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The sundown of home economical cilongok village: case of coconut farm agriculture

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Abstract. This study aims to provide a description on the development of coconut plantation in Cilongok Village. Brown sugar is an important and main source of income for the people of Cilongok Village, especially at Cilongok Sub-district. However, the recent development of the village as a district has an impact on coconut farming and the brown sugar home industry. The objectives of this study are (1) to describe the recent development of coconut plantations and brown sugar production in Cilongok and (2) to provide a review of the development of Cilongok Village as a Sub-district Capital City towards the employment shifts of the agricultural workforce (*penderes*; in Cilongok Indonesia) in services, timber industry, and trade. The results show that the village of Cilongok as the capital city has an influence on the existence of coconut farming in the village. This condition affects social and economic conditions and developments. One of them is the social integration affected by money as a medium of exchange. The development of the service and building sector has an influence on the agricultural sector workforce. Initially, every household has a minimum of 2 *penderes* (the head of family and boys), but recently the number is decreasing, even none. Parents do not encourage their children to obtain a family economic source as a danger due to the risk and income considerations. Most generations of *penderes* choose to work as shop employees, wood industry and service workers.

1. Introduction

Cilongok is a periphery village in the area of Purwokerto, the capital city of Banyumas Regency. The distance and travel time from Cilongok to Purwokerto City has an estimated 16 km and approximately 30 minutes of travel time. The face of Cilongok Village (as well as the Capital District of Cilongok District) has begun to shift from rural to the urban one. Before the 1980s, social integration among people lived in the village of Cilongok was very strong. Most of farming and coconut plantations were carried out in groups accompanied by social ties. Every community helped each other in agricultural activities. The value of the exchange of each community was not simply calculated based on the money but also by helping each other during planting and harvesting when the time has come. On the other hand, these social ties or integration in the 2000s experienced a decline where the influence of money and capitalism began to take form strongly. Money is then a measure that cannot be avoided by the public. Social integration weakened, especially related to agricultural activities.



Agricultural efficiency is a key contributor to the growth of modern agricultural productivity and the efficient allocation of resources in the economy [1]. The influence of the modernization of the city of Purwokerto also changed the social integration which experiences shrinkage. City residents and migrants gradually shifted the original residents and the landowners. Coconut plantations and rice fields have gradually become the residential areas of the migrants. Local economic activity has progressively changed its face to a city characteristic dominated by services, mixed trade, and industry. Observation and discussion with local officials at the site indicated that at present, farmers' households are estimated to be less than 30 percent of the total households in Cilongok village.

This study aims (1) to describe the recent development of coconut and brown sugar farming in the village of Cilongok and (2) to examine the impact of the development of the village of Cilongok as the capital city of the sub-district on employment shifts in the agricultural workforce. The existence of Purwokerto City has indeed given the spillover effect as the relationship between the city and the village (core-periphery) has the effect of the spread effect and the backwash effect [2].

Coconut plants for the residents of the village of Cilongok are not only the economic resource but also the part of the adaptation process of village communities to create ecological economics. Coconut plants provide ecological and economic benefits. From the ecology side, it is able to maintain soil fertility, to prevent erosion and flood. The economic side, coconut trees are the source of farmers' income in the Cilongok village. Coconut farming in Cilongok village is intercropped. Each farmer household plants various types of trees including banana trees, duku trees, durian trees, rambutan trees and sengon trees. This shows that farmers (penderes; in Indonesia) of Cilongok Village build a village based on ecological economy. Economic ecology is an economic activity that utilizes different rural environmental resources in a sustainable manner [3]. Economic ecological activities do not result in resource depletion but rather provide addition value and environmental benefits.

Coconut farming not only has a linkage in the economic ecological system of the community but also forms a system of values and institutions. Furthermore, coconut farming produces local food characteristics of the people of Cilongok Village, Banyumas. There are at least 7 types of 35 local foods of the village of Cilongok identified from the results of research made from trees and coconuts, namely (1) "Cimplung"; local food made from bananas or cassava cooked with brown sugar or palm juice, (2) "Intil"; steamed grated cassava and mixed with coconut sugar water (brown sugar water), (3) "lupis"; sticky rice mixed with brown sugar water and wrapped in banana leaves, (4) "gethuk"; made from boiled cassava and crushed together with brown sugar, then fried, (5) "cingcau"; a drink mixed with coconut sugar and coconut milk, (6) "satiety"; a mixture of glutinous rice flour and starch added with grated coconut and coconut sugar and (7) "badeg"; a drink made from fermented coconut flower essence for 1-2 days. Local food is not only a source of local food but is able to (1) create opportunities for innovation and participation and (2) create space for reflection, communication and experimentation with alternative social structures [4]. Local food can survive if communities strengthen ideologies and cultural values that are formed historically [5].

