The analysis of palm oil plantation impact on the social geographic conditions in Kapuas sub-district, Sanggau district

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Abstract. The establishment of palm oil plantation in Sanggau is started in 1979. The establishment utilizes the land of Dayak indigenous people in the form of customary rights and managed lands that have been cultivated for generations. Based on the data of 2005, the area of palm oil plantation in Sanggau District is up to 131,148.64 hectares, consisting of large state-owned companies covering 20,512.60 hectares, national private companies 30,453.40 hectares, and foreign private companies 21,999.30 hectares. While the area of palm oil plantation of farmers is 77,383.30 hectares. The entry of investors in the plantation business area will become a stimulus for the establishment of palm oil factories and job opportunities for local communities and immigrants. The research aims at determining the impact of palm oil plantation on the social geographic conditions in Kapuas, Sanggau. This is qualitative descriptive research. Purposive sampling is employed as the sampling technique. In collecting data, the researchers utilize interviews and questionnaires. Descriptive analysis is employed as a data analysis technique. The results of this study indicate that there is a significant change in the social geographic condition of the local and immigrant communities who stay at Kapuas, Sanggau.

1. Introduction

Palm oil plantation has a long history in Indonesia. The business of palm oil plantation begins in the Dutch colonial period, with seeds originated from West Africa. Furthermore, since 1911, oil palm plantation has been developed for business purposes in the east coast area of Sumatra under Dutch administration [1]. After Indonesian independence, although there are several changes in the government, oil palm plantations continue to develop, making Indonesia as the largest land and the largest palm oil production in the world since 2006 [2].

The total production in 2007 was 17.0 and 1.9 million tons of crude palm oil (CPO) and crude palm kernel oil (CPKO), respectively. More than 70% of the CPO was exported and 87% of the domestic consumption was used for food [3]. This rapid development places palm oil as a strategic commodity that directly contributes to job opportunities and state income.

Nowadays, entering the 27 years, palm oil plantations give positive results to the creation of job opportunities and public welfare. Nonetheless, these commodities still face ongoing problems. Amid the controversies that arise in the community, oil palm plantations are still growing in Indonesia. In 2016, it is estimated that the area of oil palm in Indonesia is 11.67 million ha [4]. The
rapid development of oil palm land in the midst of controversy shows that oil palm plantations play an important role in the economy of Indonesia and become the basis of life for some people.

The rapid development of oil palm is supported by various factors, such as government policies making palm oil plantations as one of the national priorities. Besides, the government issued a policy on the use of biofuels (BBN) which encourages the development of the palm oil industry. Until nowadays, there is no specific research which calculates local community ownership of palm oil plantations. The researchers obtain information that many people switch to pursue palm oil business since the opening of oil palm plantations in the 1980s. Even though, they face up and downs by selling palm oil plantations to the employees of PTPN XIII and other "immigrants".

The intention of the Indonesian government, including the leader of West Kalimantan to encourage economic growth of the local community (especially in the Kapuas Regency), is not easy. Initially, the program runs well as the pattern of oil palm plantations formulated by PTPN XIII. 80% of oil palm land is managed by companies ranging from seedling to marketing. But smallholder plantations, known as plasma, where local communities manage oil palm plantations face serious problems. The problems are in the form of economic and social.

The condition of the main plantation at PTPN XIII is equipped with various facilities such as building a palm oil factory into CPO. As for plasma plantations, PTPN XIII also builds houses for farmers equipped with yards [5]. PTPN XIII carries out the establishment of plasma plantations by the instructions of the 2017 Population Census, by presenting data on poverty in Kapuas, Sanggau Regency. The overview of the poor people in Kapuas, Sanggau District in the year 2017 is as follow on the table 1.

| No | Information | The Population | Pk | P1 | P2 | GK |
|----|-------------|----------------|----|----|----|----|
| 1  | Kapuas Sub-district | 87,577 | 4,52 | 20,62 | 4,52 | 283,608 |

Source: National Socio-Economic Survey / BPS

Information:
Pk : Poverty Percentage
P1 : Depth of Poverty
P2 : Poverty Severity
GK : Poverty Line

The percentage of poverty is 4.52% of the population of 87,577 people. The depth of poverty in this region is up to 20.62, while the severity level is 4.52. Meanwhile, the poverty line is up to 283,608. In fact, in this region, there are still many people who are in the poverty line behind their economic growth and their increase in income. Palm oil plantations bring several benefits, for example, opening job opportunities and raising new sources of income such as the presence of new stalls opened by the community. The local revenue of Kapuas (PAD) will increase income from company and factory taxes. Economic changes are also felt by the growth of economic centres and the rise of other businesses, such as the existence of housing development. Besides, the establishments of palm oil plantations also have an impact on the social change of the community, the level of education, and public health.

