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**Marketing Aspects of Vegetables: Comparative Study of Four Regions in East Java and Bali**

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**ABSTRACT**

*One of the factors that determines the success or failure of agribusiness is ability of farmers to sell the product. Thus, marketing is an important part of vegetable farming. Good marketing process leads to commercialization, and unsuccessful in this step leads to inadequate income. This study aims to explore the marketing aspects of vegetables using descriptive analysis of vegetable marketing relates issues. The aspects include sources of information, traders, time to sell, use of mobile phone in marketing and the potential constraints. Marketing characteristics of each region were discussed by comparing and contrasting one to another. Data for this study were gathered from a quantitative investigation of 360 farm households situated in four main vegetable producing regions of rural East Java and Bali, Indonesia. The results show that farmers relied on traders and neighbouring farmers as the trusted sources market information. The ways of farmers to sell the product to the market varied across regions. Commonly, farmers had frequent buyers or costumers to sell the products without any special commitment. In majority, farmers contacted a few of traders to sell the product about three days before harvesting. Highly fluctuation of prices was perceived to be the most important constraint among other factors limiting good marketing. Thus, there is a need to address such constraints to help farmers to get fairness.*

Keywords: *Vegetables, Marketing, Traders, Collectors*

**INTRODUCTION**

Agricultural marketing plays an important role in the process of agricultural commercialization. Smallholder commercialization is a crucial feature of the development process considered by most development economists. This is the central path from a semi-subsistence agricultural communities to a more differentiated with high-valued commodities and confident food economy with higher standards of livelihood (Mariyono et al., 2017). The process begins with a wide-ranged agricultural growth, that bring about a accumulation of purchasing power by millions of smallholding agribusiness players. Subsequently, these millions of the farmers disburse and re-cycle more currency through the economic activities,

thought-provoking demand and occupation growth in non-farm sectors. This in turn enhances the demand for foods and other agricultural products in a good cycle where rural and urban labours f provide an exchange for each other (Mariyono, 2017). This piece of paper provides an overview of factors related to the marketing activities of the vegetable product that supports vegetable commercialization in rural and sub-urban areas.

In current policy discourses, constructing agriculture higher level of commercialisation is realised as a key component in attaining economic growth and poverty reduction in developing countries, including Indonesia. The agricultural commercialization is characterized by spe-

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cialization and the development of markets and trade that are fundamental to economic growth. Seeing that movement from subsistence to commercialization of agriculture is the key point of agribusiness, smallholder farmers are encouraged to play in a market-oriented farming (Mariyono & Sumarno, 2015).

However, commercialization of smallholder agriculture is not an instantaneous progression. There are numerous requirements to accomplish it. Leavy & Poulton (2007) identify driving factors of agricultural modernization via commercialization of the subsistence farming. This, among other, includes population growth, new technology, access to market, intensification, and endowment accumulation. More comprehensively, Poole, Chitundu, & Msoni (2013) provide detailed highlight by showing that the process of commercialization in agricultural sector entails a series of certain approaches, which consist of a commitment to farming practices and new set of techniques, a low onset of risk aversion, willingness to make investment in land and soils, access to financial institution, skills in handling business relations, price conciliation, time devoted to markets, product and process quality control and reassurance, uninterrupted improvement and efficiency improvement. As well, group activity with the characteristic operational and management challenges is indispensable for reducing transaction and transformation costs, and involves significant individual and organizational learning.

