

# The Social Impact and Environmental Risks of Public Oil Mining in Musi Banyuasin Regency South Sumatera Province

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**Abstract.** The oil mining was firstly performed in Musi Banyuasin Regency by the end of the 1990s as performed by the people on old wells of Standard Vacuum Oil Company which was no longer engaged in oil production activities. The crude oil is then refined into gasoline (premium), kerosene and gas oil (solar). Due to the increasing oil mining activities, the local government of Musi Banyuasin Regency stipulated a Local Regulation No.27 of 2006 concerning the sale of public oil mining products. In this local regulation, people are only paid for their work drawing out the crude oil, which is valued at a low price and is not suited with the workload. Since then, the people have not only performed mining for crude oil from old wells, but also by performing their own mining activities, especially for the mining field with a depth of 100 - 200 meters. The result is that the crude oil trade in the Musi Banyuasin Regency is increasingly widespread, either for the crude or distilled oil. This study aimed to describe, analyze and interpret social impact, environmental risks and multiplier effect of illegal public oil mining. This study used the paradigm of critical theory. The results showed there are some social impacts on people's lives in the mining and refinery sites. The positive impact is the shift of livelihood activities, from rubber farmers to oil miners, both as investors, traders, workers and oil takers, so that the multiplier effect of this activity is highly perceived by the community in their lives. The negative impact is the polarization in the life of society, such as gambling, drug distribution, red-light district and environmental degradation due to oil spills and distillation.

## 1 Introduction

The first petroleum source was discovered in 1883 by a Dutchman named A.G Zeijlker in Telaga Tiga and Telaga Said near Pangkalan Brandan, North Sumatra. This discovery became a milestone of the Indonesian foreign oil company from Netherland in Indonesia, Shell. Along with the discovery of oil resources in Telaga Said, there were also found many oil discoveries in various locations, such as oil fields in Ledok, Cepu, discovery of Riam Kiwa in Sanga-Sanga, Kalimantan and the discovery of black oil in South Sumatra, near Muara Enim.

There are some regions producing oil and natural gas products, among others; Riau, that is capable of producing 365.827 barrels per day composed of 359.777 barrels of crude oil and 6.050 barrels of condensate; West Irian Jaya, with an area of 410.660 square

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kilometers, is capable of producing 14.811 barrels of oil per day; East Java, that is capable of producing 52.290 barrels of crude oil and 326 barrels of condensate or 52.616 barrels per day in total; South Sumatra, that is capable of producing 30.718 barrels of crude oil per day and 10.339 barrels of condensate per day. All oil blocks in South Sumatra are managed by Pertamina, Medco, Talisman, Conoco Philips and Golden Spike.

As a host, Pertamina should be able to maximize these potentials. Pertamina is expected to explore natural resources by conducting improvement and innovation on technology. So that, Pertamina can be the largest company in exploring the national natural resources by which the products of natural resources can be enjoyed by all of the Indonesian people, not by the foreign countries which can get a lot of benefit from it.

Based on the Regulation of the Minister of Finance Number 19/PMK.07/2013 concerning the Estimated Profit Sharing Fund Allocation of Natural Resources of Petroleum Mining for the Fiscal Year 2013, South Sumatera Province received the allocation of 5.063 trillion rupiahs for oil and gas in total. From this allocated profit sharing, Musi Banyuasin Regency received the largest allocation of 1.551 trillion rupiahs. The profit sharing for of natural oil and gas for South Sumatera Province amounted to 1.012 trillion rupiah. The second largest allocation for oil and gas was for Musi Rawas Regency of 426.534 billion rupiahs.

The public oil mining was firstly performed in Musi Banyuasin Regency by the end of the 1990s as performed by the people on old wells which were not longer utilized for production. The mining activities were firstly performed around the Sungai Angit area where the people drilled the old wells of Standard Vacuum oil company. The crude oil product was then distilled by burning it in drums and the vapor flowed through pipes in a water bath and was converted into gasoline (40 percents), kerosene (30 percents) and gasoil (30 percents). The results are considerable from oil mining with promising income, even it has a high risk.

Due to the increasing oil mining activities, the local government of Musi Banyuasin Regency stipulated a Local Regulation No.27 of 2006 concerning the sale of public oil mining products. In this local regulation, people are only paid for their work drawing out the crude oil, which is valued at a low price and is not suited with the workload. Then, the people started performing oil mining due to the higher results than from rubber plantation products which are highly influenced by price fluctuation. Since then, the people have not only performed mining for crude oil from old wells, but also by performing their own mining activities, especially for the mining field with a depth of 100 - 200 meters. The result is that the crude oil trade in the Muba Regency is increasingly widespread, either for the crude or distilled oil.

