

# Sustainability Of Coconut Sugar Production

*by* Lilis Siti Badriah

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## Sustainability Of Coconut Sugar Production Based On The Conditions Of Coconut Sugar Craftsmen In Banyumas Regency

Lilis Siti Badriah<sup>1</sup>, Dijan Rahajuni<sup>2\*</sup>, Arintoko<sup>3</sup>

<sup>1</sup>Universita<sup>2</sup> Jenderal Soedirman, lilis.badriah@unsoed.ac.id, Indonesia

<sup>2</sup>Universitas Jenderal Soedirman, dijan.rahajuni11@gmail.com, Indonesia

<sup>3</sup>Universitas Jenderal Soedirman, arintokoz@yahoo.co.id, Indonesia

\*Dijan Rahajuni

### ABSTRACT

The center of coconut sugar-producing in Banyumas Regency is Cil<sup>1</sup>gok District. There are five villages with the most significant number of coconut sugar craftsmen: Langgongsari, Sudimara, Batuanten, Rancamaya, and Kasegeran. The existence of a coconut sugar business can be a means to reduce unemployment and a source of family income. This research is a qualitative descriptive study to analyze the sustainability of production in terms of the strengths and weaknesses of the craftsmen. There are 180 respondents, with the simple random sampling method. The results show the average age of craftsmen is 54 years, with an education level of 90% only in elementary school. The activity of being a coconut sugar craftsman is the main livelihood of all respondents, so they have a long experience in making coconut sugar with an average of 21 years. In carrying out their production activities, the craftsmen have a good work ethic and desire to improve the quality of production. However, to maintain the continuity of their business, they have several limitations, such as a decline in the regeneration of craftsmen, land ownership, the number of coconut trees, knowledge, capital, and dependence of prices and markets on buyers. This study implies that to maintain the sustainability of coconut sugar production, it is necessary to increase production and marketing empowerment through pro-craftsman policies, for example, the availability of adequate raw materials and guarantee of appropriate prices, so that it can be a driving force for the maintenance of regeneration of coconut sugar craftsmen.

**Keywords:** Coconut Sugar; Qualitative Descriptive; Work Ethic; Production Sustainability; Craftsmen Regeneration

### 1. Introduction

Coconut sugar is a processed product from sap produced by coconut trees. Coconut sugar product is local wisdom that is very beneficial for health, so along with the increase in population, coconut sugar production really needs to be improved and maintained for its sustainability.

The manufacture of coconut sugar is generally carried out by farmers (craftsmen) on a small scale and is done traditionally to be sold to collectors (*pengepul*), middlemen (*tengkulak*), and or subsequent sugar processors. The coconut sugar production process by craftsmen is generally done on a small scale, so it is inefficient. This results in low family income and welfare.

Banyumas Regency is one of the most coconut sugar-producing areas in Central Java Province, with a total of 27,112 families heads. The Banyumas Regency area is suitable for growing coconuts because it is a low-lying area with an average height of + 108 meters above sea level, located between 7° 15'05" - 7° 37'10" South Latitude and between 108° 39'17" - 109° 27'15" East Longitude. The area of Banyumas Regency in the form of land is 1,327.59 km<sup>2</sup>. Banyumas Regency consists of 27 districts. Cilongok District, with an area of 105.34 km<sup>2</sup>, is the largest sub-district (Department of Public Housing and Settlement Areas, 2022). As a tropical area, Banyumas only knows two seasons, namely the dry season and the rainy season. Therefore it is suitable for coconut plants.

Coconut sugar production, apart from being a product based on local wisdom, can also absorb labor and reduce unemployment. In the production of coconut sugar, in general, the *penderes* are only tasked with taking coconut sap water and then processing it into molded coconut sugar and/or crystals (ant sugar) by other family members, usually the wife. The sub-districts producing coconut sugar in Banyumas Regency are Pekuncen, Ajibarang, Cilongok, Wagon, Kebasen, Somagede, and Kemranjen sub-districts. Cilongok District is the largest producer of coconut sugar, with production reaching 48,964 kg per day, with a total of 6,512 *penderes*. Of the 20 villages in Cilongok District, Langgongsari, Rancamaya, Batuanten, Sudimara, and Kesegeran are villages with many coconut sugar craftsmen, reaching 1,805 people.