Regarding the risk, chili farming is one of risky business ventures, then the short edge of risk aversion is one of the dangerous factors of successful agribusiness ventures (Ikerd, 2011). Diversification of agriculture is one of the ways to reduce economic and ecological risks, as well as to increase farm profitability (Mariyono, 2007; Mariyono & Agustin, 2006). Agricultural diversification with high-valued crops is also one of the several pathways to agricultural development (Kumar, 2009). Availability of farming technologies becomes important to support the commercialization. Invest-

ment in an intensification of land use is only possible with nutrient replenishment to the soil to sustain its productivity. In subsistence societies, soil nutrient supply is replenished by farmyard manures. As output growth is intensive, commercially oriented agricultural production systems are not possible in the absence of chemical fertilizer use (Pingali & Rosegrant, 1995). In the case of cassava in Africa, unavailability of adequate agricultural technologies such as disease-free stems and disease tolerant cultivars has obstructed the implementation of commercialization technologies (Mulu-Mutuku, Odero-Wanga, Ali-Olubandwa, Maling'a, & Nyakeyo, 2013).

Diversification with high-valued crops (including vegetables) of agriculture is driven by technological change (Pingali & Rosegrant, 1995). Successful adoption of technology can be a powerful force in reducing poverty (Kuntariningsih & Mariyono, 2013b), and new technology seems to contribute a chance to improve the production level and earning substantially (Kuntariningsih & Mariyono, 2013a). Since the history, progress in agricultural technology have continuously been an important element in the development of human societies, and more so recently in the development of modern agriculture with a range of technologies (Bhattarai & Mariyono, 2016). One key innovation that will be necessary to improve the productivity of diversified farming systems is the introduction and adoption of technologies that reduce the costs and helps farmers manage and optimize input allocation in multiple crop systems. These technologies are costly, however, and the development of innovative low-cost, practical strategies that reduce the costs of production in diversified farming systems in the developing world will be necessary if they are widely disseminated (Mariyono, 2017).

There are many marketing factors that affect the success of introduction and dissemination of new technology. Distance to market represents the cost-effective marketing of produce. Since vegetables are a perishable product, local market availabil-

ity and distance to vegetable market are important. Many studies have shown that distance to market is the significant driving force to the adoption of agricultural technology and agribusiness (Kuntariningsih & Mariyono, 2013b). This study aims to descriptively analyse marketing aspects of vegetable productions in four areas of East Java and Bali Provinces. The findings are expected to be one of considerations to formulate appropriate policies.

## METHODOLOGY

The baseline study adopted framework of integration of qualitative and quantitative survey to meet the above objectives. The qualitative survey approach used for collection of social and institutional issues involved in vegetable farming and the information at the community or group level average in the village. The quantitative approach used for collection individual information on socio-economics of farmers' household and farming. The later approach was expected to provide information of quantitative information more accurate.

Quantitative one used the individual interview. This was conducted by interviewing selected farmers on socio-economic aspects. Interviews were conducted by enumerators using structured questionnaires. Each selected farmer was questioned individually to avoid farmers from being influenced by one another. Every response from farmers was recorded in a questionnaire. Each questionnaire only recorded one farmer. Data for this study were compiled from a quantitative survey of 360 farm households located in four major vegetable producing regions: Blitar and Kediri (East Java), Bangli and Tabanan (Bali).

To achieve the objectives of evaluation, this study used three major forms of descriptive data analyses namely: frequency, proportion, and weighted rank order. The frequency analysis was conducted by counting the number of farmers who provided responses to a specific type of issue/response in the questionnaire. After the frequency has been obtained, the percentage of such information from the

sub-total of each region and total samples in the project areas were determined. If the incidence of a certain variable is higher than the others, then this particular variable is considered more significantly important. Mean (average value) of a particular variable was estimated by calculating the sample average of the respective variable.

The report uses descriptive analysis. Qualitative data are represented by proportion (percentage) of farmers providing response relative to total farmers in each region and overall. The common formula of proportion is expressed as:

$$Y = \frac{n}{N} * 100\% \quad (1)$$

Where  $n$  is the number of farmer responding the questions,  $N$  is the total number of sampled farmers. Further analysis of the importance of information was conducting using a weighted average. Graphs were used to visually help in comparing important selected information.

