

SUSTAINABLE MINING DEVELOPMENT IN ACEH BESAR, INDONESIA: A CHALLENGE AND SOLUTION (BANDA ACEH, 2013)

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ABSTRACT

Mining sector is a natural resource that takes a long time to do exploitation. Mining activity is also a sector that has a great impact on development in an area such as economic, social and environmental. Therefore, the concept of sustainable mining development should be directed to achieve three objectives, namely economic development, social and environmental. Economic purpose is not only to focus on the macro-economic growth alone, but must consider the economic conditions of local communities. Then pay attention to social goals must be the local social and cultural conditions so that welfare can be improved. Further environmental objectives must consider the balance of the environment around the mining activity.

The amount of growth in the mining sector on development in the province especially in Aceh Besar district can be seen from the Gross Domestic Regional Product (GDRP). This sector has a major role to both the local economy and the growth conditions of the local communities. But the concept of sustainable development is not only economic growth alone is the target of development of a region. According to data from the Department of Mines and Energy of the Province of Aceh in 2011, there were six (6) mining companies operating in Aceh Besar regency which has contributed greatly to the GDP of Aceh Besar district. However, the selection of research sites only in existing mining companies in the district Lhoong as a case study because of the attention to the criteria of the concept of sustainable development.

The results showed that the mining activity in the area during this study generated a lot of negative impressions for both regional and local communities. Aceh post-tsunami and post-conflict between the Government of Indonesia and the Free Aceh Movement (GAM), a lot of investors who built the company's mining sector in Aceh Besar district, but the potential is very big problem will arise if the problems that exist today cannot be solved immediately. Ecological damage caused by the efforts of development and economic growth has provided a real threat. The condition raises concerns about the sustainability of resources for future generations in Aceh Besar district. Therefore, by introducing the concept of sustainable development of mining this is a solution to overcome the problems of existing mines in the province especially in Aceh Besar district.

Keywords: Sustainable Mining, economic, social, environmental, Aceh Besar

Introduction

The pattern of re-development has begun to appear in Aceh post conflict and tsunami the security situation started to improve. With peaceful atmosphere, development in various sectors has shown a positive trend with an increase in Gross Domestic Product (Gross Domestic Product) of the province as well as in various districts/cities in Aceh.

One of the sector in GDP growth is the mining sector (see table 1). This sector has a significant role in the regional economic growth as well as on local communities (multiple effects). Despite the positive growth, the mining sector, in particular the province of Aceh, has other negative impacts on the local area. The increase in the investments in the mining sector also increases the number of horizontal conflicts between local communities and mining companies.

Table 1. Economic Growth in Aceh Besar District (percentage)

	2008	2009	2010	2011
Mining Sector	4,56	0,95	1,27	1,77
Total GDP	5,86	5,77	5,66	5,34

Source: Badan Pusat Statistik, Aceh Besar District (2012)

Problems of Study

The development of mining industry has led numerous conflicts in the life of society in Aceh. The government's role in issuing the permit and lack of care about the well-being of the local community in the mining area created a lot of problems from all aspects of community lives including socio-economic, socio-cultural and environmental aspects. The present development practice seems to emphasize on the fulfillment of economic targets of profit oriented only. Such practice is causing high exploitation of mineral resources in the area of Aceh Besar district, whereas mineral resources are non renewable natural resources and must be kept for long-term survival and future well-being of society.

Because if this problem continues to occur in Aceh Besar district it will then be affecting various dimensions of life such as environmental pollution, deforestation and destruction of forests, declining supply of clean water (sanitation), land acquisition problems, even loss of human lives to a certain extent if mining conflicts continue to exist in Aceh Besar district. Especially in the area of study, which is Lhoong district, located on the edge of the beach, it is feared that this problem will interfere with the ecosystem around the beach.

Based on a two-dimensional description of different interests on an issue of mining in Aceh, especially in Aceh Besar, a more in-depth research to get an appropriate solution method needs to be done, so that the two dimensions of the different interests can be mutually runs as expected in line with the concept sustainable mining development sensitive to economic, social and environmental. After the achievement of peace in Aceh, the utilization of mineral resources has increased and reach a better stage.

Research Question

1. How is the impact of the development of the mining sector in Aceh Besar district on the

- economy and society and the environment in the region?
2. What are the factors contributing to the problems faced by the community and the environment in the study area?
 3. How does the potential for sustainable mining can be implemented in Aceh Besar district?

Sustainable Development Approach

Since 1980, the political agenda on the environment is focused on what is known as the sustainable development. The definition first appears in the World Conservation Strategy of The International Union for the Conservation of Nature (1980), later used by Lester R. Brown (1981) in his book *Building a Sustainable Society*. This definition then became very famous through the Brundtland report, *Our Common Future* -

in 1987. The term sustainable development was used by the Brundtland Commission which coined what has become the most often-quoted definition of sustainable development: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The year 1992 was the basis of the political process, which at Summit Earth in Rio de Janeiro, Brazil an agreement was achieved to accept sustainable development as a global agenda. Sustainable development approach has been accepted as a political agenda for the development of the whole country in the world.

