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Marketing Vulnerability of Shallot Farming in Tapin Regency, South Kalimantan, Indonesia

Lisda Noorizatil Hasanah[1], Luthfi Fatah[2], Ahmad Alim Bachri[3], Hilda Susanti[4]
1. Doctoral Program of Agriculture Science, Lambung Mangkurat University, Jalan Ahmad Yani KM.36, Banjarbaru, South Kalimantan, Indonesia (70714)
2. Agribusiness Study Program, Faculty of Agriculture, Lambung Mangkurat University, Jalan Ahmad Yani KM.36, Banjarbaru, South Kalimantan, Indonesia (70714)
3. Magister Management, Postgraduate Program, Lambung Mangkurat University, Jalan Hasan Basri, Kayu Tangi, Banjarmasin, South Kalimantan, Indonesia (70123)
4. Agronomy Study Program, Faculty of Agriculture, Lambung Mangkurat University, Jalan Ahmad Yani KM.36, Banjarbaru, South Kalimantan, Indonesia (70714)
Author correspondence email: lisda_nh@yahoo.com

Abstract
Allium cepa (shallot) is an important commodity in Tapin Regency, South Kalimantan. Tapin Regency is a reliable shallot production area in South Kalimantan Province. Shallot farming is faced with uncertain climate conditions in Tapin Regency, which have an impact on changing the behavior of farmers in dealing with harvest and product marketing issues. Shallot production has decreased dramatically in the last five years in this area. Thus, it is urgent to identify the problems faced by farmers. To identify the existing problems, an analysis of shocks, exposure, responses, and impacts better known as the SERI analysis method was carried out. The research results showed that product marketing and government subsidies were problems that caused shocks due to unformed markets, simultaneous harvests, and an inability to compete with production from outside the region; furthermore, no longer receiving subsidies from the government prevented farmers from buying seeds due to the high price of seeds. The exposure experienced by the farmers was that the selling price became low, resulting in losses, and most farmers did not dare to continue to plant the next season's shallots. The response of the farmers to the shock conditions that occurred was that most of them sold cheap and lost money; there were a few who held back sales, while some surrendered, and almost all farmers switched to planting other commodities. The impact felt by farmers from these shocks was that their income decreased due to their loss, and there was no income from shallot farming. Buffer capacities that can be put in place to reduce the impact of these problems are actively seeking price and market information, forming marketing networks, adjusting planting times, adding product value by means of postharvest processing such as processing fried shallot or shallot paste, buying seeds by groups, using the best quality seeds, accessing financial institutions to obtain venture capital assistance, and conducting nurseries.
Keywords: marketing, shallots, subsidies, Tapin District, vulnerability
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1. Introduction

While Tapin Regency is one of the shallot production centers in South Kalimantan, the amount of production produced by this area is still not sufficient to meet the consumption of the population; thus, shallots from other regions are still imported in large quantities (Denny, 2018). This causes the price to be unstable and results in a large contribution of shallots to inflation (Aldila et al., 2017; Darmawan, 2018; Kementan, 2018). Shallot production in Tapin Regency from 2013 to 2017 continued to increase but experienced a sharp decline from 2018 to 2021 (BPS Tapin, 2022), as illustrated in Figure 1.