It seems that the Local Government of Musi Banyuasin Regency is allowing this condition. Therefore, it is interesting to conduct a research on it with a focus on social impact, environmental risks and multiplier effects due to public oil mining. This research seeks to critically understand the impacts of public oil mining on the environment with a focus on the social environment and changes in livelihoods and the multiplier effects on people's lives.

## **2 Materials and Methods**

The research was conducted in Keban 1 Village which is administratively located in Musi Banyuasin Regency, Sanga Desa District. Keban 1 village has an area of  $\pm$  20 Km<sup>2</sup> with a population of 1.983 people and 451 Families distributed into three (3) hamlets.

The data were collected through in-depth interviews and participatory observation. The interview was conducted by using interview guidelines. Taking informants using this method is an approach to put rich information from key informants. In this research, the problem on informants was not based on the number of informants, but on the representation in providing data and information [6].

The data obtained were analyzed qualitatively. The analysis of qualitative data is the observation on general statements about relationships between different categories of data. Therefore, the process of data analysis is to organize, sort, classify and categorize the data obtained based on data categorization, and then interpreting and presenting the data in the description of the analysis.

## **3 Results and Discussion**

### **3.1 History of Oil Mining**

The oil mining was firstly performed in Musi Banyuasin Regency by the end of the 1990s as performed by the people on old wells which were not longer utilized for production. The mining activities were firstly performed around the Angit River area where the people drilled the old wells of Stanvac company. The crude oil which had been taken off the well was then carried by the people by running. The crude oil product was then distilled by burning it in drums and the vapor flowed through pipes in a water bath and was converted into gasoline (40 percents), kerosene (30 percents) and gasoil (30 percents). In making distinction to which product is whether gasoline or kerosene, the people only touch the texture and smell the product. The order for the distilled product is gasoline, kerosene, and gasoil, respectively. Therefore, due to the higher results, even with a high risk, the oil mining activities are increasing by utilizing the old or used wells which are considered no longer economical for the oil companies.

In the past, the people pulled a rope to take the oil off the wells but now the people used motorcycle engine to pull it efficiently. Due to the depth of the old wells is reaching 300 - 500 meters down, a car with a single tire is used to pulled the *canting* (container) off the wells using a rope. There may be 20-30 liters of oil for one attempt, depending on the *canting* capacity.

It was the beginning of the increasing public oil mining due to the more promising results than the results of rubber plantation products which are highly influenced by price fluctuation. The surrounding areas of Sungai Angit and Bayat Ilir Village in Bayung Lencir District have been being utilized for crude oil distillation and, recently, other areas have been being utilized for the similar activities, such as Bintialo, Plakat Tinggi, Panjering, Betung and others.

Since then, the people have not only performed mining for crude oil from old wells, but also by performing their own mining activities, especially for the mining field with a depth of 100-200 meters. The result is that the crude oil trade in the Muba Regency is increasingly widespread, either for the crude or distilled oil. The increasing oil trade has an impact on the illegal taping on the pipes of Pertamina EP on the Palembang – Jambi highway in some villages in BayungLencir District.

The chain of oil mining until its trade sales involves many parties, although the risk of miners safety is at stake. At the oil mine in Keban 1 village, there has been a fire that killed miners and some workers who suffered burns. However, this condition does not discourage the people to perform oil mining activities, because the results obtained are able to support

the life of their family. In addition, working in the oil mining sector is more promising as a new livelihood, as a substitution to their former livelihood as rubber farmers. In Keban 1 village, about 75 percent of the people converted from rubber farmers to oil miners. The problem is on how long the people can survive as oil miners.

### **3.2 Social Impact**

Oil mining activities are performed 24 hours a day divided in some shifts. In general, the drilling work using rigs is performed during the day, while the uplifting work for oil from wells is performed in the day and night, in turns. Thus, the oil mining activities are performed for 24 hours non-stop and by many people. There are many pick-up cars around the mining site waiting to transport the crude oil. There are two types of the produced crude oil, namely light and heavy oil.

Such mining activities involve many people, so that there are positive and negative impacts on social life as well as on the environment. Positive impacts in social life include the new livelihood for the people, as a temporary substitution for their former livelihood as rubber farmers.

