The impact of mining activities toward the behavioral change of social aspect in the village outer mining area

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Abstract. The existence of mining activities is aimed at improving the welfare of society, especially the mine circle society. Mining activities have been changed based on the three parameters of sustainable development, i.e. economic, social, and environmental. On the economic and social parameters, they have interactions that have a potential impact on influencing the change of mine circumference behavior which is closely related to the existence of the mine circle society itself. The methodology used in this study is the literature review based on existing studies and a brief observation around the mine. The observation technique is carried out by a random selection of respondents (random sampling) with a confidence number of 95%. The analysis results show that there are three types of behavioral changes that occur, namely natural change, planned change, and willingness to change. The factors influencing the behavioral change in the community around the mine areas, especially external factors, are education, religion, culture, environment, and socio-economic. The behavioral changes and factors affecting these changes can be used as a foundation for a mining company to develop community empowerment programs as part of good mining practices. The good mining practices will facilitate the mining company to get a social license to operate.

1. Introduction
Nowadays, civilization and human development can not be separated from the role of natural resources input, especially mining, an activity closely related to the improvement of human welfare. Mining activity is an industrial activity that processes natural resources by processing mining materials to produce various final products needed by mankind [1]. Therefore, mining materials are important for worldwide as one of the icons required by the world today, which commonly known minerals. As stated in the Constitution 1945 section 33 paragraph 3 which reads, that the earth, water, and natural wealth contained therein are controlled by the state and used as maximum for the prosperity of the people [2].

This mandate is the cornerstone of mining and energy development to optimally utilize the potential wealth of natural resources, minerals, and energy to support sustainable national development [3]. Sustainable development is the process of development (land, city, business, and community) where the principle "fulfills the needs now without compromising the fulfillment of the needs of future generations" is applied. One of the factors that must be faced to achieve sustainable development is how to improve environmental destruction without compromising the need for economic development and social justice [4].
Based on UN reports, especially from the 2005 World SUMMIT, sustainable development consists of three main pillars, i.e. economy, social, and interdependent, and strengthening the environment. Mining activities relating to sustainable development are also potential to become a development agent in an area because mines are generally located in the outer (remote) areas and open accesses and build infrastructure around the sites through mining activities. Mining activities also need to be converted into other forms (beneficial transformations) to continue developing and providing welfare to the surrounding areas [5]. It is undeniable, however, that sustainable development existed through mining activities that have caused behavioral changes resulting from interactions in the areas around the mine site [6].

2. Method
In this paper, the researchers used a literature review method. The forms of behavioral changes and some factors influencing them in the society around the mine areas were explored by these methods. The analysis includes determining some factors that affect the forms of behavioral changes, especially external factors was conducted descriptively and is provided in the results and discussion herein.

3. Result and Discussion
Based on the problem formulation and research objectives in chapter 1 above, to know the forms of behavioral changes and to analyze the factors affecting them in the mine circle society, researchers did literature review methods to explanation explain some definitions supporting this research, such as definition of mining activity and behavioral changes from some experts. As the impact of mining activities, the community development must be carried out sustainably because of their temporary nature and unrenewable resources. Also, the benefits of mining activities need to be converted into other forms (beneficial transformations) to continue developing and providing welfare in the areas around the mine, which is environmentally sound and sustainable. Moreover, sustainable development does not concentrate on environmental issues only. In a broader perspective, sustainable development includes three scopes of policies: economic development, social development, and environmental protection. UN documents, especially the 2005 World Summit documents, refer to all three terms of the dimensions and are the driving pillars of sustainable development as shown in Figure 1.

Figure 1. Scheme of sustainable development at the confluence of three preoccupations [3]

Sustainable development scheme: at the intersection of the three pillars, the Universal Declaration of Cultural Diversity further excavated the concept of sustainable development by mentioning that "... Cultural diversity is important to people as the importance of biological diversity for nature". Thus
"Development is not only understood as economic development, but also as a tool to achieve intellectual, emotional, moral, and spiritual satisfaction." In this view, cultural diversity is the fourth policy of the scope of sustainable development policy. A quality component of the population is required to materialize sustainable development in a country. It is possible to be able to process and manage the potentials of natural resources with excellent, precise, efficient, and maximum efforts while preserving the environment because of the quality people. Hopefully that there are balance and harmony between the number of inhabitants with the capacity of native support and environmental power. Similarly, as the community around the mine areas is experiencing direct interaction, the social and economic conditions become the parameters or aspects that affect the change in behavior as a result of the impact brought by the activities taking place in their areas. The behavior is a basic relationship between the stimulant (stimulus) and the response. The behavior is further divided into three domains, i.e. cognitive, affective, and psychomotoric [7]. Cognitive is measured from the knowledge, affective is measured from attitude, and psychomotoric is measured from action (skill). Knowledge is gained from experiences other than teachers, parents, friends, books, and mass media. Knowledge is the result of taboo due to the sensing process of an object. The sensing occurs mostly from sight and hearing. Based on the discussion, there are three forms of behavioral changes occurring in the mine circle society.

