

## VALUE CHAIN OF SWEET POTATOES IN AGGLOMERATION AREAS MEDAN AND DELI SERDANG

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### Abstract

The purpose of this study was to analyse the actors involved in the value chain and marketing flow of sweet potatoes in the Medan and Deli Serdang agglomeration areas. Analyse the performance of the sweet potato commodity value chain from upstream to downstream in Medan City and Deli Serdang. Identifying sweet potato commodity value chains in Deli Serdang Regency. Value chain analysis was conducted by first identifying the actors involved in the sweet potato value chain and the activities performed. Value chain analysis was conducted by looking at the primary and secondary activities of each institution involved in the sweet potato value chain in Deli Serdang. Measuring value chain performance using financial analysis by calculating share margin and profit share for each actor. The results of this study are that there are several actors involved in the value chain activities of sweet potato commodities in Deli Serdang Regency, namely, farmers, collective traders, wholesalers, large traders, and end consumers (Home Industry), each of which each actor gets different benefits. The performance of the sweet potato commodity value chain in Deli Serdang Regency can be seen from the profit share of each institution. Wholesalers with the highest profits with a profit share of 44.4% greater than the other actors.

**Keywords:** *Value Chain, Value Added Analysis, MSMEs.*

### 1. INTRODUCTION

Sweet potatoes in North Sumatra are cultivated in various food and horticultural agricultural centres such as Dairi, Simalungun, Karo, Samosir, Nias and Deli Serdang. Based on sweet potato production data from the North Sumatra Central Bureau of Statistics (BPS) in 2020, Deli Serdang Regency has the third highest average production with an average production of 212.97 tonnes.

Value chain analysis provides a way to understand business policies, mechanisms, and the movement of products and information to improve efficiency, productivity, customer service, and a better business place. This is in line with the statement (Mostenska & Tur, 2018) saying that the tool for creating competitive advantage is the value chain. This activity signifies that a better relationship between producers, market participants, and consumers in the supply chain will begin. In addition, value chain analysis is a strategic analysis tool used to understand competitive advantage, identify customer value that can be increased or reduced costs, and understand the company's relationship with suppliers, customers, and other companies in the industry (Siddique, 2021). The value chain is a business activity where each stage will generate its own benefits for those who do it and others related, this value chain can add value to both goods and services (Addlillah, 2021). The value chain of sweet potato has not been clearly identified in Medan City and Deli Serdang Regency, which is necessary for business development in terms of value addition to each institution involved in marketing activities. The value chain includes activities that occur from relationships with consumers and relationships with suppliers (Syamsudin, 2023).

Given the lack of value-added activities in sweet potato commodities when compared to the magnitude of the potential of these commodities, it is necessary to conduct research to determine the value chain of sweet potato commodities in Medan City and Deli Serdang Regency, it is

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necessary to conduct research on value chain analysis and competitive advantage of sweet potato commodities in the Medan City and Deli Serdang Regency areas. From the above statement, the author wants to see how the sweet potato commodity value chain is in Deli Serdang Regency and how the performance of the sweet potato commodity value chain in Deli Serdang Regency.

## **2. IMPLEMENTATION METHOD**

The sweet potato value chain in this study will be explained using a qualitative descriptive method. Value chain analysis is carried out by first identifying the actors involved in the sweet potato value chain and the activities carried out. Measuring value chain performance using financial analysis by first calculating production costs, income, production and revenue and share margin for each actor.

## **3. RESULTS AND DISCUSSION**

### **3.1. Sweet Potato Value Chain Actors**

#### **3.1.1. Farmers**

The concept of value chain is defined as a series of activities that need to be carried out for a product at different phases, from raw materials to end consumers and to waste (Dania, 2021). Sweet potato value chain activities begin with farmers as fresh sweet potato producers by purchasing sweet potato seeds from other parties or storing the previous harvest. The selection of raw materials in the form of seeds is carried out by each farmer because they better understand what kind of seeds are suitable and good on their farm based on previous experience (Sembiring, 2022). Farmers buy seedlings in the form of stems from other farmers at a price of Rp. 200/stem. A series of activities are carried out by farmers, starting from land cultivation, making beds, planting seeds, using herbicides, weeding, and harvesting. Wages for daily labourers range from Rp 75,000/day - Rp 100,000/day. However, the wage is based on the activities performed, such as tillage and harvesting, and depends on the size of the land. The selling price of fresh sweet potato from farmers is around Rp. 2,000/kg - Rp. 3,000.

