

Comparing Coal Mining Industries and Palm Oil Plantations Impacts on The Human Security of Local Communities

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Abstract. Coal mining and palm oil plantations are important sectors for supporting development in Indonesia. However, these sectors are criticized as the cause of horizontal conflicts, deforestation, and natural disasters that threaten the human security of local communities. Therefore, this research aims to compare the extent to which coal mining industries and palm oil plantations have impacted the human security of local communities by applying comparative process tracing as in the case of Kalimantan Timur and Kalimantan Tengah. This result showed that palm oil plantations have lower negative impacts on the human security of local communities than coal mining industries. Mining has co-opted the livelihood of local communities as those who initially worked as farmers lose job opportunities due to the transfer of agriculture to mining. In contrast, palm oil plantations cooperate with local laborers and farmers in the Nucleus Estate Smallholder scheme (NES), which prevents unemployment. Therefore, in the context of local communities' human security, government should develop palm oil plantations than coal mining.

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1. Introduction

Coal mining and palm oil plantations are important sectors that support development in Indonesia. The book series of national development agenda issued by the National Development Planning Agency (*Badan Perencanaan Pembangunan Nasional/ Bappenas*) explained that one of the strategies to accelerate domestic economic growth is by optimizing these industries (Bappenas, 2014). For this purpose, the government decided to use Kalimantan, Sumatra, and Papua as the center of mining and palm oil plantations (Bappenas, 2014). The mining industry is encouraged to obtain sustainable value-added by reducing the exportation of raw materials as well as increasing the export of processed products. Besides, the palm oil plantation is regulated under a sustainable approach to expanding the global market, namely the Indonesian Sustainable Palm Oil System (ISPO) (Syahza & Asmit, 2020). According to Bappenas (2014), this was aimed to provide an international standard of palm oil that meets the requirement of the global market. Currently, Indonesia is one of the biggest coal and palm oil exporting countries (PricewaterhouseCoopers/ Pwc, 2018).

However, organized and unorganized movements criticized the coal mining industry and palm oil plantations. These sectors cause horizontal conflicts, deforestation, and natural disasters that threaten the human security of local communities. They converted protected forests into industrial areas, which led to deforestation and other social and environmental problems (Dharmawan et al., 2020; Muhammad et al., 2019; Purnomo et al., 2019). More specifically, local communities lack freedom due to want, fear, and the need to live in dignity. Non-governmental

organizations (NGOs) actively campaigned against the impacts of the mining and palm oil industries through their publications (Earth.org, 2019; Greenpeace, n.d., 2015; Wahana Lingkungan Hidup/Walhi, 2019). Additionally, the affected local communities employed spontaneous or unorganized counter-movements to protest against the operations of these industries (CNN Indonesia, 2017; Media Indonesia, 2018).

Based on this fact, there is a puzzling issue to address in the governance or regulatory process of coal mining and palm oil plantations. On the one hand, the government needs to increase its economic growth through these industries, while on the other, the human security of local communities is also an essential element of the development goals. This research aims to compare the impacts of coal mining and palm oil plantations on the human security of local communities. More specifically, it seeks to investigate which sector is better for supporting development as well as protecting and empowering these communities. The intent is to provide a policy recommendation regarding which industry should be optimized.

Karl Polanyi's (1944) idea on land and labor commodification and the notion of embeddedness were utilized to address the research problem. This commodification refers to the handling of these commodities as commercial assets in capital accumulation (Block, 2003; Buğra & Ağartan, 2007; Polanyi, 1944; 2018; Sandbrook, 2011). In this context, the land is managed based on monetary value rather than its usefulness for living purposes and is converted to mining areas or palm oil

plantations. Consecutively, this leads to unemployment and poverty because these communities were forced to lose their means of livelihood. The commodification of labor worsened this condition because the indigenes lost their jobs due to land transfer. They had to compete in the labor market to find new work, including in the mining industry.

Subsequently, the notion of embeddedness was employed to understand the extent to which the coal mining industries and palm oil plantations correlate with the local communities. Embeddedness refers to the relationship between the economy and the society (Dale, 2011; Gemici, 2008; Peck, 2013; Polanyi, 1944; 2018; Sandbrook, 2011). From the Polanyian (1944) view, the market economy is embedded in social and political institutions. In this context, it simply means the conditions these industries have involved local communities, thereby enabling them to benefit from their operations.

Furthermore, this study also adopted the concept proposed by the UNDP (United Nations Development Programs) to examine the human security of local communities. According to the UNDP (1994), human security refers to 'safety from such chronic threats as hunger, disease, and repression' as well as 'protection from sudden and hurtful disruptions of daily activities either at home, workplaces or in the communities.' Based on this definition, it also refers to the protection and empowerment of three crucial elements, namely freedom from want, fear, and living in dignity. Freedom from want means the conditions that aid individuals in meeting their basic needs, such as food and material items. Freedom from fear refers to conditions that protect individuals from direct violence or potential conflicts. Meanwhile, freedom to live in dignity is a condition wherein local communities' fundamental and human rights, including their existence, are recognized and protected (Kim et al., 2019; Tadjbakhsh, 2015).