3.1. Forms of behavioral change occurring in the outer mining area’s society
According to World Health Organization (WHO), the behavioral change can be grouped into three categories, they are [3]:

1) Natural Change
   Human behavior has always changed. Part or all of that change is due to natural change or occurrence (environment). Example: A change in behavior caused by the age of a person that causes the changes made and experienced will naturally appear in nature.

2) Planned Change
   This behavior change occurs because mostly planned by themselves as a subject. The example of a change in behavior that occurs in this planned change like a person change due to a specific purpose or desire to get something worthy, which lead the person to do some activities that can satisfy himself with a plan of his/hers.

3) Readiness to Change
   In the event of an innovation or development program within the organization, the most common part is that some people are swift to accept such innovations or changes, and some people are prolonged to receive innovations or changes. An example that can be described in this case is the change of technology in an organization, e.g., from a manual typewriter to a computer machine; usually, old people find it difficult to accept changes in the use of the technology. This can undoubtedly lead to positive and negative impacts on the behavioral changes resulting from the innovation.

   The formation of behavior can occur due to the maturity process and from the process of interaction with the environment, which is the accumulation of the forms of behavioral changes as above. These behavioral changes can occur at any times and constitute a dynamic and inevitable process. The process of forming and/or changing behaviors are influenced by several factors originating from both internal and external. In its development, one's behavior can vary according to the things that allow the changes to occur. In its development in life, human behavior is influenced by several factors from inside (internal) and from outside (external) that allow a change in behavior. The following outlines factors that affect changes in human behavior, especially to answer the formulation problem, so the researcher focused only on external factors.
3.2. Factors affecting community behavioral change in the mining area especially at the outer mining area’s society, which is focused on external factors

The researchers conducted a non-participatory library and observation study of the community in the areas around the mine to put the factors affecting behavioral changes into effect. There were several factors affecting the changes, such behavior is the educational, cultural, environmental and socio-economic factors [8]. The researchers explained these factors by displaying positive and negative sides, such as:

a. Positive side

1) Better level of education indicated by the ability as miners to send their children to education level higher than that of their parents and also receive scholarship program through CSR programs conducted both in conventional and thematic ways, such as those in the district of Sumbawa, Papua and some major mining areas owned by the Indonesian state.

2) The overall data of mining or mining activities indicates that the community economy may increase as demonstrated by good changes or changing towards a more feasible way to facilitate them to technological innovations and information that are already familiar with. Similarly, poverty rate is decreasing so that people can overcome the difficulties they previously experienced.

3) The occurrence of cultural acculturation due to mining workers from outside of the region so that it will affect the local culture.

b. Negative side

1) The majority of children in the circle of mining area is not interested to continue their study into the higher education levels because most of them are satisfied enough, especially about the improvement of their socio-economic condition, the education and technology is not equal anymore, so the education facilities are not utilized properly.

2) People lifestyle, which is no longer natural, is also caused by deteriorating environmental and health quality. Based on some literature sources, diseases related to mining activities and worsening condition due to mine waste were discovered.

3) Cultural assimilation causes changes that will affect or erode or even eliminate the value and meaning of the culture itself.

Both of the positive and negative side above shows that the presence of mining activities has significant influence to the people who lives in the the village outer mining areas and give the good effect on the certain circumstances.

4. Conclusion

The results of the analysis show there are three types of behavioral changes occured, namely natural change, planned change, and willingness to change. Furthermore, the factors that are influencing behavioral changes in the mine circle society, especially external factors, are education, religion, culture, environment, and socio-economic. The behavioral changes and factors affecting these changes can be used as a foundation for mining companies to develop community empowerment programs as part of good mining practices. The presence of good mining practices will facilitate the mining company to get a social license to operate.

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