2. Methods
This research carries out in June 2019 until July 2019. The research site is in the Kapuas Sub-district, Sanggau Regency [6]. Kapuas is one of 15 sub-districts in Sanggau Regency, West
Kalimantan Province. The Kapuas sub-district is located between 0°8'48" up to 3° 27'00" south latitude and 113°2'35" up to 114°44'00" is located in the equator. There are two characteristics of the region in Kapuas, namely the southern region with tidal characteristics (10 sub-districts) and non-tidal characteristics in the northern region (5 sub-districts), the capital of the Kapuas is Kuala Kapuas (Sanggau District in the year of 2018).

This is descriptive qualitative research. The sample is taken by researchers from the community of Kapuas, Sanggau [7]. Purposive sampling is employed as the sampling technique. So that each selected area has a representative sample

The methods of collecting data are: (1) Interview, face to face interview with the respondent; (2) The questionnaire, several written questions are submitted to the respondent; and (3) Documentation, which is utilized to obtain written data. The type and the data source are primary data obtained from farmers and secondary data obtained from government agencies.

Research has 3 steps are: (1) The researchers determine the problems and focus of research. The researchers suspect that there are the biggest problems regarding the impact of oil palm plantations on social geographic conditions; (2) The study of the theory in which the researchers test the theories regarding the problems related to the impact of palm oil plantations on social geographic conditions; and (3) The researchers collect and analyze data from primary and secondary data.

3. Results and Discussion
Based on the results of the research that has been carried out in Kapuas on the effect of oil palm plantations on social geographic conditions, it can be described as this following table 2.
Table 2. The Education Level of Local Community and Immigrants

| Education of KK          | Local Community | Immigrants |
|-------------------------|----------------|------------|
|                         | Frequency | Percentage | Frequency | Percentage |
| Elementary School      | 5         | 50%        | 2         | 20%        |
| Junior High School     | 3         | 30%        | 3         | 30%        |
| Senior High School     | 2         | 20%        | 5         | 50%        |
| University             | -         | -          | -         | -          |
| **The Number**         | **10**    | **100%**   | **10**    | **100%**   |

The results reveal that the education level of the local community family with a percentage of 100% in elementary and lower, while the education level of 100% immigrants are Senior High School and above. Education can produce a better quality workforce. Regarding the results of these data, it can be seen that the education level of the local community head is lower than that of the immigrant community.

Table 3. The Area of the Land

| The Land Area    | Local Community | Immigrants |
|------------------|-----------------|------------|
|                  | Frequency | Percentage | Frequency | Percentage |
| Above 5 Hectares| 1         | 10%        | -         | -          |
| 3-4 Hectares     | 5         | 50%        | -         | -          |
| 1-2 Hectares     | 4         | 40%        | 10        | 100%       |
| **Answer**       | **10**    | **100%**   | **10**    | **100%**   |

Table 3 shows that the area of land managed by local people as oil palm farmers covering 4 hectares to above 5 hectares is up to 10%. Whereas immigrant communities that manage oil palm plantations under 4 hectares are 10%.

Table 4. Average Monthly Income

| Income       | Local Community | Immigrants |
|--------------|-----------------|------------|
|              | Frequency | Percentage | Frequency | Percentage |
| < Rp 1 jt    | -        | -          | 3         | 30%        |
| Rp 1,5 jt - Rp 2jt | 3     | 30%        | 3         | 30%        |
| Rp 2,5 jt - Rp 3 jt | 4     | 40%        | 2         | 20%        |
| Rp. 3,5 jt - Rp 4 jt | 2     | 20%        | 1         | 10%        |
| > 4,5 jt     | 1         | 10%        | 1         | 10%        |
| **The Number** | **10**    | **100%**   | **10**    | **100%**   |

The results of the study as shown from table 4 deduce that there is a difference in the amount of income per month between local communities and immigrant communities. The total income of
local people per month ranges between 2,500,000 and 3,000,000 with a percentage of 40% compared to immigrant communities whose income is 1,000,000 to over 2,000,000 up to 30%.