For certain essential aspects, analyses were carried out using a form of weighted rank, which was calculated based on the score revealed by farmers. The weighted average rank formulation is specified as

$$\bar{R} = \frac{\sum n \cdot S}{N} \quad (2)$$

Where  $n$  is the number of farmers providing response to each category,  $S$  is the score, and  $N$  is the total sample. A higher mark was assumed for a particular response) when farmers perceived that such variable was more important than others. For instance, during the field survey, should there are five alternatives, and a farmer selected the first rank for a certain factor in the list, then the particular factor is given score (rank) of 1. If the farmer posited it in the second rank, then it is given score of 2, and so forth. If the farmer mentioned nothing, then the score for this particular factor is zero. Thus, the higher the value of the weighted average rank the more important the factor (re-

response) revealed by many farmers during the survey. For being consistent in the data analysis and being easy in reporting the results, the ranks are reversed : the first rank is transformed to 10 and lowest rank is converted to 1. Thereby, the higher the score for a factor the more important the particular factor among the assortment of other ranges/factors listed by the farmers. The highest weighed rank will be 10 when all farmers placed such variable in the first. The analysis was done using *statistical* software package and *MS-Excel*. The outcomes were presented in graphical forms.

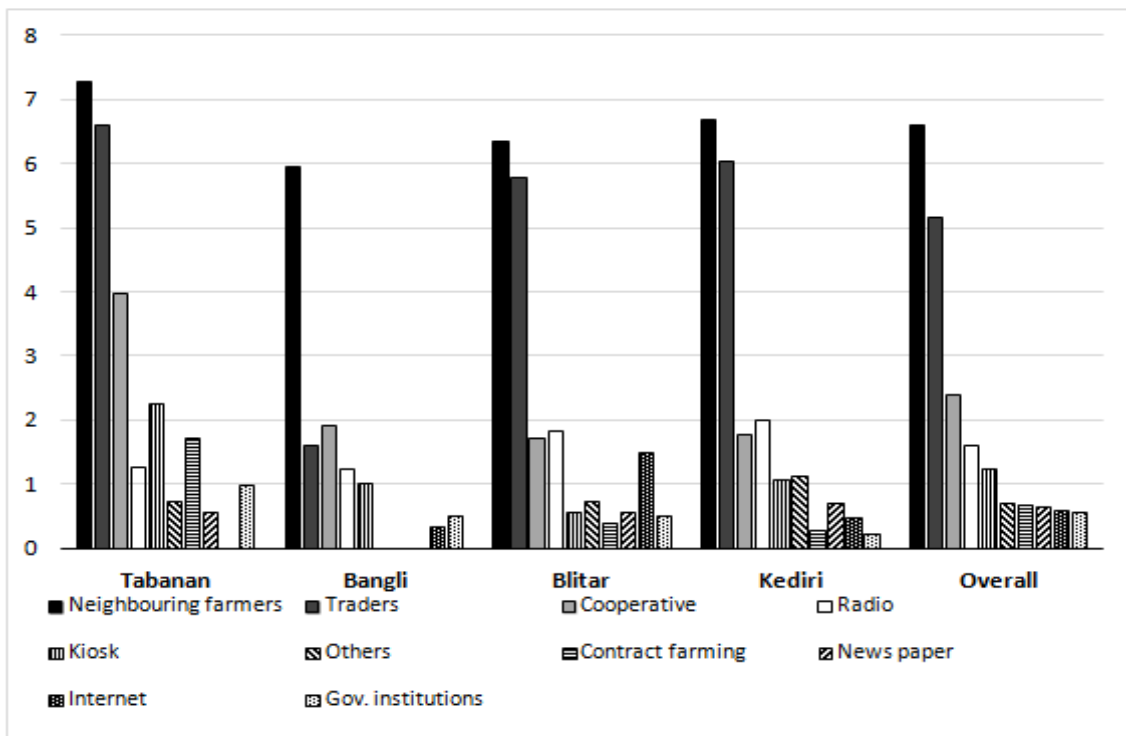
**RESULTS AND DISCUSSION**

**Marketing aspects**

The availability of market information accessible to farmers is imperative for intensive vegetable farming ventures. By acquiring the access to the market information farmers enable to plan the best time to start planting the crops that support agribusiness ventures. Availability of market information accessible to farmers will reduce asymmetric information, (particu-

larly price and production) between producers and buyers. The disproportionate information, isuch as lack of understanding about prevailing market price, necessitated quantity and preferred quality, has brought about farmers to be relatively low in the position of bargaining power. (Soviana & Puspa, 2012).

