SUPPLY CHAIN ANALYSIS OF DRIED CENTIPEDES (Chilopoda) AT CV WURIZKY, PERBAUNGAN DISTRICT, KABUPATEN SERDANG BEDAGAI

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Abstract

Centipede is now one of the types of animals that are hunted by the people of Serdang Bedagai, especially Melati II Village, Perbaungan District and its surroundings to increase the community's economic input with a price of IDR 2,000 per head to collectors. So far, not many people know about centipedes and not many people market them. Therefore, Rizky's business is one of the largest centipede suppliers in North Sumatra, in the form of CV Wurizky. This research method uses the case study method, namely research conducted by looking directly into the field. The supply chain flow that occurs in the centipede business consists of 3 streams, namely, product flow, financial flow, and information flow carried out by the dried centipede business actors namely farmers (centipede seekers), CV Wurizky, wholesalers, and consumers. The marketing efficiency of the dry centipede supply chain can be as high as 30.25%, it is said to be efficient if the yield percentage is 0 - 33%. So the supply chain efficiency of dried centipedes at CV Wurizky is efficient to do.

Keywords :Supply Chain, Supply Chain Flow, Supply Chain Marketing Efficiency

INTRODUCTION

Centipedes are classified as subphylum myriapoda. All extant myriapods live on land. The head of a myriapoda has a pair of antennae and three pairs of modified protrusions as mouthparts, including jaw-like mandibles. Millipedes (Class Diplopoda) have many legs, although less than the thousand as their name suggests. Each body segment is formed from two fused segments and has two pairs of legs. Unlike millipedes, each segment on the torso of a centipede (Class Chilopoda) has a pair of legs. Centipedes have poisonous claws on the frontmost body segment that can paralyze prey and help defend themselves (Rusyana, 2013).

Important factors in the sales system are margins and the cost structure of the trade that occurs. One of the key factors to optimize the supply chain is to create a flow of information that moves easily and accurately between the network or chain and the movement of goods that are effective, efficient and responsive to changes in consumer demand so as to produce maximum satisfaction to consumers. Factors that affect the performance of the supply chain are warehousing (investor), transportation (transportation), facilities (facilities) and information (information) (Siagan, 2005).

Therefore, Centipedes are now one of the types of animals hunted by the Serdang Bedagai community, especially Melati II Village, Perbaungan District and its surroundings to increase the community's economic input with a price of Rp 2,000 per head to collectors. So far, Centipedes are not widely known and not many people have marketed them, therefore Mr. Rizky's business is one of the largest Centipede suppliers in North Sumatra in the form of CV Wurizky. This is in accordance with the results of a pre-survey conducted by researchers that Centipede Business has begun to

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develop in North Sumatra Province, precisely in Serdang Bedagai Regency. However, in Serdang Bedagai Regency, Centipede businesses only exist in Perbaungan District. In fact, dried Centipedes have quite a large market potential when viewed from the demand side with a fairly high selling price ranging from Rp 3,000 to Rp 4,000 per head depending on the size. Therefore, there needs to be a scientific analysis of the supply chain flow and efficiency of the centipede supply chain in Melati II Village

To meet the needs of Centipede in various regions, good distribution is needed from the producer level to the consumer level, this distribution is called the Supply Chain. The supply chain is a network of companies that work together to create and deliver products to end consumers. The product supply chain is related to the distribution flow of goods and services from the producer level to the final product stage to the hands of consumers, to find out how well the Centipede supply chain is performing in Melati II village, it needs to be analyzed qualitatively and quantitatively. This study aims to determine the flow of the dried centipede supply chain at CV Wurizky, and to determine the efficiency of the dried centipede supply chain at CV Wurizky.

Research methods

This research method uses the case study method (*case study*). That is a study conducted by looking directly into the field. The location of the study was conducted at CV Wurizky intentionally (purposive) based on certain considerations. The method in this study used the census method, where the sample in this study was the entire population of CV Wurizky.

The types of data sources from this research are:

1. Primary data, namely data obtained through direct interviews with respondents via a list of questions (questionnaires) provided.
2. Secondary data was obtained from agencies related to this research, such as the village head's office and the Central Statistics Agency (BPS).

