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The Historical Process and Dynamic of Rural Coconut Sugar Industry Development in Banyumas, Central Java, Indonesia

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Abstract

For many decades, Banyumas has been a centre of coconut sugar production in Indonesia. There are many aspects of the rural coconut industry in Banyumas that are worthy of further study such as production and distribution methods, government policies and strategy relating to the coconut sugar industry, as well as the role of extension. The study found that rural coconut sugar industry in Banyumas Regency is very much a hereditary industry, and today farmers still use the traditional processes for production. In this regency, there is a unique coconut sugar management model, with some variants based on the agreements between coconut sugar farmer and the coconut tree owners. The transparency of price creates a symbiosis of mutualism between the coconut sugar farmer and the warungs/collectors. Access to new media like mobile phones and the internet, as well as the establishment of a cooperative, have provided opportunities for coconut sugar farmers to expand into international markets. Although this rural industry still faces some problems like low earnings and danger, the coconut sugar farmers remain grateful for the income they earn and are dedicated to their profession. Various extension programs have been implemented to improve the quality and quantity of coconut sugar produced in the region, and safety measures have been introduced to protect farmers when tapping the neera(coconut tree sap).

Index terms— hystorical rocess, dynamic, coconut sugar industry, banyumas.

1 Introduction

n Banyumas Regency, poverty is still a significant issue for many people who struggle to achieve a good quality of life (Shinta et al. 2018: 124-134). In contrast, Banyumas has excellent potential to develop rural coconut sugar industry. Coconut sugar production is the most important economic activity an hereditary business in Banyumas.The majority of small and medium enterprises in this district are related to coconut sugar (74%). In total, there are around 110,000 employed in the coconut sugar industry **??**Cilongokkec, 2019). Rural coconut sugar enterprises in the Banyumas do not need to operate solely to meet the daily needs of the owners or farmers, but they can be turned into profitable businesses. That is the reason why the local government and stakeholders must create innovative strategies that focus on strengthening the coconut sugar industry to compete in new markets. There is some debate regarding the success of such initiatives, and many feel that the most destitute and needy are often excluded from the programs (Hickey & Sam 2005: 851-865). However, despite criticism, there is evidence that shows government intervention can play a significant role in poverty reduction (Aliber 2003: 473-490), and the rural coconut sugar industry in the Banyumas Regency still exists which its interesting dynamic.

2 II.

3 Objectives of the Study

This study examines the history and dynamic of the rural coconut sugar industry development in Banyumas Regency, Central Java, Indonesia.

? Investigate the historical process of rural coconut sugar industry development.

? Identify the portrait of the rural coconut sugar industry. ? Analysis the extension programsand government policies on rural coconut sugar industry. development.

4 III.

5 Research Method

This study is descriptive and semi-exploratory, and it uses a qualitative approach. It was conducted in Banyumas Central Java Indonesia, and considers the following 1) Banyumas is one of the centres of the rural coconut sugar industry in the region and country, 2) the coconut sugar industry in Banyumas has become a strategic economic commodity, 3) the coconut sugar industry needs business partners to enhance productivity and expand into new markets, 4) the availability and quality of internet infrastructure.The data were collected through in-depth interviews with coconut sugar farmers, informal leaders, founder of the cooperative, and local government staff. Other data collection techniques used were FGD, participative observation, and documentation.Source and method triangulation were used for data validity (Patton, 1987), whileinteractive model was used for data analysis (Miles & Huberman, 2002).

IV.

6 Results and Discussion

a) The historical process of rural coconut sugar industry development Banyumas is one of the centres of coconut sugar production, not only in Central Java but also the country. The coconut trees thrive in Banyumas,and there are as many as 1,746,881 trees in an area of 17,814 ha (BPS Central Java Province, 2017). With a lifespan aroundfourty five years, the treesare valuable because they can be used from the top to the roots, and they do not require special care.One part of the coconut tree that has economic value is the flower (manggar) which can be used to make coconut sugar and foods likegudeg(traditional Javanese dish). Coconut sugar is used by companies as an ingredientin other foods like soy sauce, syrup, cakes. Unfortunately, there is little reliable data about when the rural coconut sugar industry started in Banyumas, as Mr. Mukhayat stated Since he was born fourty four years ago,the coconut sugar industry already exists. So it's hereditary. The crystal sugar recently comes out. It's only about ten years ago. If shaped one is a long time ago. In line with Mr. Mukhayat, Mr. Narsim, a 77-year old community leader of Sambirata argued coconut sugar production has existed since his great grandfather , it has been hereditary until now. The above figure shows that the rural coconut sugar industry in Banyumas has been running for decades, and it informs that warungs/ rural collectors that oft enact as loan provider, are where coconut sugar products are usually sold. In the past, only shaped coconut sugar was produced, and it was exclusively marketed to Banyumas and the surrounding area. The coconut sugar farmers traditionally sold their products to warungs/rural collector and only started to export in the year 2000.

