

INTEGRATION OF CSR PROJECTS IN COAL MINING ACTIVITIES IN ACEH

Muhammad Dhafi Iskandar

Doctorate in Business Administration (DBA)

IPAG Business School

Paris, France

**E-mail: dhafiiskandar@gmail.com*

ABSTRAK

Indonesia dengan banyaknya sumber daya batubara dan eksploitasi sumber daya alam serta kegiatan operasional penambangan diharapkan dapat membawa dampak ekonomi baik dari segi infrastruktur, Corporate Social Responsibility (CSR), ketenagakerjaan, dll., yang sejalan dengan konsep etika bisnis serta esensi hak dan kewajiban dalam masyarakat. Namun, banyak masalah yang seharusnya dapat diselesaikan dengan potensi-potensi tersebut namun tidak dapat dikurangi atau dihilangkan secara efektif. Peraturan pemerintah menyatakan bahwa perusahaan wajib mengembangkan program pemberdayaan dan pemberdayaan masyarakat di sekitar wilayah pertambangan yang harus dikonsultasikan terlebih dahulu dengan pemerintah daerah dan masyarakat, di mana mereka dapat mengajukan program, yang diprioritaskan untuk masyarakat sekitar yang terkena dampak langsung dari kegiatan pertambangan, terlepas dari batas administratif wilayah kabupaten. Penelitian ini dilakukan melalui observasi, wawancara, laporan, dan makalah dari perusahaan pertambangan batubara dan instansi terkait tentang metode penelitian Action Research yang kemudian difokuskan pada analisis perkembangan pertambangan di Aceh, dimana hipotesis yang muncul adalah mengenai kemungkinan mengintegrasikan pertambangan, hasil hutan, perkebunan, peternakan ayam, dan pertambakan di areal konsesi pertambangan batubara di Aceh dalam mengurangi dampak negatif tersebut. Kerja sama dengan masyarakat dapat dimanfaatkan untuk pembangunan desa dan pemenuhan kebutuhan perusahaan tambang, serta berpotensi menghasilkan keuntungan tambahan bagi kedua belah pihak. Dengan demikian, hal ini dapat menjadi solusi bagi penebangan dan penambangan liar serta pembakaran lahan dan konflik, melalui sistem kerjasama dan bagi hasil. Program tambahan di bidang kesehatan, pendidikan dan infrastruktur yang didasarkan pada survei dan penelitian memunculkan hasil yang sesuai dengan akar masalah dan kebutuhan aktual, yang mungkin belum disadari sebelumnya oleh masyarakat.

Kata Kunci: Corporate Social Responsibility, pertambangan, komunitas, kolaborasi.

ABSTRACT

Indonesia with its vast number of coal resources and natural resources exploitation and mining operational activities are expected to bring economic impacts both in terms of infrastructure, Corporate Social Responsibility (CSR), employment, etc., which is in line with the concept of business ethics and the essence of rights and duties in society. Yet, many problems that are supposed to be solved with such potentials are not effectively reduced or diminished. Government regulation states that companies are required to develop community development and empowerment programs in the vicinity of the mining area which must first be consulted with the local government and communities, where they can propose a program. Those are prioritized to the surrounding communities that are directly affected by mining activities, regardless of administrative boundaries of the district area. This research was conducted through observation, interviews, reports, and papers from coal mining companies and related institutions on action planning research methods which then focused on analysing the development of mining in Aceh, where the hypothesis that emerged is regarding the possibility to combine mining, forestry products, plantation, poultry, and fishery in the coal mining concession area in Aceh to reduce the negative impact. Collaboration with the local community can be utilized for village development and construction of mining company's needs, along with the potential to produce additional profits for both parties. Hence, this could serve as a solution to illegal logging and mining as well as land burning and conflicts, through the system of cooperation and profit sharing. Additional programs on health, education and infrastructure that are based on surveys

and research produce appropriate results according to the root of the problem and actual needs, which the community may not have previously realized.

