Socio-Economic Analysis of Traditional Diamond Mining Community in Banjarbaru City, South Kalimantan

N Akmiyati¹, RM Damoiko¹, R Ulfah², H Najmi¹, AY Abdurrahim³*, MDH Rahiem¹ and M Ramli⁴.

¹MAN Insan Cendekia Tanah Laut, Indonesia
²MTsN 8 Banjar, Indonesia
³Research Center for Population, Indonesian Institute of Sciences (LIPI), Indonesia
⁴Faculty of Tarbiyah and Teachers Training, Syarif Hidayatullah State Islamic University, Indonesia

*Email: aliyansyah.lipi@gmail, aliy002@lipi.go.id

Abstract. Since the 8th century, the South Kalimantan region was known as a diamond producer, especially in the Cempaka Sub-District, Banjarbaru City. Local communities have carried out the work as a traditional diamond miner for generations in groups with a system of division of labor and results. This study aims to determine the effect of diamond mining on the socio-economic conditions of the miners, especially related to income and expenditure. Primary data collection was carried out in May-August 2018 in the Cempaka diamond mining location through field observations, in-depth interviews, FGDs, and questionnaires. Based on David Ricardo's theory, the informants and respondents were grouped into three categories: diamond miners, landowners, and diamond polisher. The analysis showed that diamond mining contributes to all, but with different income levels. The average monthly income of diamond miners (Rp 1,147,222.22) is the smallest compared to diamond polisher (Rp 2,125,000.00) and landowners (Rp 3,625,000.00). For average expenditures per month, each of which is sequentially Rp 1,186,239.35; Rp 1,020,658.33; and Rp 1,273,950.00. This indicates a deficit between income and expenditure of diamond miners. The deficit was covered by various programs from the government, such as food assistance for poor households (‘Raskin’). The study also showed differences in the socio-economic characteristics of diamond miners, diamond polishers, and landowners.

1. Introduction
Since the 8th century, South Kalimantan has been known as a diamond producer, especially in Cempaka Sub-District, which is the largest diamond producer. The existence of mining material that has an economic value needs to be managed well to improve the standard of living of the community as well as protect ecology interest. Although the economic value is high, since a dozen years ago, precisely in 2000, about 400 people had died as a result of buried land. The miners work to find mineral rocks that have fantastic prices, the one is a diamond. Diamond is a mineral that is only composed of the element carbon (C) with an isometric crystal system, has a hardness of 10 on the Mohs scale [1]. Diamond prices are seen based on carat, level of hardness, clarity, shape, and color of diamonds obtained. Panning activities were usually done in groups. Each person in the group has a different division of tasks. One of the tools used in searching for diamonds
traditionally is known as dulang. Dulang is made of jingah wood that is made in the form of a caping with thick sides so that in the process the diamonds do not dissolve with water. The results sharing system is used in diamond searching. The traditional miners share with landowners and other people involved in the process. The more people involved in panning, the fewer the wages will be received by traditional diamond miners.

According to Ganie [2], precisely on August 17, 1965, the diamond miners who were chaired by H. Madsalam found a diamond weighing 166.75 carats and were given the name Trisakti by President Soekarno. The price of Diamond Trisakti was estimated at up to 10 trillion rupiahs. Unfortunately, the panning group that found the diamonds were only rewarded for the pilgrimage without any additional. These factors underlie why the people of Cempaka Subdistrict still choose to work as diamond miners because it is considered as a promising activity to increase family income. Furthermore, Munifa's research [3] shows that the level of education affected someone’s income. The last level of education undertaken by a person has a big contribution to increasing one's household income. In response, the researcher is interested in examining diamond mining activities in the Cempaka District which has an impact on the household income of miners.

2. Method
This research was conducted in Cempaka Sub-District, Sungai Tiung urban village, especially in Ujung Murung and Pumpung Villages because this area has extensive diamond mining areas and is very well-known internationally [2]. The population in this study were diamond miners, landowners and diamond polishers who live in Cempaka Sub-District. Sampling in this study was using cluster sampling techniques. The primary data was collected through qualitative and quantitative approaches (mix-method). The qualitative approach was carried out through in-depth interviews and Focus Group Discussion (FGD). While the quantitative approach was carried out through a questionnaire distributed to diamond miners, landowners, and diamond polisher. The collection of primary data through surveys and FGDs was conducted in May - July 2018 and secondary data updates and data analysis were conducted in May - September 2019.