Sustainable Mining Development Criteria

Sustainable mining development according to the Ministry of Energy of the British Columbia defines that sustainability in mining such as mining and mineral development that meets the growing needs of all communities while maintaining a healthy environment and a vibrant economy for generations present and future. The Ministry of Energy has also developed a framework for sustainability in mining and mineral exploration. The aim is to encourage the implementation of best practices and innovations that will improve the performance of social, environmental and economic benefits while maintaining or enhancing shareholder value.

As for the criteria that can be used in sustainable mining operation as follows:

1. *Health and Safety*: a project / operational act to ensure the health and safety of workers and the community.
2. *Effective Engagement*: Relationships with people affected by the project /operation characterized by integrity and trust.
3. *Respect for Indigenous Peoples*: Project / operations respect the rights, culture and values of the local people.
4. *Environment*: Action is being taken to ensure the maintenance and strengthening of environmental integrity in the long run in the region of influence of the project / operation.
5. *Mine or Operation Full Life Cycle* : A full or mine operating life cycle perspective is used for planning and decision making that spans exploration through post closing.
6. *Resource-use Efficiency*: Project / Resource operations looking to reduce energy inputs, water, reagents, supplies, and so on, while also reducing the output of air pollution, water and soil.
7. *Continuous Learning and adaptation*: uncertainty inherent in mining operations is recognized, and displayed a commitment to continuous learning.
8. *Benefits*: project / operations increase the potential to create economic,

social and cultural services to the local community.

Mining Sector in Aceh Besar

Potential mining in Aceh Besar district is very large. Moreover, post-conflict elections increased the growth rate of the mining sector. But the only kind consists of iron ore and iron sand. In Aceh Besar district currently consists of several mining companies that invest PT. Tambang Indra Puri Jaya, PT.Lhoong Setia Mining, PT. Samana Citra Agung, PT. Perusahaan Bina Bangsa.

Table 2. Mining Companies in Aceh Besar district

No	Company	Commodity	Area (Ha)	Status
1	PT. Tambang Indrapuri Jaya	iron ore	538.00	Production Operations
2	PT. Lhoong Setia Mining	iron ore	2,811.00	Exploration
3	PT. Lhoong Setia Mining	iron ore	500.00	Production Operations
4	PT. Samana Citra Agung	iron sand	99.96	Production Operations
5	PT. Samana Citra Agung	iron sand	120.60	Production Operations
6	PT. Perusahaan Bina Bangsa	iron sand	57.15	Exploration

Source: Board of Mining and Energi of Aceh Province (2011)

Methodology

Methodology in this research involves a qualitative approach using case study. In data collection, researchers will conduct in-depth interview method, Focus Group Discussion (FGD's) and direct observation.

The respondents for this research include:

- i) Local communities around the mining areas, because people are suffering from the direct impact of mining activities;
- ii) Community leaders will also be the respondents because they are a respectable public figures that can represent the community;
- iii) Government officers related to the administration and the issuance of the mining permit, as the government is the main authority in granting permits for mining companies, so it is important to obtain the information regarding permits granted as to whether they are in accordance with existing regulations;
- iv) Mining company is a very important source of information because they are the main actors in the extraction of natural resources and over the years has become the target of demonstrations by the community;
- v) Non-governmental organizations involved in mining activities, as they often provide important information to the government or to the public, so that the information obtained is more objective and equitable;
- vi) Mining specialist / expert who can provide in-depth information for sustainable mining development in Aceh Besar district.

The qualitative data analysis in this research will use the content analysis method.

Content analysis method as suggested by Miles and Huberman (1994) and Merriem (1998) will be used to analyze the data obtained from interview. According to Burn (1995), content analysis is a method that has been used widely in qualitative study. The analysis includes the identification of themes, concepts and meaning related to the research objectives and questions. In this case, it requires the content analysis coding system which corresponds appropriately to the aims of this research.

Analysis of Study

Analytical results of this study are as follows

Table 3. Result of Analysis

Research Question (RQ)	Groups of Informants	Institutions	Results
1. How is the impact of the development of the mining sector in Aceh Besar district on the economy and society and the environment in the region? (R1)	Government (G)	- Mining Agency	R1+,R3+
		- Environmental Agency	R1-, R3-
		- Board of Investment and Promotion	R1+, R3+
		- Permit Agency	R1-, R3-
		- Forestry Agency	R1-, R3+
2. What are the factors contributing to the problems faced by the community and the environment in the study area? (R2)	Mining Companies (MC) Community Representatives (CR)	- Marine and Fisheries Agency	R1+, R3+
		<i>Public Relation (PR) of Companies</i>	R1+, R3+
		- Local People	R1-, R3-
		- Community Leaders	R1-, R3-
		- Mining Expert (Lecture)	R1-, R3+
3. How does the potential for sustainable mining can be implemented in Aceh Besar district? (R3)		- Non Government Organizations (NGO's)	R1-, R3-

Impacts of Mining and Find the Cause of the Problems

From the results of preliminary investigations have been conducted in Lhoong district, Aceh Besar as seen from Table 3 above can be described generally as follows:

Mining and Socio-Economic Impacts

From Table 3 describes the mining activities not make a positive contribution to the economic development in Lhoong, Aceh Besar district. However it also causes some negative impacts on the ecology of the local area. Contribution of mining to national development through state revenues (national income) is very large, but the development of regional and local communities around the mining activities either through community empowerment program (community development) as well as other development programs is very low,

especially in Aceh Besar district.

