

Farmer empowerment and farm management: The key to successful agribusiness of leading local commodities

Sri Jumiya^{1*}, Munajat², Tanti Kustiari³, Fifian Permata Sari⁴, Budi Utami⁵, Fitriyana⁶

1. Ilmu Pertanian, Muhammadiyah University of Palu, Indonesia

2. Department of Socio-Economic Agriculture Faculty of Agriculture, Baturaja University, Street KiRatu Penghulu Karang Sari No. 02301, Baturaja 32113, Ogan Komering Ulu District, Indonesia

3. Department of Agribusiness Management, Politeknik Negeri Jember, Indonesia

4. Department of Socio-Economic Agriculture Faculty of Agriculture, Baturaja University, Street Ki Ratu Penghulu Karang Sari No. 02301, Baturaja 32113, Ogan Komering Ulu District, Indonesia

5. Universitas Mulawarman, Balikpapan, East Kalimantan, Indonesia

6. Universitas Islam Majapahit, Indonesia

* Corresponding author's Email: asrijumiya1068@gmail.com

ABSTRACT

The Covid-19 pandemic has an impact on the agricultural sector in Central Sulawesi, which was previously the victim of natural disasters such as earthquakes, tsunamis, and liquefaction. Muhammadiyah is committed to helping by initiating an empowerment program for local Palu shallot farmers as part of the congregation-based Da'wah movement. This empowerment aims to increase farmer income, improve farm management and recommend farmer empowerment models to reduce the impact of Covid-19. The research method used observation, interview, and focus group discussion (FGD) techniques involving 20 local Palu shallot farmers. The results showed an increase in farmers' income by 45.97%, in addition to farm management including the functions of planning, organizing, driving, and controlling, which are included in the criteria of Good to Very Good. The empowerment model recommendation is an integrated, synergies, and comprehensive activity from the aspect of farm management to increase the capacity of location-specific and sustainable groups to support farmer corporations and strengthen agricultural businesses during the Covid-19 pandemic.

Keywords: Empowerment, Management, Agribusiness, Local commodities.

Article type: Research Article.

INTRODUCTION

Sigi Regency is an agricultural area that is the main affected area of the earthquake and liquefaction, in addition to Palu City and Donggala Regency which occurred on September 28, 2018 (Fauzan *et al.* 2020). This has caused farmers' income to decrease drastically by 50% from an average of around 10 million / month to 5 million / month. A number of farmers in the region were also unable to cultivate their agricultural land, since the Gumbasa irrigation channel, which is the source of water for irrigating agricultural land in the area, was severely damaged (Selamet 2019). When conditions have not fully recovered, the spread of the Covid-19 pandemic has again impacted the agricultural sector in Central Sulawesi, which had previously been victims of natural disasters such as earthquakes, tsunamis, and liquefaction (Rajindra *et al.* 2019) as a social organization. Muhammadiyah is committed to helping the rehabilitation and reconstruction process for disaster recovery in Palu City, Sigi, and Donggala Regencies. Central Sulawesi as a province in Indonesia has the potential for the development of shallot plants (Erny *et al.* 2019). The type of shallot that is favored in the Central Sulawesi area is the local Palu or commonly called the stone onion which has been known for its superiority in terms of its distinctive texture and aroma (Saidah *et al.* 2020). The uniqueness of Palu's local red onions that distinguishes them from other shallots is that the tubers have a dense texture, resulting in crisp and savory fried onions and an aroma that does not change