Figure 1 shows that farmers had access to various sources of market information. The top three important sources of market information were farmers, vegetable traders and cooperative. These sources were trusted by farmers because the information was updated. Radio, newspaper and government were perceived by farmers as agencies that provide obsolete information. Farmers and traders have been trusted by farmers in all regions, except in Bangli that only put neighbouring farmers as a trusted source of market information. Note that the location of Bangli where the survey was conducted is a remote and isolated area. The community was very traditional, and the cultural relationship among others was strong.

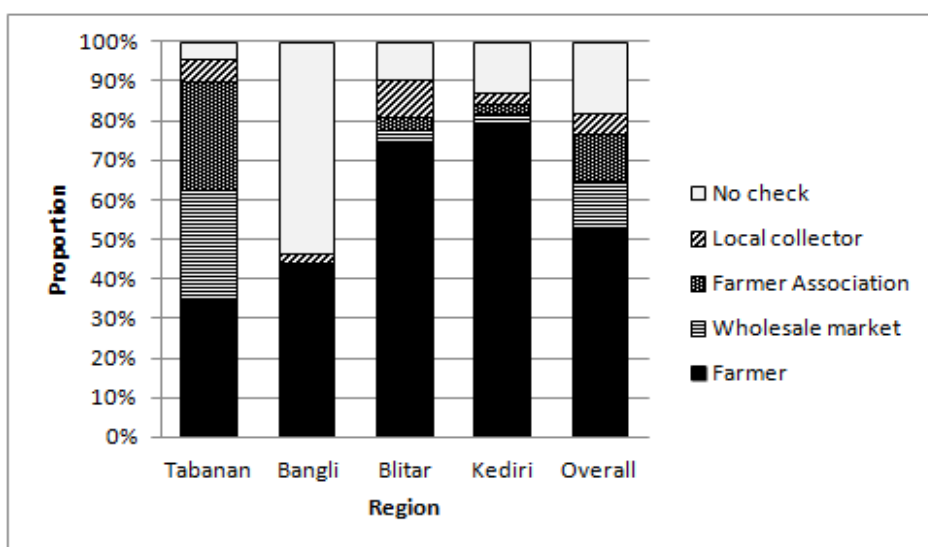


Source: Analysis of Primary Data, 2014

**Figure 1**  
**The Importance of Market Information**

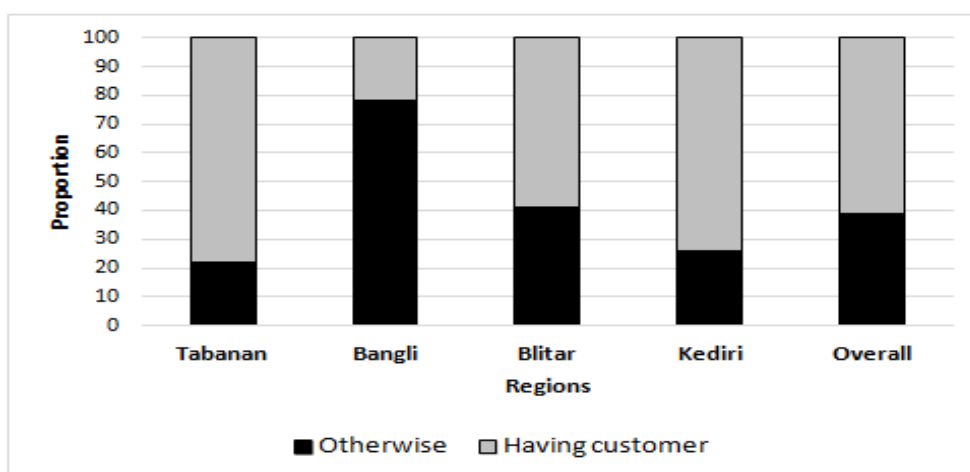
Special for price information, the farmer was the most trusted, particularly in East Java, where more 70% of farmers stated that they got price information from their friends (Figure 2). In Bali, several farmers also mentioned that they got price information from other farmers. Note that more than 50% of farmers in Bangli did not care about price information. Since the information is important, the access to the information can help farmers to get better performance (Negoro & Mariyono, 2014).

