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RURAL LIVELIHOOD TRANSFORMATIONS AND LAND INEQUALITY IN BANGKA

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Abstract: Since the Dutch colonial era, Bangka Belitung Province has been a rich province due to its abundant tin mining resources. However, the limitation of tin availability and the extraordinary environmental degradation caused by mining has changed people's lives. This study aims to determine the level of land ownership inequality and the factors that influence such inequality. In addition, this study also describes the transformation causes of the livelihoods of the majority of the population in Bangka. This research was conducted through descriptive quantitative analysis, and the data was obtained through a survey of 140 head of households who work as farmers or work as a farm labourers in Bangka and West Bangka. Analysis of land ownership inequality is done through the Gini index ratio measured using the Lorenz curve. The results of a study conducted on 140 respondents in Bangka and Bangka Barat show that the level of land ownership inequality reaches 0.45. Several things have an effect on the level of inequality. First, most of Bangka regions, almost 3/4 the areas have mining permits. Second, there has been a large-scale expansion of oil palm plantations and a lot of Cultivation Rights Permits/HGU. Third, most of the areas outside the mining and the cultivation rights permits are forest areas. The results of the study also show that the majority of the community shifted from miners to farmers due to limited tin sources and low tin prices. The high level of inequality in land ownership and the shifting of community's main jobs can certainly affect the economic growth which is getting weaker and widening the inequality.

Keywords: Land Inequality, Land tenure, Land ownership, Livelihood transformations

A. Background

Bangka Belitung Province (Babel) is a division of South Sumatra Province which was declared on February 2, 2001. Bangka Belitung is known as the best and the second largest producer of tin in the world which has been operating since the 1709s (Osberger in Suteja 2007; Meyzilia 2018). Tin is the largest source of local government revenue in Bangka Belitung and also a leading export commodity (Rusfiana 2019). Taxes, fixed contribution and other contributions (Law Number 11 of 1967) generated from tin mining sources

in Bangka Belitung are able to suffice the needs of regional development. The existence of tin was excavated by the Dutch colonizer in 1816 to 1942 by utilizing indigenous labor for forced labor (Erman 2010).

After the independence of Indonesia, PT. Timah TBK and PT. Koba Tin started tin mining with appropriate equipment and technology. However, some people conducted illegal mining known as unconventional / IT mining (Zulkarnain 2007; Erman 2010). The existence of tin and the tin companies operation actually increase the level

of local government revenue and also suffice the infrastructure construction. On the other hand, the tin mining operation not only dig in land but also in rivers, lakes, and oceans offshores resulting environmental damage and threat of disaster (Setiadi 2006; Yuliana 2017; Rismika 2019; Rusfiana 2019). Besides damaging the environment, the negative impacts caused by mining are greater when it compared with the mining result (Sari 2015).

Tin mining is carried out continuously by large-scale companies (PT Timah Tbk, PT Koba Tin), small-scale companies, mining partner systems, or known as Mining Works, and by the community (Lutfi 2008). The tin availability on land is decreasing and causing land damage, the emergence of former tin mining pits that have not or never been reclaimed. This environmental damage is clearly massive in Bangka Belitung (both West Bangka and Bangka Regency). When observed the appearance of satellite imagery, a typical view of Indonesia's largest tin-producing province can be seen. There are 67% of the land mass in Bangka Belitung is registered as an area that requires reclamation.

The limited availability of tin on land makes the capital holders begin tin mining operations in the offshore area. From the data shows that the result of tin mining operations in the offshore area impacted on the destruction of 57% of corals in Bangka Regency sea and 29% of waters suffered damage in South Bangka. Tin mining at sea using suction vessels also has a significant impact on the reduction in the number of fish catches (Erman 2010; Rismika 2019). Exploration often impacts on environmental damage and adversely affects the tourism potential in Bangka and Belitung because the dumped mud pollutes the beach and damages the beauty of coral reefs (Syahputra 2018, 91-105).