even though they are stored for a long time in a closed container (Ratnawati *et al.* 2019). Apart from being a cooking spice, onions are traditional medicine, for example, as a heat-reducing compress, lowering blood sugar and cholesterol levels, preventing thickening and hardening of blood vessels, and stomach pain (Miriam Teang 2015). The success of developing shallot cultivation is largely determined by the intensity of farmers' efforts for land preparation, plant maintenance by farmers to post-harvest handling, and finally, of course, the issue of price, as an incentive that farmers receive (Rosha *et al.* 2020; Williamson 2023). This is because shallot plants are not only susceptible to attacks by pests/diseases of quite a large number and types, but are also vulnerable to climate change, weather and are also vulnerable to the requirements needed to grow and develop, especially the availability of water and the need for fertilizer as a growing medium (Srivastava 2012; Pržulj & Tunguz 2022). On the other hand, the formation of commodity prices is completely left to the market mechanism, so it is not surprising that prices fluctuate greatly according to demand and supply conditions in the market (Hastuti & Amanda 2023). Efforts to empower local Palu shallot farmers in Langgaleso Village, Biromaru District, Sigi Regency, Central Sulawesi Province were carried out through the Muhammadiyah Farmers Group (Jama'ah Tani Muhammadiyah/JATAM) by the Community Empowerment Council (Majelis Pemberdayaan Masyarakat/MPM) Central Leadership (Pimpinan Pusat/PP) of Muhammadiyah and Lazismu by building cooperation between farmers and enthusiasm mutual cooperation at work. Efforts to generate togetherness and enthusiasm for work are Muhammadiyah's successes in mobilizing congregational-based Da'wah (Hakim 2018). Post-disaster community empowerment is carried out through counselling and assistance on economic access so that people affected by the disaster can exist in the future socio-economic life (Gil-Rivas & Kilmer 2016). Role of social capital on economic growth since social ties intensify efficiency across beneficiary group (Haile & Whakeshum 2020). Muhammadiyah applies a new paradigm of community empowerment with a focus on granting rights to communities to manage resources for increased income and progress in farming management (Baidhawiyah 2015). In addition, to ensure the success of the empowerment program, it is carried out by applying the principles of equality, participation, sustainability, and independence (Islamiyah *et al.* 2020). Efforts to increase productivity and income of local Palu shallot farmers in Langgaleso Village, Sigi Biromaru District, Sigi Regency, Central Sulawesi Province require a management concept for various aspects that should be considered, ranging from farmers' knowledge, providing superior seeds and high growth power, soil processing, fertilization, control of pests and diseases, then the availability of water or irrigation and post-harvest handling. Agribusiness-based farming management for local shallot farmers in Palu during the Covid-19 pandemic did not only focus on the cultivation aspect, but needed to pay attention to the marketing aspects of agriculture commodities by developing an efficient marketing system oriented to consumer needs through institutional development efforts, marketing information, standardization and product quality, price security, business partnerships, and marketing promotions both off-line and online (Jumiyati *et al.* 2020). The impact of the Covid-19 pandemic and the discourse on Large-Scale Social Restrictions (PSBB) has relatively not disrupted the production and distribution of subsistence farmers who produce to meet their own needs (Aday & Aday 2020). However, this will affect semi-commercial and commercial farmers in meeting production input needs and marketing agricultural products (Crick & Crick 2020). Therefore, to overcome this problem, it is necessary to have a group that will help farmers in marketing (Wang *et al.* 2020). To avoid fluctuations in prices, farmers need to network with direct consumers. In times of pandemic, traditional marketing channels that involve middlemen and retailers are very vulnerable to causing high price spikes (Bahadur Poudel *et al.* 2020). For this reason, it requires the intervention of parties other than the government in the supply chain of agricultural products (Hartmann & Lussier 2020). The role of the community in this case social-religious organizations such as Muhammadiyah is very strategic in making efforts to increase and empower in the agricultural sector.

MATERIALS AND METHODS

The research was conducted in Langgaleso Village, Sigi Biromaru Subdistrict, Sigi Regency, Central Sulawesi Province as one of the locations for the implementation of the Capacity Building Training Program for Empowerment of local shallot farmers in Palu Head of Biromaru Branch of Muhammadiyah (PCM). The research was carried out in the following stages:

Determination of Respondents

Determination of respondents using the purposive sampling method, namely local shallot farmers from Palu, a disaster survivor of Palu, Sigi, Donggala (PASIGALA), Central Sulawesi who are members of the JATAM group

of 20 farmers. The purposive sampling technique is a sampling technique with certain considerations (Jumiyati *et al.* 2021). The reason for using this purposive sampling technique is because it is suitable for use in quantitative research or research that does not generalize (Pribadi *et al.* 2021).