Around 2008, a meeting was attended by young people from four villages. They joined together and began to think about what they could do to improve the economic situation in the area. At the time, they were working in non-agricultural jobs like construction, but they decided that the development of coconut sugar production was the solution for the area because the majority of the population in Banyumas were coconut sugar farmers. They initiated production by doing some experiments, and then they started to produce coconut sugar, but with different variations, not only shaped coconut sugar.

At the beginning of the pre-cooperative process, not all crystal coconut sugar produced by the farmers couldbe sold on the market, which meant that a lot of coconut sugar waswasted. To avoid losing their product, the farmers obtained organic certification in 2009, which helped them to grow sales and expand into new markets. They promoted the business through social media and with the organic certifications, it helped enormosly, especially in international market. Although they were promoting through their business well through online media or aligned to a particular organisation. Then in 2011, the Cooperative of Nira Satria was established in Pernasidi, which make promotional efforts more organised and productive. The cooperative currently has around 300 members from the surrounding villages.

Since 2016, coconut sugar farmers not only sold their produce to warungs/collectors and the Cooperative of Nira Satria but also PT Integral Mulia Cipta. In 2018, plastic pongkor, which are reservoirs to collect neera, was introduced to the coconut sugar farmers by the Cooperative of Nira Satria and PT Integral Mulia Cipta. However, there are still many coconut sugar farmers in Banyumas who use traditional pongkor made of bamboo rather than plastic.

7 Coconut sugar production: a portrait

Plantation products, particularly coconut sugar, are an essential product for the economy of Banyumas. Coconut trees are spread over an area of 17,814 ha, and more than 50,000 tons of coconut sugar is produced annually by 20,293 coconut sugar farmers (Lpplsh, 2019). With such a large number of trees and farmers, it is not surprising that Banyumas has become a leading producer of coconut sugar in Indonesia. The comparison data about coconut sugar production in Central Java (BPS Central Java Province 2014) is shown below: The interviews with staff in the Office of Industry and Trade and the Cooperatives of Banyumas found that total coconut sugar production in Banyumas increased for the past five years, as well as the production of crystal coconut sugar. In contrast, shaped coconut sugar production fluctuated for several years. Based on the data from the Office of Industry Trade, and Cooperatives of Banyumas, it is evident that the coconut sugar produced in Banyumas is not only sold to local and national markets but also internationally. The export volume of Banyumas coconut sugar production has increased each year since 2017. Although the crystal coconut sugar industry is newer than the shaped coconut sugar, the export volume is much higher, and it increased each year. For example, it rose from 8,413.12 tons/year in 2012 to 25,819, 00 tons/year in 2017. This figure dwarfs that of the shaped coconut sugar, which rose from 280 tons/year in 2012 to 580 tons/year in 2017 **??**Dinperindagkop, 2019). Complete data about the export volume of coconut sugar in Banyumas is shown in figure 3 In the term of distribution, coconut sugar produced by the farmers is sold in several ways. First, the farmers sell directly to neighbours because not all villagers are coconut sugar farmers. Second, coconut sugar is sold to warungs, who then resell it from their business. Third, coconut sugar is sold to the Cooperative of Nira Satria, and then the cooperative sell it to customers within and outside the country. Fourth, suppliers such as PT. Integral Mulia Cipta (IMC) purchase sugar product from the farmers in Banyumas and distribute it to national food companies and to companies abroad. Fifth, coconut sugar is sold online by coconut sugar farmers. For sales conducted via the internet, the buyers usually order the product first, and then the coconut sugar is sent several days after depending on the size of the order and the ability of the farmer to produce it.