Although coconut sugar production is an excellent potential and a source of employment, this business activity has not provided a decent income; the family's per capita income is still below the Regional Minimum Wage (UMR) of Banyumas Regency in 2021.

Some of the problems that arise in coconut sugar business activities according to Husein (2015), are product quality, human resources, equipment and technology, capital, marketing, clusters, and limited development funds from the Government. Meanwhile, according to Badriah, Arintoko, and Rahajuni (2021), the problems of the coconut sugar development business are the acquisition of raw materials, namely sap as the main raw material for coconut sugar, both from limited availability and poor quality; Production problems are related to the availability of capital to buy fuel, production equipment, production technology, marketing, and weather. According to Sriyoto and Sumantri (2016), capital and production techniques are common problems faced by coconut sugar craftsmen.

The motivation of entrepreneurs to produce coconut sugar is to get a decent profit to be able to meet the needs of life and welfare. The many problems that exist in the coconut sugar business and the lack of sufficient business income to meet a decent life and welfare will cause a business sector to be abandoned by producers. Therefore, to increase revenue, entrepreneurs must be able to identify problems related to their line of business and carry out various solutions to increase their production and sales, for example, by improving product quality and diversification and expanding their product marketing network.

## 2. Literature Review

Production activity is a process to increase added value through the activity of converting raw materials into finished goods that are more beneficial to consumers. The raw material for coconut sugar production is based on results from the agricultural sector, so the production is very vulnerable to seasonal changes. Considering that the agricultural sector is very dependent on

nature, it is necessary to mitigate the climate and weather changes to maintain raw materials' availability.

Climate dramatically affects the growth and productivity of the agricultural sector (Barokatuminalloh et al. 2020), so when climate change occurs, the quality of agricultural sector results will be affected, can increase, and can decrease according to the suitability of the type of plant. According to Zulhilda & Gravitiani (2019), climate change affects the income of coconut sugar farmers. This condition is understandable because, for example, when the climate is not good, the quality of sugar produced is also not good, so the selling price of sugar decreases, and the income of sugar farmers will also decrease. In the coconut sugar business, climate change that sugar craftsmen understand is related to rainfall and air temperature. Through mitigation measures in the form of watering and fertilizing in the rainy season, it can increase the production of coconut sap in the dry season. Still, not all farmers understand and take mitigation actions against climate change.

Coconut sugar production activities carried out by coconut sugar craftsmen are generally the main livelihood, so if the income from the sale of sugar decreases, it will result in reduced family income, increased poverty, and decreased welfare. This condition is evidenced by Gun Gun, Noor, and Isyanto (2019) that the subsistence of coconut sugar-crushing food is still in deficit, meaning that income from coconut sugar production is still unable to cover expenditures for family food needs.

Alodia's research (2019) shows the occurrence of a regeneration crisis in coconut sugar farmers because the village government's development policy focuses more on improving the welfare of sugar craftsmen rather than on regenerating the penderes. In fact, welfare will be realized if there is an increase in income. In sugar producers, an increase in income will occur if there is an increase in production which can be caused by the number of coconut trees that are taken for sap a lot, the production of sap per tree is plentiful and of good quality, and the method of processing sap is good. Besides, it guarantees the price of sugar that can benefit the coconut sugar craftsmen. To maintain the sustainability of coconut sugar production, it is necessary to have good planning related to production and prices that can ensure sufficient income and welfare for the craftsmen. Research by The Jakarta Consulting Group by Susanto (2008) in Martini (2018) shows that family companies in Indonesia have not all prepared successors through succession planning to lead the company. Family companies with ready successors through succession planning are 67.8%, while others (32.2%) do not or have not prepared them. For coconut sugar craftsmen this is very easy to understand. The craftsmen are not motivated to want to prepare for regeneration if their current life and family it is not following a decent standard of living. The income per capita of families of coconut sugar craftsmen is below the district minimum wage (Rahajuni et al., 2021).