Data collection

Data collection is related to the analysis of farm income before and after the empowerment program, farm management, and determining the empowerment model for local Palu shallot farmers to reduce the impact of the Covid-19 pandemic. The data were collected using observation techniques, interviews using a questionnaire, and Focus Group Discussion (FGD) accompanied by documentation.

Data Analysis

a. Analysis of farming income before and after empowerment

Income analysis was done by calculating production, revenue, and farm costs. Furthermore, a comparative analysis was carried out to see the differences in income of local Palu shallot farmers before and after participating in the empowerment program through the JATAM group. The analysis was performed using the t-test with statistical hypothesis form:

H_0 : there are difference in production, costs, and income of local Palu shallot farmers before and after empowerment. Bentuk hipotesis statistik:

H_1 : there are differences in production, costs, and income of local Palu shallot farmers before and after empowerment.

b. Farm management studies

Farm management studies were carried out using the qualitative descriptive analysis to describe the management functions consisting of planning, organizing, implementing, and evaluating (Novkovic *et al.* 2015) carried out by local Palu shallot farmers after empowerment. The data obtained were then processed and tabulated in the form of frequencies and percentages with the help of scoring using a Likert scale (four-tier). Respondents provided answers in 4 (four) categories, namely Very Good (VG), Good (G), Not Good (NG), and Very Bad (VB) with a specific score weight.

RESULT AND DISCUSSION

Farmer income comparison

Farming can be said to be effective if farmers can allocate the resources they have as well as possible, and it is said to be efficient if the use of these resources produces output exceeds the input (Struik & Kuyper 2017). The income obtained by farmer needs to be analyzed with the aim of describing the current state of business activities (Jumiyati 2019), as well as describing the state of future farming plans or actions (Kanianska 2016). The income of local Palu shallot farmers before and after of empowerment can be seen in Table 1.

Table 1. Analysis of local onion farmers in Palu before and after empowerment in Langgaleso Village, Sigi Regency.

Description	Unit	Values Before of Empowerment	Values After of Empowerment (IDR)
- Production	Kg	1.320	1.452
- Price	IDR	18.000	20.000
Total Revenue (TR)	IDR	23.760.000	29.040.000
- Land tax	IDR/year	82.500	82.500
- Tool depreciation	IDR	629.000	629.000
Fix Cost (FC)	IDR	711.500	711.500
- Labor	IDR	2.115.000	1.960.000
- Seed	IDR	6.250.000	8.425.000
- Fertilizer	IDR	1.111.000	602.000
- Pesticide	IDR	2.673.000	1.863.000
- Tractor rent	IDR	595.000	437.500
Variable Cost (VC)	IDR	12.744.000	13.287.500
Total Cost (TC)	IDR	13.455.500	13.999.000
Income (I)	IDR	10.304.500	15.041.000

Source: Primary Data After Processing (2020).

Based on Tables 1, it can be seen that the increased income of local Palu shallot farmers in Langgaleso Village, Sigi Regency before and after empowerment is IDR. 4,736,500, -. After analyzing the income of local Palu shallot farmers, to test the hypothesis a comparative analysis (t-test) was carried out, namely by comparing the differences in the income of local Palu shallot farmers before and after empowerment through the JATAM group. Empowerment of the farmers group was able to contribute to the local red onion farming income in Palu, including prices for fertilizers, medicines and equipment rental as well as more affordable labour wages for group members (Wibowo *et al.* 2021). Thus, farmers will be more focused on planning input needs for joint production and ease of access to information (Forbord & Vik 2017). However, the empowerment of the farmers group has not been optimised in terms of capital, availability and access to quality seeds (Rajindra *et al.* 2021). Collective efforts provide more opportunities for group members to overcome their limitations which include collectivity, capital collectivity, processing and marketing collectivity which can increase farmers households income (Blackmore *et al.* 2021).

Difference Test Two Variables

The t-test used in testing the hypothesis is to determine whether or not there is a significant difference between the two variables being compared. One form of the t-test is Paired sample t-test, namely pre-test (test before empowerment) and post-test (test after empowerment). The comparison of the average production and income of local Palu shallot farmers before and after empowerment are depicted in Table 2.

