

Analysis of Shallot (*Allium Ascalonicum L*) Availability Fluctuation in the Yogyakarta Special Region

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Abstract

*Shallot is one of the food commodities that determine or influence the political policy in Indonesia. Shallot (*Allium Ascalonicum L*) is a horticultural commodity, the price of which often experiences significant fluctuations in Yogyakarta Special Region. Shallot prices can increase or decrease significantly in monthly or even weekly periods due to fluctuation of its availability. The objective of this research was to analyze the fluctuation of shallot availability in the special region of Yogyakarta. It was conducted through field survey and by collecting secondary data on shallot commodity in Special Region of Yogyakarta in 2017. To support data about shallot deterioration rate during storing period, the research on how to store shallot was conducted in a warehouse owned by farmer group "Ngudi Makmur" in Samiran, Parangtritis Village, Kretek District, Bantul Regency. The results showed that the fluctuation of shallot availability in Yogyakarta Special Region was caused by the decrease of shallot production in the main production center of Bantul district which contributed about 70% from local production, the fluctuation of supply from the surrounding area that had the planting season and harvest seasons similar to those in Yogyakarta Special Region, the deterioration rate that was still high during storing period and the lack of significant role of BULOG in controlling the availability of shallot due to limitations of its storage technology.*

Keywords: Availability, BULOG, Shallot, Storage, Yogyakarta

1. INTRODUCTION

Shallot is one of the food commodities that determine or influence the political policy in the country of Indonesia. Significant increase of shallot price can lead to public unrest due to their inability to buy, and can even affect the prices of other food commodities. Therefore the availability of shallot in the country should always be monitored and controlled in such a way that its amount is always sufficient at affordable prices by the community.

From the production side, about 70% of the shallot's harvested area is located in Java while the rest is situated outside Java. In Java itself, about 85% of shallots are produced from Central Java, East Java, and West Java. Shallot production in the Special Region of Yogyakarta is not more than 10% of the national production (Kementan, 2016). To meet the demand for shallot commodities, the government relies on domestic shallot

production. Often Indonesia increases the availability of shallot by importing it from neighboring countries such as the Philippines and Vietnam, Malaysia and China if domestic production is perceived to be insufficient.

According to Anonymous (2016) and Syamsul (2016), the government agency responsible for maintaining the stability of food availability and price, especially shallot is the Government Agency for Logistics Affairs (BULOG). Shallot price fluctuations are highly dependent on the balance between demand and supply. Shallot price will increase substantially if its supply apparently cannot fulfil its demand. On the other hand, the price will drop when there are a large amount of shallots available in the market. The fluctuation of shallot price due to its uncertain availability is of course highly dependent on the supply from other regions as well as the production from its own region. In line with these facts it is very important for BULOG and the government of Yogyakarta Special Region to find out the

actual reasons regarding the fluctuation of shallot availability in Yogyakarta Special Region which will affect the price of shallot in the market. Understanding of the distribution channel and shallot sales in the country will be very helpful in determining the next policy that can improve the ability BULOG to absorb shallot from farmers. Understanding, analysis and evaluation of traditional storage method and level of damage of shallot inventory after harvesting and during its distribution can be used as a basis for BULOG’s policy change in an effort to stabilize food prices in Indonesia. Therefore research on the fluctuation analysis of the availability of shallot commodities in Yogyakarta Special Region is very important to be conducted.

2. MATERIAL AND METHODS

This research was conducted through field survey and by collecting secondary data on red shallot commodity in Special Region of Yogyakarta in 2017. To support data about shallot damage during storage, the research on how to store shallot is conducted in warehouse of Ngudi Makmur Farmer Group Dusun Samiran, Parangtritis Village, Kretek District, Bantul Regency, Special Region of Yogyakarta. Analysis of shallots availability fluctuation was conducted through literature reviews and analysis of primary and secondary data of research.

3. RESULTS

Shallot is agricultural or horticultural commodity the price of which often experiences significant fluctuations in Yogyakarta Special Region. Shallot prices can increase or decrease significantly in monthly or even weekly periods. As can be seen from Fig.1, the weekly price of any types of shallots tended to decrease at the end of January, followed by the increase at the beginning of March. The price then continued to decrease during the weeks of April and turned to increase again during the weeks of July. The price fluctuation of shallot can be caused by the instability of shallot availability in Yogyakarta although the demand is stable.