### **3. Research Methodology**

The research was conducted through a survey method with quantitative descriptive analysis techniques. The quantitative descriptive analysis technique is a research method that aims to analyze independent variables without comparing and looking for relationships between variables (Sugiyono, 2013). The analysis technique is done through data tabulation for later interpretation. Data were collected by purposive sampling on the population of coconut sugar craftsmen in the Cilongok District, namely in the villages that have the most coconut sugar craftsmen, including the Villages: Batuanten, Kasegeran, Langgongsari, Rancamaya, and Sudimara, with a total sample



of 180 respondents who taken from 10% of the population of each village. Data were taken through interviews regarding the perceptions of the craftsmen towards themselves and their conditions, including the advantages and disadvantages related to the coconut sugar business activities carried out. Perception assessment is carried out with an interval scale between 1 to 5, where 1 indicates a weak condition and 5 indicates a strong one.

#### **4. Results**

##### *4.1 Respondent Identity*

The identity of the villager is seen in terms of age between 32 and 70 years, with an age distribution of 66 people (37 percent) under 50 years old, 39 people (38 percent) between 51 and 60 years old and over 61 years old as many as 45 people (25 percent). The gender of respondents who took sap were all men and became coconut sugar craftsmen as their main livelihood. These livelihoods have been carried out between 1 year to 55 years, with a distribution of 18 people (10 percent) doing business activities for less than ten years, 60 people (33.3 percent) doing it between 11 years to 20 years, and 102 people (57 percent) doing business for 21 years to 55 years. Judging from the level of education, as many as 163 people (99.99 percent) had elementary school education, 16 people (0.08 percent) had junior high school education, and one person (0.001 percent) had a high school education.

##### *4.2 Condition of Coconut Sugar Craftsmen*

The condition of coconut sugar craftsmen can be seen based on their perception of their excellence and weaknesses. Craftsman's perception of their condition seen from the side of excellence consists of:

- Have relatively long production experience
- Take sap is the primary source of livelihood
- In processing sap, always follow the production instructions
- Among the craftsmen have the spirit of mutual cooperation and help each other
- Caring and having the desire to move forward
- Implement the results of the training in the production process.

Craftsman's perception of their condition seen from the side of weakness consists of:

- Regarding business sustainability
- There is no business regeneration because children are not interested
- There is no business regeneration because parents don't want it
- Regarding the internal condition of coconut sugar craftsmen
  - Have limited independent coconut tree planting area
  - No independent coconut tree planting area
  - There is no renewal of coconut seedlings as needed
  - The limitations of craftsmen in land ownership and knowledge of coconut cultivation so that seed assistance is not optimally utilized
- Experiencing a lack of capital
- Do not have other skills other than coconut sugar business
- Not disciplined/not routine in coconut sugar production
- Take sap had to be done because it was challenging to get another job
- The coconut sugar business is only to fulfill daily needs
- Regarding marketing conditions
  - The selling price of coconut sugar is unstable

- Be bound by an agreement to sell the product to a certain party
- There is no other more profitable alternative to market coconut sugar
- Regarding the condition of social capital
  - Craftsmen do not do activities together to share information and experiences.
  - The production process takes a long time
  - The production process is still traditional
  - It is not easy to accept or adapt to a new change
  - Craftsmen prefer to do their own business rather than work in groups
  - Often have difficulty in fulfilling supporting raw materials
  - Technology limitations in the coconut sugar production process

## 5. Discussion

Based on the perception of coconut sugar craftsmen, being a coconut sugar craftsman is the primary source of livelihood, with an average working period of 22 years. This condition reflects that they already have a long experience in their field of work. Indeed, the longer the experience, the better abilities, and skills. According to Dewi, Lestari, and Sudiana (2019), length of work, age, and education level positively affect the productivity of carved coconut shell craftsmen in Tampak Village. On the other hand, according to Aprilyanti (2017) that, age and length of work have no effect on the income of drinking water supply workers.

Coconut sugar craftsmen with income levels below the minimum wage indicate that their income is low, even though seen from work experience it shows that they have quite a long work experience. In line with Aprilyanti's research (2017) that in jobs that rely on the ability of human labor, increasing age causes the productivity decreasing, which will have an impact on income. Especially in the work of extracting coconut sap, where the productivity of coconut trees is influenced by nature. However, through the addition of knowledge and/or education, this can still be mitigated by treating coconut trees, as stated by Alodia (2019). In addition to mitigating coconut trees, efforts to increase the production and income of craftsmen can also be carried out by good processing and product diversification. Research by Auriel et al.(2019) states that the ratio of income and costs to the production of crystal sugar is higher than that of molded sugar. Although in the research sample, this condition was in a good category but still needs to be improved.