In the Banyumas Regency, there are several models of cooperation between tree owners and sugar farmers (penderes). The profit-sharing model in the rural coconut sugar industry in the Banyumas is called maro. According to this model, the profit-sharing is usually based on days; for example, in the 4:1 model it means four days of coconut sugar production are for the coconut sugar farmer, while the tree owner receives the results of one day of production. The other model uses percentages, for example, 60:40. In this model, the coconut sugar farmer receives 60% out of the result, and 40% is for the tree owners. In this rural coconut sugar industry, there is no standard benchmark for profit-sharing models between tree owners and coconut sugar farmers. Usually, tree owners receive deposits in the form of a quantity of coconut sugar that is mutually agreed between the two parties. For rental models, sugar producers have to pay the tree owner for 100,000 IDR rent for a certain number of trees, and the rent is valid for one year. Coconut sugar farmer can also mortgage coconut trees when they need money. In this case, there is no specific limit on the value of the mortgage for each coconut tree or for how long it lasts. It all depends on the agreement of both parties. During the mortgage process, coconut trees are managed by coconut tree farmers who lend money. The mortgaged coconut trees are returned when the loaned money has been returned. For complete data about the coconut sugar management model in Banyumas can be seen in this below table: (%) 1 ? - ? - - - ? - - 2 ? ? - ? - ? - - - 3 - - ? - - ? ? ? ? 4 ? - - - - - - - - 5 - - ? - - ? ? ? ? ? 6 ? - ? - ? ? ? ? ? Source: Researcher (2019)

Note: ? 5: 2: it means five days of coconut sugar productions are for coconut sugar farmer, while the next two days are for coconut tree owner. ? 4: 1: it means four days of coconut sugar productions are for coconut sugar farmer, while the next one day is for coconut tree owner. ? 60:40:it means the coconut sugar farmer gets 60% of the coconut sugar production, while the owner of the coconut tree is entitled to 40% of the production of coconut sugar. ? 70:30: it means the coconut sugar farmer recieves 70% of the total production, while the owner of coconut tree is for 30% .

In addition to the above models, there are also coconut sugar farmers who interchange the tapping responsibilities of particular trees. For example, farmer A collects sap from five coconut trees belonging to farmer B and vice versa. The advantage of this model is that when farmer A is sick and cannot work, then he still gets an income from the deposits obtained by farmer B. These types of arrangements are not fixed and are the specific details are arranged between the farmers. The production of coconut sugar is often not decided by the farmer depends on the agreement with the owner of the trees. For coconut sugar farmers in Banyumas, usually, two-thirds of the production of sugar is sold, and the remaining third is sent to warungs or the cooperative (Nira Satria). However, some farmers sell directly to warungs or cooperatives, and each warung generally holds coconut sugar products from around ten different coconut sugar farmers. The coconut sugar farmers can take out small loans with the warungs, which is more beneficial than the previous system. The previous system known as ijon meant that farmers received payment for the product before handing it over, which was more beneficial for the warung. With the new system, the financial loan is returned in the form of coconut sugar at a fixed price, so the coconut sugar farmer is not harmed if there are fluctuations in price. This process benefits both parties because the farmers receive much-needed capital the warung is guaranteed to receive a specific quantity of coconut sugar. Warungs or collectors of coconut sugar, are usually neighbours who live in the same village as the coconut sugar farmers, and they determine the price of the product. If prices are reasonable, coconut sugar can reach IDR 12.000-14.000/kg, whereas when prices are low, it is only around IDR 6.000-7.000 /kg. Some coconut

sugar farmers do not switch to producing organic crystal coconut sugar because of the uncertainty regarding price. According to them, producing organic crystal coconut sugar is a longer process, although the price is more stable. The coconut sugar farmers can also take out small loans with the warungs, which is more beneficial than the previous system. The previous system known as ijon meant that farmers received payment for the product before handing it over, which was more beneficial for the warung. With the new system, the financial loan is returned in the form of coconut sugar at a fixed price, so the coconut sugar farmer is not harmed if there are fluctuations in price. This process benefits both parties because the farmers receive much-needed capital the warung is guaranteed to receive a specific quantity of coconut sugar.

The coconut sugar farmers do not invest much effort in the packaging of their products as this is left up to the Cooperative of NiraSatria or the retailers to pack it and make it is more attractive to the buyers. The marketing of coconut sugar products of Banyumas is not only done at a local and national level, but the products are also marketed internationally. The significant buyers of coconut sugar products in Asia are Saudi Arabia (228 tons/year), Singapore (144 ton/year), Korea (24 tons/year), and Taiwan (2 tons/year). Outside Asia, The Netherlands and the United States of America are also large purchasers of Banyumas coconut sugar products with 15 tons/year and 5 tons/year respectively.