#### **3.1.2. Collecting Traders**

Collecting traders buy fresh sweet potatoes directly from farmers who have previously made transaction arrangements before the harvest period. They sort the fresh sweet potatoes by classifying the products based on their size. Collecting traders only act as distributors by directly distributing fresh sweet potatoes to other marketing institutions to generate profits. In addition, labourers (only drivers and porters) are only employed during harvesting and marketing activities and are paid at the end of harvesting activities. Labourers earn a wage of IDR 200/kg IDR 300/kg. Collecting traders sell fresh sweet potatoes for IDR 4000/kg - IDR 4800.

#### **3.1.3 Wholesalers**

Wholesalers get their sweet potato supplies from collecting traders who buy directly from farmers. Wholesalers pay the collectors after unloading the sweet potatoes from the trucks. Furthermore, wholesalers sort out sweet potatoes that are worth selling because the delivery process from collectors to wholesalers takes time which will result in some sweet potatoes being damaged. Wholesalers only employ daily workers to help them distribute the products and sell to retailers or directly to end consumers. Wholesalers sell their sweet potatoes at a price of IDR 6000/kg - IDR 8000/kg, due to the additional cost of storage, and the depreciation of the sweet potatoes themselves.

#### **3.1.4. Retailers**

Retailers conduct their marketing activities by purchasing sweet potatoes from wholesalers in the wholesale market. They usually buy products weighing 100 - 450 kg and do not conduct



operational activities. The marketing process is done through their stalls with a selling price of IDR 9,000/kg - IDR 10,000/kg. Similar to wholesalers, retailers operate by considering stall conditions and sorting activities.

### 3.1.5 Industri dan Home Industry

Industry is an economic activity that carries out the activity of transforming a basic item mechanically, chemically, or by hand so that it becomes finished / semi-finished goods, and or goods that are less valuable into higher value goods, and their nature is closer to the end user.

Home industry or called producers of sweet potatoes who convert sweet potatoes into a processed product that will be resold. Industry is an economic sector in which there are productive activities such as processing raw materials into finished or semi-finished goods (A, 2023). Home industry is a small-scale economic activity and is traditional and informal, in the sense that it has not been registered and has not been incorporated. Usually home industry activities are home-based activities (Yasmin, 2023).

Big home industry players usually do not buy sweet potatoes to collectors, wholesalers or retailers, they buy sweet potatoes directly from farmers because the price can be cheaper for large-scale purchases. Before buying sweet potatoes, they make an appointment with the farmers and usually they have a subscription with several farmers, not just one farmer so that their production activities do not depend on the existing sweet potato supply. They get the price of fresh sweet potatoes from farmers at Rp. 2500/kg - Rp. 2700/kg.

### 3.2. Marketing Chain and Product Flow

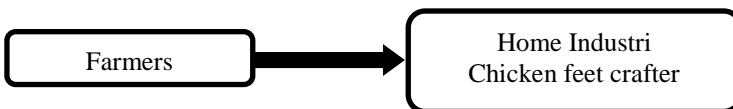
Sweet potato marketing refers to the distribution chain from the farmer to the final consumer. There are three levels of marketing distribution channels that prevail in the observed locations. The three levels of marketing channels are:

#### a. Marketing Chain Type 0

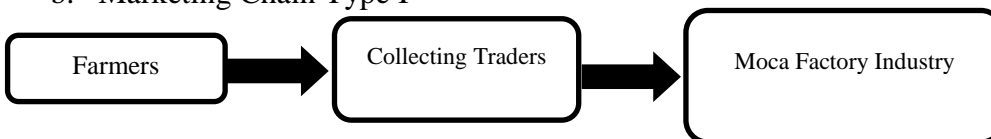
In this pattern, farmers sell their harvest directly to consumers. Usually, farmers with this type of channel grow sweet potatoes for the needs of the surrounding community. In the Sei Berasekata area, for example, farmers will sell their harvest by selling it on the roadside or opening outlets in traditional markets.



Apart from selling directly to end consumers, there are also farmers who sell their crops directly to micro, small and medium enterprises. These businesses include food processing businesses such as making chicken feet, fritters, sponge cake, and other sweet potato-based snacks, and other sweet potato-based snacks.