Data Analysis Methods

To answer the first problem formulation, namely the flow of the dried centipede supply chain, a descriptive analysis method is used, namely a form of data analysis to test the generalization of research results based on a sample. Descriptive analysis is a method used to analyze data by describing or depicting the data that has been collected as it is without intending to make conclusions that apply to the public (Misbahuddin, 2013).

To measure the level of supply chain efficiency, supply chain efficiency can be described by calculating the percentage of marketing margin, profit margin, marketing cost ratio from the beginning to the end of the supply chain members (Furqon, 2014).

The formula used in this measurement is as follows:

$$M = Pr - Pf$$

Information :

M : Marketing Margin

Pr: Price at consumer level

Pf : Price at centipede seeker level

According to Zuraida (2015), to find out the benefits of marketing, you can use the formula:

$$\Pi = Nj - TB$$

Where :

Π = Profit (Rp)

Nj = Marketing Margin (Rp)

TB = Total Marketing Cost (RP)

Farmer's Share is calculated by:

$$SF = \frac{Pf}{Pr} \text{x } 100\%$$

Information :

SF = Farmer's Share

Pf = Price at Farmer Level
Pr = Price at consumer level
Decision rule:
Farmer's Share Value $\geq$ 40% = Efficient
Farmer's Share Value $\leq$ 40% = Inefficient

To find out marketing efficiency, you can use the formula:

$$EP = \frac{TB}{NP} \, x \, 100\%$$

Where :
Ep = Marketing Efficiency (Rp)
NP = Product Value (Rp)
TB = Total cost (Rp)
By decision:
0 – 33% = Efficient
34 – 67% = Less Efficient
68 – 100% = Inefficient (Soekartawi, 2002)

RESULTS AND DISCUSSION
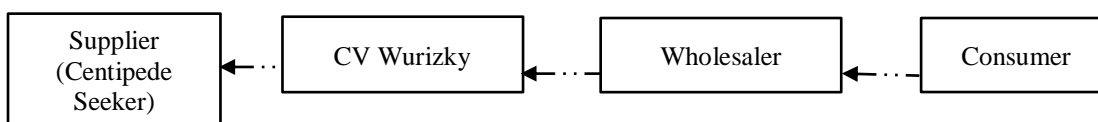Centipede Supply Chain Flow

The supply chain flow or flow of the centipede supply chain in Melati II Village can be explained through the centipede sales flow scheme. Supply chain analysis includes actors involved in the flow of products, finances, as well as the flow of information starting from suppliers, namely centipede seekers, dried centipede processors to consumers who buy the dried centipede.

a. Product Flow

Supplier (Centipede Seeker)	→	CV Wurizky	→	Wholesaler	→	Consumer
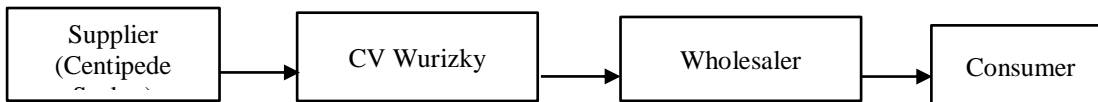
The flow of materials or goods involves the flow of physical products from suppliers to consumers through the chain, the flow of dried centipede products in Melati II Village occurs from upstream to downstream starting from the supplier where the supplier is the centipede seeker who sells his centipedes to CV Wurizky to be processed into dried centipedes. On average, centipede seekers are able to obtain 500 centipedes in a month with a selling price of Rp. 2,000 / tail and CV Wurizky buys it directly from the centipede seeker to be able to produce 10,000 dried centipedes each month. The time needed to produce dried centipedes reaches 2-6 days, while the drying process takes 2-4 hours. After the centipede product is finished being packaged, the centipedes are ready to be sold and ready to be distributed to Wholesalers and Consumers. CV Wurizky sells its dried centipedes at a price of Rp. 3,000 / tail per package with a plastic size of 1 kg. The next flow of goods is the Wholesaler. Wholesalers obtain dried centipedes by ordering them via telephone and directly and CV Wurizky sends them according to the order. CV Wurizky receives orders from wholesalers for 5,000 centipedes every month and in a month wholesalers order them up to 2 to 3 times. The selling price given by wholesalers to consumers is Rp. 4,000/tail.