Although the rural coconut sugar from Banyumas has been able to penetrate international markets, the industry in Banyumas still faces challenges. For example, limited capital, unstable prices, low salaries, and changes in the weather all make the job of a coconut sugar farmer difficult and somewhat dangerous (perkebunan.litbang.pertanian, 2019). In the rural coconut sugar industry, women play an essential role. They are usually responsible for cooking and shaping the neera, while the men look for grass for livestock or firewood. According to Morgen (1998: 515-537); **??**eist et al. (2003), the role of women should not be understated, and they have fantastic potential to improve the industry which should be developed further.

8 b) The extension programs and government policy on rural coconut sugar industry development

Because coconut sugar is a leading product in Banyumas, the industry does not escape the attention of the local government, who has tried to improve it by providing extension programs and training on production methods, and by encouraging the diversification of production to organic crystal coconut sugar. Compared to conventional coconut sugar, crystal coconut sugar is better because it lasts for up to two years, and the powder form makes it easier to dissolve. Also, it has a more attractive shape, a more distinct aroma and taste, it is easier to transport, and the price is higher and more stable (cilongokkec, 2019). To promote crystal coconut sugar to the farmers, the government also provided equipment and additional assistance. However, despite government efforts, it is difficult and time-consuming for many farmers to make the change from producing shaped coconut sugar to crystal sugar.

The Office of Industry, Trade, and Cooperatives of Banyumas hold annual training sessions to help farmers improve the quality and quantity of their coconut sugar. The targets of this program are the coconut sugar farmers and the labourers (usually women). For this training,the Office of Industry, Trade, and Cooperatives Banyumas Regency coordinate with stakeholders like the University of Jenderal Soedirman (Unsoed), the Ministry of Industry of Indonesia, and the Bank of Indonesia. In addition to the routine training, the Office of Industry, Trade, and Cooperatives also conduct extension programs for coconut sugar farmers. Unfortunately, because they only have four extension staff, it means that the extension program is only implemented when there are requests from other stakeholders such as the cooperative.

One of that extension program was about the socialization of the Penderes program which aimed to provide compensation of up to 10,000,000 IDR for coconut sugar producers who suffered from accidents or injuries and up to 5,000,000 IDR for death. The program is implemented under the 2009 Regulation No. 4 of the Banyumas Regency and is known as the Accident Compensation for Coconut Sugar Producers in Banyumas. At the start of the program, the Banyumas government distributed 9.000 Penderes cards to farmers, which has now risen to over 26,000. Along with the local government, the Cooperative of Nira Satria also provides guarantees for coconut sugar farmers who experience accidents. The cooperative gives up to 5,000,000 IDR provided that the farmer is a registered member. Regarding the compensation payments, there was a farmer who suffered an accident and sustained serious injuries. Based on the rules set by the regional government, he was entitled to receive 5,000,000 IDR. However, in reality, he only received 500,000 IDR and had to wait for four months to receive the money. Another coconut sugar farmer died when he was tapping the neera, and his family only received 1,500,000 IDR rather than the 5,000,000 IDR specified in the legislation.

In 2014, the local government introduced a safety belt program to increase the safety for farmers tapping the neera (Suaramerdeka, 2019). It was expected that all coconut sugar farmers would want to wear the safety belt. According to the village officials, around 2016-2017, there was an extension activity concerned with safety procedures for the tapping of neera. At that time, safety belts were distributed to some coconut sugar producers, although not all received it. Unfortunately, the safety belt was not successful because the farmers felt they were cumbersome and time-consuming to use, and for that reason, the process of tapping neera has not changed for decades.

Furthermore, a new species of tree has been introduced called genjahentok in an attempt to reduce the number

of workplace accidents. This tree is only a few meters tall, so it is far safer because little or no climbing is required. They are so small that they can also be tapped by the females, who do not traditionally tap the larger trees. At the beginning of the program, 16,500 of the new smaller coconut trees were distributed to 23 farmer groups. The following year, while other 85 farmer groups received 85,000 coconut sugar stems, which grew to 500,000 stems in 2017.In term of credit provision, it is a relatively straightforward process because it is easy to obtain credit from national and local banks. Farmers are required to present a certificate that shows they are a coconut sugar producer, and the credit applications are quickly approved without a complicated process.