Since 1991, global tin prices have declined dramatically, certainly it has impact on mining operations. One of them is PT. Timah Tbk, which has quite extensive land operations, 330,664.09 Ha or controls almost 35% (Erwin 2010) of the Bangka region. PT. Timah Tbk. started to stop some of its business because of high operational

costs, while the selling price dropped or was low. As a result of this condition, the community starts to mine the former tin land that had been abandoned by PT. Timah Tbk. Unconventional tin mining is done traditionally with simple equipment by the community;¹ on its journey, it began to widen and encroach on forest areas, protected forest areas, conservation forests and watershed protected areas (Yuliana 2017). This various damage continues to occur both on land and sea, further attracts the community's attention, especially fishermen through peaceful protests, WALHI, environmentalists and the government to control community mining operations and companies in Bangka Belitung.

Because of the situation, in 2007 the Governor of Bangka Belitung promoted the sustainable green Babel, a movement of social care environment. In 2016, the governor established the Decree of Bangka Belitung Governor number 540/40 /DPE on January 18, 2016 concerning the temporary termination of KK and KIP in the Deniang Sea, Kelabat Bay and Tempilang Sea areas (Pratama 2018). This step is only an effort to reduce the continuous impact of mining; but this effort has not succeeded in saving Babel from massive environmental damage that has reached 67 % of the total areas.

Beside an environmental issues, the impact of tin mining also touches on social, political, and economic aspects. The settlement efforts to the socio-economic and community cultural impact have severe challenges. Even though Bangka Belitung has a high level of local government revenue, the poverty rate in Babel is very high (Babel Province 2015, BPS 2018). BPS data for 2017 shows the level of poverty in Babel has increased, the percentage of poor people reaches 5.2%. The na-

¹ With the enactment of Law Number 32 of 2004 the Regional Government and Law Number 4 concerning Minerba has given the regional government the freedom to manage mining. Massive mining by the public and private parties began to bloom since the enactment of Regional Regulation Number 6 of 2011. With the enactment of Law Number 32 of 2004 the Regional Government and Law Number 4 of Minerba has given freedom for local governments to manage mining.

tional data analysis also shows that in 2019 several provinces can reduce poverty except Bangka Belitung, Riau, North Maluku, and Papua Provinces which have increasing number of poor people (BPS, 2019). Todaro and Smith (2004) stated that the development success is indicated by the low level of income disparity, the low number of poor people, and low level of unemployment.

In connection with the discussion above, the study in this research would like to explain the imbalance and the gap that occurred, several analytical models are used to see the complete building of the argument. Moore's approach is interesting to see: the potential for political conflict and also natural resources are very likely caused by economic inequality which are the causes of the agreement (Moore 1996, 336). This situation can be overcome by policies related to make the rent of the land cheaper to improve the welfare of the community (Bramall 2000, 43), but the choice of policy was not made in the Bangka Belitung to reduce land tenure inequality and the potential for conflict in the community.

Furthermore, this study also wants to discuss how the division of community agricultural land in Bangka Regency; whilst the condition of Bangka, most of its territory has been granted mining and HGU permits for plantations. This study also wants to describe how the level of income of people working in the agricultural sector with various types of agriculture. The research methods are quantitative descriptive. Data obtained by conducting surveys of agricultural land ownership and how to obtain income derived from the community from the results of their efforts. Data analysis was performed descriptively using Lorenz curve to evaluate how the level of distribution of community ownership is. In addition, for the analysis of data on agricultural commodities cultivated by the community can be done by income assessments conducted with quantitative descriptive evaluation.

B. Agriculture as a Source of Community Livelihood

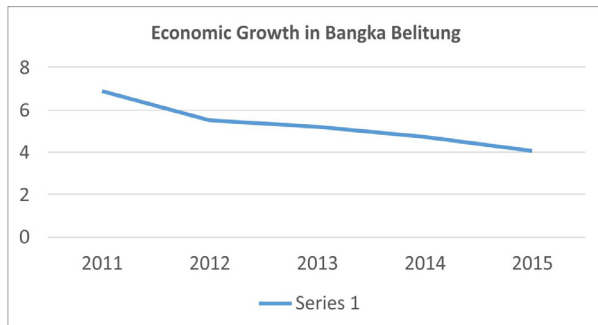
The agricultural sector is the choice of some