b. Financial Flow

Supplier (Centipede Seeker)	←	CV Wurizky	←	Wholesaler	←	Consumer

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Cash flow is a description of the flow of money/capital that starts from consumers as buyers then flows through each link and will eventually reach the producer to be used as production costs. This cash flow is unidirectional, meaning that funds are generated from the exchange of products purchased by consumers by passing through several links, and will eventually be received by the producer in exchange for the products produced. The payment process is carried out through two systems, namely the cash system and the bank transfer system. The cash flow process in the flow of centipede information raw materials begins with CV Wurizky buying centipedes from centipede seekers as many as 500 centipedes/month at a price of Rp. 2,000/centipede so that CV Wurizky must spend Rp. 5,900,000. The selling price of dried centipedes given by CV Wurizky to Wholesalers is Rp. 3,000/centipede.

Wholesalers buy 5,000 dried centipedes every month so that wholesalers spend Rp. 3,100,000 on purchasing dried centipedes in a month. In the production process, CV Wurizky spends Rp. 5,900,000 including operational costs such as cardboard, plastic, drying costs, storage, packaging, and labor costs. CV Wurizky in one production reaches 10,000 centipedes. Each 1 kg plastic packaging package contains 50 dried centipedes so that 10,000 centipedes produce 200 packaging packages with a selling price of Rp. 3,000 / tail. After the production of dried centipedes is complete and ready to be sold to wholesalers and consumers. Wholesalers in ordering dried centipede products via telephone and directly with a single order of 100 packages or 5,000 centipedes. After carrying out the transaction process between CV Wurizky and wholesalers, wholesalers sell them to consumers at a price of 4,000 / tail

c. Information Flow
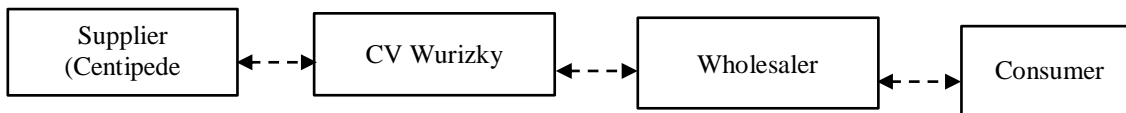
The flow of information distribution is a very important component to be considered in order to achieve the objectives of the supply chain. Good distribution between the actors in the flow of raw materials and information can create a good and transparent relationship so that it can increase trust and commitment in carrying out cooperative relationships. The flow of information between the actors in the flow of raw materials and information must be managed well together to avoid asymetric information. The flow of dry centipede information from upstream to downstream and preferably between each actor in the supply chain.

The flow of information in this supply chain starts from the local community where they get information about CV Wurizky who accepts live centipedes at a selling price of Rp. 2,000/tail so that the community wants to earn extra money from the process of finding centipedes. Centipede seekers sell their centipedes to CV Wurizky who is domiciled in the local area, namely in Melati II Village, Perbaungan District, Serdang Bedagai Regency and also has a place for processing dried centipedes so that centipede seekers sell to CV Wurizky in the area. Centipede seekers prefer to sell their centipedes directly to CV Wurizky in the local area because after the centipede seekers sell their centipedes, they are immediately paid in cash according to the number of catches and the size of the centipedes and the distance of CV Wurizky is not far from their location.

The flow of information from CV Wurizky is about the number of orders for dried centipedes and the purchase price of dried centipedes, centipede hunters will provide information to CV Wurizky when they have caught their centipedes and will then sell them directly to CV Wurizky and make a price agreement, because CV Wurizky in Melati II Village has a place to process dried centipedes and is the largest dried centipede business in Melati II Village. The process of ordering information and sending dried centipedes is done via telephone. Consumers who want dried centipedes will contact wholesalers or by visiting the store directly.