Figure 3 shows that about 60% of farmers had frequent buyers or customers when they sold vegetables, except in Bangli, which only about 20% of farmers. Even though they had customers, mostly they did not have any special connection such as credit. Only about 15% of farmers who had customers got a loan. Farmers in Kediri, 30% of them got credit from their customers (Figure 4). This is a good condition because customers are not legal credit providers. Usually, if farmers get credit from



Source: Analysis of Primary Data, 2014

**Figure 2**  
**Source of Price Information**



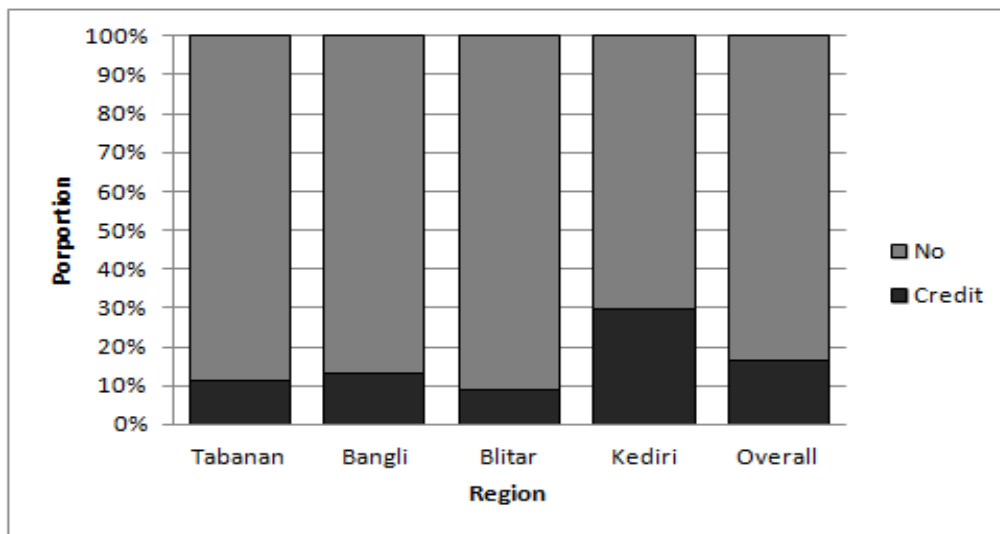
Source: Analysis of Primary Data, 2014

**Figure 3**  
**Frequent Buyer or Customer of Vegetables**

the traders/customers, the farmers should sell the product to the traders, and the price is determined by the traders, which is usually lower than prevailing price.

Figure 5 shows that more than half of farmers did not contact traders before selling the produce even though they did not have costumers They just sold directly to local market through local traders around their farm. During harvesting time, local collectors came and bought the vegetable produce.