Table 5. House Condition of Oil Palm Farmers

| House Condition | Local Community | Immigrants |
|-----------------|-----------------|------------|
| Frequency       | Percentage      | Frequency  | Percentage |
| Permanent       | 5               | -          | -          |
|                 | 50%             | 4          | 40%        |
| Semi-Permanent  | 3               | 4          | 40%        |
|                 | 30%             | 6          | 60%        |
| Board           | 2               | 6          | 60%        |
|                 | 20%             |            |            |
| The Number      | 10              | 10         | 100%       |

Table 5 shows that the local community generally has 50% permanent housing condition, while 60% of the house condition of the immigrant community is a board to semi-permanent.

The assessment of available land resources for crops is an essential step in achieving sustainability in agricultural development [8]. Oil palm as a producer of palm oil and palm kernel is a prime crop of the plantation which is a source of non-oil and gas production for the bright prospects of the palm oil commodity. In world trade, the international agreement encourages the Indonesian government to develop oil palm plantations. The development of the oil palm plantation in Indonesia is inseparable from government policies that provide various incentives, especially the ease of licensing and investment subsidy assistance for the development of smallholder plantations in the PIR-Bun pattern in opening new areas for large private plantation areas [9].

Oil palm plantations in Indonesia are currently one of the very large export commodities in Indonesia. Nowadays, Kapuas becomes one of the areas with the largest oil palm plantations [10]. This has been proven by many private and state-owned oil palm companies (PKS) that cover thousands of hectares. The Kapuas area is 956.046 Ha, which predicted to produce TBS of more than 19 million tons per year and 4.1 million tons of CPO per year [11].

The palm oil fried factory is designed to refine CPO material into palm oil cooking oil and it is equipped with fractionation process. As a result, the products produced by Refinery Bleaching Deodorizing Palm Olien (RBD Palm Olien) are grade "A" [12]. The export of Indonesian oil palm products, especially in the Kapuas sub-district, is largely in the form of CPO for the development of oil palm plantations, It must be carried out by taking into account various factors such as plantation laws and regulations, sustainability of biodiversity and wildlife, waste disposal arrangements economic and social responsibility from plantation management companies.

3.1. The Role and Function of Oil Palm in Reducing Global Warming

Global ecological degradation and climate change have become a real threat to agriculture, the main source of production of high-income oil palm plantations in the country. However, there are negative aspects of oil palm plantations such as those in the village, groups in the village, those in the village, and farmers [13]. The development of the oil palm industry causes several problems, including in oil palm plantations and the process of waste disposal. The expansion of oil palm has various positive and negative impacts. The negative impacts of oil palm establishment include [14]:

- Incorrect use of land for oil palm plantation. It has a huge effect on global warming.
- Natural forests are very monoculture. Natural forests that should be a source of carbon capture are reduced in their ability.
- The impact of ecological balance. The loss of various unique flora and fauna causes the balance to be disrupted.
- The need for oil palm plants for groundwater.
Some of these negative impacts are the reasons for various parties who accuse that oil palm agroindustry greatly affects global warming.

3.2. Method of Oil Palm Industry Development to Reduce Global Warming

The increase of oil palm plantations will affect forest land in Indonesia. Based on government regulations No. 41 concerning Forestry, states that forests are divided into forest functions including protected forests, conservation forests, and production forests. Government policy is a benchmark for the development of oil palm plantations. By the function of the forest, conservation forests and protected forests will always be maintained as their functions so that they do not change into production forests.

4. Conclusion

The development of oil palm plantations in Indonesia has a positive and negative impact on the community. Based on the aspect of employment, oil palm development creates 5.3 million employment opportunities in 2014. The role of oil palm plantations in creating employment opportunities increases in the central area of oil palm plantation development such as in Kapuas, especially in the community of Kapuas, Sanggau.

The results and discussion of the socio-geographical conditions of oil palm indicate that the existence of oil palm plantations gives employment opportunities. This is a distinct advantage which resulted from the existence of oil palm plantations. Besides, it raises new sources of income such as the existence of stalls. The local revenue (PAD) of Kapuas, Sanggau will increase, obtained from company and factory taxes. Economic changes are also marked by several factors. For example, the growth of economic centers and the rise of other businesses such as the existence of housing development and the development of oil palm plantations which also have an impact on the social change of the community, the level of education, and public health.

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