This research is organized into four sections. This introductory section provides general explanations of the research problem, its purpose, contributions, and the adopted theoretical framework. The second section is centered on the research methods, which involve a combination of the comparative case studies and process tracing procedures. The third section is the result and discussion of the investigation. The first part of the third section provides an analysis of the human security of local communities in relation to coal mining and palm oil plantation. Meanwhile, the second part of section three provides analysis based on tracing the commodification of land and labor and the notion of embeddedness in these sectors. The final section of this research is the conclusion and recommendation that palm oil plantation has a better impact on the human security of local communities than coal mining industries.

2. Methods

This study prefers to employ a qualitative approach because the procedure suitably accommodated a complex situation and causal relations between human experiences and behaviors (Krauss, 2005). A qualitative approach was also considered suitable for analyzing human security as it explores experience, meaning, and perspective, most often from the participant's standpoint (Hammarberg et al., 2016). Therefore, it was used to capture how local communities

perceive their conditions due to the impacts of the industries operating around their geographic area. This study specifically used the interview method to gather data in accordance with Creswell's design (2014) for carrying out qualitative research, which includes data collection, recording, analysis, and interpretation. Data collection was followed by several other steps, namely: 1) transcribing interview data, 2) organizing and preparing it for analysis, 3) reading through all data, 4) coding it, describing and identifying the relevant themes, 5) interrelating themes and description, 6) interpreting findings or result, and 7) write-ups.

In terms of coding, data were classified based on themes derived from theoretical framework and literature review. However, it also contains a new theme obtained from fieldwork, which is surprising and unusual and can be a finding for refining the concept (Creswell, 2014). Based on the human security framework and the Polanyian perspective, the themes were classified as follows. Firstly, freedom from fear (free from conflicts and direct violence), want (income availability, job creation, and fulfillment of basic needs including food, shelter, education, health), and to live in dignity. Secondly, the commodification of land and labor, and the notion of embeddedness as part of the governance of coal mining industries and palm oil plantations.

Furthermore, this case study was deeply used to examine puzzling phenomena (Creswell, 2014; Yin, 2009). These comprised Kalimantan Timur and Kalimantan Tengah, which were selected based on purposive sampling techniques as opposed to random sampling methods. The selection of these provinces was based on the following considerations. Geographically, Kalimantan Timur and Kalimantan Tengah had similar topographic areas as they were located on the same island, namely Kalimantan. Moreover, they had similar landscape and natural resources and were also suitable for palm oil plantation (Badan Pusat Statistik/ BPS Provinsi Kalimantan Tengah, 2019; BPS Provinsi Kalimantan Timur, 2018). Demographically, these provinces have similar characteristics to the local communities and consists of indigenous and migrants due to the transmigration program before the operation of the mining and palm oil industries. Politically, these provinces have similar authorization based on the regional autonomy policy (Law No 23/2014). The case selection technique was intended for anticipating potential bias in this study. While the phenomena have several similarities, the provinces have different primary sources of income, including agribusinesses (Kalimantan Tengah) and mining (Kalimantan Timur).

This research utilized primary and secondary data. The primary data were collected during fieldwork carried out from October 2016 to February 2017. It consists of state acts and the perception of human security discovered through semi-structured interviews held with government officials, NGOs, and local communities. The interviewees were in their productive ages; besides, they were highly experienced and had the capacity to answer the interview questions. These were organized based on the Polanyian perspective and the human security framework. However, since the interview type was semi-structured, this research provided open-ended questions that allowed the interviewees to express their opinions or perceptions freely. A total of 25

Table 1. List of Participants and Questions

Interviewees		Number of Interviewees	Themes of Interview Questions
Government officials of Kalimantan Tengah and Kalimantan Timur	Regional Development Planning Agency	2	What are the contributions of palm oil plantations and the mining industries to regional development? What are the impacts of mining industries and palm oil plantations on the livelihood and security of local communities?
	Manpower and Transmigration Office	2	What are the contributions of palm oil plantations and the mining industries to job creation for local communities? How are local communities involved in palm oil plantations and the mining industries?
	Energy and Mineral Resources Office Plantation Office	2 2	The extent to which local communities are involved in the mining industries? The extent to which local communities are involved in palm oil plantation?
Local Communities of Kalimantan Tengah and Kalimantan Timur	Palm oil farmers	2	The extent to which local communities are involved in palm oil plantation?
	Farmers (Indigenous people who used to carry out shifting cultivation)	2	What are the impacts of mining industries and palm oil plantations on local communities' livelihood and security?
	Farmers association leader	1	What are the impacts of mining industries and palm oil plantations on local communities' livelihood and security?
	Mining workers	2	To what extent did mining industries support their workers' means of livelihood?
	Shop owners (Local entrepreneur)	2	What are the impacts of mining industries and palm oil plantations on local communities' livelihood and security?
	Taxi drivers (Local entrepreneur)	2	What are the impacts of mining industries and palm oil plantations on local communities' livelihood and security?
	Lodge owners (Local entrepreneur)	2	What are the impacts of mining industries and palm oil plantations on local communities' livelihood and security?
National NGOs	AMAN	1	What are the impacts of mining industries and palm oil plantations on the environment, conflicts, and local communities' livelihood and security?
	Greenpeace	1	
	Jatam	1	
	Walhi	1	

participants were interviewed, with all the details and questions shown in Table 1.

