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Impact Of Oil Palm Plantation Vs Swamp Buffalo Breeders in Kuripan District Barito Kuala Regency South Kalimantan Province

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Abstract

This paper offers a general survey of the social and environmental impacts associated with oil palm development, on communities by emphasising the negative impacts of oil palm plantation expansion specifically on the badangan farmers of Kuripan Sub-district, Barito Kuala District, South Kalimantan Province. This is followed by a brief overview of the case study location and the research methodology adopted for data collection. This is followed by presenting the findings from the field research. The paper concludes with reflections on the conclusions and implications of oil palm plantation development in Kuripan Sub-district, Barito Kuala District, South Kalimantan Province.

Keywords: *Oil Palm Plantation, Swamp Buffalo Breeders.*

Introduction

The expansion of oil palm plantations in Indonesia occurred in 1980 and in 2018. Palm oil contributes significantly to the economic development of Indonesia. Indonesia is listed as the world's largest palm oil producer and exporter with total Crude Palm Oil (CPO) exports of 45.1 million tonnes. Indonesia's palm oil production is mostly exported to foreign countries and the rest is marketed domestically. Indonesia's palm oil exports reach five continents, namely Asia, Africa, Australia, America, and Europe with the main share in Asia. In 2021, Indonesia's top five CPO-importing countries are India, Kenya, Italy, the Netherlands, and Spain (Statistics Indonesia, 2021). Palm oil and its derivatives are found in about half of all packaged goods in supermarkets worldwide, including food, cosmetics, pharmaceuticals, household hand sanitisers, and biodiesel (Murphy et al., 2012). In addition, the palm oil industry contributes to state revenue from taxes, export duties, and job creation.

At the regional level, oil palm is a strategic commodity for several regions such as West Kalimantan, North Sumatra, South Sumatra, Central Kalimantan, and Riau. Growing global demand over the past five decades has led to oil palm cultivation being widely considered by many tropical countries as a method to boost their economies (Arrieta et al. 2007; Ohimain and Izah 2014; Paterson et al. 2015). Oil palm plantations contribute significantly to rural economies

Indonesia through increased sustainable resilience to the value of agricultural output, manufacturing output, and district GDP (Edwards, 2015).

The expansion of oil palm plantations continues to this day. From Sumatra, the development of oil palm plantations extended to Kalimantan, where land was still cheaply available. However, in the 2010s, land in Kalimantan became increasingly valuable due to high demand. Now, the expansion of oil palm plantations is starting to enter the interior regions of Papua (Andrianto, 2019). It is undeniable that palm oil is a new and more promising commodity for the economy of local communities in various regions, such as Sumatra and Kalimantan. The advantage is that palm oil offers a faster supply and turnover of cash, at least compared to other commodities that have been cultivated for generations, such as rubber, coffee, nutmeg and others. The high production costs of oil palm are covered by the very open and increasing market demand, so the turnover of money is very fast. This has led to unstoppable public interest in oil palm farming. The capital

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Journal of Ecohumanism
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system is also very wide open, with various financing schemes offered by the financial industry. Thus, the palm oil commodity is able to become a driving instrument for social transformation in rural areas, which changes the subsistence society system into a consumption society, supported by the expansion of rural infrastructure coverage such as electricity, markets, schools, health clinics, and places of worship and technology penetration and better integration of rural communities into markets (Edwards, 2019a,b; Santika et al., 2019a; Gehrke and Kubitza, 2021; Chrisendo et al., 2022). In addition, Santika et al. (2019a) found that oil palm villages have better housing conditions, fewer instances of child malnutrition, better access to credit, more active cooperatives, and a greater number of small industries in oil palm villages compared to villages that do not cultivate oil palm. Similar findings have been documented in Latin America, where oil palm-growing towns have better food, clothing, housing, and healthcare provision, as well as lower infant mortality rates and higher incomes than non-oil palm- growing towns (Castiblanco, 2014; Castiblanco et al., 2015; Abrams et al., 2019).