Change in the system of government in Indonesia from a centralized administration to a decentralized system is marked with the decentralization Law No. 32 of 2004 on regional autonomy. This change resulted in the emergence of new "kings" in the new district. With the birth of this order, many regional Governor, Regent of Aceh Besar are given the autonomy to implement the policies and rules which are previously regulated by the central government including the issuance of mining permit to investors or mining companies. As the analysis of Table 3 shows the local people, community leaders and NGO's have given a negative impression of the result of the mining activity.

Unfortunately, such change in autonomy caused grievances to the society and often resulted in social conflicts in the mining areas. Government and mining companies only concern with the utilization of natural resources and focused on the economic growth but ignore the environmental concerns of the community. The mining company focused only on generating profit (profit oriented) without considering the socio-economic needs of the community in Aceh Besar.

Mining and Socio-Cultural Impacts

Besides having socio-economic impacts, mining industry also has socio-cultural effects that cannot be ignored. Often times, the mining activities can change the socio-cultural conditions of the local community. As the analysis of Table 3 shows the people of Aceh during the approximately 32 years of conflict are more likely becoming more close-minded because of the violence they experienced which made them become vigilant and careful of foreigners who entered their territory, including foreign investors. The conflict situation also makes them hesitant to find jobs. Although they own some land and often in large quantities but this fail to enable them to come out from poverty. Luckily after conflict, investment activity rebounded in Aceh as security factor has been recovered.

Based on observation on mining activities in Indonesia, many of the proposed territory by investors for mining activities is on the land owned by a community. However, land is a symbol of status of an individual or a family in a community. With abundant land, they became distinguished and respectable figures in their village. But the fact is often the other way round whereby the mining activity in their area often leads to conflict among neighbors because of the unfair sharing of the profit among the villagers and between local communities who had lived in peace and harmony. This condition has occurred in Aceh, especially in Aceh Besar district.

Mining and the Impact on Environment

If we look at this issue more carefully, the conflict in mining area at Aceh Besar due to the selfishness and greed of the mining company owners (PT. Lhoong Setia Mining) who aim to maximize their profit. In addition, government officers tend to think only about profit with the investment and division of royalties. Meanwhile, the most important need such as safety of the local communities and the environment are less considered. It is evident from table 3 that of whole groups of informants giving negative feedback effects of mining activities on the environment.

Indonesia's government has also permitted mining (underground mining) in protected forest (Hutan Lindung) and states that the policy is not against existing legislative methods. Government of Indonesia has notarized the Presidential Decree (PP) of underground mining area of protected forest but still prohibits open mining activities in protected forests (open-pit mining). Such government policy has been indirectly supporting illegal logging (illegal

logging business), destroying protected forests or national parks which in turns damaged the ecosystem in the forest. Although its impact may not be seen in a short time, but slowly but surely will have long-term impact in the future. Mining activities in Aceh is also one of the factors for the occurrence of deforestation (removal of forest cover whether permanently or temporarily) in Aceh Besar area especially in Lhoong district.

Potential for Sustainable Mining in Aceh Besar District

The potential for sustainable mining can be implemented in particular in Aceh Besar district as follows: 1) Provide economic value in the form of profits from taxes and royalties, community needs for the product from the mine; 2) The balance of benefits in the supply of products from the mine to the needs of the community with the potential impact on society and the environment, and 3) Ensure transparency, so mining role in sustainable development can create social welfare, among others: a) Increasing employment tax revenue and economic growth, b) Reducing the level of poverty in mining areas 4) Implement sound environmental management as perform preventive strategies to minimize the impact of pollution on the environment by method of *Cleaner Production* (CP).

The purpose of this concept is the environment in the study area will contribute to the sustainable mining, when a mining manager particularly at PT.Lhoong Setia Mining (LSM) and workers to limit the activities of mining operations to prevent damage to the environment from the exploration stage to the state post-abandonment. .

Conclusion

Development of the mining sector, particularly in Aceh Besar, Aceh province has led to a wide range of problems and the solutions should be sought in compliance with the sustainable mining methods. The implications of the mining activities not make a positive contribution to the economic development in Lhoong, district, Aceh Besar. The analysis showed local people, community leaders and NGOs have given a negative impression of the results of mining activities. Mining industry also has socio-cultural effects that cannot be ignored. Often times, the mining activities can change the socio-cultural conditions of the local community. Other condition the people of Aceh during the approximately 32 years of conflict are more likely becoming more close-minded because of the violence they experienced which made them become vigilant and careful of foreigners who entered their territory, including foreign investors. And the impact on the environment is the occurrence of deforestation (removal of forest cover either permanently or temporarily) in the region, especially in district of Aceh Besar.

Therefore, we need a comprehensive solution that involves the various stakeholders in promoting a more sustainable mining development.

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