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The Innovation Model Of Palm Sugar Value Chain To Improve Sustainable Added Value

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***Abstract**: This study aims to innovate the value chain model of palm sugar creative products for supporting the tourism sector in East Kolaka Regency. In detail, this study aims to identify the regional distribution of palm sugar products in East Kolaka Regency, develop an existing palm sugar product value chain model, develop a palm sugar product value chain innovation model, and formulate a strategy formulation for strengthening the palm sugar product value chain in East Kolaka Regency.*

This study uses a mix method approach which is carried out in all sub-districts in East Kolaka Regency within 4 months by adopting data from 15 informants and 100 respondents. The analysis used in this research is qualitative analysis, value chain analysis, activity based costing (ABC) analysis, and SWOT.

The results obtained information that palm sugar products are spread throughout the sub-districts in East Kolaka Regency with different potentials. The results of the study also provide information that there are several components that need attention in the innovation model of the palm sugar product value chain, namely; development of production equipment, stages of quality control in the production process, development of production center areas, business institutions, improvement of workforce skills, development of trading houses and holding companies, as well as the provision of packaging houses for palm sugar creative products in East Kolaka Regency. The formulation of strategies for strengthening the value chain of creative palm sugar products in East Kolaka Regency formulates 5 (five) strategies, namely; (1) Production Capacity Improvement Strategy; (2) Strategy to Improve the Quality of Human Resources; (3) Market Access Improvement Strategy; (4) Strategy for Institutional Development, Empowerment, and Partnership; and (5) Strategy to Increase Availability of Basic Infrastructure.

***Keywords**: Innovation Model; Value Chains; Activity Based Costing; Palm sugar; Strengthening strategies.*

I. Introduction

The development of creative industries in East Kolaka Regency is based on the condition that the availability of the main raw materials for this industry is very much available in East Kolaka. The palm sugar creative product industry in East Kolaka Regency is generally home-based. East Kolaka palm sugar is currently entering the stage of expanding its marketing area in the region. However, in its development, the palm sugar creative product of East Kolaka faces several significant obstacles, including the high cost of the industry, starting from the cost of obtaining raw materials, production costs to marketing costs. This triggers the high setting of the Lowest Retail Price at the consumer level. In addition, the high distribution costs also add to the complex problems faced by the palm sugar creative industry in East Kolaka Regency. However, at the level of the final consumer, it is relatively high, but the margin received by industry players is very low. This is due to the high margins set by each distribution channel, so based on these conditions, it is very necessary to have a study that aims to increase efficiency at every stage of the industry from upstream to downstream.

One of the concrete steps that must be taken in anticipating these problems is to engineer the value chain system for palm sugar creative products in East Kolaka Regency. This engineering is directed to modify activities at each stage of the industry in order to obtain margin efficiency. The value chain engineering can be done by innovating activities at the industrial stage at every level, starting from the raw material chain, production chain, to marketing chain, so that the results of this engineering will produce a value chain model that leads to efficiency and increased industrial value added. . This step is taken to increase efficiency and added value which is expected to have an impact on increasing regional productivity in East Kolaka Regency.

This study aims to study the Innovation Value Chain Model of Palm Sugar Creative Products in East Kolaka Regency in order to increase regional productivity, especially in the manufacturing sector and tourism sector, increase added value, increase job availability, reduce unemployment, and reduce poverty.

The outputs produced in this activity are the results of the study of the Innovation Value Chain Model for Palm Sugar Creative Products in East Kolaka Regency which include; (a) A palm sugar creative product value chain model, which consists of; consisting of (1) Raw Material Chain; (2) Production Chain; and (3) Marketing Chain, according to the latest empirical conditions; (b) A value chain innovation model for palm sugar creative products in East Kolaka Regency, which consists of (1) Raw Material Chain; (2) Production Chain; and (3) Marketing Chain; (c) Formulation of a strategy to strengthen the value chain of creative palm sugar products in East Kolaka Regency.

II. Literature Review

Value Chain

The value chain isa strategy used to understand competitive advantage by identifying all of the company's activities in order to reduce costs, and to better understand the company's relationships with suppliers, and customers in the industry. The value chain also plays a role asa tool for understanding the values that make up a product. This value chain comes from the activities carried out, from raw materials to the hands of consumers, including after-sales services (Zaid et al, 2017; Zaid et al, 2018; Baihaki et al, 2014).

The value chain has clear and specific elements that are broken down into two categories. The analysis prioritizes systems over departments because the ultimate goal of value chain analysis is to identify aspects of a system or process for improvement rather than entire departments. The value chain identifies the general business activities and areas of assistance in which they function in two broad categories called primary and support:

1. Main Activities

The main value chain activity has five sub-activities:

- *Inbound logistics***:**This process relates to internal logistics such as storing, receiving, and distributing spare parts or materials. Suppliers are usually a key factor in the inbound logistics process.
- *Operation***:**These processes contribute to the shift from raw input materials to final, customer-ready outputs. The operating process is usually internal.
- *Outbound logistics*: This process includes the steps that supply products to customers from your company. Sometimes, this involves external shipping connections whereas for other companies outbound logistics it is an internal procedure.
- *Marketing and sales***:**This process deals with persuading customers to make a purchase from your company. Most companies have in-house sales and marketing teams.
- *Service:*This process includes any post-purchase or support actions your company takes to maximize customer happiness and loyalty.

2. Support Activities

Within the category of value chain support, Porter identified four important areas:

- Enterprise infrastructure: is an activity that supports the creation of a product or service, but does not have to contribute directly. Accounting, management and law are examples of corporate infrastructure;
- Human resource management: This activity includes everything related to employees or other workers involved in all steps of the value chain;
- Technology development: This activity includes all the technological processes and procedures that your company uses as part of the value chain;
- Procurement: This activity includes every step your business takes to purchase the raw materials needed to make your product.

Value-chain analysis is a strategic analysis tool used to better understand competitive advantage. In value chain analysis, customer value can be increased or decreased costs, and to better understand the company's relationship with suppliers / suppliers, customers, and other companies in the industry. Furthermore, Value Chain analysis identifies and connects various strategic activities in the company (Hidayat et al., 2013; Hidayatullah et al, 2015).

The purpose of value chain analysis is to identify the stages of the value chain where the company can increase value for customers or to reduce costs. Reducing costs or increasing value added can make companies more competitive (Jantje & Bachtiar, 2010).