Modernization and globalization threaten the existence of coconut farming, local food and sustainable development to cultural values. Cilongok village only leaves less than 30% of coconut farmers so it can threaten the existence of local food and ecological-economic development. This research has an important role because it wants to explore how the process of development of coconut farming is threatened with extinction (sundown) and how the agricultural labor sector shifts the labor and trade sectors.

2. Research methods

This study uses a qualitative method. The technique used to obtain the data is by conducting (1) in-depth interviews with several key figures such as the task of the village head, village officials, community leaders and village community, (2) observations in agricultural land and (3) discussion groups with several village officials and community leaders. The observations were conducted in a

wider community such as coconut farmers, community leaders, small-scale entrepreneurs and housewives[6]. Our focus is on various activities in the village to obtain a complete social picture related to social issues.

3. Results and discussion

3.1. Coconut farmers

Globalization and economic uncertainty in rural areas have influenced the existence of the agricultural sector and the agricultural labor sector. Agricultural activities "do not come" to provide welfare for farmers. Global commodity prices have a profound effect on the rural level. The Influence Global markets are not only in urban areas but have an impact on unemployment, falling wages, and income inequality. This happened when the economic recession occurred in the USA in 2001 causing the demand for agricultural products to decline [7].

The global influence also has an impact on the effect of the price of processed products experiencing export constraints in various countries in Europe, one example is oil palm. This has an effect on the rural economy. In 2018, the European Union imposed an anti-subsidy duty of around 8% to 18% on Indonesia's biodiesel imported products. The same thing happened in the domestic palm sugar industry which was able to produce products demanded by the international market. It was confirmed by the growing demand for palm sugar exports. The value increased around 27 percent from USD34.7 thousand in 2014 up to USD48 thousand in 2017.

In Cilongok, the price of the brown sugar commodity is generally controlled by the traders. Throughout the year, the price of brown sugar lasted 3 years ranged from Rp.11,000 - Rp.12,000/kg. The highest price was when entering the Ramadan 2019 which reached Rp.14,000/kg. The production capability of landowner's/farm laborers reaches 4 kg - 6 kg daily, if lucky they can reach 7 kg. Production results are greatly influenced by weather conditions. In the rainy season, the amount of production is relatively decreased. Farmers who do not own a coconut farm depend on the landowner.

Farmers who are not landowners (farm laborers) can work on land owned by farmers with a production sharing system. A production-sharing system (*paro*; in local wisdom) is to divide the yields based on the time of harvest. Coconut trees can be harvested every day by farmworkers. The harvest for 5 days is for farmers to choose and the next 5 days is for farmworkers. Farmworkers who have the expertise to climb coconut trees can work more than 1 owner of a coconut farm. In the morning, the farmer or the farmworker harvests the results of the coconut tree, then later in the afternoon the farmer or the farmworker climbs the coconut tree again. If farmers want to achieve 5 kg of production, each farmer must climb as many as 25-30 coconut trees in the morning. The tree will then be climbed again in the late afternoon.

The amount of coconut water that is needed to produce 5 kg of brown sugar is 20 liters of coconut water. The coconut water is then cooked to produce brown sugar. The mixture to produce brown sugar is a little lime and mangosteen rind. The processing of coconut water into brown sugar is done by the female farmer (farmer's wife). This is a pattern of division of labor as well as being a value system in the village of Cilongok and some in other villages in Indonesia. Brown sugar processing is still carried out traditionally by farmers. The fuel used to produce brown sugar is firewood. Other equipment is bamboo (for printing brown sugar), pan (a place to cook) and saving tools from a coconut shell. The role of mothers has an important meaning in regulating household life obtained from the sale of brown sugar.

Farmworkers who are able to produce 5 kg of brown sugar/day will get 25 kg for 5 days. The results obtained in the next 5 days were handed over to the coconut farmers' land owners. During a month of the working day, 15 days of the proceeds are reserved for farm laborers and 15 days are for the landowners. When the price of brown sugar is Rp (Rupiah)11,000/kg, the estimated monthly income of farmers is Rp.825.000. This income is valued by the majority of very small farmers.

Landowners and farm laborers do not have an alternative market to sell processed products of brown sugar. So far they have depended on collecting traders.

The income is very small in number, so to meet daily needs is very difficult. Instead of wanting to provide good family education, daily needs are still difficult to be met by farmworkers. The needs of farmers are slightly alleviated by the free educational assistance for poor farm households. This provides opportunities for farmers to provide education for their children.