communities who previously worked as miners or miner labors. Abandoned agricultural land they had owned as miners, now it slowly begins reprocessing. The condition happened because almost 3/4 of the total areas in Bangka Belitung have been granted mining permits; as a result, the availability of land for agricultural processing is very limited. Moreover, 1/4 of the areas have also been given other permits besides mining permits, the HGU permits for large scale companies. The narrow land availability has an impact on the limited ownership of agricultural land cultivated by the community. The fact shows that in Babel there is a lot of land expansion by large-scale plantations that are starting to work on oil palm cultivation.

Agriculture is one of the people's choices to continue their lives. The falling of tin price and supervision or control of illegal mining business operations has made the community afraid to take illegal mining actions. The mining sector finally abandoned by the community due to the high number of mining accident caused by manual illegal mining and the erratic income from mining products. The emergence of community awareness and concern for environmental conditions which post mining occurs environmental damage and even disasters make people start thinking again to continue mining activities conventionally. As the expertise, skills and level of education are limited, the communities are unable to survive and compete with other young workers to work in the upper middle business sector such as the industrial, education, health or other sectors that rely on certain expertise. This reason makes the agricultural sector becomes the life choice of most communities to continue their lives, because this sector is considered as the easiest and does not require special expertise.

Changes in livelihoods and community culture that originally rely on the mining sector which only focuses on physical work and disregards certain education and skills become Bangka Belitung communities' life problems. The falling of tin prices has led to the deterioration of economic growth in Bangka Belitung. Adhiani (2018) in his study explains that economic growth in

Bangka Belitung shows a number that continues to decline. Since tin prices declined, Bangka Belitung economy also continued to decline, as can be seen in table 1.



Picture 1. Economic growth in Bangka Belitung province. Source: Adhiana 2018

Besides being known as the best tin producer in the world, Bangka Regency is an island also well known for its pepper commodities. The outcomes of pepper commodities in this district are exported to foreign countries because they have super quality and distinctive taste. Ten years ago, the price of pepper reached 120,000 to 150,000/ kg, but now the price of pepper in the world has decreased dramatically to only Rp. 60,000 to 80,000/kg.

This condition makes pepper farmers in Bangka suffer from decreasing income and causes some people fall into poverty. In addition, pepper commodities are not the only one. The community of Bangka Regency also grows rubber trees. They have been cultivating the trees since the period of their ancestors. However, the collapse of world rubber prices made the communities' economic condition weaker. The results of field studies show that previously, people could rely on their lives from the business of pepper and rubber; but with the declining prices of pepper and rubber, the communities experienced shortcomings and limitations to fulfill their daily needs.

In the middle of the falling tin, pepper, and rubber prices in the 1990s, the cultivation of oil palm began to operate in this region. Several large-scale companies began to expand oil palm plantations and buy arable land owned by the community. The success of the large-scale companies in cultivating oil palms make most of the commu-

nities who have capital begin to change their agricultural land which was previously a rubber plant and pepper to become oil palms. While, the lower level people who do not have capital still continue growing pepper and rubber plants, and some of them even only become laborers on oil palm plantations.

C. Inequality of Land Ownership in Bangka

The community inequality found in Indonesia will have an impact on various aspects of community's life as well as cause slow economic growth², difficulty in alleviating poverty and lead to the emergence of various conflicts (World Bank & Australian Aid 2016). Inequality in land ownership is a fundamental problem and becomes a chronic problem that occurs in this republic. This continuous disparity in land ownership is one of the main factors in the high level of income inequality. Then, a study conducted by Haryanah (2017) shows that for the past 10 years there has been a tendency of the income gap is increasing in Indonesia. Various efforts to reduce inequality have been made by the government. One of the agendas/policies to reduce this level of inequality is through an agrarian reform program. However, these efforts have not been able to resolve and finish the problem of inequality that occurs in various regions throughout the country because the large-scale land tenure is rooted and strong, and the power of capitalism continues to operate. Moreover, the political system is still in favor of the authorities and capital holders; then, the legal and institutional systems are still weak to create justice and equal distribution of natural resources, especially land.