Value Chain Implementation Stages

The stages for Value Chain activities are carried out as follows: (1) Presenting real problem situations, (2) Analysis of situation conditions with stakeholders with an inventory analysis of value chains, institutions,

social systems, (3) Composing a sequence of problems encountered, (4) Making improvements and solutions to existing problems through system identification, model design, suggestions for improvement in several stages of testing, (5) Differentiating between the designed model and the real situation in the field, (6) Systematic changes in desire that are possible, and (7) Action activities / implementation to change the situation to be more productive to gain added value ((Zaid et al, 2017; Zaid et al, 2018; Baihaki et al, 2014; Hidayat et al., 2013; Hidayatullah et al, 2015).

The value chain can be applied to various business activities, including agribusiness. Researches that use value chains in creating competitive advantages for agribusiness products include Value Chain Analysis and Cocoa Added Value in Paya Bakong and Geurudong Pase Subdistricts, North Aceh Regency (Kusumawati, 2013; Magnifera, 2015) then research on Chain Analysis Value Chain (Value Chain) of Organic Vegetable Farming (Case Study in Brenjonk Organic Community, Pananggungan Village, Trawas District, Mojokerto Regency, East Java (Nor et al, 2020). compete.

In addition, research related to the Value Chain of Pumpkin Agribusiness in Getasan District, Semarang Regency (Kusumawati, 2013), as well as research on Value Chain Analysis (Value Chain) on Batik Tulis Products in Surakarta (Magnifera, 2015). The results of these studies indicate that the model or value chain analysis is very suitable to be applied to commodities and agribusiness derivative products for business cost efficiency purposes.

Value-added

The concept of added value is a change in value that occurs due to the treatment of an input in a production process. The flow of increasing value-added agricultural commodities occurs in every supply chain from upstream to downstream starting from farmers and ending with final consumers. The added value of agricultural commodities in the upstream sector can be done by providing quality and sustainable raw materials that involve the first chain actors. The added value in the downstream sector involves the processing industry. Agricultural commodities that are perishable (perishable) and bulky (kamba) require proper handling, so that agricultural products are ready for consumption by consumers (Tuoi & Nguyen, 2022; Kusumawati, 2013; Zaid et al, 2017; Zaid et al, 2018).

Added value is a form of business performance measure. There are several methods that have been developed for the measurement of added value, namely; activity based costing (ABC), life cycle analysis (LCA), economic value added (EVA), and the Hayami method (Tuoi & Nguyen, 2022; Kusumawati, 2013; Zaid et al, 2017; Zaid et al, 2018). In the current study of the innovation value chain model for palm sugar creative products in East Kolaka Regency, the method of increasing added value used is the Activity Based Costing (ABC) method.

III. Method

Research sites

The research was carried out in all sub-districts in East Kolaka Regency which are the poles for producing raw materials as well as production centers for semi-finished raw materials and palm sugar creative products, namely; Aere District; Lalolae District; Lambandia District; Loea District; Tirawuta District; Ladongi District; Poli-Polia District; Dangia District; Mowewe District; Tinondo District; Uluiwoi District; and Ueesi District. In addition, the location of this research was also carried out in several places outside East Kolaka Regency which functioned as the closest target market areas for Palm Sugar creative products, namely; Kolaka Regency, Konawe Regency, and Kendari City.

Research Informants and Respondents

The informants and respondents of this study were divided into 6 (six) groups, namely;

1. Sap/sugar farmers;
2. Intermediate product industry players;
3. Finished product industry players (Arentim Management);
4. end consumers;
5. retail consumers; and
6. Industrial consumers

The number of informants used in this study based on the results of data collection was 15 (fifteen) people consisting of; nira farmers 3 people; 3 people in the intermediate product industry; palm sugar industry players (Arentim Koltim) 1 person; final consumer 3 people; retail consumers 2 people; and industrial consumers 3 people. Furthermore, the number of respondents used in this study were 100 respondents, which focused on respondents who produced palm sugar raw materials spread across all sub-districts in East Kolaka Regency.

Data analysis

The data analysis methods that will be used in this activity are; (a) Value Chain Analysis; is an analysis used to determine the value chain model of palm sugar creative products in East Kolaka Regency; and (b) Activity Based Costing (ABC) analysis; is an analysis used to innovate the value chain model of palm sugar creative products in East Kolaka Regency which is able to provide added value for industry players; and (c) SWOT analysis; is an analysis used to determine the condition of the strengths, weaknesses, opportunities and threats faced by the palm sugar industry in East Kolaka Regency. The results of this SWOT analysis will then be the basis for formulating strategies for strengthening the value chain of creative palm sugar products in East Kolaka Regency.

IV. Results And Discussions

Existing Model of Palm Sugar Creative Product Value Chain

The results of the exploratory analysis to identify the potential distribution of palm sugar products in East Kolaka Regency which have been described in the previous section then become a reference in the preparation of the value chain model of palm sugar creative products in East Kolaka Regency. The value chain model in question is a value chain model based on the existing conditions of the palm sugar value chain that currently exists in East Kolaka Regency. This value chain model is broken down into 3 (three) value chain models, namely; (1) Raw Material Chain; (2) Production Chain; and (3) Marketing Chain. In this analysis stage, the three value chain models are then used as the basis for calculating the value chain efficiency of palm sugar creative products in East Kolaka Regency. Model description of each palm sugar product value chain in East Kolaka Regency,

Existing Model of Palm Sugar Creative Product Raw Material Chain

The raw material chain is the chain where the supply of palm sugar raw materials is produced. The creative product of palm sugar in East Kolaka Regency has 2 (two) types of raw materials, namely; raw material in the form of sap used as raw material for the manufacture of liquid palm sugar; and raw material for powdered palm sugar which is used as raw material for powdered palm sugar.

The model of the palm sugar raw material chain in East Kolaka Regency starts from the nira water production activity carried out by the sap farmers. The results of data collection indicate that the nira products produced by farmers in several sub-districts in East Kolaka Regency are partly directed to home industries that produce traditional special drinks, such as; wine and others, but the producers of this regional specialty beverage industry are decreasing day by day. Currently, there are only a few home industries left and they are no longer carried out for commercial purposes. In addition, nira products are also directed to home industries that produce solid palm sugar. This solid palm sugar is usually sold directly to individual consumers or households for the purpose of cooking ingredients.

In addition, by the nira farmers, raw materials are also directed to home industries that produce intermediate products. The intermediate product in question is a home industry that produces powdered palm sugar. This powdered palm sugar product is produced by home industries belonging to the families of sap farmers or household industries belonging to other communities. The results of this powdered palm sugar production then lead to individual consumers who come directly to buy at the place of production; and individual consumers who buy at certain places that are marketing locations for powdered palm sugar. Powdered palm sugar produced by this home industry usually does not have good quality and the packaging design is still traditional. Besides that,

The model of the palm sugar raw material chain which in turn also leads directly to the palm sugar production house in Tirawuta District, East Kolaka Regency. In the flow of this material chain, the raw material in question is sap product (not powdered palm sugar). Nira products produced by farmers are directly directed to palm sugar production houses and then become the main raw material for making liquid palm sugar products.