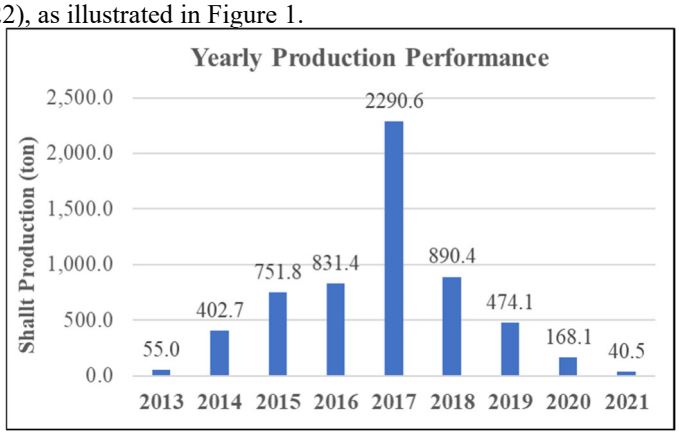

Figure 1. Shallot Production Performance at Tapin Regency from 2013 to 2021

The shallot production produced by this area in 2017 was 2,290.6 tons, which decreased to 890.4 tons in 2018 and continued to decrease to 40.5 tons in 2021 (BPS Tapin, 2022). For this reason, it is necessary to evaluate the vulnerability of shallot farming in the marketing sector in Tapin Regency so that in the future, this area of farming can be managed in a balanced and sustainable manner to improve both the economy and people's welfare (Zuraida, 2016). Based on the foregoing, the target research focuses on how the vulnerability of shallot farming to marketing in Tapin Regency includes shocks, exposure, responses, and impacts, as well as buffers that can reduce the impact of these problems.

2. Material and Methods

2.1 Research Location

This research was conducted in the five subdistricts of Tapin District, South Kalimantan Province, namely, Binuang, Hatungun, South Tapin, Salam Babaris, and Bungur, as illustrated in Figure 2. The selection of the research location was based on the consideration that this location has carried out shallot farming over the last five years.

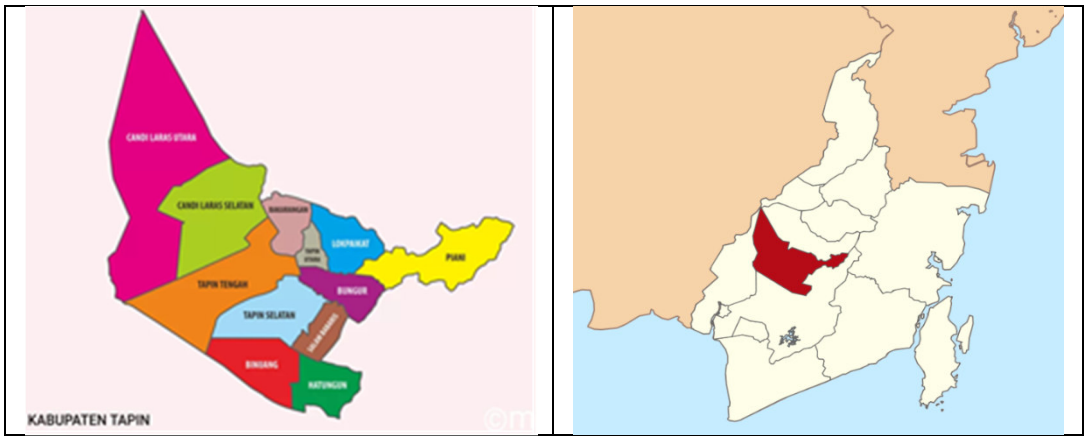

Figure 2. Research Location of Tapin District (left), South Kalimantan (right)

2.2 Sampling Data and Analysis

This study uses two types of data, namely, primary data and secondary data. The primary data are the result of interviews held with shallot farmers, while the secondary data collected in this study include data on planting area, harvested area, shallot production and productivity in Tapin Regency and South Kalimantan Province obtained from the relevant agencies.

The population in this study was shallot farmers in Tapin Regency, and the sample was obtained using a purposive sampling technique, namely, taking shallot farmers at the research location as a sample. The sample of respondent farmers comprised 30 people, with 12 people who were still planting shallots and 18 people who had not planted shallots this year but had tried to plant shallots in previous years, as mentioned in Table 1. Analysis of the data obtained using the SERI (shock-exposure-response-impact) analysis (ICRAF, 2017; Noordwijk et al., 2011) by carrying out steps including (1) identifying extraordinary events (shocks) that have occurred over the past few years, (2) identifying the exposure intensity, (3) identifying how farmers respond, and (4) identifying the impact of shocks, as well as analyzing buffers that can reduce the impact.

