Market Efficiency and Integration Analysis
of Organic Vegetables in Medan

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ABSTRACT

The study aims to analyze about marketing chain of organic vegetables, margin trading system, and level efficiency of organic vegetables market chain and the market structure and the integration of organic vegetables in a market. From theoretically, there are three basic theory is the basic for forming an efficient trading system is the theory of marketing chain and its functions, the farmer's share, the efficiency of marketing chain and transmission theory to analyze the structure of organic vegetables market price. The samples are vegetable farmers and institutions involved in organic vegetables chain in trading system which is comprised of ten farmers, a collectors and two wholesalers supermarkets. The research found from three organic vegetables chain have three channels, wherever the first channel are from farmers to traders and then to wholesalers and consumers; the second channel are farmer to consumer and the third channel the growers to wholesalers and consumers. The farmer's share analysis concluded the second channel was the most efficient channel because the efficiency levels up to 100 percent, while based on a calculation form of marketing chain efficiency, generally that three organic vegetables have been efficient. Analysis of the organic market integration, organic vegetable market was monopsony market and monopoly market. The recommendations of research was expanding the market share of organic vegetables again in the city of Medan.

Keywords : vegetables organic, market efficiency, market integration

Background

Along with the increasing public awareness of the impact of conventional agricultural systems on the environment, health and food security, organic agriculture is now becoming a business in the agricultural world. Organic farming business besides producing a product that is safe for consumption, it is also expected in the long run can increase and maintain the level of production and fertility of the land
Vegetables are one of the horticulture groups that have their own meaning and position in the national development process in agriculture sub sector. Vegetables are an important source of vitamins and minerals for nutrition fulfillment. Assuming that organic vegetables are better than inorganic vegetables, it is necessary to increase the production and productivity of organic vegetables.

Vegetables can be cultivated in non organic or organic. Various obstacles encountered in organic vegetable cultivation include: (1) there is not yet sufficient price incentives for producers of organic agricultural products, (2) needing expensive investment at the beginning of development because they have to choose a truly sterile field of agrochemical material, (3) Of limited market share. Organic vegetables have a high selling value compared to non-organic vegetables. This is because the price of organic

products, especially organic vegetables are more expensive and relatively stable than non-organic. The market share of organic vegetable products in the country is still limited or relatively small, ie upper middle class society.

Table 1. Organic Vegetable Commodity Prices at Various Levels

Number	Commodity	Prices of level farmers	Prices of level Suppliers	Price of level Consumers
1	Spinach	Rp 3000	Rp 5000	Rp 9000
2.	Kale	Rp 2800	Rp 4000	Rp 6000
3.	Celery	Rp 3000	Rp 4500	Rp 7000

From table 1 above it can be concluded that the price of vegetables at the farm level is always lower than the price of vegetables at the supplier level, this is because farmers do not have a strong bargaining position compared with other marketing institutions. In addition, farmers also do not have complete market information when the high price of vegetables depends on market information.

Medan City is one of the potential areas of organic vegetables that are large enough to produce organic vegetables. But how marketing patterns and marketing agencies involved is not known. To that end, researchers here are interested in researching about the efficiency analysis of organic vegetable marketing and Integration of Organic Vegetable Market in Medan City.

Literature Review

Generally, all plants can be cultivated organically because at first the plants grow naturally, without additional (fertilization) from the outside. Only, there are plants that are sensitive to pests and diseases that need intensive maintenance. In addition, when organic cultivation is directed to the business, the selection of crops should consider the types sold in the market, such as onions, carrots, lettuce, peppers, and tomatoes (Pracaya, 2003).

Organic vegetables are one of the products produced by organic farming systems in addition to organic fruits, meats and eggs. These vegetables are produced without pesticides and fertilizers from other chemicals whose goal is to preserve the environment with the concept of back to nature (back to nature). The results obtained are vegetables that are free from chemical residues, safe to eat and much healthier so that generally the selling price of organic vegetables is more expensive than conventional vegetables On the development of agricultural sector in the future still encountered several obstacles, especially in the development of agricultural systems based on agribusiness and agro-industry. Constraints faced in the development of agriculture, especially small-scale farmers, among others:

First, the weakness of capital structure and access to capital resources. Second, land availability and soil fertility problems. Third, the procurement and distribution of production facilities. Fourth, limited ability in technology mastery. Fifth, weak organization and management of farming. Sixth, lack of quantity and quality of human resources for the agribusiness sector. There are two things that can be seen related to human resources is the availability and quality of human resources (Syahza,, 2007).

Marketing is an overall system of business activities shown to plan, price, promote and distribute goods and services that can satisfy the needs of both existing buyers and potential buyers. This means marketing is one of the main activities that must be done in the agricultural sector to distribute its produce (Downey and Erickson, 1987)

The cost of trading component comprises all types of expenditures by middleman and the marketing agency that play a direct and indirect role in the process of transferring goods and profits taken by the middleman or trading agency on its capital and services in carrying out such marketing activities. After grouped by the same type of cost, this marketing margin is called price spread dipersenkan to the purchase price of consumers, then the share margin.

Distance must be bridged so that the goods and services needed by consumers to meet the principle of place, amount, time, quality, type and at the price level worth paying consumers. The distribution sector is the bridge. This sector is responsible for moving, allocating, utilizing, diversifying the goods produced in the production sector, and this sector is a role model. Marketing efficiency is an indicator of good or bad marketing at each marketing agency. How much the sacrifice that must be spent in marketing activities to support the results that can be obtained from these marketing activities. Marketing efficiency can be sought by calculating output-input ratios in marketing activities undertaken (Sihombing L, 2010).