In terms of weaknesses, 21 weaknesses were identified in the condition of coconut sugar craftsmen and in coconut sugar production. The 21 weaknesses are divided into four groups, namely: 1). Regarding business sustainability; 2). The internal condition of the craftsman; 3). Market conditions and 4). Social capital conditions. Regarding business sustainability, 99.96 percent of craftsmen do not want their children to continue working as coconut sugar craftsmen because, based on their experience, the income received has not been able to meet their welfare. In addition, from the side of their children, they are not interested in continuing their parents' business. The phenomenon of children not being interested in the agricultural sector is also found in Bali. Things that affect children's interest in not continuing their business in the agricultural sector are the income factors and interests of the children themselves (Arimbawa and Rustariyuni, 2018). In fact, the market opportunity for coconut sugar is still very wide, both domestic and foreign (export) markets.

Weaknesses related to the internal conditions of coconut sugar craftsmen, namely the limitations in education and knowledge, capital ownership, both capital in the form of ownership of land

production factors, coconut trees, as well as capital to process sap. Limited education has an impact on the absence of alternative employment opportunities for them, so becoming a coconut sugar craftsman is an alternative livelihood for them. This is because, in addition to being coconut sugar craftsmen, they also have side jobs that they do after drooling, such as odd jobs and farming. In contrast, the activities of processing coconut sap into sugar are left to their wives and or other family members. The survey results show they have skills in other fields, although they are still constrained. The level of education has a positive effect on income because the higher the level of education, the higher the revenue. Hamermesh and Rees (1987) in Julianto and Utari (2019) stated that individuals with higher education initially have lower incomes than individuals who are less educated or who do not continue to higher levels. However, their income will continue to increase relatively larger after they complete their education. Thus, education increases their income through the implementation of their thinking and understanding in their work field.

Regarding marketing conditions, although coconut sugar is very much needed by the community as part of food ingredients, coconut sugar craftsmen cannot determine the price. The price of coconut sugar from craftsmen is determined by the buyer, and this will continue to be sustainable because the craftsmen have no other alternative to sell their products, and besides that, they are also bound to sell to certain parties, although the nature of the attachment is flexible. The craftsmen stated that this marketing condition was in a very weak condition. Pricing by buyers causes price instability received by craftsmen so it will have an impact on craftsman income.

Regarding social capital, the social capital capabilities of craftsmen still need to be improved. This is reflected in the behavior of craftsmen where most of them do their own business, and it is not easy to accept renewal and adaptation. This will be difficult if they experience problems in the field of production and or marketing. Social capital, which includes trust, norms, and networks, is indispensable in producing and marketing a product, even though the conditions for each type of product are different. In agriculture, according to Lulun et al. (2019), the influence of social capital on income is high. Social capital that has a high influence on income, namely norms, trust, network, and participation. According to Burt (1992) in Saheb, Slamet, & Zuber (2013) social capital is the ability of people to associate (connect) with each other and subsequently become a very important force not only for economic life but also for every other aspect of social existence. Even though according to the survey, the social capital owned by respondents is in the high category, but it is limited to bridging social capital, which is only bridging to help meet the needs between group members, meanwhile bonding social capital or linking or relationships with other groups is still not developed. This condition has an impact on indiscipline in applying the rules and has an impact on production methods, production quality, prices, and income.

## **6. Conclusion**

Coconut sugar is a product based on local wisdom that also plays a role in the national and local economy, as well as employment. Coconut sugar products are part of the nutritional needs of the community. The regeneration of coconut sugar production is very low due to several obstacles, such as 1). Regarding business sustainability, the craftsmen do not want their children to become coconut sugar craftsmen, and their children do not want them either; 2). The internal conditions of the craftsmen are old age, low education, and limited capital; 3). Marketing conditions, where the price is determined by the buyer, and 4). The condition of social capital among craftsmen who



have not yet developed in a productive direction and institutional cooperation is still not in favor of the craftsmen.

Therefore, the level of welfare of coconut sugar craftsmen is still low. This research implies the need for regeneration of coconut sugar craftsmen through modernization of production and product diversification that is more profitable and development of social capital towards a more productive and *linking social capital*.

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