Powdered palm sugar and sap products produced by producers of raw materials that lead to palm sugar product production houses, will subsequently be entered as inputs for activities in the production chain. The model of the raw material chain for palm sugar products in East Kolaka Regency, can be seen inFigure 1.

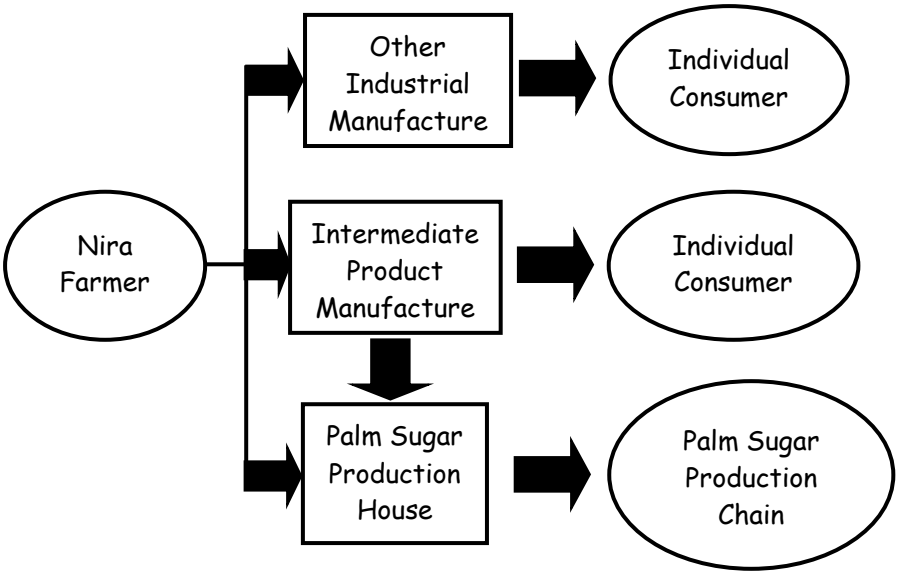

Figure 1.
Raw Material Chain Existing Model
Palm Sugar Creative Products East Kolaka Regency

Existing Model of Palm Sugar Creative Product Production Chain

Production Chain is a model that describes the production flow of palm sugar creative products that begins with the input of the output produced by the raw material chain and ends with the output produced by the production chain which is the input for the marketing chain. In this study, the production chain model consists of 2 (two) models, namely; (1) production chain for powdered palm sugar products; and (2) the production chain for liquid palm sugar products. The production chain model for powdered palm sugar can be seen inFigure 2, and the production chain model for liquid palm sugar products, can be seen in Figure 3.

a. Existing powdered palm sugar production chain

In Figure 2, it can be seen that the production chain model of powdered palm sugar begins when the input is entered from the raw material chain. Especially for powdered palm sugar products, the input or raw material that becomes the input to the production chain is powdered palm sugar produced by home industries from several sub-districts in East Kolaka Regency. The production chain of powdered palm sugar products is a tiered or gradual activity. The description of each stage in the powdered palm sugar production chain is as follows:

- Heating Process; The first stage in the chain of powdered palm sugar production is the heating stage. This stage carries out the heating process for the raw material, namely powdered palm sugar. This process is carried out for approximately between 6 to 8 hours. This process aims to reduce the water content of powdered palm sugar to the limits according to the standard. The equipment used in this process is a stove and an oven.
- Sifting Process; After going through the heating stage, the next stage in the powdered palm sugar production chain is the sieving process. Palm sugar produced from the previous stage, namely the heating stage, is then left to cool. After cooling, the palm sugar is then sifted to produce ready-to-use palm sugar powder. The sieving process usually takes between 4 and 5 hours. The sifting process is carried out carefully so that there is no clumping of palm sugar which can lead to a decrease in the quality of palm sugar. This sifting process also aims to remove the pulp contained in palm sugar left over from heating. The equipment used in this stage is a manual sieve.
- Packaging Process; The final stage in the powdered palm sugar raw material chain is the packaging stage. This stage aims to put powdered palm sugar into the packaging container for further palm sugar products into ready-to-sell products. The results of field data collection indicate that powdered palm sugar packaging is a packaging made from melamine paper ordered from packaging manufacturers in the Makassar City and Jakarta City areas. The packaging used is designed in such a way that it is air and watertight, so that the packaging can maintain the durability of palm sugar. This packaging process takes between 1 to 2 hours. The packaging tool used is a packaging press machine.

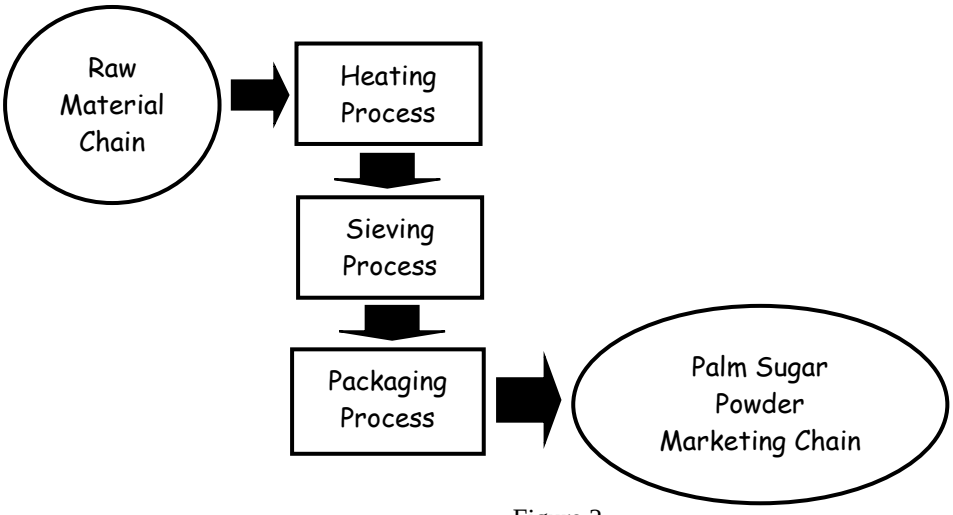

Figure 2.
Existing Production Chain Model
Creative Products of Palm Sugar Powder East Kolaka Regency

b. Existing liquid palm sugar production chain

In Figure 3 it can be seen that the model of the liquid palm sugar production chain begins when the input is entered from the raw material chain. Liquid palm sugar products using inputs or raw materials that are input to the production chain are sap products produced by sap farmers from several sub-districts in East Kolaka Regency. The production chain of liquid palm sugar products is a tiered or gradual activity. The description of each stage in the liquid palm sugar production chain is as follows:

- Heating Process; The first stage in the chain of liquid palm sugar production is the heating stage. This stage carries out the heating process for the raw material, namely sap water that has been filtered first. This process is carried out for approximately between 3 to 6 hours. This process aims to cook the sap water which will then produce liquid palm sugar. The equipment used in this process is a gas stove, a ± 30 liter wok/pot, and a filter.
- Screening Process; After going through the heating/cooking stages, the next stage in the liquid palm sugar production chain is the filtering process. The liquid palm sugar produced from the previous stage, namely the cooking/heating stage, is then left to stand for a while then the sugar is filtered again (the filter used is different from the filter in the first stage). The liquid palm sugar that has been filtered is then allowed to stand for 1 (one) day, and then filtered again up to three times with a time lag between filtering of 6 to 8 hours. This repeated filtering process is carried out with the aim that the liquid palm sugar produced is completely clean. The equipment used in this stage is a fine sieve, scales, and measuring cups.
- Packaging Process; The last stage in the liquid palm sugar raw material chain is the packaging stage. This stage aims to put powdered palm sugar into the packaging container for further palm sugar products into ready-to-sell products. The results of field data collection showed that the liquid palm sugar packaging was in the form of bottles and small jerry cans made of plastic ordered from packaging manufacturers in the Makassar City and Jakarta City areas. The bottle packaging used today is 250 ml and 500 ml. The packaging used is designed in such a way that it is air and watertight, so that the packaging can maintain the durability of palm sugar. This packaging process takes about 1 day for the amount of liquid palm sugar from 50 to 100 liters. The tools used are measuring cups, scales,

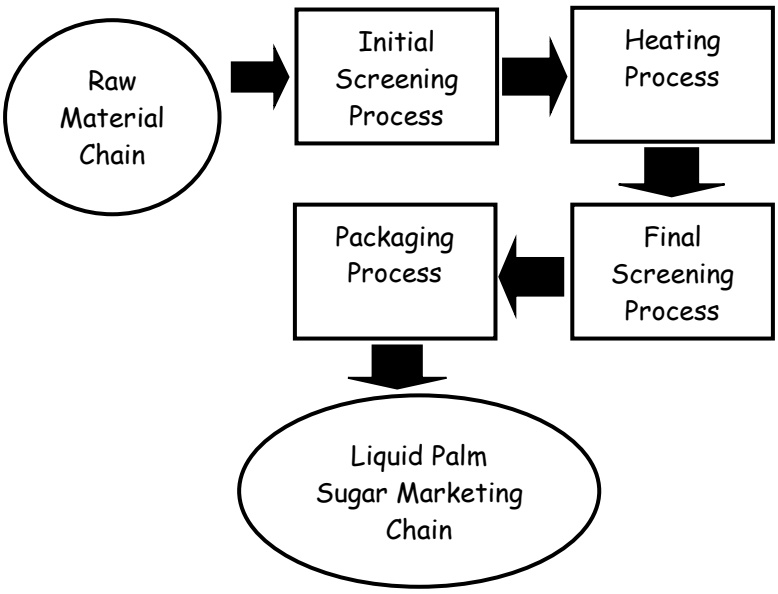

Figure 3.
Existing Production Chain Model
Creative Product of Liquid Palm Sugar, East Kolaka Regency

Existing Model of Palm Sugar Creative Product Marketing Chain

The marketing chain is a product distribution channel consisting of levels of product marketing flow. The marketing chain model is a model that starts from the input obtained from the production chain, then enters the distribution channel which then ends at the end consumer. The existing model of the marketing chain for palm sugar products in East Kolaka Regency is generally in the form of a 2-3 level distribution channel consisting of 4 (four) equal-level channels. The selling price of the product that applies to all channels is the same, namely; Rp. 20.000,- for packaged palm sugar weighing 225 mg; Rp. 25.000,- for packing powdered palm sugar 500 mg; and Rp. 50.000,- for 1 kg of powdered palm sugar. Meanwhile, the selling price for liquid palm sugar products is; Rp. 15.000,- for liquid palm sugar in 250 ml bottles; Rp. 25,000, - for liquid palm sugar in 500 ml packaging, and Rp. 50.000,- for liquid palm sugar in 1 liter packaging. The marketing chain model for palm sugar products in East Kolaka Regency can be seen in FigFigure 4.

Figure 4 shows that the palm sugar produced in the next production chain model leads to 4 (four) types of distribution channels, namely; (1) individual end consumers; (2) retailers; (3) food and drink industry; and (4) other related industries. The descriptions for each distribution channel are as follows:

- Individual end consumers; the results of data collection obtained information that powdered and liquid palm sugar products produced by palm sugar production houses in East Kolaka Regency, one of which is distributed directly to end consumers. The channel model for this marketing chain is carried out by means of the final consumer coming directly to the production house for consumption. Although empirically the palm sugar production house in this case ARENTIM Koltim has promoted on social media and is ready to serve online purchases, empirical conditions show that there is no online sale of palm sugar products.