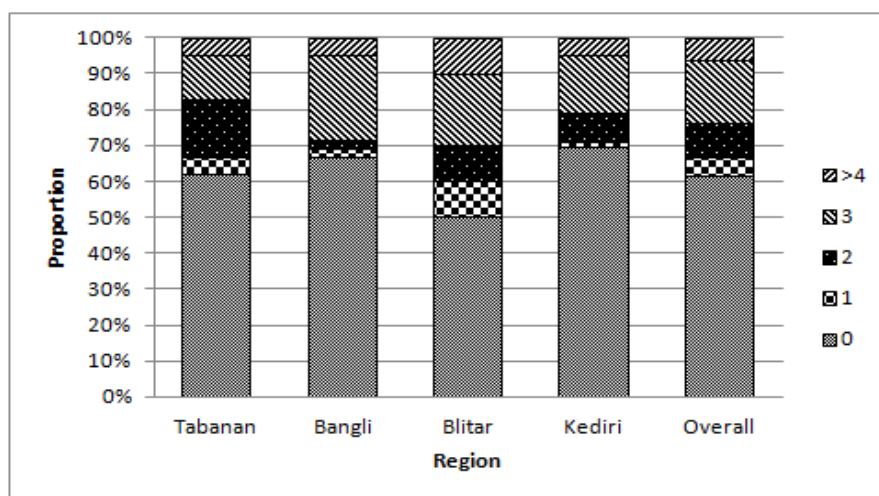
More than 50% of farmers checked the price of produce less than three days before harvesting except in Bangli (Figure 6). As the price of vegetable is volatile (Webb, Kartikarsari, & Kosasih, 2012), it is better if farmers check the price close to harvesting time. It is different from the price of staple food crops, which is relatively stable. In Bangli, 50% farmers did not check the price. Farmers just relied on the prevailing price during harvesting time. In this area, farmers were still traditional.



Source: Analysis of Primary Data, 2014

Figure 4

Proportion of Farmer Having Credit From Customers



Source: Analysis of Primary Data, 2014

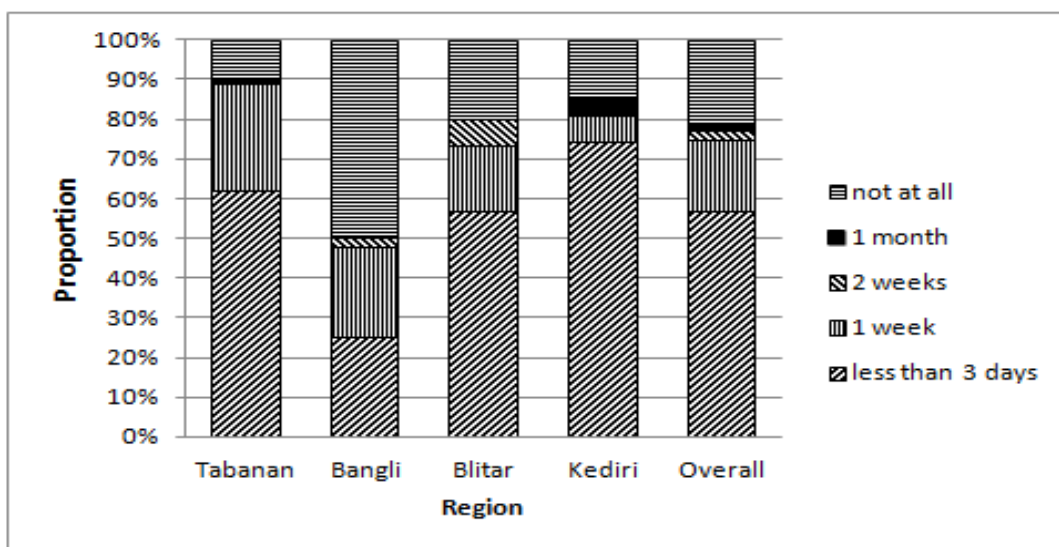
Figure 5

Number of Traders Contacted Before Selling Produce

Farmers usually negotiated on price with traders before selling the produce. About 60% of farmers did price negotiation, except in Bangli (Figure 7). More than 80% farmers in Tabanan did price negotiation. Note that farmers in Tabanan were more modern than those in Bangli. Vegetable farming in Tabanan was close to the vegetable market such that farmers in this areas had the higher bargaining power that those in Bangli, which was located