Meanwhile, secondary data consists of official reports, including statistical data provided by the government, published and unpublished articles, and news from mass media. Most of the ones presented in this study were collected from the Indonesian statistical agency's website, namely the Indonesian Central Bureau of Statistics (Badan Pusat Statistik/ BPS). The secondary data are useful for triangulation to guarantee the validity of the research.

Data were analyzed using comparative process tracing methods. Firstly, cross-section analysis was used to compare the human security of local communities in Kalimantan Tengah and Kalimantan Timur (Rialp et al., 2005). It aimed at obtaining a detailed description of the case under

investigation and also to discover a puzzling outcome. This was followed by tracing the underlying causes of the different levels of human security. Process tracing methods played a major role in presenting historical analysis and causal mechanisms in the sequel events that occurred in the provinces (Beach & Pedersen, 2013; Collier, 2011). Therefore, this study also traced the human security of local communities before the mining and palm oil plantations operations.

3. Results and Discussions

Human security of local communities in Kalimantan Timur and Kalimantan Tengah

Based on the human security framework, this research analyzed freedom from fear, want (such as poverty and the

rate of unemployment), and to live in dignity. In several circumstances, both mining and palm oil plantations had triggered horizontal and vertical conflicts primarily related to tenurial problems of land conversion. These industries require a large area for their operations, and this led to massive land conversion in Kalimantan Tengah and Kalimantan Timur. An NGO, namely *Jaringan Tambang* (Jatam), reported that in 2016, approximately 93.36 million hectares of land were converted for mining purposes. Specifically, the percentage of mining areas in Samarinda, the capital city of Kalimantan Timur, was relatively 71% [Interview: Jatam Kalimantan Timur, 2017]. It was regarded as problematic because this municipal was a populous city whose population density was approximately 1,037.80 per km² in 2015 (BPS Kalimantan Timur Province, 2015). Therefore, the land conversion led to two main problems: conflicts and displacement that caused fear and threatened the dignity of local communities.

The mining maps of Samarinda city and Kalimantan Timur Province are shown in figures 1 and 2. The red, yellow, and green zones in Figure 1 show the area of coal mining in Samarinda City (Capital of Kalimantan Timur Province). Meanwhile, the orange zone in Figure 2 shows the mining areas in Kalimantan Timur, which are much wider than the yellow (farming areas) and blue zones (fishing areas). Moreover, there was an overlay between the province's mining, farming, and fishing areas.

On the other hand, Kalimantan Tengah focused on developing agriculture, especially palm oil plantations, instead of mining areas. The red zone in Figure 3 shows the area used for palm oil plantations in Kalimantan Tengah. The conflicts did not only occur due to disagreement on land-related issues between the local communities and industries. Rather it was also due to the ineffectiveness, inefficiency, and ambiguity of the regulatory framework of land ownership and usage in Indonesia, especially during the decentralization era in Kalimantan provinces [Interview

government official 1-2, 2017]. Decentralization contributed to the uncertain regulations due to an overlapping and unclear division of tasks and functions between the local and national governments. Unfortunately, it worsened communal conflict in Indonesia (Sujarwoto, 2017). In many cases, there was an overlap of land ownership, leading to

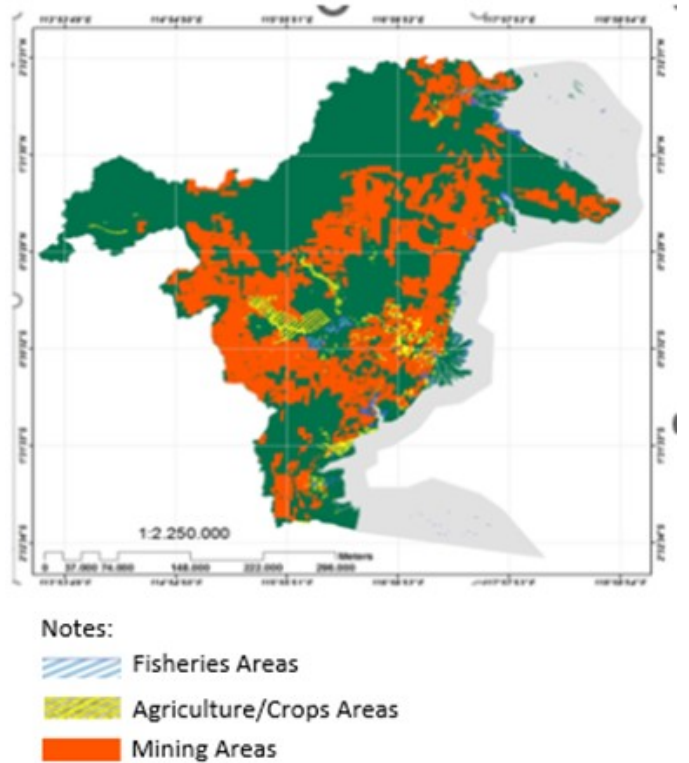


Figure 2. Map of Coal Mining in Kalimantan Timur
Source: Adapted from map issued by Jatam Kalimantan Timur