However, with rapid growth and poor governance, the expansion has led to various problems, such as environmental and social issues. Palm oil is negatively stigmatised globally as a driver of deforestation and ecosystem damage to tropical forests and peatlands (Obidzinski et al., 2012; Gerber, 2011; Koh & Ghazoul, 2010). A study conducted by Austin et al. (2017) found that from 1995-2015 deforestation due to oil palm plantations reached an average of 117,000 hectares per year, with the rate tending to decrease in the last ten years. Research conducted by Lee et al. (2014) also noted that large plantation companies should bear responsibility for 90% of forest loss in Sumatra from 2000-2010. Previously, the Ministry of Forestry in 2012 reported that around 282 oil palm plantation companies in Central Kalimantan illegally encroached on three million hectares of forest area (Setiawan et al., 2016). The pattern of land clearing by burning forests is also prevalent in oil palm plantations. This has exacerbated environmental degradation and increased greenhouse gas emissions in Indonesia.

A study conducted by Varkkey (2012) found that around 80% of forest and peatland burning involved oil palm plantation companies. Not surprisingly, land use change accounts for 75% of national greenhouse gas emissions (Cronin et al., 2016). This condition has put Indonesia in the top three greenhouse gas emitters in the world even though it is not an industrialised country (Bissonnette, 2016). Furthermore, without a good governance system, especially in land management, palm oil expansion has created inequality in rural land tenure (Obidzinski et al. 2014). In many places, the palm oil industry tends to benefit migrant planters more than local communities, such as in Kalimantan. This is because migrant planters are more skilled in oil palm cultivation (Obidzinski et al., 2012). The palm oil industry is also not free from social problems. One of them is social conflict with indigenous communities. Palm oil expansion has triggered land grabbing by indigenous peoples, resulting in social conflicts and land conflicts (Marti, 2008). The topic of indigenous peoples' grievances is none other than to convey their aspirations to immediately restore access to land, adequate compensation, and environmental acclamation of indigenous peoples' livelihoods. Conflicts over plasma plantations have been highlighted in the case of oil palm, which examines the relative powerlessness of indigenous peoples in the face of corporate abuses that impose natural law rules of degradation in order to improve the image of indigenous peoples' welfare (Qaim et.al 2020). Not only does it increase land conflicts, the overlap between plantation land and customary land also triggers local food vulnerability due to shifting traditional agricultural patterns (Orth, 2007). McCarthy (2010) argues that oil palm plantations have great potential to affect socio-economic relations and customary lands.

Despite recent growth, palm oil-based biodiesel in Indonesia has been scrutinised by various domestic and international organisations for its impacts on social and environmental sustainability, particularly in the upstream, palm oil industry. One of the most widely discussed issues is deforestation and land use change (Malins, 2018) and associated GHG emissions (S. S. Harsono et al., 2012; Traction Energy Asia, 2019). In addition, various social conflicts are associated with the palm oil industry such as land conflicts, unfair labour contracts and conditions, and damage to the local environment (Barreiro et al., 2016; Zakaria et al., 2017).

Oil palm expansion is thought to be one of the most important drivers of deforestation as it occurs at the expense of Indonesia's tropical forest cover. A study based on spatial data showed that approximately 23%

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of deforestation in Indonesia between 2001-2016 was caused by oil palm plantation development, higher than any other cause (Austin et al., 2019).

Sibhatu's (2023) literature review shows that oil palm expansion is a double-edged sword. On the one hand, it helps the economies of producing and non-producing countries significantly by facilitating the (re)export of crude palm oil and its by-products and creating jobs. Oil palm is suspected to stimulate rural economies, reduce rural poverty, and improve food security and diets for rural households in producing countries. On the other hand, it has increased conflicts and tensions between local communities and agro-industrial companies, worsened labour conditions, and widened the domestic economic divide between production and non- production areas in producing countries. Monetary quantification of palm oil's negative environmental and social impacts shows that the loss of (Acosta and Curt, 2019) and increased social impacts far outweigh the benefits derived from increased oil palm production (Grasse, 2022). Direct income benefits through crop sales and employment are more pronounced in the frontier production regions of Southeast Asia, particularly Indonesia where oil palm cultivation and marketing are relatively advanced and well integrated into global value chains. The negative impacts are seen across all oil palm production regions, with the larger negative impacts on food security occurring in the production frontier in Africa.