Table 1. Respondence Distribution

Respondence	Total	Methods
Farmers who continued planting this year	12	Interviewed
Farmers who did not plant this year	18	Interviewed

3. Results and Discussion

3.1. SERI (shock-exposure-response-impact) Identification

The identification of the SERI analysis process (shock-exposure-response-impact) from the impact of difficult marketing (shocks) on the productivity of shallot farming systems in Tapin Regency is shown in Table 2.

Table 2. SERI Identification of Marketing Issues

Shocks	Hard Selling
Period	2015–2017
Impacted	• Imported shallots selling for less than locally produced shallots • Lack of networking; set the same period of harvest
Exposures	Lower sale process and loss
Farmer Responses	• Lower sales price/losses; Hold off on sales • Surrender; Replace shallots with another commodity
Impacts	Revenue reduction and loss
Buffers	• Find market price; Build up market networking • Set planting period for a different harvest; Extension of product value

The identification of the SERI analysis process (shock-exposure-response-impact) from the impact of the absence of subsidies by the local government on the productivity of shallot farming systems in Tapin Regency is shown in Table 3.

Table 3. SERI Identification on absence of subsidies by the government

Shocks	No supply of new seed by government
Period	2018–2021
Impacted	Subsidy program expired; no new seed supply
Exposures	Not continue shallot farming; seed higher cost
Responses	Surrender and plant another commodity
Impacts	Less revenue from shallot farming
Buffer	Purchase better seeds in groups; set financial support

Shock Analysis

The shallot farming business in Tapin Regency is affected by marketing difficulties and the completion of the subsidy program period. These changes have caused shallot production to experience a sharp or drastic decline (Asmara & Ardhiani, 2010; Sayaka & Supriatna, 2010). The results showed that the shocks experienced by shallot farmers in Tapin Regency related to marketing difficulties occurred from 2015 to 2017, which caused shocks to shallot farmers in the area (Eka et al., 2017). For most farmers during a simultaneous harvest, the marketing of shallots is very difficult, and the price drops lower due to the abundant stock or supply of shallots (Destiarni et al., 2021). In addition, it is also difficult for local shallots to compete with shallots brought in from outside the region (Java Island), and it is difficult to enter the market because large markets such as the central market in Banjarmasin are already controlled by traders who import shallots from outside the island (Eka et al., 2017; Susanawati et al., 2015). The absence of a marketing network is the reason for the difficulty in marketing shallots, according to some of the respondent farmers (Asmara & Ardhiani, 2010; Permataputri et al., 2019; Waryanto et al., 2014). This greatly affects farmers in cultivating shallots. The difficulty of marketing for most farmers also causes many farmers to lose money and be afraid to plant more; thus, many of them take shortcuts and switch to planting other commodities (Kurniawan et al., 2019).

The end of the subsidy period for shallot farming from the central government also greatly affected shallot production in Tapin Regency. The subsidies provided by the government were for seeds, fertilizers, medicines, and other equipment. This subsidy lasted for a three-year span from 2015 to 2017. The seeds obtained by most farmers were the Bima variety of shallots. Starting in 2018, there were no more subsidies or assistance provided from the central government; when the subsidies stopped, most of the farmers also stopped planting shallots because the price of shallot seeds is very expensive, reaching 60-80 million per ton per hectare. Meanwhile, their experience with failing and losing money while farming shallots makes them afraid to plant shallots with their own capital because of the high price of seeds and the difficulty of obtaining seeds Permataputri et al., 2019; Sumarni et al., 2012; Waryanto et al., 2014). Currently, the seeds used by farmers are imported from outside the area, namely, from Nganjuk, East Java; thus, the price of seeds is very expensive. In the past, in Tapin Regency, there was once a nursery business, which meant that farmers could buy seeds in Tapin Regency; however, because that farmer is now sick, the nursery has stopped operating, and no one has chosen to continue running it. Someone once tried to keep it open but failed; now they want to try again with selling seed (Ghozali & Wibowo, 2019; Wiguna et al., 2013)