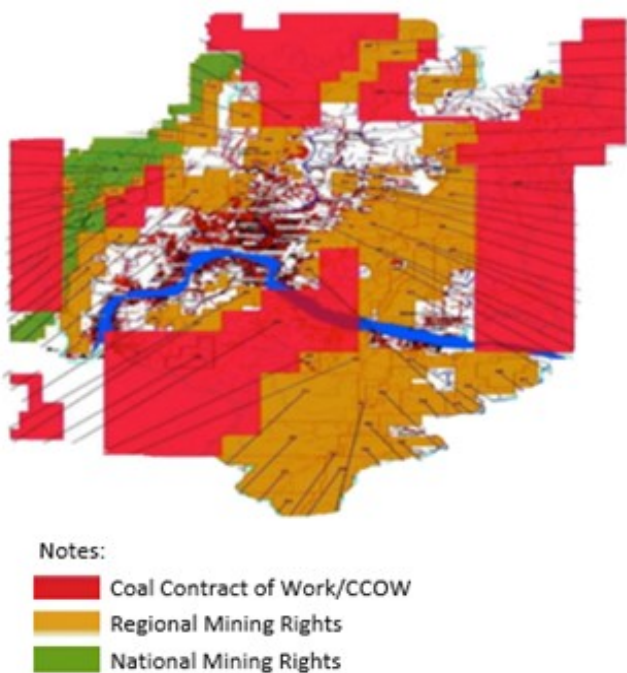


Figure 1. Map of Coal Mining in Samarinda City
Source: Jatam Kalimantan Timur

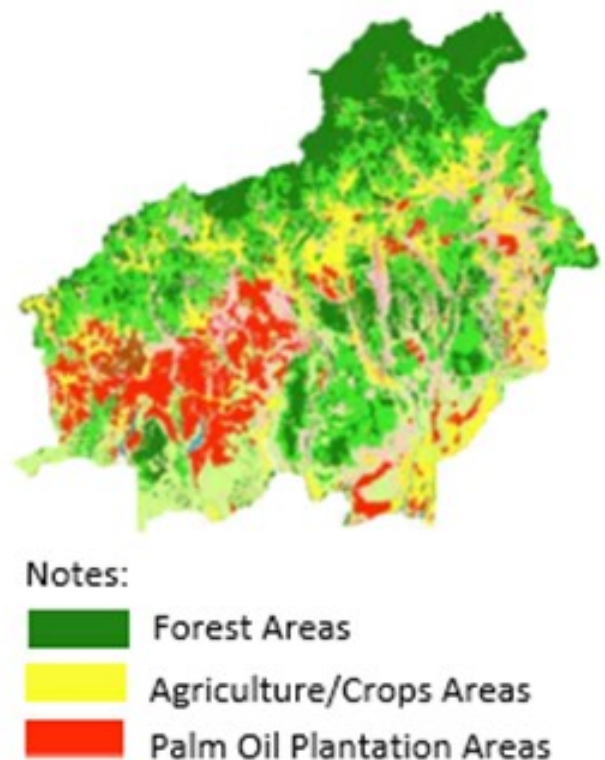


Figure 3. Map of Palm Oil Plantation (2016)
Source: (Sharma et al., 2018)

the complexity of land problems. During the interview session, an interviewee in Samarinda stated that they encountered verbal and physical threats because of conflict regarding land claims [Interview: local communities 8 & 12, 2017]. NGOs, such as Jatam and *Aliansi Masyarakat Adat Nusantara* (AMAN), and Greenpeace, also emphasized acute land issues that triggered horizontal and vertical conflicts [Interview: Greenpeace Indonesia, 2017; AMAN Paser East Kalimantan, 2017; Jatam East Kalimantan, 2017].

The industries converted private and public land ownership managed by the Ministry of Environment and Forestry. Meanwhile, the negotiation process between landowners and the company often influenced the indigenous people's means of livelihood. Many indigenous people do not have legal rights to land ownership even though they have been living in these areas since their ancestors. Therefore, they were unable to defend their lands from being converted. This also led to their displacement, and these local communities were also unable to carry out their spiritual events. For many indigenous people in Kalimantan Island, such as the Dayak, the forest was the source of food and other basic need and for spiritual purposes related to ancient beliefs. From the human security perspective, land problems triggered violence and fear and threatened the dignity of local communities [Interview: Jatam Kalimantan Timur, 2017; local communities 3, 4, 7-12, 2017].