Table 2. Test of differences in income of local Palu shallot farmers before and after empowerment in Langgaleso Village, Sigi District.

No.	Description	Value		Comparison	
		Before Empowerment	After Empowerment	t-count	t-table
1.	Production	1.320	1.452	-19.0109139	2.093024054
2.	Cost	13.455.500	13.999.000	-2.056664008	2.093024054
3.	Income	10.304.500	15.041.000	-9.582747961	2.093024054

Source: Statistical Analysis Results 2020

Based on the Paired sample t-Test analysis, it can be seen that there are differences in the income of local Palu shallot farmers before and after empowerment. Before empowerment the average production was 1,320, the cost was IDR. 13,455,500, and an income of IDR. 10,304,500. After the empowerment there was an increase in the average production of 1,452, the cost was IDR. 13,999,000, and an income of IDR. 15,041,000. The differences comparison of the t-value of production (-19.0109139) with the t-value of the production table (2.093024054) shows that H_0 is rejected, since the t-count is greater than the t-table. This indicates that there is a significant difference in the amount of production after empowerment. The comparison of the t-value of farmer income (-9.582747961) with the t-value of the income table (2.093024054) shows that H_0 is rejected, since the t-count is greater than the t-table. This indicates that there is a significant difference in the amount of income after empowerment. The comparison of the t-value of cost (-2.056664008) with the t-value of the cost table (2.093024054) shows that H_0 is accepted, since the t-count is smaller than the t-table. This is because, although after empowerment there is efficiency and effectiveness in the use of production inputs, the quantity, and quality of inputs is higher than before empowerment (Sharma & Bali 2017). Increasing in the quantity and quality of production inputs causes an elevated production costs, however, this is accompanied by optimization of production results (Jumiyati *et al.* 2017).

Increasing of Farm Management

Farm management is an activity in the agricultural sector that carries out management by carrying out the functions of planning, organizing, actuating, and controlling by using available resources to increase income (Jumiyati 2019). The management that has been carried out by farmers should be abandoned, namely management that is centred on farmers who are always waiting and working on their own farming from upstream to downstream (Rozaki 2020). There is an alternative farming management that can be done in groups without reducing the quantity and quality of the results (Piñeiro *et al.* 2020; Nasikh *et al.* 2021). The farming management in question is cooperative and corporation based. Corporate management is an alternative, since it has several advantages, namely: (i) Daily business decision-making can be done quickly, so that farming is responsive to market and price changes; (ii) Land management, irrigation and other cultivation techniques are managed by a team of managers

assisted by technical staff, skilled field technicians, so that management is efficient; (iii) Mobilization of agricultural resources (land, labor and capital) is easy, since resources are managed by a team of managers; (iv) Distribution of profits generated from the type of land, labor and capital as member shares based on the agreement (Arabiun 2014). The implementation of farm management by local Palu shallot farmers after empowerment can be seen in Table 3.

Table 3. The implementation of farm management by local Palu shallot farmers after empowerment in Langgaleso Village, Sigi District.

No.	Aspect	Score	Percentage (%)	Criteria
1.	Planning			
	- Estimated production costs	3.25	85	Good
	- Estimated processing costs	3.20	80	Good
	- Estimated marketing costs	3.25	85	Good
	- Labor requirements	3.20	80	Good
	- Needs for seeds	3.10	85	Good
	- Needs for fertilizer	3.20	80	Good
	- Need for pesticides	3.15	85	Good
	- Estimated harvest time	3.05	80	Good
	- Estimated selling price	3.25	85	Good
2.	Organizing			
	- Use of labor in the family	4.00	95	Very Good
	- Use of wholesale labor	3.30	80	Good
	- Use of group labor	3.90	95	Very Good
3.	Actuating			
	- Increasing of Capital	3.05	80	Good
	- Preparation of seeds and nurseries	3.15	85	Good
	- Cultivation and planting			
	- Fertilization and maintenance	3.25	80	Good
	- Harvest and Post-harvest	4.00	95	Very Good
	- Processing of crops	3.25	80	Good
	- Marketing	4.00	95	Very Good Very Good
		4.00	90	
4.	Controlling			
	- Production efficiency	3.00	80	Good
	- Quantity of product	3.95	95	Very Good
	- Quality of product	3.85	90	Very Good
	- Income	3.90	90	Very Good

Source: Primary Data After Processing 2020.