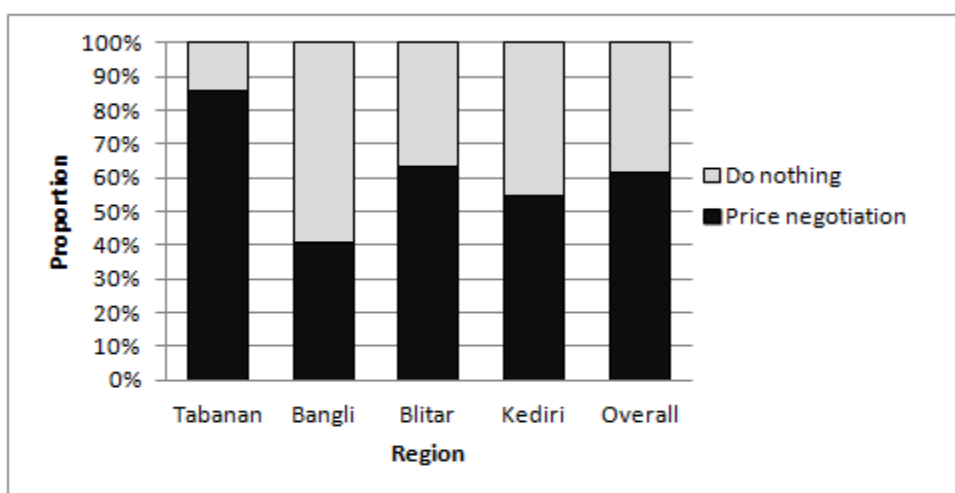
away from the vegetable market.

In the era of modern telecommunication, the cell-phone is no longer luxury goods. Everyone, including farmer, can get the cell-phone at an affordable price. Figure 8 shows that about 40% of farmers use a cell-phone to access price information, even though cell-phone could be owned by farmers. In Bangli, the rate of cell-phone use for accessing price information was the lowest.