These industries cause conflicts and displacement, despite generating income for the provinces. However,

compared to Kalimantan Tengah, which focused on agriculture, especially palm oil, Kalimantan Timur generated a higher income due to the mining industry, as shown in Figure 4.

This figure showed that the mining industry had generated high regional income at the macro level compared to Kalimantan Tengah. Based on this, a government official from this province stated that:

Mining generated high income that increased gross regional domestic product and created an economic opportunity for the indigenes to open shops, dormitories, laundry, and others. However, this lasted for only a short term, especially when the mining industry was operational [Interview: government official 1, 2017]

Similarly, another government official from Barito Utara Regency, Kalimantan Tengah province, agrees that mining supports regional income [Interview: government official 6, 2017].

Nevertheless, economic dependency on unprocessed materials such as raw mining endangered regional and national development (Putri et al., 2019). Developmental programs tend to be vulnerable because of the fluctuating prices of raw materials in the international market. The evidence obtained in Kalimantan Timur province from 2010 to 2015 showed that its economic growth declined sharply since 2012 and was further reduced to a negative sign in 2015, as shown in Figure 5. This was caused by a decline in global coal prices [Interview: government official 1, 2017].

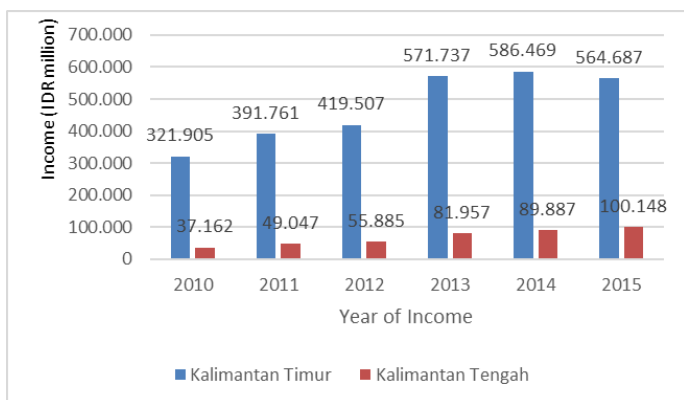


Figure 4. Regional income of Kalimantan Timur and Kalimantan Tengah, from 2010 to 2015

Source: BPS Kalimantan Tengah Province, 2012, 2014, 2016; BPS Kalimantan Timur Province, 2012, 2014, 2016



Figure 6. Land conversion from agriculture to mining

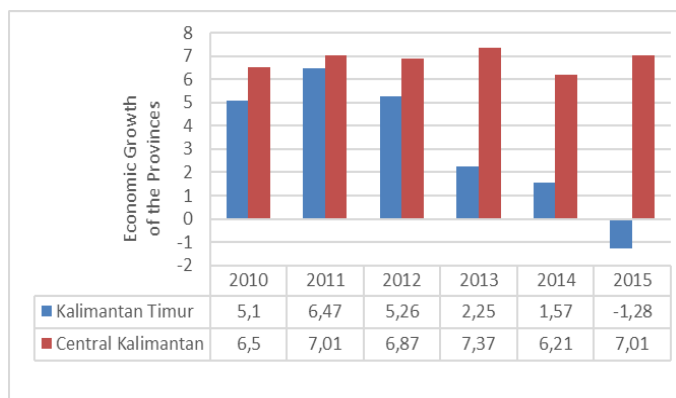


Figure 5. Trend of economic growth of Kalimantan Timur and Kalimantan Tengah

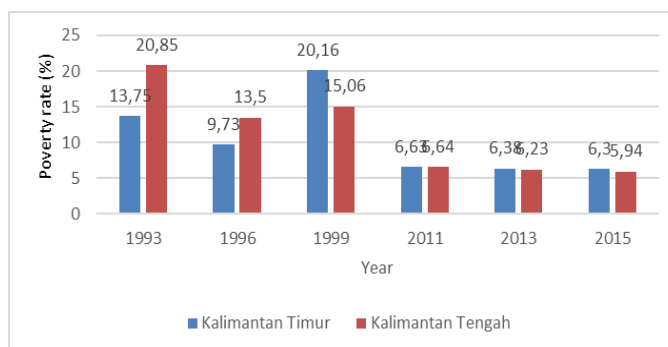


Figure 7. The poverty rate in Kalimantan Timur and Kalimantan Tengah

Source: BPS, 1998; BPS Provinsi Kalimantan Tengah, 2012, 2014, 2016; BPS Provinsi Kalimantan Timur, 2012, 2014, 2016

The mining industry had diverse economic impacts on different stakeholders at the local level. Local entrepreneurs benefitted from this sector by opening shops, accommodation, transportation, laundry, restaurants, and other services (Setiadi, 2020). However, the sustainability of jobs depends on their operations [Interview local communities 7-12, 2017]. An indigene of Samarinda, Kalimantan Timur, who owns a lodge business, stated that their rooms are filled with tenants whenever the mining industry is operational [Interview: local communities 12, 2017]. Unfortunately, due to the closure of the mining operations, only relatively 20 percent of the room was rented by the workers. Similarly, a taxi driver in Kalimantan Timur stated that:

'I earned a high income when the mining industry operated because many customers hired my service. However, since many mining companies had reduced their operations, my income dropped by 75%. This issue was encountered by virtually all local entrepreneurs' [Interview: local communities 9, 2017].