This portrait of inequality in land ownership is very visible in Bangka Belitung. Based on the results of studies conducted through surveys in the West Bangka Regency and in Bangka Regency, it shows that inequality occurs because: firstly, in Bangka and West Bangka regions, some areas have been granted the right to mining permits.

² A study conducted by Amri (2017) states that income inequality can affect the economic growth of a region. Meanwhile, when land inequality occurs, it certainly can lead to high income inequality.

Land tenure by mining companies that still operates in West Bangka and Bangka is fenced and guarded by security officers. The existence of the permit that is still controlled by the entrepreneur causes the community unable to access natural resources in the form of land. While, the abandoned land that has been mined in the form of open pits by companies or illegal mining is not possible to be processed into fertile agricultural land by the community. Reclamation efforts can be done but requires huge costs and efforts, which is not possible for people who have economic limitations. Based on these conditions, the existence of tin mining in this context causes the loss of broader community opportunities to access sustainable economic value through agricultural and plantation efforts (Manik 2014).

Secondly, the narrow ownership of land owned by the majority of people in Bangka and West Bangka is due to the expansion of oil palm plantations businesses. Strong capital and network ownership of large-scale stock and plantation growers can convert lands in Bangka and West Bangka for oiling palm plantations. The issuance of HGU permits in this province will certainly displace access to land that should be allocated mostly to the community. The results of the study conducted and the recognition of several respondents state that in West Bangka Regency and Bangka, fertile land mostly have been controlled

by people or companies outside Bangka or West Bangka area who have bought, rented or undergone the processing permit system of land for oiling palm cultivation.

Thirdly, the fundamental factor that makes the high level of inequality in land ownership in Bangka is because most of the areas outside the mining permit area or outside the HGU permit are forest areas. The results of the field study, especially in West Bangka, show that land cover in forest areas has changed a lot. The physical condition of the land is no longer a forest area where land cover is in the form of fields with high-density vegetation.

The obtained data of a study conducted through a survey to 140 farmers in two districts namely West Bangka and Bangka where sampling is done randomly are presented in table 2. Types of agriculture in Bangka and West Bangka are different from the one in Java where in the two regencies, the surveyed agricultural land was dry farming. In these 2 regencies, it will be very difficult to find wet agricultural land cultivated for rice. Efforts to create paddy fields have been carried out by the government, but due to the limitations of irrigation channels and the availability of water, the paddy fields cultivated by the community only produce a limited amount of rice harvest. Thus, the land used in this study is the dry agricultural land because the paddy farms are the small-scale ones.

Table 1. Distribution of community's agricultural land ownership in West Bangka and Bangka

| Surface area group (Ha) | Number of plots of land | Average land area (m ²) | % Cumulative number of fields (Xk) | Total area | % Cumulative area (Yk) | Xk-Xk-1 | Yk+Yk-1 | (Xk-Xk-1)x(Yk+Yk-1) |
|--------------------------------|-------------------------|-------------------------------------|------------------------------------|------------|------------------------|----------|----------|---------------------|
| <0.1 | 1 | 785 | 0,007142857 | 785 | 0,000322766 | 0,007143 | 0,000323 | 2,30547E-06 |
| 0.1-0.19 | 5 | 1.480 | 0,042857143 | 7.400 | 0,003365397 | 0,035714 | 0,003688 | 0,00013172 |
| 0.2-0.49 | 9 | 2.500 | 0,107142857 | 22.500 | 0,012616643 | 0,064286 | 0,015982 | 0,001027417 |
| 0.5-0.99 | 29 | 5.610 | 0,314285714 | 162.690 | 0,079509314 | 0,207143 | 0,092126 | 0,019083234 |
| 1-1.99 | 44 | 11.608 | 0,628571429 | 510.730 | 0,289504359 | 0,314286 | 0,369014 | 0,115975726 |
| 2-2.99 | 32 | 20.563 | 0,857142857 | 658.000 | 0,560051889 | 0,228571 | 0,849556 | 0,194184285 |
| 3-3.99 | 5 | 30.000 | 0,892857143 | 150.000 | 0,621726858 | 0,035714 | 1,181779 | 0,042206384 |
| 4-4.99 | 1 | 40.000 | 0,9 | 40.000 | 0,638173516 | 0,007143 | 1,2599 | 0,008999288 |
| 5.0-10.0 | 12 | 56.667 | 0,985714286 | 680.000 | 0,917766708 | 0,085714 | 1,55594 | 0,133366305 |
| 10.0-20.0 | 2 | 100.000 | 1 | 200.000 | 1 | 0,014286 | 1,917767 | 0,027396667 |
| The whole amount of lot | 140 | | | 2.432.105 | | | | 0,542373332 |