Research Methods

The research method used is purposive (purposely) and the area used as research place is in Medan City. Selection of the area is done because this city is the most areas that have farmers oriented to organic farming, especially in the organic vegetable cultivation. In this study, researchers used the sampling technique by tracer study method (tracer study). The study population as many as 13 people and the entire population serve as a sample of research. So, this sample of research consists of 10 farmers in Medan Johor. For collecting traders consisting of 1 person and 2 merchants wholesalers so that the overall sample is 13 people.

Characteristics of Sample Farmers
Age
The age of organic vegetable farmers who were the respondents in this study ranged from 40 to 60 years. This bias seen from the table as follows:
Table 2. Age of Farmer Sample

Number	Age (Tahun)	Farmers
1.	40-45	4
2.	46-50	2
3.	51-55	1
4	56-60	3
Amount		10

Source: Primary Data Processed, 2016

Education

In terms of education level of organic vegetable farmers in Medan City, the education of farmers is high. This can be seen from the table as follows:

Table 3. Farmers Education Level Organic Vegetables

Number Level of Education		Farmers
1.	Graduated Primary School	-
2.	Graduated Junior High School	2
3.	Graduated Senior High School	5
4.	Graduated S1	3
Amount		**10**

Source: Primary Data Processed, 2016

Experience Farming

From 10 farmers, the average farmers' experience in farming is between 11-15 years. For more details, the classification of peasant experience can be seen in Table 7..

Table 4. Experience Farming

Number Experience Farming		Farmers
1.	0 – 2	1
2.	3 – 5	9
Jumlah		**10**

Source: Primary Data Processed, 2016

Results and Discussion

Chain Analysis of Organic Vegetable Stores

Channel trading in the city of Medan In the picture shows that there are three channels of organic vegetable trading, namely

1.   Farmers → Collector Dealer → Large Traders → Consumers
2.   Farmers → Large Traders → Consumers
3.   Farmers → Consumers

The resulting organic vegetables are generally 60% sold to collecting traders while 40% are sold directly by farmers to consumers who come to the farm. The production supplied by collecting merchants to the supermarket market consists of 50 kg of spinach, 54 kg celery and 60 kg of water spinach because in this case all farmers always set production target for harvest as much as 100 kg.

Farmer's Share Analysis and Efficiency Trading

In the analysis of farmer's share, channel I organic vegetables sold to merchant traders then sold to wholesalers and after that comes to the consumer. Channel II farmers sell directly to consumers. Channel III farmers sell to the wholesalers and after that comes to the consumer. Although through a bargaining system but ultimately it is the merchant that determines the price so that the price can be suppressed.

Table 5. Percentage of Farmer's Share on Each Traffic Channel

No.	Saluran Tataniaga	Farmer's Share (%)		
		Kale	**Spinach**	**Celery**
1.	Channel Trading I	45	33,3	50
2.	Channel Trading II	100	100	100
3.	Channel Trading III	66,7	55,5	66,7

Source: Primary Data Processed, 2016

Based on Table 5, the largest share received by farmers is on channel management II that is 100 percent. The smallest part that farmers receive is in pattern I. Based on the three channels of trading, it can be seen that channel II is the most favorable trading arrangement for farmers.

The efficiency of trading is measured by looking at the value of efficiency and also see the price of consumers in the final levelThe level of efficiency of trading in the research area has different values based on existing channels. Table 10 shows the efficiency of each channel's trading account

Tabel 6. The Level of Trades Efficiency

NumberChannel Trading		Trade Efficiency		
		Kale	**Spinach**	**Celery**
1	Channel I	0,96	1,5	1,03
2	Channel II	∞	∞	∞
3	Channel III	0,88	3,3	2,15

Source: Primary Data Processed, 2016

Tabel 7. The Level Of Commodity Prices in Consumers

NumberChannel Trading I		Commodity Prices in Consumers		
		Kale	**Spinach**	**Celery**
1	Channel I	7000	9000	8000
2	Channel II	2800	3000	3000
3	Channel III	6000	10000	7000

Source: Primary Data Processed, 2016

From table 6, the overall result of calculation of organic vegetable trading efficiency, it can be seen that channel II is an efficient channel. This is because farmers are able to sell goods directly to consumers without incurring the cost of trading.

From table 7, prices at the consumer level for each commodity are different. From the table we can conclude also that channel II is an efficient channel. This happens because farmers are able to sell these products directly to consumers with a relatively cheap price. From this study can be concluded that the smaller the price formed at the consumer level the more efficient the trading channel that is formed.

Analysis of Market Structure and Integration of Organic Vegetable Market
To measure market structure and market integration then use price transmission formula. The price transmission elasticity analysis is used to illustrate the response of product prices at the level of the producer farmers due to price changes at the exporter level through price information.

The results of the calculation of the transmission of price analysis is as follows:

Table 8. The levels of Price Transmission

Number	Channel Trading	Price Transmission		
		Kale	Spinach	Celery
1	Channel I	0,2	0,1	1,03
2	Channel II	1	1	1
3	Channel III	0,44	0,31	0,33

Source: Primary Data Processed, 2016

From the price transmission result, it can be concluded that cumulatively, there is no integrated and efficient integration between market of producers, traders and consumers so that with this condition the market is oligopsoni market means that the market is in the supply condition more than demand.

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