In contrast, farmers were threatened by the mining industry. The farmers' association leader in the Kutai Kartanegara regency stated that their lands were used for mining activities. As a result, they did not have enough income to meet their daily needs. The leader compared the situation before and after the mining operations. Accordingly, farmers earned higher income before the mining activities commenced [Interview, Local Communities 5, 2017]. Figure 6 shows the conversion of farmlands to mining areas. This fact was parallel to the statement of farmers from Barito Utara regency, the center of coal mining in Kalimantan Tengah. The indigenes usually gathered food from the forest or practiced shifting cultivation. However, after the mining operations commenced in their area, they lost their source of food and income [Interview, Local Communities 3-4, 2017].

The land is an essential element of farmers' life. Therefore, the conversion of farmlands to mining activities caused them to lose their jobs. Nevertheless, the use of this sector as a replacement for farming tends not to be able to provide job opportunities for farmers since mining is a capital-intensive industry. As opposed to agriculture, it only hired limited skillful workers for which farmers were unable to meet the requirements of the job recruitment [Interview: government official 1-4, 2017]. It caused an increase in the unemployment rate in Kalimantan Timur. It was even the highest at the national level in 2017 (Antara Kaltim, 2016; BPS, 2018; Detik Finance, 2017; Liputan6.com, 2017). The loss of land and space was simply a means of livelihood, which led to a decrease in the welfare of local communities (Setiadi, 2020).

On the other hand, while palm oil plantation does not generate an income as high as mining, they provide job opportunities for the indigenes. It employed a collaborative operation between farmers and companies under the *inti plasma* scheme. In the past, there was an effort to encourage farmers' empowerment by strengthening the role of cooperatives. Therefore, compared to the mining industries, which alienated the farmers, palm oil plantation allows them to continue with their jobs and obtain income from this sector [Interview: government official 5-8, 2017].

The farmers at Kalimantan Tengah are relatively able to satisfy their basic needs, such as food, education, and housing. One of them from Bintang Ninggi village, Kalimantan Tengah province, stated that they were able to send their sons to the university to get a bachelor's degree. Furthermore, their neighbors had a similar opinion, and they had no problem with food and other basic needs as they were able to plant vegetables and raise livestock in their field [Interview: local communities 7, 8, & 9, 2017].

This condition was parallel to the poverty rate in Kalimantan Tengah and Kalimantan Timur, as published by BPS. Figure 4 showed that Kalimantan Timur had a higher regional income than Kalimantan Tengah. This was approximately five to ten times that generated by Kalimantan Tengah. Normally, high income facilitates development and human security protection. Nevertheless, after the mining operation, the poverty rate in Kalimantan Timur was even higher than that of Kalimantan Tengah, as shown in Figure 7.

This analysis does not prove that Kalimantan Timur was poor, but one of the richest provinces in the country. However, this research focused on the level of poverty rates in these provinces both before and after the mining operations. Figure 7 showed that in 1993 and 1996, when the mining industries started to operate in Kalimantan Timur, the poverty rate was lower than in Kalimantan Tengah. Nevertheless, it turned out to be higher in the late 90s. It took a decade for the mining industries to impact local communities directly. The operation of mining activities, in the long run, was dependent on several steps, including general survey, exploration, feasibility studies, mining construction, production, and reclamation (Pwc, 2018). As a result, since the late 90s, the poverty rate in Kalimantan Timur has been higher than that in Kalimantan Tengah.

By comparing the impacts of these industries on the human security of local communities, this study reportedly argued that coal mining was more destructive than palm oil plantations. As stated by some NGOs, which were part of the participants, mining had caused the displacement of these local communities since its operational activities required a large area. Unfortunately, they lost their means of livelihood and also housing [Interview: Greenpeace Indonesia, 2017; AMAN Paser Kalimantan Timur, 2017; Jatam Kalimantan Timur, 2017]. Displacement causes fear due to horizontal and vertical conflict and threatens the freedom to live a dignified life. These local communities lacked dignity since displacement abused human rights and ignored their existence.

While the poverty rate in Kalimantan Timur is higher than in Kalimantan Tengah, Kalimantan Timur has a high human development index (HDI). This was higher than that of the Kalimantan Tengah and also other provinces in the Eastern part of Indonesia (BPS Provinsi Kalimantan Timur, 2012, 2014, 2016). In this case, it was argued that a high level of HDI does not necessarily reflect the human security of local communities. More specifically, it does not equate with a low poverty level and unemployment rate. According to the UNDP, 'the HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment, etc.' (UNDP, n.d.). HDI reflects on the developmental goal of

all communities, which shows a summary of the average achievement' of human development, comprising aspects of health, education, and the standard of living (*ibid.*). Therefore, it was not concerned with a specific aspect of poverty at the individual level, which reflects a downside risk of development as well as the vulnerability of poor people. In contrast, HDI reflects the average achievement of developmental goals in other regions or countries.