Even though various extension programs and policies to improve the capabilities and safety of the coconut sugar farmers have been implemented by the local government and related parties, it seems that these efforts have not made the coconut sugar industry enticing, profitable, or desirable, particularly for young people (Lpplsh, 2019). However, farmer regeneration is still the main issue in this industry. The different

9 Conclusion

This article concludes that the rural coconut sugar industry in Banyumas has experienc ed various stages of development. The establishment of cooperatives and the presence of larger suppliers have allowed producers to expand into overseas markets. Price transparency means that the system is fairer because the warungs no longer determine the price. In Banyumas, there is no generic coconut sugar management model in place. The business relationship between coconut sugar farmers and tree owners depend on the individual agreements between both parties.

The main problem facing the rural coconut sugar industry in Banyumas is farmer recruitment. Currently, the younger generation is reluctant to work in this business because to become a coconut sugar farmer is very risky, and the potential income is limited. The government hav e implemented various extension programs and policies to improve safety standards and the quality of coconut sugar. However, despite these policies, coconut sugar farmers are often sceptical and reluctant to take part in government programs due to a lack of trust in their effectiveness and implementation. [1]

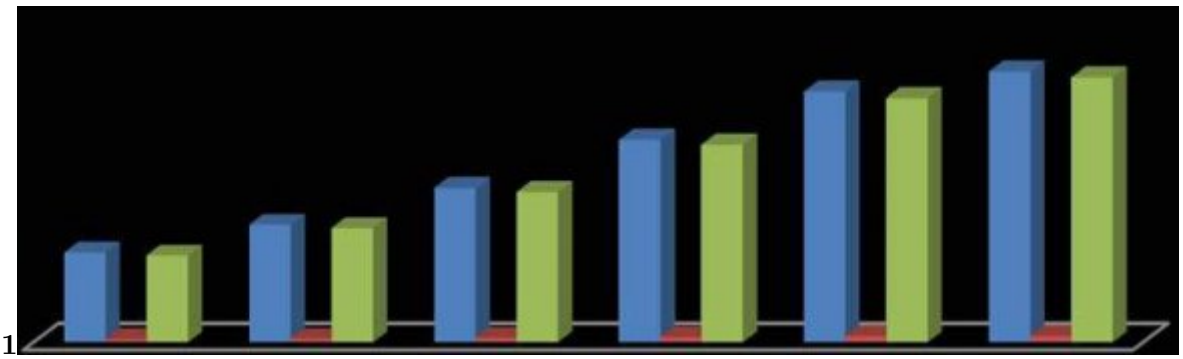

Figure 1: Figure 1 :

1

No.	Production Centers (District)	The number of coconut sugar production (ton)	Percentage (%)
1	Banyumas	52.114,56	23.30
2	Cilacap	48.802,51	21.82
3	Purbalingga	48.795,20	21.82
4	Kebumen	24.054,24	10.75
5	Purworejo	18.655,96	8.34
	Total	223.669,35	100

[Note: Source: Adapted from BPS Central Java 2014]

Figure 2: Table 1 :

[1]The Historical Process and Dynamic of Rural Coconut Sugar Industry Development in Banyumas, Central Java, Indonesia

31
Volume XX Issue II Version I
(H)

Figure 3:

2

Types of product	Year (tons) 2012	2013	2014	2015	2016	2017
Shaped coconut sugar	27.829 27.225 26.178 24.797 23.387 25.726					
Crystal coconut sugar	3.358	4.191	5.239	6.549	7.859	7.865
Total	31.182 31.416 31.417 31.346 31.246 33.589					

[Note: Source: Archives of the Office of Industry, Trade, and Cooperatives of Banyumas Regency, 2019]

Figure 4: Table 2 :

3

No.	Coconut sugar management			Mortgage	Profit-sharing model based on the day			
Own coconut tree	Rent coconut tree (100,000 IDR/ tree/ year)	Maro (share harvesting)	Own coconut tree and tapped by other people		5:2 (day)	4:1 (day)	60:40 (%)	70:30

Figure 5: Table 3 :

4

35
Volume XX Issue II Version I
(H)

[Note: V.]

Figure 6: Table 4 :

[Geist and Sharf] , M P.; B F Geist , Sharf .

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