Based on Table 3, after the empowerment of local Palu shallot farmers, the implementation of farm management based on the planning function that achieves the highest score is the aspect of estimated production costs, estimated marketing cost, and estimated selling price with a score of 3.25 (90-95%) and good (G) criteria. This is because the local Palu shallot farmers are victims of the earthquake and liquefaction who have limited farming capital. In addition to making the use of capital more efficiently, farmers are trying to increase their income. Through extension activities in the capital, farmers are motivated to save by setting aside 10-30% of their total income as preparation for venture capital for the next planting season (Jumiyati *et al.* 2020). The score on organizational function is in very good criteria (VG), especially in the aspect of labor utilization in the family and group workforce utilization with a score of 3.90-4.00 (90-95%). Using available labor is carried out to achieve labor cost efficiency and increase the effectiveness of resources in accordance with farm planning (Sri Jumiyati *et al.* 2017). Furthermore, the score achieved on the actuating function is in good criteria (G), including aspects of fertilization and maintenance, processing of crops, and marketing with a score of 4.00 (90-95%). The aspects of fertilization and processing of crops received the highest scores in relation to empowerment activities in the form of training in making organic fertilizers and manufacturing fried onion products (Jumiyati *et al.* 2021). The score achieved for the last function, namely supervised, is in very good criteria (VG) covering the aspects of quantity and quality of products and income with a score of 3.85-3.95 (90-95%). The aspects of product quantity and quality, as well as income, are changes felt by local Palu shallot farmers after a 2-year empowerment program through the JATAM group.

Empowerment model to reduce the impact of Covid-19

The empowerment model carried out in the JATAM group is in the form of counselling, training, and mentoring, starting from the production, marketing, and processing stages. Empowerment at the production stage was carried out through counselling on land suitability and fertility studies for local Palu shallot cultivation and training in making organic fertilizers followed by assistance in utilizing water source networks donated by the Muhammadiyah Central Leadership. Furthermore, empowerment at the marketing stage is carried out through counseling on marketing efficiency and internet training for online marketing as well as assistance to take advantage of market opportunities and build partnerships with universities, the business world, and the government (Jumiyati 2019). Meanwhile, empowerment for the processing stage is carried out through counselling on the management of raw material availability, training to increase the competitiveness of superior processed food products (Palu fried onions), and assistance in promoting and marketing local superior food products (Jumiyati *et al.* 2021). The models and stages of empowerment carried out during the Covid-19 pandemic are illustrated in Fig. 1.