The development of oil palm plantations in Kuripan District, Barito Kuala Regency, South Kalimantan Province has caused social impacts. The emergence of social impacts is due to plantation activities in grazing pastures. The land has been utilised as grazing land for generations by farmers. The expansion of oil palm plantations is believed to have threatened the existence of hadangan (swamp buffalo) as South Kalimantan's germplasm, which has been kept by the community for generations. Unlike buffaloes that live in various parts of Indonesia, buffaloes in the South Kalimantan region live in swamp areas so they are adept at swimming and diving to find grass, and even their pens are built on swamps. Hadangan is indigenous to South Kalimantan and a source of germplasm that has been developed as a specific farming enterprise in swampland agrosystems with a kalang (cage) system (Suryana, 2007:140; Suryana and Hamdan, 2006:202).

Kuripan District, Barito Kuala Regency, is one of the centres of swamp buffalo farming in South Kalimantan Province. This condition is possible due to the availability of large wetlands (7.78%) of the total available land, and is supported by the availability of various types of forage that grow throughout the year (Subhan et al., 2006: 185).

Conflicts on forbidden land or grazing pastures occur in the swamp buffalo farming centre villages in Kuripan sub-district. Conflicts occurred due to the introduction of oil palm plantations. To PT Tasnida Agro Lestari (PT TAL), the Barito Kuala District Government granted a Plantation Business Licence (IUP) covering 10. 810 hectares. From the core and plasma map of PT Tasnida Agro Lestari, Kuripan sub-district, Barito Kuala district, it can be seen that the land cleared for the core plantation is 8,187.12 hectares and the plasma plantation is 2,150.63 hectares, making a total of 10,337.75 hectares. Looking at the map of plasma plantations, the land cleared in the villages of Rimbun Tulang (125.45 hectares), Tabatan (701.57 hectares) and Tabatan Baru (220.58 hectares) totalled 1,047.60 hectares. The opening of oil palm smallholdings in these hadangan farming centre villages has led to conflicts between the farmers and the smallholdings managed by KUD Manuntung as the plasma of PT Tasnida Agro Lestari. For farmers, the grazing pastures have been used for generations to graze hadangan. For KUD Manuntung as the manager of the plasma plantation, they have received a recommendation for land rights in the form of HGU covering an area of 2,282 hectares. The HGU comes from a portion of land that has been designated as a location permit from PT Tasnida Agro Lestari (PT TAL).

To the best of our knowledge, no study has synthesised the positive and negative social impacts of oil palm plantation expansion on primarily hadangan (swamp buffalo) herders.

Methodology

This study used an explanatory sequential mixed methods design, as the researcher first conducted quantitative research, analysed the results, and then structured the results to explain them in more detail with qualitative research. Qualitative research is considered explanatory because the results of the initial

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quantitative data are further explained with qualitative data, and is considered sequential because the initial quantitative phase is followed by a qualitative phase (Creswell, 2017: 294). The research respondents were all 38 farmers. Informants consisted of some farmers, formal and non-formal leaders who were aware of the land conflict, and members of NGOs concerned with land conflict. Data collection techniques included questionnaires, interviews, documentation and observation. Quantitative data analysis used descriptive statistics in the form of frequency distribution, because it aims to describe the state of social symptoms in the field. Qualitative data analysis was conducted continuously during data collection. Activities in data analysis include the process of data collection, data reduction, data presentation, and conclusion drawing.

Setting

This study was conducted in three villages in the centre of hadangan rearing in Kuripan Sub-district, Barito Kuala District, South Kalimantan Province, namely Tabatan Baru Village, Tabatan Village and Rimbun Tulang Village. In these three villages, hadangan rearing activities can be found, because there are grazing lands that are overgrown with grass as the main feed for hadangan. In addition, in these three villages there are also oil palm smallholdings whose concessions cover part of the grazing land, resulting in overlapping land use that has led to conflicts between hadangan farmers and the smallholdings managed by KUD Manuntung.