Centipede Supply Chain Efficiency Analysis

Marketing Margin

Marketing margin is the difference between consumer and producer prices. Margin also includes costs incurred by each supply chain actor and the profits earned by each member. In marketing, there is only one channel where the actors in the supply chain act as producers, collectors, wholesalers, and consumers. The total margin is calculated based on the prices applicable to producers and consumers and the profits earned from the contribution of each actor. The amount of the Centipede Dried marketing margin can be seen in Table 8 below.

Table 8. Centipede Marketing Margin in Melati II Village

No	Description	Price (Rp/tail)	Margin Distribution (%)	Farmer's Share (%)
1	Centipede Seeker			
	Selling price	2,000		50
2	CV Wurizky			
	Purchase price	2,000		
	Wooden Stick Cost	50	2.5	
	Cardboard Cost	60	3	
	Plastic Cost	60	3	
	Drying Costs	150	7.5	
	Storage Costs	120	6	
	Shipping Costs	50	2.5	
	Packaging Cost	50	2.5	
	Labor costs	50	2.5	
	Total cost	590		
	Profit	410	20.5	
	Selling price	3,000		
	Marketing Margin	1,000		
3	Wholesaler			
	Purchase price	3,000		
	Car Rental Fees	40	2	
	Fuel Cost	20	1	
	Shipping Costs	120	6	
	Storage Costs	200	10	
	Shipping costs	140	7	
	Labor costs	100	5	
	Total cost	620		
	Profit	380	19	
	Selling price	4,000		
	Marketing Margin	1,000		
	Total Margin	2,000	100	

Source: Primary Data, processed 2022.

Based on Table 8, it can be seen that the margin obtained by both supply chain actors is the same, namely IDR 1,000 / head with a total margin of IDR 2,000 / head. Because in this centipede supply chain business there is only one channel, namely from centipede seekers then sold to CV Wurizky and then sold to wholesalers and then sent to consumers who order the centipedes. Marketing costs incurred by CV Wurizky as well as a place for processing dried centipedes

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amounting to IDR 590 / head, the total marketing costs are obtained from the costs of wooden sticks, cardboard, plastic, drying, storage, transportation, packaging and labor costs. The costs incurred by CV Wurizky are costs that have been set by CV Wurizky itself. So that from the marketing process that occurs, a profit of IDR 410 / head is obtained. For the wholesaler level, the marketing costs incurred are IDR 620 / head, the total marketing costs are obtained from the costs of car rental, fuel, transportation, storage, labor, and shipping. So that the profit obtained is IDR. 380/tail. Farmer's share that occurs between farmers/centipede seekers, CV Wurizky and Wholesalers is Rp.50%.

Supply Chain Efficiency

In determining supply chain efficiency, marketing efficiency analysis is used, namely calculating marketing margins and costs incurred by supply chain actors.

$$EP = \frac{TB}{NP} \; x \; 100\%$$

$EP = \frac{1.210}{4.000} \; x \; 100\%$

EP = 30.25% (Efficient = 0 – 33%)

From the calculation above, the marketing efficiency obtained from the comparison of total costs with the value of the product with a result of 30.25%. This means that the dried centipede business is included in the efficient category because it is in accordance with the decision rule of the percentage result of 0 - 33%, because the number 30.25% is between 0 - 33%.

CONCLUSION

1. The supply chain flow that occurs in this centipede business consists of 3 flows, namely, product flow, financial flow, and information flow carried out by the dried centipede business actors, namely farmers (centipede seekers), CV Wurizky, wholesalers, and consumers.
2. Supply chain efficiency is obtained from the total margin obtained by CV Wurizky and wholesalers, which is Rp. 2,000/head, the total cost incurred by CV Wurizky is Rp. 590/head and wholesalers are Rp. 620/head including production and transportation costs. The total profit obtained is Rp. 790/head. The farmer's share value obtained is 50%. Marketing efficiency is obtained at 30.25%, it is said to be efficient if the percentage result is 0 - 33%. So from the results of farmer share and marketing efficiency, the centipede supply chain at CV Wurizky, Perbaungan District, Serdang Bedagai Regency is Efficient to carry out.

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