Source: Analysis of Primary Data, 2014

**Figure 6**  
**Time for Price Check Before Harvesting**

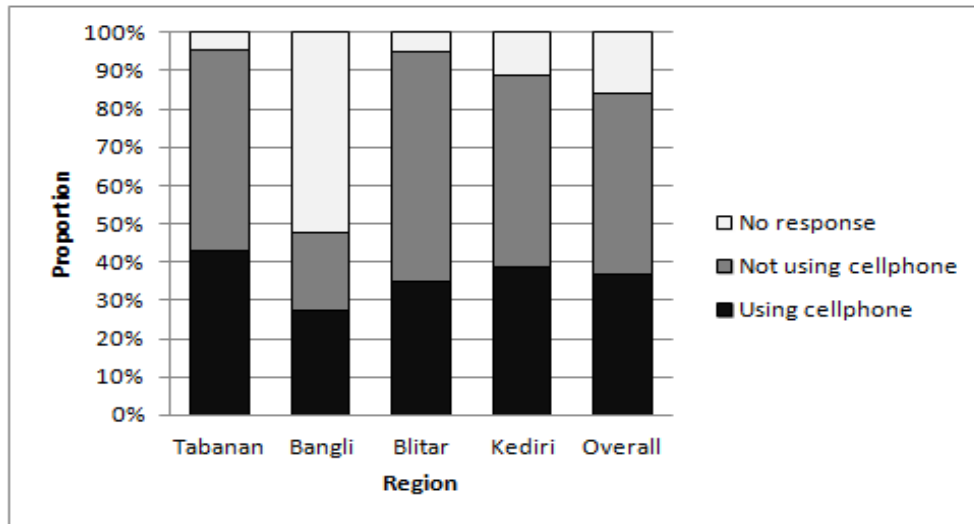


Source: Analysis of Primary Data, 2014

**Figure 7**  
**Price Negotiation Before Selling**

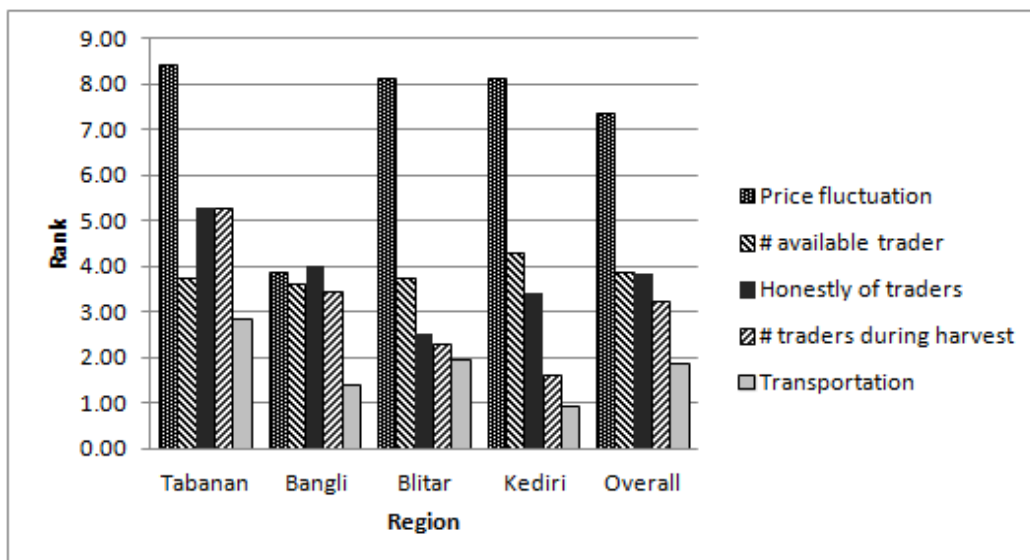
In general, price fluctuation is the most important constraint in vegetable marketing (Figure 9). Farmers could not predict the price such that they could not get the best profit. Sometimes farmers did not harvest the vegetables because the price was extremely low and could not

cover the costs of harvest. Transportation was not the problem in all areas, even in Bangli which was located in remote areas. This is because traders provided transportation when collected the produces during harvesting season. In Tabanan, the number and honesty of traders were also the important constraints.



Source: Analysis of Primary Data, 2014

**Figure 8**  
Using a Cell-Phone to Get Price Information



Source: Analysis of Primary Data, 2014

**Figure 9**  
Constraints of Vegetable Marketing



## CONCLUSION

Marketing activities is the final stage in agribusiness. This is an essential stage because failure in marketing leads to getting loss in profit. As vegetables are perishable, than timely marketing should be conducted by farmers. There are many aspects of marketing that determine the success of agribusiness based on vegetable farming. This study tried to explore the aspects in four regions of East Java and Bali Provinces, where vegetables are intensively cultivated by farmers. The aspects includes access to market information and traders, behaviours of farmers in selling the products, and marketing constraints. The important findings are as follow. Farmers accessed market information from various sources. Neighbouring farmers and traders were the most preferred sources of market information, including for prevailing price of vegetables. Farmers commonly sold the produces to their customers, but there was not a special agreement between farmers and the costumers. Farmers sell immediately the products after harvesting because vegetables are perishable products. Farmers tried to get prevailing market prices less than three days before harvesting, and farmers attempted to get better prices by negotiating with traders. Farmers tried to negotiate with traders to get reasonable price of products. Less than half of farmers used mobile phone in the marketing activities. This is a good stage because farmers were able to get good prices. Market price fluctuation was perceived to be the most important constraint in vegetable marketing. The exception was for Bangli areas, where farmers were still traditional. Based on the constraints, information on the seasonal production should be provided by appropriate agents. Currently, market information system has been available, and thus such production of vegetables should be accessible to farmers.

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