The visible social impacts are the creation of jobs, new homes, the ability of some people to buy new cars, either as private use or for oil transportation, and the ability to buy motorcycles for their high school children. There are also emergence of street vendors who sell food and daily necessities of workers, from gasoline and gasoil sellers, food stalls, coffee shops and alcoholic beverage sellers around the mine.

The negative effects on the social life are the emergence of gambling arena through the pool games by the young people, the increasing drugs distribution, especially for methamphetamine and ecstasy. The circulation of money for this petroleum mining activity reaches billions of rupiah, so it has a potential as a “field” of drug distribution. There is also the emergence of red-light district.

The implications of social impact in social life are more individualized and marketable and there is polarization in society. It can be seen from the sense of gotong-royong (communal work), as the people are now apathetic, as well as in the sense of helping each other that nothing is free, as any action must have a price.

### **3.3 Multiplier Effects**

Revenue from this oil mining chain has a broad multiplier effect, not only on the people around the mining, but also on the people from outside the areas. Most of drilling specialists and rig owners are the people from Lampung, although there are some locals who have their own rigs and own power. The cost of drilling/mining is calculated based on the depth of the well. For wells with a depth of 100 meters, the cost is Rp. 100.000 per meter, and for wells with a depth of more than 100 meters, the cost is Rp. 130.000 per meter. The pipe welder used for drilling is paid for Rp. 2.000.000 per well.

*Pemolotor* oil picker is paid for Rp. 30.000 to Rp. 40.000 per drum (100 litres), and an oil picker usually pick 5 to 10 drums a day, depending on the amount of oil taken off the well. The crude oil scavenger (called as “*pemer*as”) usually get 3 jerrycans, as one jerrycan (35 liters) is paid for Rp. 50.000 - Rp. 60.000.

The capital owner gets 60 percent of the results obtained from crude oil, as the land owner gets 30 percent of the results and local security guard gets 10 percent. The traders buy for Rp. 640.000 for each drum of light oil and Rp. 500.000 for heavy oil. In the trading

of oil, there are several forestallers and they sell the products for Rp 800.000 - Rp. 900.000 per drum. Another multiplier effect is the emergence of food and daily necessities vendors. The chain of oil mining and crude oil refining make the circulation of money in the mining area reaching billions of rupiah per day.

### **3.4 Environmental Risk**

There is a high environmental risk arise from the public oil mining activities, namely environmental degradation. Although the oil mining activities have multiplier effects perceived in the social, but there also a very great environmental impact for the future life. The oil spills and mud resulted from drilling activities as well as the distillation sites are left unattended, without any cleaning management, and there is no clear sign for whom is should be responsible.

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It also applies on post mining activities, as the sites are left unattended. The soil turns black due to spills caused by ex-mining sites and oil spills.

Sources of the impact are assumed from oil mining and refining activities, as obtained from identification of environmental risks. Based on the identification of environmental risks, there are 10 environmental components that are considered as the sources of the impact. Environmental Risk Analysis is an activity to estimate the cause of a risk from an activity and determine the impact of the activity. By using qualitative analysis method, a matrix of combination of risk opportunity and level is created, which generates a risk level matrix.

Based on the qualitative analysis on the oil mining and refining conducted by the community, the high environmental risk scores are almost in all environmental components, except for the components of decreasing terrestrial plants and animals which have low score. Thus, the environmental risks of oil mining and refining conducted by the community in the research location have a great environmental and social impact although the personal income component has a great multiplier effect on people's lives.

The environmental components that the high environmental risk scores are land-use change, air pollution, surface water pollution, changes in social interaction, personal income, decreasing health level, changes in the environmental aesthetic, and Social impact.

## **4 Conclusions**

Due to the decreasing price of rubber products by the end of 2013, people have turned to oil miners and perform oil refining. The chain of mining production up to the oil refining has an impact on the social life and environment. The social impacts on social life are that the people become more individualized, marketable and polarized in social interaction. The unexpected social impacts are the increasing circulation of drugs, and the emergence of gambling arena and red-light district.

The chain of oil mining and oil refining make the circulation of money in the drilling sites reaching billions of rupiah per day. Therefore, the multiplier effect perceived by the community is great, as some people are able to build new houses, buy cars for private use or oil transportation business. The new livelihoods as oil miners or refiners are a substitute for their former livelihoods as rubber farmers. However, how long they can survive in these

activities as the environmental risks and impacts are very great, and if it does not get any attention from the role and policy of local government in regulating the management of oil mining, there will be environmental degradation occurred.

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## Acknowledgments

We would like to thank Universitas Sriwijaya, especially for the Department of Research and Community Service, that has provided fund assistance to us in conducting this research.

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