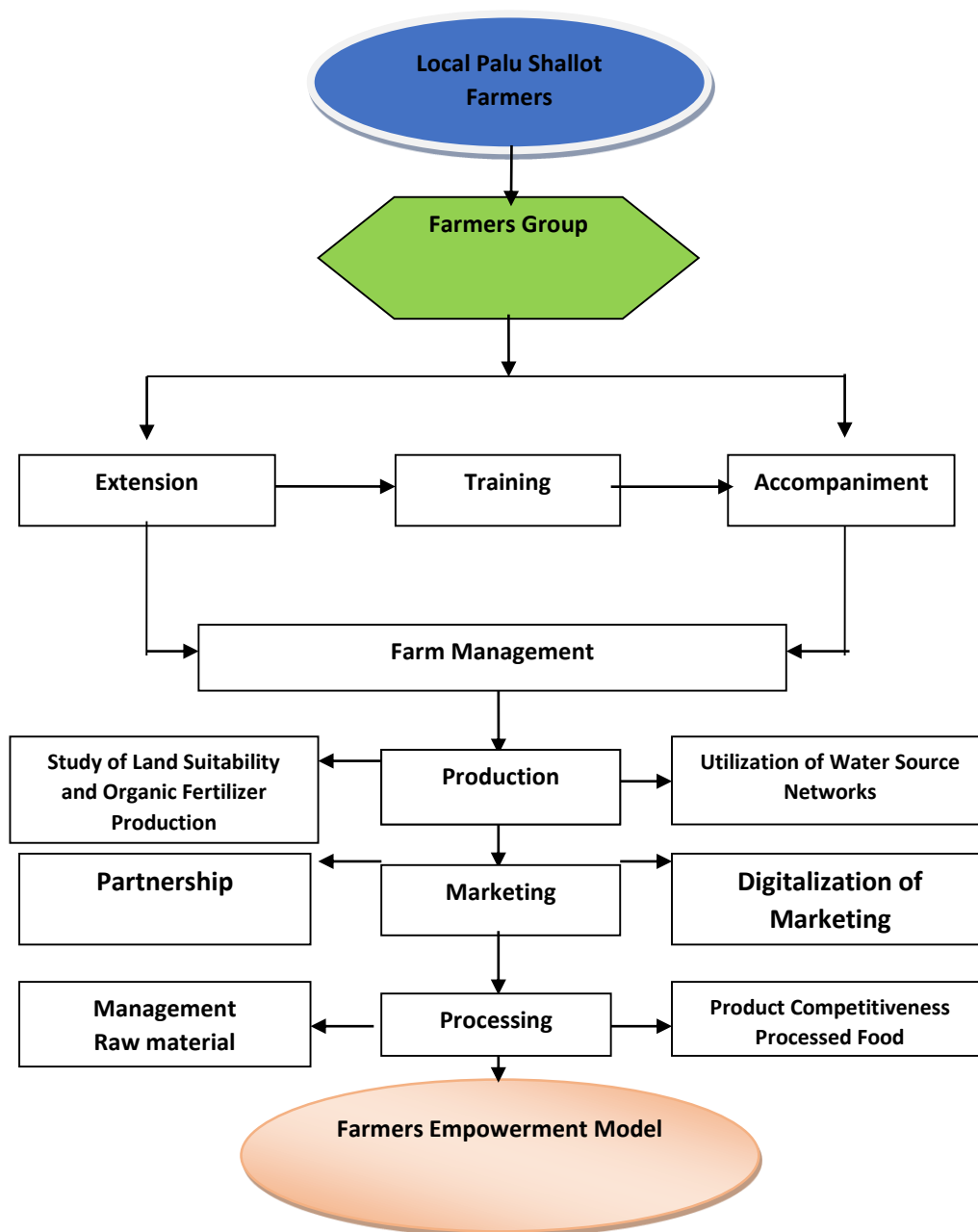


Fig. 1. Empowerment model to reduce the impact of covid-19.

CONCLUSION

The implementation of empowerment program activities through the JATAM group led to an increase in the income of local Palu shallot farmers in Langgaleso Village, Sigi Biromaru District, Sigi Regency, Central Sulawesi Province by 45.97%. In addition, farm management which includes planning, organizing, actuating, and controlling functions is in the criteria of Good to Very Good. Increased income of farmers who previously were victims of earthquakes and liquefaction and changes in farm management, can be a model of empowerment in reducing the impact of the Covid-19 pandemic. Empowerment efforts through the JATAM group are integrated activities consisting of counselling, training, and mentoring that are synergistic and comprehensive, starting from the aspects of production, processing to marketing (Jumiyati *et al.* 2018). Empowerment is also carried out in the form of structured, location-specific, and sustainable capacity building for farmers through the socio-religious philanthropic movement. Efforts to empower farmers require institutional development, both farmer institutions and the government as follows: (i) Development of farmer groups through increasing their capacity not only from the aspect of cultivation, but also aspects of agribusiness as a whole and the ability to work together. So that, they can develop into business groups both in the form of cooperatives and business units small independent and growing from the bottom (Jumiyati *et al.* 2020); (ii) Improving the quality of human resources, assisting with processing tools, providing credit, and developing partnership patterns; (iii) Development of agricultural equipment service businesses by strengthening and providing guidance to officers, managers, operators and farmers through improving workshop facilities, cooperation with the private sector, credit services and training; (iv) Strengthening government institutions to provide excellent service to the community, especially farmers through efforts to increase professionalism and administration, as well as increase cooperation between field officers and related agencies through consultation and consolidation forums (Scott 2017).

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