Findings And Discussions

Based on data from BPS Kecamatan Kuripan Dalam Angka (2017) and research data, hadangan herders in Kecamatan Kuripan are spread across three villages, namely Tabatan Baru Village, Tabatan Village, and Rimbun Tulang Village. There are 38 farmers in total. All farmers (100%) are Dayak Bakumpai people. They are the original inhabitants of the three villages. Their parents have lived in the Kuripan sub-district for generations. Among the farmers, there are still kinship ties. This is related to the custom of the Bakumpai people who used to live in groups in small villages along the Barito watershed. Raising hadangan is done by men, who are owners, owner-keepers, owner-herders, and herders. Among them, 93.75 per cent are heads of households, and 6.25 per cent are not heads of households. Apart from men, there are also women as hadangan farmers. Between the two, there are differences in their roles in raising this livestock. The number of farmers by gender can be seen in the following table.

Table. Hadangan Farmers by Gender

NO	Gender	Frequency	Percentage (%)
1.	Male	32	84,21
2.	Women	6	15,79
	Total	38	100

Source: Research Results, 2020.

There were 32 (84.21%) male farmers, while six (15.79%) were female. These women became farmers because they continued the work of their husbands or parents. Raising hadangan is a labour-intensive job that requires a lot of energy, such as when they have to push the hadangan up to the cage. They have to paddle a jukung using a long stick, which also serves as a deterrent. Given the strength of the hadangan, it is the men who work together to catch the cattle when they are about to be sold or slaughtered. Women do not directly participate in the maintenance of the h a d a n g a n . Farmers range in age from 13-64 years, as shown in the table below.

Table 4.2. Hadangan Farmers by Age Group

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No	Age Group	Frequency	Percent
1	<15-25	6	15,79
2	26-35	10	26,33
3	36-45	12	31,56
4	46-55	6	15,79
5	56-65	4	10,53
	amount	38	100

Source: Research Results, 2020.

Some hadangan farmers are less than 15 years old, precisely aged 13 years old. The youngest farmer is still in grade six. He continues his father's work as a farmer because his father passed away. The oldest farmer is 64 years old. Judging from the average age, farmers belong to the productive age group who are still physically strong. This is related to the hadangan rearing system. When farmers supervise and herd the hadangan, they have to paddle the jukung with human power. They even have to go into the swamp to get close to their animals. When the hadangan are to be sold, it requires the co-operation of several strong farmers to carry them to the boat. In the afternoon, farmers have to control their hadangan, as shown in the following picture.

Figure 1: Hadangan Farmers Grazing Livestock

Source: Research Documentation, 2018, 2020. Image caption

(Left) the farmer giving salt to the hadangan, (Centre) the farmer having to enter the swamp to approach the hadangan wallowing in the swamp, and (Right) the farmer watching the hadangan licking the salt from the jukung. Salt is a medium to tame hadangan.

Judging from the length of time being a farmer is in the range between 1-40 years. Details of the length of time as a barrier farmer can be seen in the table.

Table. Farmers By Length of Time as A Farmer

No	been a farmer for a long time	Frequency	Percent
1	<1-5	11	28,95
2	6-10	9	23,68
3	11-15	4	10,53

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4	16-20	4	10,53
5	21-25	7	18,42
6	26-30	2	5,28
7	31-35	0	0
8	36-40	1	2,63
	amount	38	100

Source: Research Results, 2020.

There were 11 people (28.95%) who had been farmers between two and five years, and nine people (23.68%) who had been farmers between six and 10 years. If the two categories are added together, the number reaches 20 people (52.63%), which is more than half of the total number of hadangan farmers. This shows that there is a regeneration of the occupation as a hadangan farmer. Working as a livestock farmer is very profitable. They can earn an annual wage as well as a share of the hadangan offspring without having to keep them intensively. Those who have been hadangan breeders between 11-30 years are 17 people (44.74%), and those who have been breeders between 30-40 years are 1 person (2.63%). The longevity of the job can be seen as an indicator that the job is quite profitable.