Keywords: *Corporate Social Responsibility, mining, community, collaboration.*

1. INTRODUCTION

Natural resources have been well known to be one of the essential parts of every living being and defining it is proved to be difficult due to the intuitive idea that most people have regarding what natural resources are and will lead to future problems when dealing with ambiguous cases. The mining sector has been recorded as one of the biggest outputs for global trading. Hence, many investors have been attracted to invest their money in this sector. It happens due to many products requiring the use of mining materials as its ingredients, which makes the role of such industry to be very vital for the advancement of technologies and researches that are in line with the necessity to produce higher quality products. With a vast number of coal resources in Aceh, foreign and Indonesian companies are interested to access the region for further research and in turn will lead to natural resources exploitation and mining operational activities which are expected to bring economic impacts both in terms of infrastructure, Corporate Social Responsibility (CSR), employment, etc.

2. STATEMENT OF PROBLEMS

Despite the tremendous effort, several problems arise in the recent coal mining activities such as the problematic land acquisition process including local community objections. External factors that occur during mining activities are define as the actions of one economic agent that affect other agents indirectly, in either a positive or negative way (Nicholson, 2001), which means that the outcomes of this kind of activities may create external costs and/or provide external benefits to consumers or firms that are not involved in the relevant production or consumption decision. Positive externality might occur when locals work in the industry with a better salary compared to their previous work opportunities, which helps the improvement of their economy, building new infrastructures to support the operational activities in the mining site and related areas, that could also be used by neighboring people and homeowners where their properties could be utilized for rentals to other workers who previously live outside the worksite territory and reside temporarily in the local area. Several examples of negative externalities are pollution from the production process that adversely affects the health of people who live nearby and damages to the natural environment, which reduces the well-being of local residents. In addition, the possibility of conflicts arising from natural resources is elaborated with the looting and grievance mechanism (Collier and Hoeffler, 2004). The grievance model refers to the condition where the coal mining activities destroy the environment, create social disruptions by labour migration, especially worker on high-level technical aspect that comes from a more developed area which leads to inadequate job opportunities due to the lack of human resources quality in the local area and also insufficient compensation for the land expropriation. Furthermore, the difference in average net salary per month is also an initial factor of social jealousy which eventually triggers conflict. According to the presented data, the biggest salary is located in the mining and quarrying sector. Another factor triggering horizontal conflict is the high unemployment rate in Aceh by 2% compared to other regions in Indonesia (BPS, 2020). Another opinion states that coal mining activities have significant effects on the society and environment where the negative impact is seen as greater than the positive impact. One of it is related to increased poverty, compared to other regions that do not have mining activities (Edwards, 2017, Bhattacharyya and Resosudarmo, 2015), especially since there is no benefit-sharing system with local communities related to the percentage of mining output purposes, in which leads to another social problem from community-based organizations (CSOs)/*Organisasi Masyarakat* (Ormas), where some of them tried to take illegal profits from companies and local communities by intimidation, especially after the development of regional autonomy systems. Moreover, even though compensation were given for land acquisition, adaptation to a new uniquely different location proved to be difficult, in addition to discussions regarding the details of compensation was carried out after the transfer process.

