analysis at α = 0.05 or α = 0.01, and data processing using the IBM SPSS Statistic 24 application.

RESULTS

Respondent Characteristics by Age

The age of respondents varied between 22 years and 67 years. According to the Central Bureau of Statistics (BPS, n.d.), productive age is measured from the age range of 15 to 64 years. Productive age is a time when a person is still able to work optimally and can still continue to develop a business to meet the needs of personal life and many people. According to Anwar and Prasetyowati (2021), someone who is at a productive age will be able to get more income than a non-productive age generally. The age characteristics of respondent farmers are very important for the sustainability of farming because a person's productivity at work is strongly influenced by age. According to Labor Law No. 13 of 2003, productive age is the age between 15 and 64 years. Farmers who have a productive age will be physically stronger than farmers who are no longer productive.

Table 1. Characteristics Based on Age

Age	Quantity	Percentage
20-29	4	10
30-39	4	10
40-49	11	27,5
50-59	16	40
60-69	4	10
70-75	1	2,08

Source: Research Data 2022

Table 1 can be seen that the average number of breeders is mostly between the ages of 50-59 years with a total of 16 people, while the age of 40-49 totals 141 people, and the age of 30-39 totals 4 people. There are also the same number in the age range of 20-29 and 60-69 with a total of 4 people and the least at the age of 70-75 with a total of 1 person. According to Anwar and Prasetyowati (2021), the productive age of labor in managing farms ranges from 14-62 years. Meanwhile, according to Anwar and Prasetyowati (2021), a person is said to be productive if he has an age of 15-64 years. This means that farmers still have great potential to produce products (goods and services).

Characteristics of Respondents Based on Education

The respondent's education level varies from elementary school to university level. Riyono and Juliansyah (2018) stated that the level of education has a significant effect on income. The results of the analysis of Hidayah, Artdita, and Lestari(2019) show that simultaneously farmer characteristics, age, education level, number of family dependents, breeding experiences, and scale of ownership have an influence on technology adoption.

Table 2. Characteristics Based on Education

Education	Total	Percentage
Primary school	11	27,5
Junior high school	5	12,5
Senior high school	22	55
S1	2	5

Source: Research Data 2022

Table 2 shows that the most graduates are high school graduates consisting of 22 people, followed by elementary school graduates consisting of 11 people, followed by junior high school graduates consisting of 5 people, and the least graduates are S1 graduates consisting of 2 people.

Characteristics of Respondents Based on Main Occupation
The number of respondents with a farmer background is the highest compared to other main job backgrounds in terms of keeping beef cattle. The number of respondents with a farmer background amounted to 35 people, 4 private individuals, and 1 ASN. This indicates that beef cattle rearing is still relied upon by farmers. Therefore, for business development, farmers should be the backbone of beef cattle farming business development.

Table 3. Main Job Characteristics

Jobs	Total	Percentage
State Civil Apparatus (ASN)	1	2,5
Private	4	10
Farmers	35	87,5

Source: Research Data 2022

The main occupation of respondents was farmers, with a total of 35 people, followed by private which consists of 4 people, and 1 person works for State Civil Apparatus (ASN).

The Relationship Between Social Engineering and Beef Cattle Business Improvement
Rekayasa sosial yang dianalisis dalam penelitian ini adalah penguatan kelembagaan tani, penyuluhan, dan pengembangan SDM.

Table 4. Relationship Between Social Engineering and Beef Cattle Business Improvement

Correlation			Social Engineering	Business Improvement
Spearman's rho	Social engineering	Correlation Coefficients	1.000	.609**
		Sig.(2-tailed)	.	.000
		N	30	30
	Business improvement	Correlation Coefficients	.609**	1.000
		Sig.(2-tailed)	.000	.
		N	30	30

*Notes: **. The correlation is significant at the 0.01 level (2-tailed)*

From the above output, the coefficient number is 0. 609**. According to de Vaus (2002), this means that the degree of strength of the relationship between the social engineering variable and the improvement of the beef cattle business is 0. 609. Furthermore, the asterisk 2 (**) means that the correlation is significant at the figure of 0.000. The correlation number in the above results is positive, i.e., 0.609. Therefore, the relationship between the two variables is unidirectional (unidirectional relationship type). Thus, it can be interpreted that the more social engineering is improved, the beef cattle farming business will increase. Furthermore, it is known that the significant value or Sig. (2-tailed) 0.000, which is smaller than 0.05. So this means there is a significant relationship (means) between social engineering variables of increasing beef cattle farming business.

The Relationship Between Economic Engineering and Beef Cattle Business Improvement

The economic engineering analyzed in this study is the development of access to capital for the procurement of inputs and market access.