In this study using the theory of income in which income is all receipts received from other parties, both in the form of money, goods, and industrial products which are valued on the amount of money from assets in effect at the time [4]. Family income plays an important role because, in essence, the welfare of the family is very dependent on the amount of family income [5]. Income is received from wages or salaries earned when someone works. The income of diamond miners in the Cempaka District comes from the work of panning diamonds. The additional income they get can certainly improve family welfare.

David Ricardo's theory states that in economic society there are three groups of people, they are the capitalist group, the workers 'group, and the landlords' group. Capitalists who play the most important role because this group is always looking for profits and investing income. The working class is the majority of the population in society, this is due to a large number of people who need jobs and do not have enough capital or income to become a capitalist group. The landlord group is the group that receives income from the results of the land rent they have [6]. In this study, researchers examined three groups, namely diamond miners, landowners and diamond polisher. The results obtained would then be compared between the respective household income levels.

3. Result and Discussion
3.1. The Influence of Educational Background towards Job Preference
Based on the results of a survey of 26 respondents (18 diamond miners, 4 landowners, and 4 diamond polisher), it was found that none of them had studied in college. This data was not so surprising to see the majority of residents who have always worked as diamond miners.
Figure 1 showed that all residents who did not complete education at the elementary school level work as diamond miners. Miners have been made a profession by the surrounding community since childhood, the fastest since grade 1 elementary school. Mining activities were carried out outside school hours to help increasing family income.

3.2. Family Dependent
Diamond miners had less than five dependents that were in line with the uncertainty and the small amount of income obtained by the miners. By few dependents of family members, expenses for basic needs and other personal needs such as education can also be reduced.

With the family planning program, the number of family dependents could be addressed by the community and the region. In Figure 2, most families have dependents less than 5 people. Of course, it helped to decrease household expenditure.
3.3. Venture Capital

Although diamond mining in Cempaka District was a traditional mine, the types of equipment were not entirely traditional. To transport water and excavated material that has been manually excavated in the hole, a machine was needed so that diamond mining works more efficiently.

![Figure 3. Venture Capital for Diamond Mining, Land Owners and Diamond Polisher in Cempaka Subdistrict, Banjarbaru City, 2018.](image)

The miners usually worked in groups and chaired by the machine owner. The machine owner supported 100% of engine capital and fed for miners who worked in his group. In this study, miners who worked in groups fall into the category of company capital sources were eleven people. Half of the landowners (two people) that have just bought land to be used as a mining site and the other half got the land from their ancestral heritage. Meanwhile, the diamond polisher did not need business capital because it has cooperated with the Banjar Regency government.

3.4. Working Span and Working Hours

Diamond miners have begun to pursue the work since childhood. Most miners spent half of their life working as diamond miners. Not much different from diamond miners, diamond polisher has started his career since a dozen until tens of years ago. Half of the landowners got inherited land from their parents who were also the ancestral land inherited from ancient times.

![Figure 4. Working Span and Working Hours of Diamond Mining, Land Owners and Diamond Polishers in Cempaka District, Banjarbaru City, 2018.](image)
Diamond miners, landowners and diamond scrapers started their work early morning but the landowner's working time was more flexible if compared to the other two jobs. The flexibility of time is due to the duty of the landowner who only had the duty to supervise the mined land and the presence or absence of diamonds obtained on that day.

3.5. The Level of Income

3.5.1. Income. One of the factors underlying the low income of diamond miners was the sharing system. Even so, all respondents who worked as diamond miners stated that there was no certain income earned every month. The income earned depended on the presence or absence of diamonds obtained by diamond miners. Most landowners (75%) stated that they had a certain income each month around Rp. 1,000,000.00 (see Table 1). Although called certain, the income of landowners had little dependence on the season. The obstacles caused by the season minimize the possibility of getting diamonds, so that the landowner also did not get anything from mining.