Although the number is small, there are also hadangan farmers who work in oil palm plantations. This is very natural considering that in the Kuripan sub-district area, an oil palm plantation of PT Tasnida Agro Lestari (PT TAL) operates. On the border between Kuripan sub-district, Barito Kuala district and Tapin district, an oil palm plantation of PT Tri Buana Mas (PT TBM) also operates. Professions as fish fishermen and fish sellers are related to the geographical condition of Kecamatan Kuripan, which is located in the Barito watershed and its tributaries. The area is rich in fish catches and harvests from wells (beje). Swallow farming is a new source of livelihood. This is characterised by the increasing number of swallow nest houses in the study villages.

Participation of Farmers as Plasma Farmers

The arrival of oil palm plantations in Kecamatan Kuripan is expected to provide additional employment opportunities for the community, including hadangan farmers. The number of hadangan farmers who have worked in oil palm plantations can be seen in the table.

Table of Hadangan Farmers by Participation as Workers in Oil Palm Plantations

No	working on a plantation	frequency	percent
1	Once	13	34,21
2	Never	25	65,79
	Amount	38	100

Source: Research Results, 2020.

There were 13 (34.21%) farmers who had worked in oil palm plantations, and 25 (65.79%) who had never worked in oil palm plantations. Of the 13 farmers who had worked in oil palm plantations, two (15.38%) worked for PT Tasnida Agro Lestari (PT TAL), which operates in Kuripan sub-district, Barito Kuala district; and 11 (84.62%) worked for PT Tri Buana Mas (PT TBM), which is administratively located in Tapin district. They worked between 2010 and 2020. Among the 13 people who had worked in oil palm plantations, 10 people (76.92%) had stopped working and three people (23%) were still working in oil palm plantations. The experience of working at PT TAL was told by Madiansyah/Madi (52 years old), a resident of Rimbun Tulang Village, who worked under the piece-rate system, as follows:

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"When there was an oil palm plantation, I worked from 2015 until 2020. I worked manabas or clearing bushes and opening discs, which are holes for planting oil palm seedlings. The wages earned are based on piecework. The wage paid is IDR 100,000 per hectare for manabas, and IDR 2,000 per tree for clearing the discs. The wage depends on the labour".

Those who work at PT TBM include those who cut grass, pump operators, clean grass, plant seedlings, foremen, and employees. They receive monthly wages, monthly salaries, or piece-rate wages. Kamariah/Komar (30 years old), a resident of Tabatan Baru Village, recounted her experience working in oil palm plantations during 2013-2014 as follows:

"I once worked in oil palm in the seedling planting section. At that time, I received a wage of Rp 90,000 per day. The wage was calculated per day but paid monthly. We worked from morning to evening. We had Sundays off. At that time, there were many people working at the palm oil plantation. In the morning, we would all go by kelotok to the plantation. After the land was planted, we were no longer used, we no longer worked at the palm oil plantation".

Before the plasma plantation opened in Rimbun Tulang Village in 2015, there were 40 farmers. After oil palm plantations entered Rimbun Tulang Village, the number of farmers was 38. The work of raising hadangan that is still carried out by residents can be seen in the following table.

Table 4.10. Livestock Farmers After the Entry of Oil Palm Plantations

No	Hadangan sustainability	frequency	percent
1	still maintaining hadangan	38	95
2	stop maintaining hadangan	2	5
	Amount	40	100

Source: Research Results, 2020.

When oil palm plantations entered the Kuripan sub-district area, hadangan farmers were still able to survive. Of the 40 farmers, 38 (95%) are still raising hadangan, while only two (5%) have stopped being farmers. They switched to working as fish sellers. This condition is not the same in the three research villages. In Rimbun Tulang village, oil palm plasma has been open since 2015. This has affected the area of grazing pasture as the main food for the hadangan. The plasma plantation was opened in Tabatan Village in 2018. In Tabatan Baru village, there is no activity from the plasma plantation. Whether the presence of oil palm plantations also has a positive impact on farmers, the data can be seen in the following table

Table of Farmers Based on Participation as a Plasma Farmer

No	participate in smallholder farming	frequency	percent
1	Yes	7	18,42
2	No	31	81,58
	Amount	38	100

Source: Research Results, 2020.