Table 5. Relationship Between Economic Engineering and Beef Cattle Business Improvement

Correlation			Economic engineering	Business improvement
Spearman's rho	Economic engineering	Correlation Coefficients	1.000	.685**
		Sig.(2-tailed)	.	.000
		N	30	30
	Business improvement	Correlation Coefficients	.685**	1.000
		Sig.(2-tailed)	.000	.
		N	30	30

*Notes: **. The correlation is significant at the 0.01 level (2-tailed)*

From the above output, the coefficient number is 0. 685**. This means that the degree of strength of the relationship between the economic engineering variable and the improvement of the beef cattle business is 0. 685. Furthermore, the asterisk 2 (**) means that the correlation is significant at a significant figure of 0.000. The correlation number in the above results is positive, i.e., 0. 685, so the relationship between the two variables is unidirectional (unidirectional relationship type). Thus, it can be interpreted that the more economic engineering is improved, the beef cattle farming business will increase. Furthermore, it is known that the significant value or Sig. (2-tailed) is 0.000, which is smaller than 0.05. So this means there is a significant relationship (means) between economic engineering variable and the variables of increasing beef cattle farming business.

The Relationship Between Engineering Technology and Beef Cattle Business Improvement

The technology engineering analyzed in this study is the achievement of agreement of recommended technology with farmers' habits. Finally, value-added engineering is done through the development of vertically and horizontally coordinated off-farm businesses. Vertical and horizontal coordination will involve many stakeholders in a partnership.

Table 6. Relationship Between Engineering Technology and Beef Cattle Business Improvement

Correlation			Engineering technology	Business improvement
Spearman's rho	Engineering technology	Correlation Coefficients	1.000	.406*
		Sig.(2-tailed)	.	.026
		N	30	30
	Business improvement	Correlation Coefficients	.406*	1.000
		Sig.(2-tailed)	.026	.
		N	30	30

*Notes: **. The correlation is significant at the 0.01 level (2-tailed)*

From the above output, the coefficient number is 0. 406*. According to de Vaus (2002), in the "moderate relationship" category, the degree of strength of the relationship between the technology engineering variable and the improvement of the beef cattle business is 0. 406. Furthermore, the asterisk 1 (*) means that the correlation is significant at a significant figure of 0.026. The correlation number in the above results is positive, i.e., 0. 406, so the relationship between the two variables is unidirectional (unidirectional relationship type). Thus it can be interpreted that the more technical engineering is improved, the beef cattle farming business will increase. Furthermore, it is known that the significant value or Sig. (2-tailed) is 0.026, which is smaller than 0.05. So this means that there is a significant relationship (means) between the technology engineering variable and the beef cattle business improvement variable.

Relationship Between Value-Added Engineering And Beef Cattle Business Improvement

The value-added engineering analyzed in this study is vertically and horizontally coordinated business development. Vertical and horizontal coordination will involve many stakeholders in a partnership.

Table 7. Relationship Between Value-Added Engineering And Beef Cattle Business Improvement

Correlation			Value-added	Business improvement
Spearman's rho	Value-added	Correlation Coefficient	1.000	.577**
		Sig. (2-tailed)	.	.001
		N	30	30
	Business improvement	Correlation Coefficient	.577**	1.000
		Sig. (2-tailed)	.001	.
		N	30	30

*Notes: **. The correlation is significant at the 0.01 level (2-tailed)*

From the above output, the coefficient number is 0. 577**. According to de Vaus (2002), this means that the degree of strength of the relationship between the value-added engineering variable and the increase in the beef cattle business is 0. 577. Furthermore, the asterisk 2 (**) means that the correlation is significant at the figure of 0.001. The correlation number in the above results is positive, i.e., 0. 577, so the relationship between the two variables is unidirectional (unidirectional relationship type). Thus it can be interpreted that the more value-added engineering is improved, the beef cattle farming

business will increase. Furthermore, it is known that significant value or Sig. (2-tailed) is 0.001, which is smaller than 0.05. So this means there is a significant relationship (means) between the value-added engineering variable and the variable of increasing beef cattle farming business.

DISCUSSION

Beef Cattle Business Development

Beef cattle farming in Tonsewer Village has long been recognized by the community, especially farmers. The potential for development is very good, but this livestock business is still carried out in a part-time (traditional) way. According to the results of research by Arbi, Manese, Lumenta, and Rundengan (2016), the West Tompaso Sub-district is suitable for cattle farming because there is still a lot of land that has not been utilized. This is especially true of community plantations that are not cultivated so that they can be used for grazing. Cattle farming managed by the community or can be interpreted as community farming is a staple that is used to meet the needs of agricultural labor and also for food needs and savings, which at any time can be sold to meet urgent economic needs. The development of the cattle population in Tonsewer Village has not shown positive progress. The decline in the cattle population can occur due to a lack of attention to (a) livestock husbandry management, including housing and balancing the needs of slaughtering livestock with the birth of offspring, (b) provision of quality animal feed, (c) selection of superior seeds and parents resulting in genetic depletion. Peranakan Ongole (PO) cattle were the most common type of cattle kept by respondents (65%). PO cattle in Tonsewer village have an average weight gain of 0.4-0.7 kilograms daily. PO cattle are known as broilers and working cattle. PO livestock is also able to adapt to various local environmental conditions.