The demand for shallots as measured by consumption levels is around 2.7 kg per capita per year (BPS DIY, 2016). The demand for shallot often outweighs its availability. The

availability of shallot in Yogyakarta Special Region is highly dependent on the fluctuation of local production and the supply of shallot from outside the region.

Although in the national magnitude has increased over the last five years, the area of crops and shallot production in the Special District of Yogyakarta has been actually decreasing, as shown in Fig. 2. The decrease of production in Yogyakarta Special Region occurred because local production is highly dependent on shallot production from Bantul region, all of which contributed more than 75% of local production.

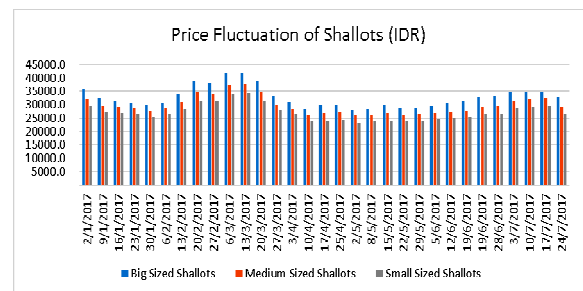


Figure 1. Weekly fluctuation of shallot price in Yogyakarta Special region

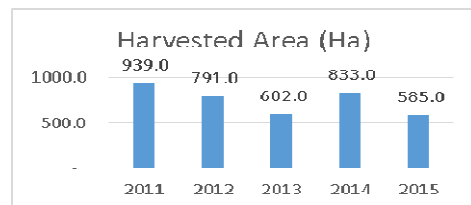


Figure 2. Harvested area of shallot in Bantul 2011 - 2015

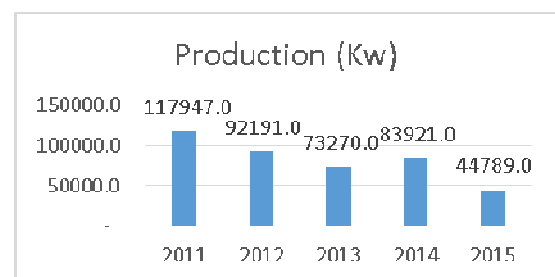


Figure 3. Production level of shallot in Bantul 2011 - 2015

As shown in Fig. 3, the production from this area also decreased and began to be rivaled by the increasing production of Kulonprogo region (BPS DIY, 2013; BPS Bantul, 2016; BPS DIY, 2016). Despite the declining number of production from year to year, the

unpredictable harvest success due to seasonal changes also contributes to the fluctuation of shallot availability in the Special Territory of Yogyakarta.

On the other hand, the supply of shallot from outside the area also fluctuated. Until now, the supply of shallots from outside the region to the Special Region of Yogyakarta comes from the surrounding areas such as Wonosobo, Temanggung, Nganjuk, Demak and Brebes (Solopos, 2016). Fluctuations in supply from outside the area are also caused by the planting season and the harvest seasons similar to those in Yogyakarta Special Region. Planting season in Special Region of Yogyakarta, especially in Bantul Regency has been arranged twice a year *i.e.* in February-April and August-September. While in the area of shallot suppliers such as in Demak and Brebes, planting season is conducted three times a year in the periods of January-March, July-September and October-December. During the planting season, shallot from Bantul area and from several supplier areas are widely used as seeds, so the availability of shallot in the Special Region of Yogyakarta in February-March and July-July tends to be limited and cause prices to increase. While in April-May the price tends to decrease due to the abundant supply. The supply results from the harvest in the first planting season both in Bantul area and in the areas of shallot suppliers to the Special Region of Yogyakarta.