Table 1. Average Monthly Income of Household Diamond Miners, Land Owners and Diamond Polishers in Cempaka District, Banjarbaru City (IDR), 2018.

|                | Diamond Miners       | Landowners   | Diamond Polishers | Total        |
|----------------|----------------------|--------------|-------------------|--------------|
| Average        | 1,147,222.22         | 3,625,000.00 | 2,125,000.00      | 6,897,222.22 |
| Median         | 825,000.00           | 4,000,000.00 | 2,100,000.00      | 6,925,000.00 |
| Minimum        | 300,000.00           | 1,500,000.00 | 1,800,000.00      | 3,600,000.00 |
| Maximum        | 5,000,000.00         | 5,000,000.00 | 2,500,000.00      | 12,500,000.00|

3.5.2. Expenditure. Analysis of the average household expenditure of diamond miners, landowners and diamond polisher in the Cempaka Subdistrict affected the fulfillment of daily basic needs. If the household income was lower than average, it means they were in debt. Otherwise, if the income is higher than the average, it could be enough for daily use.

Table 2. Average Monthly Expenditures of Household of Diamond Miners, Land Owners and Diamond Polishers in Cempaka District, Banjarbaru City (IDR), 2018.

|                | Diamond Miners       | Landowners   | Diamond Polishers | Total        |
|----------------|----------------------|--------------|-------------------|--------------|
| Average        | 1,186,239.35         | 1,020,658.33 | 1,273,950.00      | 3,480,847.68 |
| Median         | 1,072,566.67         | 901,166.67   | 1,241,566.67      | 3,215,100.00 |
| Minimum        | 242,516.67           | 901,166.67   | 1,042,333.33      | 2,186,016.67 |
| Maximum        | 2,445,333.33         | 1,379,133.33 | 1,570,333.33      | 5,394,800.00 |

Based on Table 2, landowners had the highest minimal monthly expenditure compared to diamond miners and diamond polisher (Rp. 1,020,658). Each diamond miner had a minimum/monthly expenditure (Rp. 242,516) and a maximum (Rp. 2,445,333), and diamond polisher had an average maximum expenditure of Rp. 1,273,950.
In Figure 5, expenditure for productive needs was higher than in others. Here it explained that diamond miners, landowners and diamond polishers preferred to spend their income on productive needs rather than consumptive. Productive needs include the cost of water, electricity, education, transportation, and health while consumptive needs include the cost of food and clothing. As for expenses for clothing, some diamond miners did not care about fashion style; they assumed that just eating one day was enough. The miners buy clothes during the Islamic holiday which is held once a year which is Eid al-Fitr if they had excess assets.

In Figure 6, it was known that diamond miners were more concerned with spending on productive needs more dominant 61% than other needs. This was because diamond miners prioritize the needs of their children so that their future was better than their parents. This is contradictory to the research conducted by Yuliza [11] in Jaya Tinggi Village, Kasui District, where the majority of the people work as farmers are found to have consumptive behavior. In general, the consumptive behavior arises due to the influence of western culture.
Figure 7 explained that consumptive needs were almost similar to production needs. Landowners were better able to meet the needs of their families in the productive and consumptive fields.

Not much different from diamond miners, based on Figure 8 it can be seen that diamond polisher was also more concerned with production needs where children's education was more priority than consumptive needs.

3.5.3. Surplus and Deficit. The difference between income and expenditure in the diamond mining category was a deficit of Rp. -39,017.13 and those who received surplus income were landowners (Rp. 2,604,341.67) and diamond polisher (Rp. 851,050.00) (see Table 3). The deficit of diamond miners was covered by Bantuan Langsung Tunai (BLT) in the form of Raskin rice that was distributed by the government and became the Cempaka District program for the welfare of the miners.
Table 3. Total Surplus and Deficit by Households per Month Diamond Miners, Land Owners and Diamond Polishers in Cempaka District, Banjarbaru City (IDR), 2018.

|                | Diamond Miners | Landowners | Diamond Polishers |
|----------------|---------------|------------|-------------------|
| Average Income | 1,147,222.22  | 3,625,000.00 | 2,125,000.00      |
| Average Expenditure | 1,186,239.35 | 1,020,658.33 | 1,273,950.00      |
| Deficit/Surplus | -39,017.13    | 2,604,341.67 | 851,050.00        |

4. Conclusion
The existence of diamond mining in Cempaka Subdistrict affected household income. Based on the amount of income and expenditure, the diamond miners got the deficit that is covered by various programs from the government, while the diamond polishers and landowners received surplus. Although they were in low education and got uncertain income, the diamond miners, landowners, and diamond polishers prioritized productive needs than consumptive needs to make sure their children get a better education.

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