Farmers consider that their futures as farmers of coconut and brown sugar are increasingly "fading". Their daily needs cannot be fulfilled if they only rely on income as a laborer of coconut farms and processors of brown sugar. Brown sugar farmers face a great risk when climbing coconut trees. When this survey took place, researchers met directly with farmers who fell from coconut trees. The farmer suffered a broken spine so that his activity as a coconut farmer is over. We also got information that there were some farmers who died as a result of falling from coconut trees. The risks faced are not commensurate with the income earned as coconut farmers (*penderes*; in Cilongok, Indonesia).

This is a dilemma for most of the "*penderes*" in the village of Cilongok. They hope that there is a glimmer of hope to improve their lot as a dweller, but that hope never comes to them. *Penderes* still keep 25-30 coconut trees in the morning and 25-30 trees in the afternoon to reach 5 kg of sugar production. Every risk that they face is countless, both during the rainy season and dry season. Every footstep is always accompanied by the sound of bamboo which is filled with sap. In the morning after dawn, they were at the top of a coconut tree accompanied by the sound of birds and roosters crowing. In the afternoon together with the sound of the evening call to prayer they slowly returned home, hoping that the juice of the water they got tomorrow would be more. Their loyal friends are as valuable as machetes and sap water reservoirs. Unfortunately, the price of brown sugar has not been able to be a good friend to bring their lives to be more decent and prosperous.

3.2. Development of coconut and brown sugar agriculture

Cilongok village has a considerable influence on the development of the city of Purwokerto. Most of the life of Cilongok people is modernist and has a city style. This is also caused by Cilongok Village being the capital of the Cilongok District. At present, there are already quite a number of residents in Cilongok Village from other regions. Most of them are working in the city of Purwokerto. Distance and travel time that is fast enough causes some workers in the city of Purwokerto to prefer to live and live. Then what about the indigenous people of the village of Cilongok, whose livelihoods are coconut farmers. Gradually, their coconut farming turned into housing. Their land was bought by migrants. Coconut farmers are increasingly shifting in the suburbs, which are beginning to show dense houses and like slums. There are still many coconut farmers who do not have sanitation and livable houses. Nowadays, coconut farmers have not reached 30% of the total number of family heads.

The income of coconut farmers is not as sweet as the taste of coconut sugar (brown sugar). Becoming a coconut farmer is getting less exciting for the current generation. The development of coconut farming is worrying. Coconut trees might be a history or a fairy tale for future generations if they do not have problem-solving. One of the main reasons is the problem of income and risk. There are several groups of people who have added a mixture of sugar into brown sugar. This is done to increase production and income. This method is certainly not good because it reduces the efficacy of brown sugar.

The majority of coconut farmers' offspring no longer continues the work of their parents. The reason is, among others, because (1) the number of coconut farmlands is increasingly limited and (2) the price of brown sugar which is not stable. Some of them prefer as (1) wood industry workers, (2) shop employees, (3) construction workers and (4) factory workers. Their income as wood industry workers is Rp.60,000 - Rp.80,000/day while the income as a store employee varies in value, namely Rp.40,000 - Rp.60,000/day.

At present, the number of coconut farmers (*penderes*) is getting smaller. In the past, every household had 2 *penderes*, namely parents, as the head of the family and a son. Now, there is only 1 person per-household head, while there are no more families who work as *penderes*. At present, the age of coconut farmers ranges from more than 50 years, coconut farmers aged 30-40 years are decreasing. Millennial young people prefer jobs as laborers, builders, and shopkeepers. The risks they face are much smaller when compared to farmers.

Working as a laborer and a handyman is indeed uncertainly earning. Once a year, they usually do not work for 1-2 months. It really depends on the number of housing construction activities, house renovations, office buildings and factories. Their activities are mostly in Purwokerto (the capital of regency). The choice as laborer and handyman gives more hope than as a peasant farmer. The development of coconut farming is getting fainter and threatening the cultivation to become extinct. The younger generation has not seen promising hopes in coconut cultivation. The more worry in case some of the agricultural lands will be taking over by the migrant population who do not work as coconut farmers. The land is surrounded by coconut trees and sengon trees. District, sub-district and village governments need to rotate together to maintain the purity of Cilongok village as a producer of brown sugar. Although the amount is no longer as large as ever, coconut farming needs to be preserved as part of the history and culture of the village.