Source: Data Analysis, 2018

The data presented in table 2 show that most people in Bangka have an area of land ranging from 1 to 2 hectares. However, the number of people with dry agricultural land under 1 Ha is quite high, reaching 44 people or 31% of the respondents. While, there are 38 households with land ownership of more than 2 hectares to below 5 hectares. Then, the land privately owned by households above 5 hectares to 20 hectares belong to 14 households. Distribution of ownership of dry land is only done for households without touching and including the large-scale land area owned by companies that hold HGU permits. If this data are included, of course, the level of inequality in agricultural land ownership has a higher Gini index.

Based on the results of the analysis, the distribution of agricultural land ownership data is then analysed using Lorenz curve to find out Gini index of the inequality level of agricultural land ownership in Bangka or West Bangka regencies. The analysis shows that Gini ratio of land ownership inequality reaches 0.45. Lorenz curve shows the degree of inequality in land ownership in Bangka and West Bangka as presented in the following image:

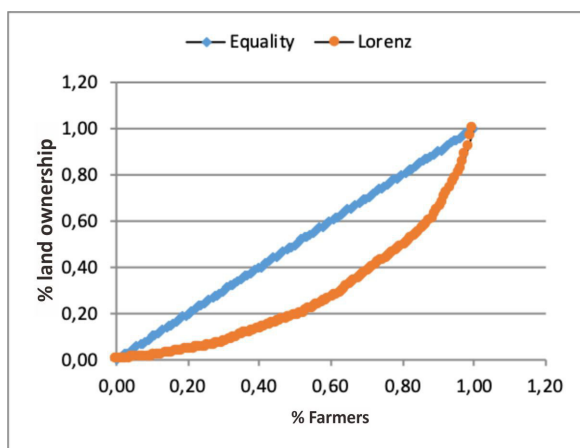


Image 2. Lorenz curve level of inequality of land ownership in Bangka and West Bangka (Source: Data Analysis 2018)

D. Conclusion

The issue of mining in Bangka Belitung, specifically in mining distribution areas such as West Bangka and Bangka became new post-mining

poverty centers. This reality is inevitable because the nature of the mining business is only temporary and becomes an economic support in a short time. The biggest problem is not the mining problem itself, but because mining actors, especially large miners do it with the permission of the state; in other words, they do it legally. Then, the problem is on what happens after the mining (post-mining). This happens because the mine leaves traces that are not handled properly. Reclamation should be the most standard way so that land that has been excavated within a certain time can be re-utilized for a new economic base. However, the fact is not the case; too many former mining pits left by legal and illegal miners.

This reality changes the surface of Bangka Belitung as a whole because what is left by the mining is damage to the land, even though the land is a source of livelihood for the people on it. This problem becomes serious as mining by the communities is banned, mining product prices are falling, and the sluggish global economic growth makes the problems faced by post-mining communities increased. Ex-mining land is not easy to exploit; and at the same time, people have lost their jobs and will return to the land to continue their lives. However, the land is no longer sufficiently available to develop the community's economy. This reality causes the community to experience economic difficulties due to the post-mining. Communities cannot return to the land-based economy system. The availability of land is very limited, not proportional to its needs; therefore, poverty in Bangka Belitung increases. Besides, the availability of the land is concentrated on the companies, and only a small amount remains in the forest area. It means that the community is not free to move to cultivate the land because the space is narrowed.

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