Only a small number of farmers remain who still want to plant shallots without assistance or subsidies from the government. They buy their own seeds and other production inputs. These are tough farmers, even though they have experienced crop failures as well. The seeds purchased by the farmers independently are the shallot seeds of the Tajuk variety, which are superior seeds that are resistant to climate change (extreme weather) and pests and diseases but require extra care. These seeds are purchased from Nganjuk, East Java, at a price of 60–80 million/ton for 1 ha. The Bima variety of shallot seeds that were given out by the government through the subsidy turned out

to not be able to withstand extreme weather; this was because the seeds were unhealthy and mixed with sick seeds, which caused crop failure (Diana et al, 2019; Effendi et al., 2019; Wiyatiningsih et al., 2009).

Exposure Analysis

The exposure experienced by shallot farmers in Tapin Regency because of difficult marketing is that they have been forced to sell shallots at low prices. Therefore, farmers experience losses, and their income decreases. The exposure experienced by shallot farmers in Tapin Regency because of the absence of subsidies or seed assistance from the government is that farmers no long plant shallots, so there is no shallot harvest. Of course, this makes the overall shallot harvest decrease globally. The high price of seeds and the high risk of failure in recent years have prevented farmers from having the courage to grow shallots independently (Ghozali & Wibowo, 2019; Susanawati et al., 2015; Winarso, 2003)

Response Analysis

Based on the results of the current study, there were several responses made by farmers regarding shocks that occurred in shallot farming. The response of shallot farmers to difficult marketing shocks or falling selling prices has been to sell their harvested shallots at low prices, even at a loss. This happens because many farmers do not have a marketing network. Especially during a simultaneous harvest, it is difficult for farmers to sell their produce; apart from the fact that many do not yet have a marketing network, they are also unable to compete with shallots brought in from outside. Some farmers choose to surrender, and some choose to withhold sales look for other businesses or switch to other commodities (vegetables and fruit) to try to find a marketing network.

Regarding the response of shallot farmers to the shock of the absence of subsidies or the cessation of subsidies from the government for production input assistance, especially seeds, almost all the respondent farmers chose to not plant shallots anymore; rather, they switched to planting other commodities (vegetables and fruit). This was due to the high price of seeds and the difficulty of obtaining seeds because the seeds come from Java Island. There is only 1 farmer who has chosen to continue to grow shallots due to experience and strong determination. Apart from the factors mentioned above, farmers have also made changes because of the high risk of loss considering the experience of the last few years, especially losses related to crop failure.

Looking at the response of the farmers, most of whom are resigned to not plant shallots anymore and instead plant other crops, the results show that the capacity of farmers is still low. This is due to the low education level of most farmers. Based on the results of the current study, the education of most of the respondent farmers was only at the elementary level (60%); a small portion (30%) graduated from junior high school, while only 10% had an education at the high school level (Hilman et al., 2019)

In addition to education, farmer capacity is also mainly influenced by farmer experience in farming. Experience is needed in shallot farming both in its cultivation and in dealing with various problems that occur. The longer their experience in farming, the better farmers are at managing their crops and overcoming various problems. Based on the results of the study, the majority (53%) of the respondent farmers had between 1-5 years of experience in farming shallots. Only 20% of the respondent farmers had more than 5 years of experience, and as many as 27% had less than 1 year of experience. Respondents' experience based on the results of the research shows that the experience of farmers in farming is indeed still new, and it appears that their capacity is still limited in overcoming the problems of shallot farming. There are some farmers who give up when shocks occur and take shortcuts by selling shallots at low prices and switching to planting other commodities. There are several other things that farmers can do, such as adding value to the product by processing shallots into other products (Asmara & Ardhiani, 2010; Hilman et al., 2019).