3.3. *Reviving coconut farming*

Cultivation of coconut farming, which is starting to fade, can be overcome by adding technology and diversification of coconuts. At present, the majority of coconut farmers (*penderes*) only depend on the yield of coconut sugar. Coconut shell processing can be used as a fuel/energy substitute for oil and gas fuels. The use of coconut shells can reduce household financing, especially for energy [8].

Furthermore, processing brown sugar can be further developed into palm sugar. A slight touch of technology and innovation can increase the price of palm sugar production to Rp.14,000/kg - Rp.16,500/kg. This price is the price set by the collecting trader. If farmers have dried technology, the results can be sold directly to companies/cooperatives. The price of palm sugar can be more than Rp.20,000/kg - Rp.25,000/kg if sold directly to the cooperative. Farmers' income can increase 2 times more than selling ordinary brown sugar. They need to integrate lower-income households in an effort to strengthen social integration. Social integration has great potential to expand the movement towards local agriculture. It further provides support to social communities that have a negative influence to build more progressive social change and social integration [9]. Currently, the demand for palm sugar in the world market has increased. The effect of globalization once again proves to have a considerable influence on rural welfare. This is the time for the government and other institutions to start developing household-scale technology and innovation in the village so that the existence of coconut farming can be maintained.

The use and application of technology and innovation can encourage better exports in agricultural commodities. This can have an impact on increasing rural household income [10]. Furthermore, agricultural development has enormous influence to reduce poverty. The effect can be greater if the level of labor productivity increases [11]. The further effect is it can stimulate the productivity of economic activities in rural areas. Agricultural development has an important role to build a country. Thus, agricultural development and productivity can accelerate the start of industrialization. The delay in industrialization has resulted in lower per capita income [12]. Industrialization at the household scale can encourage employment. If the scale of the ant palm sugar processing household can be increased in number, coconut farming and the coconut industry can come back to life as a support for the family economy. It is necessary to develop coconut farming entrepreneurs to strengthen the presence of coconut farmers while addressing the decreasing number of coconut farmers (*penderes*). Young farmer entrepreneurs are expected to emerge as an alternative strategy to build a coconut

farming community. The progress of the agricultural sector is to provide opportunities for farmers to develop their entrepreneurial abilities. This requires education, training and liquidity assistance [13].

Furthermore, an increase in farm family income can be increased by the Multifunctional Agriculture (MFA) approach. MFA does not only participate in food production, but also in the management of renewable natural resources, landscape conversion, and bio-diversity. It contributes to the economic and social sustainability of the region [14]. The application of MFA needs to pay further attention to government regulations, land-use approaches, actor-oriented and actor-based approaches and public regulation approaches. Coconut farmers in Cilongok need to expand their role by developing other agricultural commodities and processed products. True coconut is not only processed into brown sugar but can be processed into shell charcoal briquettes, coconut oil and coco peat (growing media) and nata de coco.

Furthermore, coconut farming needs to maintain ecological-economic based agriculture. Coconut farmers in Cilongok Village must maintain the coconut farming landscape where the area does not only grow coconut trees but there are rambutan or *Nephelium lappaceum* trees, sengon or *Albizia chinensis* trees, *Lansium domesticum* or duku trees, durian or *Duriozibethinus* trees and jackfruit or *Artocarpus heterophyllus* trees. Maintaining coconut as a support for the family economy (industry-based) can increase the environmental sustainability and the local food of the Cilongok Village community. The village government along with the stakeholders needs to build a synergy of economic institutions and innovation to carry on the existence of coconut farming in Cilongok village.

4. Conclusion

The results showed that the development of coconut farming in the village of Cilongok began to dim. Cilongok village as the capital city has an influence on the existence of coconut farming. Furthermore, the distance from the capital city is only around 16 km. The development of villages into cities simultaneously led to a change in the function of land for coconut plantations into housing, services, and trade. The development of villages into the cities has led to a change in the function of land for coconut plantations into housing, services, and trade. The number of houses is increasingly accompanied by an increase in the number of migrants who want to build houses. Furthermore, indigenous people and landowners are increasingly displaced. They occupy narrow land and look like slums. Housing standards are partly unfit for habitation because they are not yet supported by good sanitation systems.

Furthermore, social integration is depreciating, one of which is influenced by money as a medium of exchange. The development of the service and building sector has an influence on the agricultural sector workforce. In the beginning, every household had at least 2 residents, but now the number is decreasing, even none. Parents do not encourage their children to obtain a family economic source as a tanger because of risk and income considerations. Most generations of "penderes" choose to work as shop employees, wood industry and service workers. The development of these economic activities has had an influence on the agricultural sector workforce with the entry of the wood, trade and service industries. Furthermore, the development of the wood, trade and service industries has a major influence on the existence of "penderes".

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