The situation in Kalimantan Timur indicated an unequal distribution of wealth in the province. Income inequality explained the conditions under which Kalimantan Timur had a higher HDI, unemployment, or poverty rate than Kalimantan Tengah. Some of the indigenes benefitted from the mining sector. They became rich and were able to afford quality education, health, and a high standard of living. On the other hand, some part of these communities lost their jobs and means of livelihood. They were unable to meet the basic human needs, both food and material items. Consequently, this shaped the poverty and unemployment rate in Kalimantan Timur. It equated with the trend of the Gini ratio, which proved that the unemployment rate in Kalimantan Timur was higher than that in Kalimantan Tengah (BPS, 2019).

This research argued that unemployment shaped the poverty rate and unequal wealth distribution (Pohlig, 2019). It was higher in Kalimantan Timur than in Kalimantan Tengah as well as other Indonesian provinces on average. For instance, in Kalimantan Timur, the unemployment rates recorded in February 2010, 2012, 2014, and 2016 were 10.45%, 9.48%, 8.89%, and 7.27%, respectively. Meanwhile, in Kalimantan Tengah 3.38%, 2.73%, 2.71%, and 3.67%, were recorded in February 2010, 2012, 2014 and 2016, respectively (BPS, 2019). This figure proved that the unemployment rate in Kalimantan Timur was almost triple that of Kalimantan Tengah. This raised curiosity about why Kalimantan Timur had a higher poverty level than Kalimantan Tengah. Polanyi's conception of commodification and embeddedness was adopted to address this puzzle.

The commodification of land and labor and embeddedness in the mining industry and palm oil plantation

Based on process tracing analysis, it was argued that the underlying factors of unemployment, poverty, and inequality can be traced to the commodification of land and labor since the inception of these industries. This referred to commercializing of land and labor. The source of the commodification of land and labor is the free market, where the private sector has the opportunity to manage these assets (Peck, 2013; Sandbrook, 2011). In contrast, decommodification or protection of land and labor frequently occurred due to state intervention in the industries. Therefore, it reflected the importance of the state's role in preventing the commodification of land and labor.

According to Polanyi (2001), labor referred to 'human activity that aligned with life itself, while the land was described as 'another name for nature, although not given by man. Therefore, they were not for sale since none of these elements are produced concerning economic activities. The commodification of labor can be seen in establishing labor markets where 'the natives were forced

to make a living by exhibiting their crafts' (Polanyi et al., 2001). As a result, this had disrupted society, thereby causing insecurity, since the boosting of economic growth through this process led to inequality as well as social and environmental problems (Soubbotina & Seram, 2000; Polanyi, 2001). Simply put, while the investors became richer due to these industries, local communities were impoverished by disposing of access and using ancestral assets due to land grabbing and environmental degradation. In the context of this research, the commodification of land was understood as land grabbing by the mining industry and palm oil plantations. Meanwhile, that of labor was seen in the alienation of unskilled laborers due to the competitiveness in the job market. It was argued that while both coal mining and palm oil plantations commodified land through land grabbing, that of labor was different. The mining sector had converted the land that was formally used for agricultural purposes, and this caused the local communities to lose their means of livelihood. This technological- and capital-intensive industry utilized modern technology in its operation. Consequently, the mining sector offered low job opportunities, which were only allocated to the limited skilled labor as opposed to a massive unskilled workforce. It was evident that compared to all sectors, this industry only hired approximately less than 1.5% of all other establishments (BPS, 2016; ILO, 2015). In other words, while mining institutions developed programs to mitigate risks such as community benefit agreement and also sociological approaches for reducing political, cultural, and financial hazards (Taarup-Esbensen, 2020), corporate social responsibility (CSR), peaceful negotiation (Hudayana et al., 2020), the commodification of land in the mining sector remained a huge threat for the local people's freedom.

Based on Polanyi's point of view, threats to local people's freedom can be minimized by embedding these industries with social and political institutions (Peck, 2013). Polanyi further stated that the economy was unable to survive without state intervention and its embeddedness in social institutions. Irrespective of this fact, it was unable to serve certain social needs such as education, health care, as well as supporting the peoples' means of livelihood (Roy & Grant, 2020). Therefore, to achieve developmental goals as well as mitigate social and environmental problems, the industries initiated programs by which a reciprocal obligation and mutual understanding between these sectors and the local community was constructed.

In Indonesia, the mining sector had certain impacts on the 'natives' or local communities. This is not only about selling labor to the markets but on displacement and unemployment. Local communities had to move from their lands and lose their means of livelihood due to the conversion of agricultural to mining areas. Local communities that used to work in the traditional agricultural sector were unable to compete in the labor markets or work in technologically intensive industries such as mining. Unskilled laborers lost their jobs due to their inability to meet the requirements of the job market. This scheme was seen in Kalimantan Timur province, which was the center of coal mining despite having a higher unemployment rate than Kalimantan Tengah and the national average (BPS, 2019). Additionally, this also

triggered its poverty rate. Although the regional income generated from the mining sector was high compared to other provinces, this led to unemployment in the local communities.