#### b. Marketing Chain Type I



Type I flow in sweet potato marketing in Deli Serdang and Medan City is played by intermediary traders. Collecting traders collect the harvest from farmers, clean the sweet potatoes themselves and then proceed with sorting. The sorted sweet potatoes are resold to various

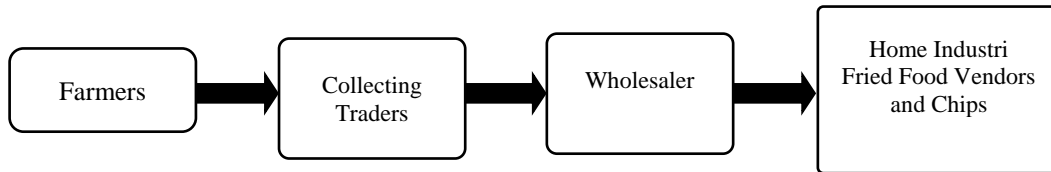
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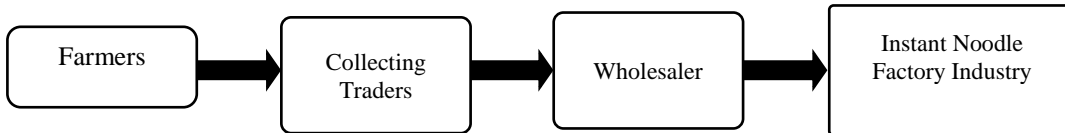
businesses. Collecting traders in Sei Berasekata sell the sorted sweet potatoes back to the mocaf production industry and other food processing home industries, while collectors based in Medan supply sweet potatoes to various home industries and even supply them abroad such as Malaysia.

**c. Marketing Chain Type II**

The two-type chain also applies in the observed locations, involving two intermediaries, namely collectors and wholesalers. The pattern that occurs is that farmers sell fresh sweet potatoes to collectors and then collectors sell sweet potatoes back to traders wholesalers.



At the sweet potato wholesale level, sweet potato buyers are food processing home industry players such as fried food and chips traders and for food industries such as instant noodle factories.



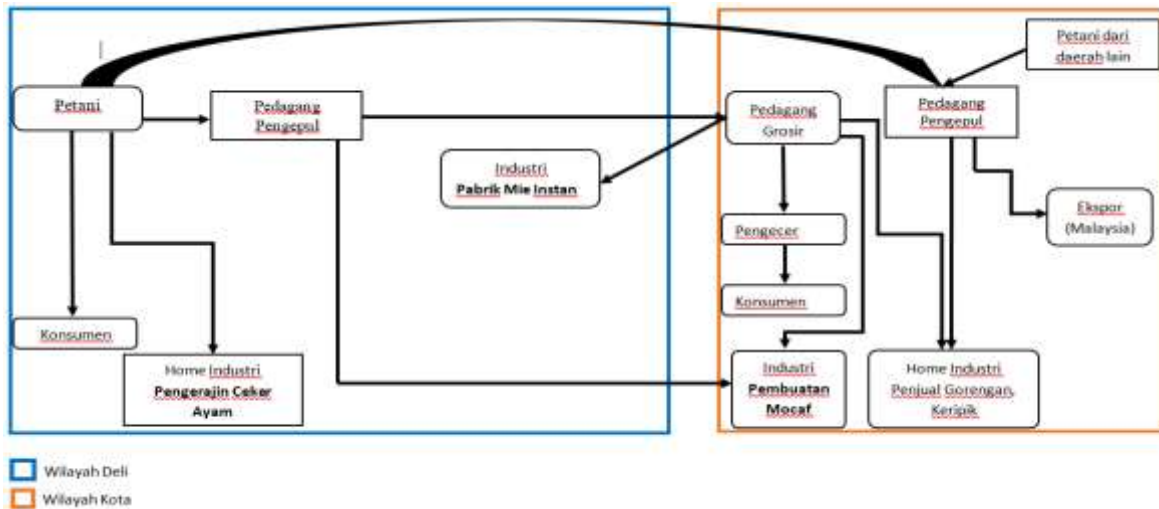
**d. Marketing Chain Type III**

The third type of marketing chain involving three intermediaries applies to sweet potato marketing in the agglomeration areas of Deli Serdang Regency and Medan City. In this type, collectors do not directly sell fresh sweet potatoes to consumers but resell them to wholesalers. Sweet potato wholesalers operate mostly in Medan City. They are usually located in wholesale markets such as the MMTC wholesale market and the Lau Chi wholesale market where sweet potato supplies come from various regions.