3. BUSINESS ETHICS AND CORPORATE SOCIAL RESPONSIBILITY

The concept of business ethics and also utilitarian are the essence of rights and duties in society. Specifically in the legal system, that consist of legal right which is defined as “an entitlement that derives from a legal system that permits or empowers a person to act in a specified way or that requires others to act in certain ways toward that person” (Velasquez, 2012, p. 93). In this case, CSR is an extension of community rights to changes or adjustments in their lives due to activities carried out by mining companies. Related to such topic, based on government regulation Number 23 Year 2010 in Article 44, if at the WIUP location there are other mining commodities which was found and are not associated in the IUP, its permit holder has the priority in commercializing existing other mining commodities in the same area, by forming new business entities or by giving it to other parties in a form of collaboration. Article 106 also states that companies are required to develop community development and empowerment programs in the vicinity of the mining area which must first be consulted with the central government, provincial government, district or city government, and local communities. Furthermore, the local people can propose a program of community development and empowerment activities to the local Regents or Mayors to be informed to the company. Development and empowerment is prioritized to the surrounding communities that are directly affected by mining activities, regardless of administrative boundaries of the sub-district or district area, with funding derived from the allocation of development programs and community empowerment on the budget and costs of IUP holders each year. Factors such as different perceptions of CSR among various socio-economic players (e.g., business organizations, government, etc.), a certain degree of ambiguity in the law, and weak law enforcement are currently delaying the homogenous reception and implementation of social responsibility in Indonesia. CSR is still perceived as a cost that is likely to burden companies, instead of being perceived as an investment which could potentially lead to increased economic competitiveness and to a fairer and a more inclusive economic growth. However, in its development to date, there are no specific directives and technical guidance for its mandatory CSR. Hence, each company implements its CSR program voluntarily with its own framework and technical implementation, with the division of categories as charity and philanthropy by its own standards. For most companies, it will be based on the company's plan contained in the Work Plan and Budget/*Rencana Kerja dan Anggaran Biaya* (RKAB) in terms of the environment that consist of community empowerment and environmental sustainability aspects, with its respective nominal cost figure. In detail, it will be done by selecting the type of activity that addresses matters relating to the environment and also what is appropriate to the environmental conditions and the local community. Meanwhile, other companies also have yearly budgets for such activity, since if it was stopped, the local community would be voiceless even though there were demonstrations from external parties that opposed the local needs. In addition, local youths often provide proposals regarding requests for assistance or funding for their activities. From various perspectives, the appropriate amount for community empowerment is approximately 1% of gross income, yet it depends on the region and the program being made (Kasli, 2019).

Furthermore, there are regulations from the government where CSR must be sustainable and the commencement should be done prior to starting large-scale operations, related to the need for a good relationship with the local community in order to secure effective operations. In large companies, it is common to have a specific division that takes care of CSR, an independent business entity that creates profit for themselves. The parent company helps in initial capital and gives direction to prepare themselves to enter the prospective market. Mining companies, for example, will create an easier way to provide trucks transporting coal to a certain point, truck facilities that are in line with road capacity, where truck drivers are also the vehicle owners who are members of village cooperatives (Setiawan, 2020). It also concerns logistical security and the ability to use local road access without establishing new roads. The management of CSR coordinates directly under the Person in Charge (PIC), at the manager's level (ibid).

4. RESEARCH METHOD

Based on the explanations that have been made, the research question can be made as “how does integration of corporate social responsibility in coal mining activities affect the environmental and social issues as well to benefit all the stakeholders in the long term?” Such research question can be captured from various sides, where there are various variables and factors that influence and are affected in this regard. For this reason, research goals that are specific enough are needed to answer the question, in line with the provided hypothesis. The first aspect that must be considered is the environmental and social impact of mining activities. The commonly utilized method and compelling to the business activities, especially for the Doctorate in Business Administration program is Action Research (AR) that defined as “a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview which is believed to be emerge at this historical moment” (Reason & Bradbury, 2001, p. 1) The main purpose is to combine both action and its review as the integration of theories and its proof of application. It aims to discover the practical solution for improving the quality of people related to the issue (ibid). It has been considered to be a common research methodology in business and management studies in recent years, especially related to the main purpose of coal mining activities in Indonesia. Similar to other mining companies, there are several challenges that must be faced along with the unpredictable character of nature, where the management team agreed that careful planning is a must prior to its activities. Therefore, it is necessary to observe whether the action research could help them perform mining business operations in a more efficient and a more competitive approach, addressing existing business needs and potentials as well as identifying the best solutions. The adopted method in this study is based on action research of the conceived notion of Lewin (1946) which defined action research as a way in which researchers could bridge the gap between practice and theory. Furthermore, there is a newer description of action research by Coghlan and Shani (2005) to undertake and study action as it takes place. In addition, Participatory Action Research (PAR) was adopted due to the collaborative nature of this study, in which the involved researcher was able to engage directly with the business case studies on a daily basis. Communication was done in two-way with the diagnosis of presented problems followed by further discussion by the management team and researcher at the very first stage of this study, aligning the action research process with Susman and Evered (1978). AR is characterized by an iterative cycle of diagnosing, action planning, taking action, evaluating, and specifying learning. The applied methodology has a main base on in-depth interviews due to limited duration in the research and huge number of involved relevant parties in the coal mining sector, especially in Indonesia. Therefore, the focus is directed at policy makers in related categories due to possessed insights and information that are considered to be extensive and valid as a basis for long-term strategic analysis and decision making. Another limitation is related to Aceh and Indonesia’s local and national culture that is associated with business, bureaucracy along with personal approach for interviews and data collection, which are considered to be different for each region and could possibly be considered as radical perspectives in other societies that might be viewed as bias and subjective assumptions. However, the author believes that such things are also vital in social science where these differences are essential points to the uniqueness of conducted research that still need further studies for each respectable topic. Further limitation, especially related to the area of research and the nature of obtained results are listed and explained in the conclusion of this dissertation.