Impacts Analysis

The impact that was felt or experienced by farmers due to difficult marketing shocks was that their income decreased due to low selling prices because of selling at cheap prices; many farmers even sold their shallots at a loss. As a result, the farmers lost financially. The impact of the shock of the absence or the end of the subsidy period for receiving assistance from the central government, including subsidies in the form of seeds or fertilizer assistance or other types of assistance, is that farmers' income has decreased because they either have no income or have minimal income from shallot farming. Thus, farmers no longer plant shallots and have switched to other farming activities, namely, planting fruit and vegetables (Diana et al., 2019; Efendi et al, 2019).

Effort to Reduce Buffers

Based on the research results, it can be summarized that the response of farmers in dealing with these shocks is still a very limited and short-term solution; for example, some farmers give up or do not know what to do and tend to look for business security by switching to planting other commodities. There are several things that farmers can do to address the threat of shocks and minimize the impact or losses that they can experience, especially against marketing shocks and the absence of subsidies or assistance from the government, namely, carrying out various

adaptation and mitigation strategies and efforts. Adaptation efforts/capacities that do not yet exist/have not been carried out by farmers to reduce the negative impact of difficult marketing in Tapin Regency are seeking market information or forming marketing networks so that they can market shallots easily (Purba et al., 2013; Sopha et al., 2017). Pricing information is also important. In addition, the planting schedule should also be arranged so that the harvest is not simultaneous and a drop in prices can be avoided. The most important thing to do is to add value to the product by means of postharvest processing. Some processed shallot products that can be created include shallot-based fast food (Diana et al., 2019; Effendi et al,2019; Noor et al., 2022).

An adaptation capacity that does not yet exist or has not been carried out by farmers to reduce the negative impact of seed subsidy assistance in Tapin Regency is to use the seeds by group. This is cheaper than the price of individual seeds, although the planting process takes longer than that for individual seeds. Apart from that, buying seeds in bulk as a group is also an option. Thus, the purchase of seeds does not feel as expensive because it can be reduced within the group. If buying seeds per hectare is very expensive, reaching 60-80 million per ha, then with help you can share the purchase of seeds in batches, e.g., 200 kg at a time, so that 1 or 2 tons can be slowly collected. The purchase of seeds can be even less; it does not have to be as much as 1 ton. Seeds are usually purchased from Nganjuk, East Java, with prices depending on the variety, ranging from 60–80 million per ton. The seeds purchased are superior, clean, and healthy, and not mixed with diseased seeds. Apart from that, what farmers can do is try to access financial institutions to obtain capital assistance; it is known that the capital needed for shallot farming is quite large, especially for purchasing production inputs such as seeds and fertilizers, as well as medicines (Muttaqin et al., 2018). Another thing that can be done is to open a nursery in Tapin Regency to avoid buying seeds from other areas that are quite far away. It is hoped that the presence of such a nursery will reduce the cost of seedling costs (seedling prices can be reduced). Therefore, shallot farmers would be able to buy seeds easily and at affordable prices. The success of such a nursery has great prospects for development because there are currently no nurseries in Tapin Regency. The average farmer is afraid of the initial capital because it is very large. In addition, extra maintenance, especially for spraying, also requires more manpower (Istina et al., 2016; Witiyaningsih et al., 2003)

4. Conclusion

Shallot farming business is very important in Tapin Regency; however, considering the production decrease in the last five years, the business needed to be evaluated with SERI method analysis. The results are as follows:

- The shocks from shallot farming in Tapin Regency are related to marketing difficulties and the lack of subsidies from the central government.
- The exposure experienced by shallot farmers is related to low sales prices (loss) and deciding to not plant shallots.
- The response of shallot farmers to the shocks that have occurred is selling cheap/losing, holding out on sales, surrendering, and replacing shallots with other commodities.
- The impacts felt by farmers from these shocks have been that their income has either decreased or was lost and that they no longer have income from shallot farming.
- Buffer capacities that can be created are seeking price and market price information; expanding marketing networks; accessing financial institutions; setting planting times so that harvests are not simultaneous; adding product value by means of postharvest processing, such as processing fried onions and onion paste; the use of buying bulk seeds to reduce costs; or being able to purchase seeds independently by opening a local nursery.

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