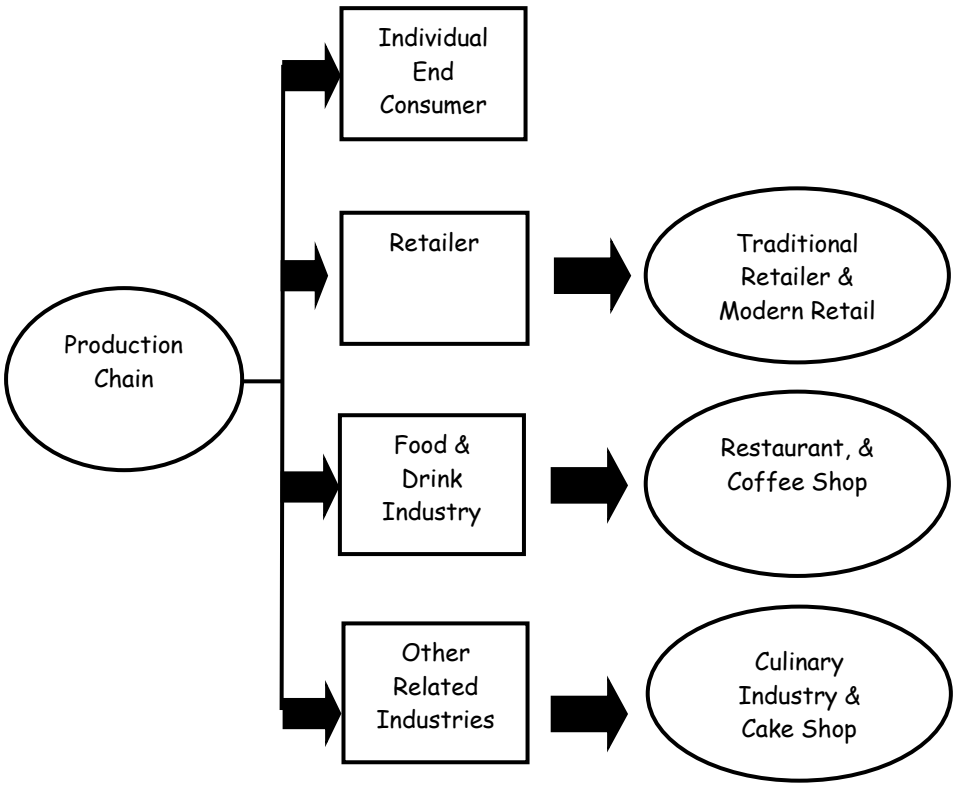

Figure 4.
Existing Marketing Chain Model
Palm Sugar Creative Products East Kolaka Regency

- Retailers; The results of data collection indicate that other channels that are part of the marketing chain of palm sugar products in KolakaTimur Regency are retailers. Empirical conditions show that based on the type, palm sugar product retailers in East Kolaka Regency are divided into two types, namely; (1) traditional retailers, namely; retailers who market palm sugar products in community-owned shops or kiosks. Regionally, retailers of this type are only found in the East Kolaka Regency, specifically limited to Tirawuta District. One of the factors causing this is the inability of the production house to increase the volume of production so that the distribution of traditional retailers for palm sugar products in East Kolaka Regency is still limited; (2) modern retail, namely; retailers carried out in modern supermarkets such as; Indomart, Alpamart, and several other local supermarkets. Regionally, modern retail which is the distribution channel for palm sugar products in East Kolaka Regency is Konawe Regency, Kolaka Regency, and Kendari City. However, empirical conditions indicate that due to the limited production volume, the supply of products to modern retailers is also limited.
- Food and drink industry; The next distribution channel for palm sugar products in East Kolaka Regency is the food and drink industry that uses palm sugar products as complementary ingredients. The results of data collection show that the food and drink industry that has a lot of demand for this product is restaurants and coffee shops. Especially for this distribution channel, purchases are made by accident or based on the ordering system. Regionally, the food and drink industry which is the market for palm sugar products in East Kolaka Regency is the food and drink industry located in the Konawe Regency, Kolaka Regency, and Kendari City. Empirical conditions show that the frequency of requests for this distribution channel occurs irregularly.
- Other related industries; is an industry that uses palm sugar products as a complementary material. The industry in question is more directed to the culinary industry. The types of related industries that become the distribution channel for palm sugar products in East Kolaka Regency are cake shops and other foods. Regionally, the areas for this distribution channel are spread over the areas of Konawe Regency, Kolaka Regency and Kendari City. The product supply system is most often carried out by ordering directly to the production house.

Palm Sugar Creative Product Value Chain Innovation Model

The results of the analysis of the existing model of palm sugar products in East Kolaka Regency that have been produced in the previous section will then be used as a reference in the preparation of a value chain innovation model for palm sugar creative products in East Kolaka Regency. The formulation of this innovation model is carried out using model engineering techniques using analytical assistance. The analysis used in building a value chain innovation model for palm sugar products in East Kolaka Regency is Activity Based Costing (ABC) analysis. ABC analysis is carried out by identifying the activities contained in each value chain model, namely; raw material chain models, production chain models, and marketing chain models that are able to trigger economic added value in the chain,

The technique of identifying activities that are able to trigger added value is carried out by using the exploration method of information obtained during field data collection. Furthermore, because the innovation of the palm sugar product value chain model to be built will be directed to support the tourism sector in East Kolaka Regency, the direction of exploration is also directed at tourist spot points and strengthening industries supporting the tourism sector in East Kolaka Regency. The innovation models that will be produced are; (1) Raw Material Chain Innovation; (2) Production Chain Innovation; and (3) Marketing Chain Innovation. Based on the results of ABC analysis, the innovative value chain model for palm sugar creative products in East Kolaka Regency is as follows:

4.3.1. Innovation of the Raw Material Chain Model for Palm Sugar Products Kab. East Kolaka

Activity based costing (ABC) analysis for the raw material chain of palm sugar products begins with identifying the basic problems faced by the raw material chain. The results of data collection indicate that the problems faced by the actors of the raw material chain are;

a. Inadequate production capacity for equipment; The results of data collection show that the production mechanism of palm sap on palm trees is still very traditional. This in addition to causing a limited production volume, also allows accidents during the production process because it is done by climbing palm trees. For this reason, in the future it is very necessary to have an appropriate technology that can be used in the production process of palm juice so that it can trigger an increase in production volume and reduce the rate of work accidents.
b. The exploitation of raw material production has not been carried out optimally in all sub-districts/villages that have the potential for palm trees. The results of data collection show that the exploitation of palm sugar raw materials in East Kolaka Regency is currently still concentrated in a few, while the potential for raw materials is very widely available in almost all regions. This has an impact on the limited supply of raw materials which causes limited production volume.
c. There are still some nira farmers who sell their products for the purposes of raw materials for other products, such as; local wine, which based on data collection shows that the margin they get from this activity is quite large.
d. Intermediate product industry has not been widely cultivated by the community in the raw material base areas. This causes the supply of raw material for semi-finished powdered palm sugar (intermediate products) to production houses is also very limited, plus some of these semi-finished powdered palm sugar industries also sell to consumers related to this product.

Based on the results of the Activity Based Costing (ABC) analysis and with reference to the problems faced by the existing model of the raw material chain for palm sugar creative products in East Kolaka Regency, the raw material chain innovation model offered in the results of this study can be seen in Figure 5 .

Figure 5 shows that the innovation of the raw material chain model for palm sugar creative products in East Kolaka Regency began with efforts to encourage the emergence of raw material production units carried out in all areas that have the potential for palm sugar raw materials in East Kolaka Regency. These production units are directed at village-based and efforts are made to form business groups for producers of raw materials in each of these villages. Furthermore, from each of these business groups a joint business group is formed, where the combined business group will be based on the sub-district area, so that finally one sub-district area in East Kolaka Regency has at least one combined business group of sap farmers or farmers of raw materials.