In addition to the fluctuation of production and supply from outside the area, the deterioration rate of shallot during storage period also greatly affects the availability of shallots in the market. Similar to those in other areas, shallot farmers in the Special Region of Yogyakarta in general store shallot by hanging, which is put on the para-para and located close to fireplace. However, there is also another method of storage *i.e.* by storing it in the barrel although it is getting rare. During storage period, shallot can be deteriorated such as rotting, wrinkled, and ultimately dried up due to fungus attack of *Botrytis Allii* or *Aspergillus niger* (Singgih, 2009). Given that shallot farmers in the Special Region of Yogyakarta are still using traditional storage methods with high levels of damage (usually above 15%), the availability of shallot at the farmers' level in Yogyakarta Special District becomes disturbed or fluctuated. Another way to reduce

the damage of shallot during storage can be conducted by using a scatter method through spreading shallots over the woven bamboo which has the distance between the webbing hole of 2 cm and the width of the wicker rods by 2 cm and placed it in a ventilated room should be considered since such a method was able to withstand damage or shrinkage of weight of 1.8% better than the traditional hanging system commonly used by farmers. Therefore, assessment of the application of farmers' shallot storage on a wider scale by means of scattering method in place of hanging method can be considered as one solution to increase the availability of shallot in Yogyakarta Special Region.

Another factor causing fluctuations in shallot availability in Yogyakarta is due to the limited role of BULOG in stabilizing the availability of shallot in Yogyakarta. Until now, BULOG Regional Division of Yogyakarta is still not capable of handling a large amount of shallot from both local farmers and from other regions. This is because BULOG does not have a storage technology that can maintain shallot quality for a long time (more than 3 months) with a low level of damage (less than 10%). As a result, the quantity of BULOG shallot procurement at harvest time is still very limited. As a consequence, when the price of shallot increases, BULOG is unable to influence the market due to the small amount of shallot inventory used for market operations. Even if the shallot market operation must be done, BULOG sometimes has to sell it at a higher price than those in the market even if it is still within the price range set by the government (Sindonews, 2016). This result is due to the high cost of storage that must be compensated due to the high damage of shallot. According to Rahayoe *et al.* (2017), BULOG is currently reviewing the application of shallot storage technology using Controlled Atmosphere Storage (CAS). The result of the study indicates that the storage of shallot in the form of "konde askip" has a higher feasibility when compared to that of "rogol askip" of shallot due to the constraint of shallot trade price regulation which must comply with the Regulation of Minister of Trade No.27 of 2017. Therefore, the application of CAS technology on shallot storage in the BULOG's regional division of Yogyakarta has the

opportunity to reduce the fluctuation of shallot availability in Yogyakarta Special Region.

4. DISCUSSION

Based on analysis and explanation of factors affecting shallot availability fluctuation in the previous paragraphs, there are at least two points for controlling the price of shallots that have to be addressed by the local government in Yogyakarta Special Region. Firstly, demands for shallots are relatively predictable year by year. Conversely, supply or availability of shallots seems to be difficult to predict. The local government should be able to forecast the supply of shallots by monitoring the data of shallots availability resulting from their own production as well as distribution from surrounding areas. It seems not an easy task since data of production of shallots in Yogyakarta Special Region is not completely complemented by data of incoming and outgoing shallots from or to surrounding areas. Secondly, BULOG in Yogyakarta Special Region should be able to upgrade its role in stabilizing the price of shallots by improving its capability of storing and preserving shallots during the peak seasons of production. Adopting new technology such as Controlled Atmosphere Storage (CAS) for storing and preserving shallots in warehouses must be taken into consideration.

5. CONCLUSIONS

Shallot is one of agricultural or horticultural commodities where its availability are managed to be stable by the government of Yogyakarta Special Region. Nevertheless, the sharp fluctuation of shallot price occurring throughout 2017 indicates frequent instability in the balance between shallot consumption and its availability. This is due to the decrease of production in the production center of shallot in Yogyakarta Special Region, especially in Bantul Regency, although recently it has been replaced by the shallot of Kulonprogo which has begun to increase its production, as well as the supply of the surrounding areas that also experienced fluctuations due to the planting and harvest seasons that are similar to those in Yogyakarta Special Region. Instability of shallot availability in special region of Yogyakarta is

exacerbated by the limitations of BULOG that have not been able to store large amounts of shallot storage yet. Therefore, to maintain the stability of shallot availability, BULOG should consider applying shallot storage technology that is capable of storing in a relatively long period with a minimum deterioration rate.

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