On the other hand, the commodification of land used for palm oil plantation in Kalimantan Tengah was not necessarily followed by labor. Palm oil plantation, which was operated based on the skill of local communities, provided job opportunities. Land grabbing was undeniably executed, and nevertheless, the indigenes were involved. Despite its environmental and social impacts, palm oil plantations became a hub or meeting point for government programs, companies, and rural economic development, which was useful for strengthening and empowering the livelihood system (Dharmawan et al., 2020). Therefore, these local communities were able to obtain a means of livelihood and benefitted from the industry.

Palm oil plantation is governed under an integrated system, namely the 'Nucleus Estate Scheme' (NES). This system integrates the smallholdings of local communities within modern plantation companies, thereby employing the process of production as well as direct income and benefits (Hasnah, Fleming, & Coelli, 2004; World Bank, 2012; Semedi & Bakker, 2014). NES provides a reciprocal obligation as well as mutual benefits between its two key players, namely independent plasma smallholders and large-scale oil palm companies. They established partnership relations related to the production of oil palm. Smallholders provide raw materials, while the companies are responsible for the processing and marketing oil palm (Dharmawan et al., 2020).

From the human security point of view, palm oil plantation under NES is suitable for empowering smallholders or vulnerable people in rural areas. Empowerment refers to strategies aimed at developing the capabilities of individuals, thereby ensuring that they are resilient to difficult situations (Human Security Unit, 2009). NES is a partnership between plantation firms and local farmers. In the Indonesian context, its operations since the 1980s successfully encourage the economic productivity of neighboring smallholders and farmers (Jakarta Post, 2018; Semedi & Bakker, 2014). This evidence proves that the state intervention in palm oil industries has successfully prevented the commodification of land and labor, thereby encouraging the human security of local communities. It created job opportunities and eradicating poverty in local communities (Pye, 2019).

Conclusion

Based on the UNDP's framework, this study discovered that Kalimantan Tengah has better human security in local communities than Kalimantan Timur. Although both provinces encountered horizontal conflicts and environmental problems due to the industries, they have different impacts regarding freedom from want. The comparison of poverty and unemployment rate in the provinces before and after the mining industries and palm oil plantations shows Kalimantan Timur generated a high regional income from mining, which does not necessarily reflect the human security of local communities.

This research analyzed the underlying factors of such conditions based on the Polanyian perspective of the

commodification of land and labor and the notion of embeddedness. Accordingly, the state income from mining was obtained under these conditions, which triggered the unemployment rate. The commodification of land in the mining sector was followed by that of labor. As a result, this caused the indigenes to lose their means of livelihood and job opportunities, which in turn triggered the poverty rate. In contrast, the commodification of land in palm oil plantations does not necessarily lead to that of labor. Indeed, under the NES system, local communities were actively involved in the operation of palm oil plantations and benefitted from these industries.

In this regard, this study suggests that the commodification of land and labor can be limited through state intervention. Building on the Polanyian perspective, privatization under a free-market system led to the commodification of land and labor, thereby threatening the fundamental freedom of local communities. Therefore, this study recommends that state intervention in both coal mining and palm oil plantation was important for protecting the human security of local communities. It is useful for preventing the commodification of land and labor. More specifically, in order to enhance the human security of local communities, the government needs to expand the realization of the embeddedness of the industries within social and political institutions.

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- Interview participants
- Government official 1: Regional Development Agency of Kalimantan Tengah
- Government official 2: Regional Development Agency of Kalimantan Timur
- Government official 3: Agency of Manpower and Transmigration, Kalimantan Timur
- Government official 4: Agency of Manpower and Transmigration, Kalimantan Tengah
- Government official 5: Agency of Energy and Mineral Resources, Kalimantan Timur
- Government official 6: Agency of Energy and Mineral Resources, Barito Utara Regency, Kalimantan Tengah
- Government official 7: Plantation Office, Kalimantan Timur
- Government official 8: Plantation Office, Kalimantan Tengah
- Local community 1: palm oil farmer
- Local community 2: palm oil farmer
- Local community 3: farmer (Indigenous people who used to conduct shifting cultivation)
- Local community 4: farmer (Indigenous people who used to conduct shifting cultivation)
- Local community 5: farmer association leader
- Local community 6: Mining workers
- Local community 7: Mining workers
- Local community 8: Shop owners (Local entrepreneur)
- Local community 9: Shop owners (Local entrepreneur)
- Local community 10: Taxi drivers (Local entrepreneur)
- Local community 11: Taxi drivers (Local entrepreneur)
- Local community 12: Lodge owners (Local entrepreneur)
- Local community 13: Lodge owners (Local entrepreneur)
- Greenpeace Indonesia
- Aliansi Masyarakat Adat Nusantara
- Jaringan Tambang Indonesia
- Walhi