Furthermore, the combined sub-district-based raw material business group will distribute raw materials in two directions, namely; (1) industrial center for semi-finished palm sugar powder; and (2) palm sugar production house. The industrial center for semi-finished powdered palm sugar or intermediate products is an industrial center for palm sugar products that only produces semi-finished powdered palm sugar which still has to be reprocessed in the production chain. So that the supply of these intermediate products can be further increased towards production houses, it is also attempted to form home industries that produce these intermediate products. These home industries will then become suppliers of intermediate products for the semi-finished powdered palm sugar industrial center area based on the sub-district area.

The combined business group of sap farmers and the home industry center for semi-finished palm sugar powder will then lead to a palm sugar production house. The joint sub-district-based sap farmer group will become the supplier of sap (raw material) for the home industry center for powdered palm sugar, in addition, the sub-district-based sap farmer group will also be the supplier of sap products for production houses which will then become the raw material for liquid palm sugar products. The results of the production of semi-finished powdered palm sugar produced by the home industry center for semi-finished powdered palm sugar, will then become a supplier for product houses which will then be processed into ready-to-sell powdered palm sugar products. After entering the production house, the raw material chain flow is considered complete,

Palm Sugar Creative Product Production Chain Innovation Model

The results of the activity based costing (ABC) analysis show that the current production chain of powdered and liquid palm sugar products is classified as capable of triggering added value. Some of the things needed for production development are, among others;

- It is necessary to add production house units so that the production volume can increase in line with the increase in supply from the raw material chain;
- It is necessary to improve the quality of equipment in order to be able to create time efficiency at each stage of production;
- It is necessary to add more manpower to speed up production time;
- It is necessary to have a work specialization mechanism for workers so that there is no one worker involved in several stages of production;
- It is necessary to add one stage before the packaging stage, namely; the quality assessment stage so that the palm sugar products produced meet product quality standards.

The production chain innovation model for powdered palm sugar products can be seen in Figure 6, and the production chain innovation model for liquid palm sugar products can be seen in Figure 7.

a. Powdered palm sugar production chain innovation model

In Figure 6 it can be seen that the innovation of the powdered palm sugar production chain model is carried out by adding a quality assessment stage before the packaging stage is carried out. This aims to ensure that powdered palm sugar products that enter the marketing chain have quality according to predetermined standards. Especially for powdered palm sugar products, the input or raw material that becomes the input to the production chain is powdered palm sugar produced by home industries from several sub-districts in East Kolaka Regency. The production chain of powdered palm sugar products is a tiered or gradual activity. The description of each stage in the powdered palm sugar production chain is as follows:

- Heating Process; The first stage in the chain of powdered palm sugar production is the heating stage. This stage carries out the heating process for the raw material, namely powdered palm sugar. This process is carried out for approximately between 6 to 8 hours. This process aims to reduce the water content of powdered palm sugar to the limits according to the standard. The equipment used in this process is a stove and an oven.
- Sifting Process; After going through the heating stage, the next stage in the powdered palm sugar production chain is the sieving process. Palm sugar produced from the previous stage, namely the heating stage, is then left to cool. After cooling, the palm sugar is then sifted to produce ready-to-use palm sugar powder. The sieving process usually takes between 4 and 5 hours. The sifting process is carried out carefully so that there is no clumping of palm sugar which can lead to a decrease in the quality of palm sugar. This sifting process also aims to remove the pulp contained in palm sugar left over from heating. The equipment used in this stage is a manual sieve.
- Packaging Process; The final stage in the powdered palm sugar raw material chain is the packaging stage. This stage aims to put powdered palm sugar into the packaging container for further palm sugar products into ready-to-sell products. The results of field data collection indicate that powdered palm sugar packaging is a packaging made from melamine paper ordered from packaging manufacturers in the Makassar City and Jakarta City areas. The packaging used is designed in such a way that it is air and watertight, so that the packaging can maintain the durability of palm sugar. This packaging process takes between 1 to 2 hours. The packaging tool used is a packaging press machine.

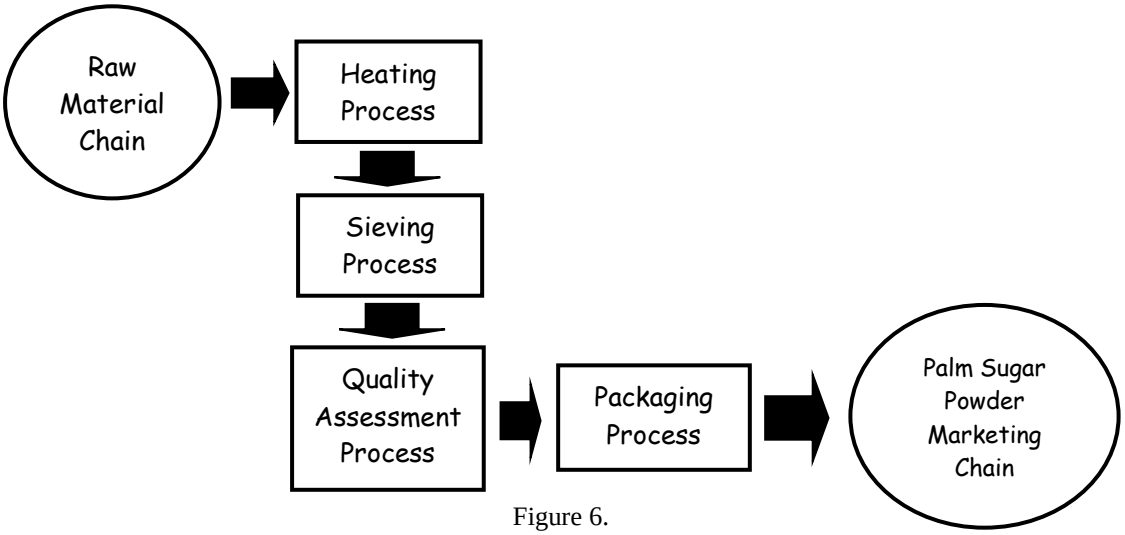

Figure 6.
Production Chain Innovation Model
Creative Products of Palm Sugar Powder East Kolaka Regency

b. Liquid palm sugar production chain innovation model

In Figure 7 it can be seen that the model of the liquid palm sugar production chain begins with the entry of input from the raw material chain. Liquid palm sugar products using inputs or raw materials that are input to the production chain are sap products produced by sap farmers from several sub-districts in East Kolaka Regency. The production chain of liquid palm sugar products is a tiered or gradual activity. The description of each stage in the liquid palm sugar production chain is as follows:

- Heating Process; The first stage in the chain of liquid palm sugar production is the heating stage. This stage carries out the heating process for the raw material, namely sap water that has been filtered first. This process is carried out for approximately between 3 to 6 hours. This process aims to cook the sap water which will then produce liquid palm sugar. The equipment used in this process is a gas stove, a ± 30 liter wok/pot, and a filter.
- Screening Process; After going through the heating/cooking stages, the next stage in the liquid palm sugar production chain is the filtering process. The liquid palm sugar produced from the previous stage, namely the cooking/heating stage, is then left to stand for a while then the sugar is filtered again (the filter used is different from the filter in the first stage). The liquid palm sugar that has been filtered is then allowed to stand for 1 (one) day, and then filtered again up to three times with a time lag between filtering of 6 to 8 hours. This repeated filtering process is carried out with the aim that the liquid palm sugar produced is completely clean. The equipment used in this stage is a fine sieve, scales, and measuring cups.
- Packaging Process; The last stage in the liquid palm sugar raw material chain is the packaging stage. This stage aims to put powdered palm sugar into the packaging container for further palm sugar products into ready-to-sell products. The results of field data collection showed that the liquid palm sugar packaging was in the form of bottles and small jerry cans made of plastic ordered from packaging manufacturers in the Makassar City and Jakarta City areas. The bottle packaging used today is 250 ml and 500 ml. The packaging used is designed in such a way that it is air and watertight, so that the packaging can maintain the durability of palm sugar. This packaging process takes about 1 day for the amount of liquid palm sugar from 50 to 100 liters. The tools used are measuring cups, scales,

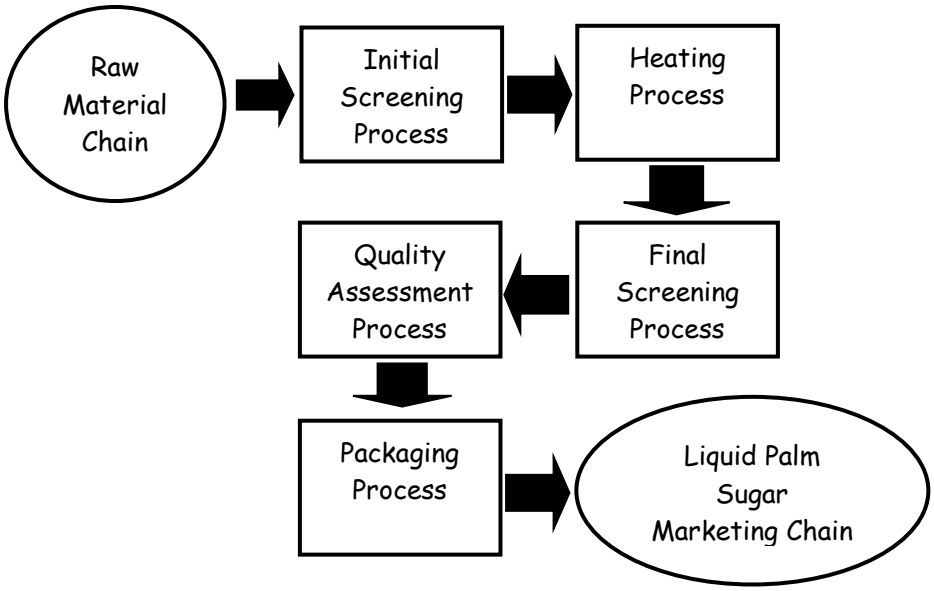

Figure 7.
Production Chain Innovation Model
Creative Product of Liquid Palm Sugar, East Kolaka Regency

Innovation of the Marketing Chain Model for Palm Sugar Products Kab. East Kolaka

Activity based costing (ABC) analysis for the marketing chain of palm sugar products begins with identifying the basic problems faced by the marketing chain. The results of data collection indicate that several important things to consider in the marketing chain are;

a. The inflow of ready-to-sell palm sugar products originating from the production chain is very limited due to limited production capacity.
b. There are very many market demands that the marketing chain has not been able to serve.
c. It is necessary to have a trading house that functions as a place for the outflow of palm sugar products ready to be sold.
d. There is no connectivity with the tourism sector, considering that palm sugar creative products are expected to be able to raise regional revenues from the tourism sector of East Kolaka Regency.
e. It is necessary to have a holding company for palm sugar products in East Kolaka Regency which is expected to function as a regional icon business.

Based on this description, the innovation model of the marketing chain of palm sugar creative products that can be offered from the results of this study can be seen in Figure 8.

In Figure 8 it can be seen that based on the results of the production chain model innovation, information is obtained that the supply sources of ready-to-sell palm sugar will come from many production chains, where this production chain is regionally based on the sub-district area. The production chains in each of these sub-districts will then become suppliers of ready-to-sell palm sugar to the sub-district trading house which will be formed in each sub-district. Then this trading house will then become a supplier of palm sugar ready to sell to the holding company. The holding company will then distribute palm sugar products ready for sale to 2 (two) parties, namely; (1) Regional Creative Product Center; and (2) target market consisting of; retailers; related industries; wholesalers; and online marketplaces.

The regional creative product center is an institution that functions as a place for sales as well as promotion for creative products in East Kolaka Regency. Empirical conditions show that there are various kinds of creative products in East Kolaka Regency, including; palm sugar creative products; Sorume orchid craft products, and several culinary products. This regional creative product center will then act as a supplier of palm sugar products for leading tourist spots in East Kolaka Regency.

There is something different regarding the pricing method used in setting the price of palm sugar products at the Regional Creative Product Center, especially at tourist spots in East Kolaka Regency. In tourism objects, the prevailing price for palm sugar creative products is the price prevailing at the retailer, related industry, and wholesaler level, and not the prevailing price at the general consumer level, so the impact is, the price of palm sugar sold at spot- tourist spots tend to be cheaper than the prevailing prices in shops, kiosks, or at modern retail.

Then, in addition to leading to tourism objects, creative palm sugar products in the marketing chain innovation model will also lead to retailers. The retailers referred to here are retailers at the local level of East Kolaka Regency, such as; shops, kiosks, and modern retail such as; indomart, alpha mart, hypermart both in East Kolaka Regency, as well as in other regencies/cities in Southeast Sulawesi, such as; Konawe Regency, Kolaka, South Konawe, North Konawe, and Kendari City. In addition, retailers who are also included in this marketing chain are several local modern retailers in Southeast Sulawesi located in the East Kolaka Regency, and other regencies/cities.