Marketing chain model 0 is the most efficient chain because it offers the lowest marketing margin and the highest farmer share (IDR 0/kg and 100%, respectively). It is said to be efficient because the fewer marketing institutions involved in the marketing channel will increase farmers' profits. However, in the observed locations, not many farmers practise this type of marketing. The lack of networks and limited storage technology owned by farmers are the reasons why this marketing pattern is not widely practised. Furthermore, it can be seen that the marketing channel model III has a long flow and has a low farmer share value of 25%, which means that there is a gap at the farm level, namely the low price at the farm level and the high price at the consumer level. The high price at the consumer level is certainly influenced by the number of intermediary institutions involved.





**Figure 1:** Sweet Potato Marketing Chain in Deli Serdang Regency

Sweet potato marketing patterns in Deli Serdang and Medan City are interconnected between each actor. In the research that has been conducted, there are separate marketing characteristics in each region. Deli Serdang Regency is mostly populated by farmers and collectors. While Medan City is the place for sweet potato downstreaming, large sweet potato traders can only be found in Medan City.

Deli Serdang has a large number of sweet potato farmers. In the process of selling their harvest, there are two patterns. First, farmers sell directly to end consumers or directly to processed food home industries. Second, farmers sell to several collectors in Deli Serdang and Medan city. The collectors in Deli Serdang sell most of the fresh sweet potatoes to wholesalers in the main market of Medan City, namely the MMTc and Lau Cih markets, besides that the collectors also supply sweet potatoes as raw materials for the mocaf production industry in Medan City. Meanwhile, collectors who live in Medan City supply their sweet potatoes to various processed food home industries and send them to Malaysia.

Sweet potato wholesalers located in Medan City accommodate fresh sweet potatoes that come from Deli Serdang collectors as well as other areas in northern Sumatra such as Sidikalang and several areas in Sumatra such as Jambi and Kerinci. Wholesalers at MMTc wholesale market are able to accommodate 2 - 3 tonnes of sweet potatoes per day with various varieties such as 'honey', 'bolu', 'cilembu', and 'purple' sweet potatoes. While in Lau Cih wholesale market, sweet potato wholesalers are able to accommodate 4 to 6 tonnes of sweet potatoes per day, interestingly the variety that is traded is only one type of sweet potato variety 'bolu'. From these two wholesale markets, wholesalers distribute fresh sweet potatoes to various parties such as being sold to the instant noodle industry in Lubuk Pakam, Deli Serdang Regency as an additional raw material for making noodles and also to fried food traders around Medan city.

### 3.3 Market Margin

Marketing agents such as collectors, wholesalers, and retailers perform their functions in purchasing, sorting, grading, packaging, transporting, and selling. The cost of each activity is shown below:

**Table 1:** Agency, Cost, and Margin of Sweet Potato Marketing

Marketing Agent	Function	Cost/Price (Rp/Kg)	Share (%)	Profit Share (%)
Farmers	Cost Production (Rp/Kg)	1,133		
	Farm Level Price	2,500		

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	Farmers margin (profit)	1,367		20
Collecting Traders	Purchase	2,500		
	Sale	4,000		
Marketing Agent	Function	Cost/Price (Rp/Kg)	Share (%)	Profit Share (%)
Wholesaler	Cost (Transportasian dan Sort)	500	6	
	Benefit	1,000	13	14,6
	Purchase	4,000		
	Sale	8,000		
	Cost (Transportasian dan Sort)	1,170	16	
	Benefit	3,030	40	44,4
Retailers	Purchase	8,000		
	Sale	10,000		
	Cost (Transportasian dan Sort)	580	7	
	Benefit	1,420	18	21
<b>TOTAL</b>			<b>100</b>	<b>100</b>

The highest profit share value was obtained by wholesalers at 44.4%. Although wholesalers bear high transportation and sorting costs, they are able to reap considerable profits because they are able to sell fresh sweet potatoes quickly. Moreover, the sales volume of wholesalers is quite large, namely 8-12 tons per day.

#### 4. CONCLUSION

There are several actors involved in sweet potato commodity value chain activities in Deli Serdang Regency, namely, farmers, collective traders, wholesalers, large traders, and end consumers (Home Industry), each of which gets different benefits. In the downstream activities of sweet potatoes, there is a chicken feet business as processed sweet potato food and resellers, mocaf flour, and instant noodles. The performance of the sweet potato commodity value chain in Deli Serdang Regency can be seen from the profit share of each institution. Wholesalers with the highest profits with a profit share of 44.4% greater than the other actors. For downstream sweet potatoes, Resellers have the highest level of profit share at 58%. There are four marketing channels prevailing in Deli Serdang and Medan City. The types range from type 0 that does not involve intermediaries to type III that involves three intermediaries.

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