The reproductive activity of the mother quickly returns to normal after giving birth, while the male has good semen quality. The advantages of PO cattle include resistance to heat and parasites, relatively fast growth despite poor adaptation to feed, and good carcass percentage and meat quality. In addition to PO cattle, Bali cattle (10%) and local cattle (Bacan) (20%) are also kept in Tonsewer village. Minahasa Regency has been used as a center for the development of local cattle breeds. Especially Peranakan Ongole (PO) cattle through artificial insemination (IB) technology. The development of PO cattle breeds through IB is centered in three sub-districts, which consist of the Kawangkoan sub-district, Tompaso, and West Langowan sub-districts. IB technology is carried out in cattle breeding centers using frozen semen, especially Ongole breeds of cattle from the Artificial Insemination Seed Center (BBIB) Singosari, East Java. The problem that has become a point of attention now is the weak recording system of variables on morphometric measures and maternal condition as a basis for implementing the maternal condition as the basis for selection. Empowerment in development to increase population, production, and productivity as well as competitiveness. According to Dahlan, Tondok, and Kallo (2021), empowered farmers are farmers who have knowledge, skills, and actions toward their potential.

Relationship Between Engineering and Business Improvement

To achieve the level of empowerment, social engineering is carried out to realize an empowered society in all types of community activities. To support social engineering and empowerment of farmers, it is supported by several factors such as the concept of Servaes (as cited in Dahlan et al., 2021), stating the participatory development communication process related to the concept of empowerment, including the existence of grassroots dialog forums, new functions of communication, the existence of participatory media, sharing knowledge equally and supporting communication models. This concept explains that participatory development communication can affect the empowerment of farmer groups. Social engineering was conducted in China to enhance

technology transfer and empower small farmers in rural areas (Jiao et al., 2016). With this model, the science and agriculture community is closely linked to innovations in research approaches and agronomic service models. Economic engineering aims to develop access to capital for input procurement and market access. The emphasis is on corporate activities in the provision of production capital and market access to agricultural products integrated through group management whose members are farmers (farmer groups) as farming actors. These conditions allow smallholders to easily access capital and empower farming activities based on the concept of profit maximization and cost minimization. This can be implemented through cooperation with stakeholders, namely farmers, the private sector, and the government. In addition, the role of extension workers and researchers is very important in leading the process of business improvement. Technology developed must be based on location specifics that have superiority in compatibility with the local ecosystem and utilize inputs available at the location and pay attention to environmental balance. Community empowerment through the development of this technology agreement can be done by utilizing the results of research activities that have been carried out by researchers.

Technology is certainly what farmers can really do in the field, while mastery of the technology can be done through counseling and research. In this way, they expected to contribute directly to the improvement of farming and farmers' welfare. The provision of facilities to farmers should not be limited to the provision of production facilities but to other necessary agribusiness development facilities such as market information, increased access to markets, capital, and the development of partnership cooperation with other business institutions. With the availability of various facilities needed by farmers, it is hoped that in addition to farmers being able to farm well, there is also the certainty of marketing results at favorable prices, so that in addition to improving the welfare of farmers, there is also enthusiasm in developing farming. Revitalization of institutions based on local culture in accordance with the development of dynamic community tastes. The purpose of institutional revitalization is to be able to make a more significant contribution to efforts to realize improvements in the business system. For this reason, efforts are needed to manage it so that it is able to become an institution that drives the economy in rural areas. Value-added engineering is done through the development of off-farm business from primary products to secondary products. The parties involved are farmers, the private sector, the government, and the private sector. Farmers will act as both members and managers. A group of farmers that has been formed from several households must actively manage on-farm (primary products) and off-farm (secondary products) planning with such assets as agricultural land technology used. The private sector's role here is due to its function as an investor. The government acts as a facilitator, a catalyst in planning activities, developing business strategy, efficiency location-specifically applied technologies, capital procurement, and inputs facilitating the process of marketing products.

CONCLUSION

Based on farmers' perceptions, farmer empowerment through social engineering, economic engineering, technological engineering, and value-added engineering can improve beef cattle farming in Tonsewer village, West Tompaso sub-district, Minahasa district. This is because the results of the analysis state that there is a significant relationship, which is unidirectional, between empowerment and business development, with the understanding that the more efforts are increased, the increase in population, production, productivity, and added value of beef cattle farming will increase.