Related industries that are intended in the innovation model of the marketing chain of creative palm sugar products in East Kolaka Regency in the results of this study are related industries such as; food and drink industry, such as; restaurants, coffee shops, and other food and drink stalls located in East Kolaka Regency as well as in other regencies/cities in Southeast Sulawesi, such as; Konawe Regency, Kolaka, South Konawe, North Konawe, and Kendari City. Empirical conditions indicate that this type of marketing chain already exists in the existing model of the marketing chain of palm sugar products in East Kolaka Regency at this time.

Wholesalers who become the direction of the marketing chain in the innovation model of the marketing chain of palm sugar products in East Kolaka Regency in the results of this study are wholesalers who act as distributors of palm sugar products in other areas outside Southeast Sulawesi, both regionally and nationally. The results of data collection provide information that currently there are very many requests for palm sugar products from East Kolaka Regency originating from the Java Island area that have not been able to be met by the industry. This is caused by the current production volume which is still very limited, so that in the future if the value chain model can be implemented and run effectively and efficiently, then this national demand is expected to be able to be met.

Furthermore, in the innovation model of the marketing chain for palm sugar products in East Kolaka Regency, a marketing channel is also offered that utilizes information technology facilities which are expected to supply products to all consumers online in a reputable marketplace, such as; Tokopedia, Bukalapak, Blibli, Lazada, Zalora, and others. In addition, it is also expected that the palm sugar holding company, namely; Arentim, can also create and provide a separate marketplace application, which may later function not only to market creative palm sugar products, but other creative products such as; Sorume orchid craft which has become an icon of the East Kolaka Regency.

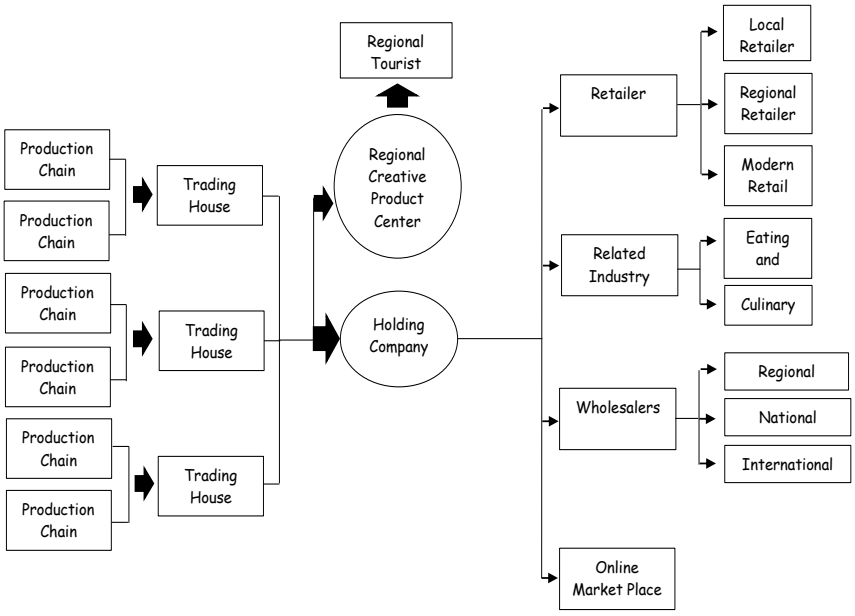

Figure 8.
Marketing Chain Innovation Model
Palm Sugar Creative Products East Kolaka Regency

Strategy for Strengthening the Value Chain of Palm Sugar Creative Products

The formulation of a strategy for strengthening the value chain of creative palm sugar products in East Kolaka Regency was prepared with reference to the results of the SWOT analysis followed by the analysis of the policy strategy matrix. Analysis of the policy matrix produces strategy formulations which are directly described into programs and each program is described into indications of action plans, so that the resulting

strategy formulation is a ready-to-use strategy formulation and can be directly implemented into local government work plans.

The results of the strategy matrix analysis in this study resulted in 5 (five) formulations of strategies for strengthening the value chain model of palm sugar creative products in East Kolaka Regency, namely;

1. Production Capacity Improvement Strategy;
2. Strategy to Improve the Quality of Human Resources;
3. Market Access Improvement Strategy;
4. Strategy for Institutional Development, Empowerment, and Partnership; and
5. Strategy to Increase Availability of Basic Infrastructure.

V. Conclusions

Based on the results of the study, several things that can be concluded from the results of this study are that there are several things that need to be addressed in the existing model of the raw material chain of palm sugar creative products in East Kolaka Regency, including; (a) insufficient production capacity for equipment; (b) the exploitation of raw material production has not been maximally implemented in all sub-districts/villages that have the potential for palm trees; (c) there are still some nira farmers who sell their products for the purposes of raw materials for other products, such as; local wine; (d) the industry of intermediate products has also not been widely cultivated by the community in the areas of the raw material base.

Some things that need to be considered in developing the production chain of palm sugar creative products in East Kolaka Regency are; (a) it is necessary to add additional production house units so that the production volume can increase in line with the increase in supply from the raw material chain; (b) it is necessary to improve the quality of equipment in order to be able to create time efficiency at each stage of production; (c) it is necessary to have additional manpower in order to speed up production time; (d)it is necessary to have a work specialization mechanism for workers so that there is no one worker involved in several stages of production; (e) it is necessary to add one step before the packaging stage, namely; the quality assessment stage so that the palm sugar products produced meet product quality standards.

Several things that need to be considered in developing the marketing chain of palm sugar creative products in East Kolaka Regency are; (a) the inflow of ready-to-sell palm sugar products originating from the production chain is very limited due to limited production capacity; (b) there are very many market demands that the marketing chain has not been able to serve; (c) it is necessary to have a trading house that functions as a place for the outflow of palm sugar products ready to be sold; (d) there is no connectivity with the tourism sector, considering that creative palm sugar products are expected to be able to raise regional revenues from the tourism sector of East Kolaka Regency; (e) it is necessary to have a holding company for palm sugar products in East Kolaka Regency which is expected to function as a regional icon business.

The results of the formulation of the strategy for strengthening the value chain of palm sugar creative products in East Kolaka Regency resulted in 5 (five) strategic formulations that can be taken in order to strengthen the value chain model of palm sugar creative products in supporting the tourism sector in East Kolaka Regency, namely; (1) Production Capacity Improvement Strategy; (2) Strategy to Improve the Quality of Human Resources; (3) Market Access Improvement Strategy; (4) Strategy for Institutional Development, Empowerment, and Partnership; and (5) Strategy to Increase Availability of Basic Infrastructure.

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