The presence of oil palm smallholdings does not have a significant impact on

hadangan farmers. Only seven people (18.42%) participated as farmers.

plasma, while 81.58% did not participate as plasma farmers. Of the seven farmers who participated in plasma, four were from Rimbun Tulang village. The plasma farm was already operating in Rimbun Tulang village. Three w e r e from Tabatan village, where the plasma farm started operating in 2018. One of the

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hadangan farmers who joined the plasma farm, Ardiansyah/Aar (40 years old) from Rimbun Tulang village, said:

"I joined the plasma. Our friends here joined the plasma. The only requirement was to bring a family card (KK) and identity card (KTP), but there was no explanation of how to proceed. I think there is no clarity about plasma. I also don't know what I should do after joining the plasma".

No farmers from Tabatan village participated in plasma. Haji Norman (64 years old), a farmer from Tabatan village, said:

"I have heard about plasma, but I don't understand what plasma is. I didn't join plasma because I didn't know what I was doing. Besides, I am already old. None of my friends in this village participated in plasma, they said it was not suitable, there were also those who said there was no certainty, the point is, they did not agree".

Based on the results of interviews with Abdi Syahbana, SPd. (30 years) as Chairman of KUD Manuntung, the requirements are as follows:

"To become a member of KUD and participate as a plasma farmer, the requirements are first, domiciled in Kuripan District since 2010. Secondly, they have a KTP and KK that prove they are residents of Kuripan Sub-district. Third, there is an official report for legality; and fourth, each participant has two hectares of land. The land is compensated at 2.5 million rupiah per hectare".

If all oil palm smallholdings have operated to all villages where livestock farms are located, then grazing land is increasingly narrowed. The empirical conditions in each research village are different. In Rimbun Tulang village, the plasma plantation was opened in 2015. Based on interviews with the village head, only 50 hectares of the 900-hectare grazing land remains. This size of land has been converted into oil palm plantations. From observations and interviews with a farmer's wife, it can be seen that the enclosure, which was originally built far from the house, has now been moved close to the house. Livestock look for grass only around the cage. Empirical conditions in Tabatan Village, plasma plantations have been opened since 2018. According to the Head of Tabatan Village, if all land has been cleared for oil palm plantations, the remaining hadangan will be at most 50%. In Tabatan Baru Village, there has been no land clearing activity for oil palm plantations. As a precautionary measure, farmers have moved the hadangan calves to a conservation area. Location conservation area is in Tabatan Baru Village. Farmers' anticipation to prepare alternative sources of livelihood can be seen in the table.

Table of Hadangan Farmers by Alternative Livelihood Sources

No	livelihood	frequency	percent
1	No	19	50
2	oil palm plasma	7	18,42
3	fisherman	4	10,53
4	swallow farmers	2	5,26
5	fish cages	1	2,63
6	planting weed	2	5,26
7	Still menggaduh hadangan	3	7,90
	amount	38	100

Source: Research Results, 2020.

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Conclusion

From the various explanations above, it can be concluded that the entry of oil palm smallholdings into hadangan (swamp buffalo) grazing land has several negative impacts. Some of the plasma land is located on grazing land, and the existence of plasma plantations does not automatically convert livelihoods as farmers into plasma farmers, because only a small proportion of farmers participate as plasma farmers. Even those who participate as smallholders do not have certainty for their future. For farmers who do not participate as smallholders, they must have other alternative jobs. Those who do not have alternative jobs and those who participate in plasma farming but have no clarity for the future, then they can be included in the vulnerable group.

Secondly, there was a conflict involving two social groups, namely the hadangan farmers and KUD Manuntung the manager of the oil palm plasma plantation that accommodates the plasma farmers. The conflict is horizontal, involving two groups that are at the lower strata in the structure of rural society. Despite being at the lower strata in the structure of rural society, farmers are not a subsistence group. They have been able to save and accumulate capital. Conflicts that occur do not escalate, conflict dynamics are unilateral escalation**.**

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