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DECLARATION OF CONFLICTING INTERESTS
The authors declared no potential conflicts of interest

REFERENCES

Anwar, M., & Prasetyowati, R. E. (2021). Karakteristik petani dan keragaan usaha tani jagung (Zea mays) Lahan Kering Beriklim Kering (LKBK) di Kecamatan Pringgabaya. *Journal Ilmuah Rinjani, 9*(1), 157-165.

Arbi, J. S. L., Manese, M. A. V., Lumenta, I. R. D., & Rundengan, M. L. (2016). Analisis usaha kelompok tani Ternak Sapi "Pelita" di Desa Tonsewer Kecamatan Tompaso Barat Kabupaten Minahasa. *Jurnal Zootek, 36*(1), 207-217.

BPS. (n.d.). Istilah. Retrieved from https://www.bps.go.id/istilah/index.html?Istilah_page=4

de Vaus, D. (2002). *Analyzing social science data*. London: Thousand Oaks.

Dahlan, S., Tondok, A. R., & Kallo, R. (2021). Review: Rekayasa sosial dan keberdayaan petani. *Jurnal Agrisistem: Seri Sosek dan Penyuluhan, 17*(2), 87-93.

Faizal, F. (2015). Diskursus pemberdayaan masyarakat. *Jurnal Pengembangan Masyarakat Islam, 8*(1), 35-51.

Handoko, W., Suliaman, A. I., & Akbar, A. A. S. (2014). Komunikasi partisipatif dalam proses pembagunan Bendungan Matenggeng Kabupaten Cilacap Jawa Tengah. *Jurnal Penelitian Komunikasi, 17*(2), 141-152.

Hidayah, N., Artdita, C. A., & Lestari, F. B. (2019). Pengaruh karakteristik peternak terhadap adopsi teknologi pemeliharaan pada peternak kambing peranakan Ettawa di Desa Hargotirto Kabupaten Kulon Progo. *Jurnal Bisnis dan Manajemen, 19*(1), 1-10. doi: 10.20961/jbm.v19i1.30916

Huraerah, A. (2011). *Perorganisasian dan pengembangan masyarakat: Model dan strategi pembangunan berbasis kerakyatan*. Bandung: Humaniora.

Jiao, X., Zhang, H., Ma, W., Wang, C., Li, X., & Zhang, F. 2019. Science and technology backyards: A novel approach to empower smallholder farmers for sustainable intensification of agriculture in China. *Journal of Integrative Agriculture, 18*, 2-11.

Laily, S. F. R., Ribawanto, H., & Nurani, F. (2014). Pemberdayaan petani dalam meningkatkan ketahanan pangan (Studi di Desa Betet Kecamatan Ngronggot Kabupaten Nganjuk). *Jurnal Administrasi Publik Mahasiswa Universitas Brawijaya, 2*(1), 147-153.

Mardikanto, T., & Soebiato, P. (2012). *Pemberdayaan masyarakat dalam perspektif kebijakan publik*. Bandung: Alfabeta.

Nuranto, G. P. (2013). Pemberdayaan masyarakat petani padi organik (Studi pemberdayaan paguyuban petani Al-Barokah Desa Ketapang Kecamatan Sususkan Kabupaten Semarang). *Journal of Nonformal Education and Community Empowerment, 2*(2), 56-60.

Nuryanti, S. (2005). Pemberdayan petani dengan model coopertaive farming. *Analisis Kebijakan Pertanian, 3*(2), 152-158.

Riyono, A., & Juliansyah, H. (2018). Pengaruh produksi, luas lahan dan tingkat pendidikan terhadap pendapatan petani karet di Desa Bukit Hagu Kecamatan Lhoksukon Kabupaten Aceh Utara. *Jurnal Ekonomi Pertanian UNIMAL, 1*(2), 65-72. doi: 10.29103/jepu.v1i2.522

Sulaiman, A. I., Lubis, D. P., Susanto, D., & Purnaningsih, N. (2015). Komunikasi stakeholder dalam musyawarah perencanaan pembangunan (Musrenbang). *Mimbar: Jurnal Sosial dan pembangunan, 31*(2), 367-378.

Sumual, T. E. M., Arham, M. A., Kawulur, A., & Rimbing, R. (2021). Conceptual model of informal business development based on intellectual capital. *Journal of International Conference Proceedings, 4*(1), 87-92.

Suswanto, B., Windiasih, R., Sulaiman, A. I., & Weningsih, S. (2018). Peran pendamping desa dalam model pemberdayaan masyarakat berkelanjutan. *Jurnal Sosial Soedirman, 2*(2), 40-60.

Trimo, L., Hidayat, S., & Budiman, M. A. (2020). Upaya peningkatan pendapatan keluarga tani teh rakyat melalui pemberdayaan wanita pedesaan di Kecamatan Cisurupan Kabupaten Garut. *Jurnal Pengabdian Pada Masyarakat, 5*(1), 193-204.