The research was undertaken in the coal mining industry in Indonesia, after going through verification processes through the author’s experience and networks, which based on the company portfolio, operational and future planning. Hence, the author has decided that those companies and institutions fit the criteria as main sources for this research, where data collection was made with interviews, observations, reports, and papers from coal mining companies and related institutions. The initial goal was to select establishments that are closely related to coal mining in Aceh in accordance with categories, consideration and arguments in the literature review. For the selection of respondents, utilization of categories was made based on simplifications from stakeholders to facilitate data collection and analysis related to research questions, where the coal mining industry is strongly associated with local and central government; coal mining companies in Aceh; local community

around the mining site; and related organizations. Preferences were made based on an analysis of collected data sources, policy makers in the mining and energy sectors, decision makers in coal companies in West Aceh Regency including suggestions and inputs from researchers and practitioners. Respondents were contacted via email or text in advance to inform the author's wishes for an interview along with initial explanation regarding this research. Consequently, appointments are made at different times depending on the availability of the respondents and the progress of the thesis for the needs of subsequent interviews. Based on the verification from the website, expert recommendations as well as the author's knowledge in the mining activities, it has been decided that there is one company that will be the main subject, namely, PT Surya Makmur Indonesia (SMI), while PT Prima Bara Mahadana (PBM) is the supporting and complementing company, along with the Indonesian Ministry of Energy and Mineral Resources, Aceh provincial government, Aceh Provincial Mining Service, Aceh Provincial Forestry and Environmental Service, Government of West Aceh District and Indonesian Association of Mining Professionals (PERHAPI). Combination of institutions that are similar in general, despite dissimilarities in specific topics can provide differences in perspectives along with diversity of information and mindsets from their respective roles.

Studies were carried out through a number of different methods to ensure the best accuracy of analysis and conclusions that cover a holistic aspect through different approaches and sources of information such as interview, observation, reports and papers. Interviews as one of the widely used methods for collecting data and samples in social science were started with research objectives presentation along with its scope of inquiry. Discussion or conversational format was chosen to make the information extraction processes easier and without excessive formalities. The interviews were conducted, recorded and transcribed in Bahasa Indonesia and subsequently translated into English. Thus, the entire provided information and quotes were based on related translations from the original text that were conducted between 2018 and 2020 with online methods (e.g., text, voice call and video call) as well as offline methods (e.g., visit to mining sites or offices). Typed notes were used to minimize the risk of technical malfunction and for the comparison of outcomes during the progressed interview to avoid inevitable delays between interview and transcription. In addition, realist evaluation is used to provide inspiration, validation, falsify, and modification (Pawson, 1996, p. 295) where hypotheses emanate regarding how the program and the intervention were performed. It was accomplished by relationship and in continuous cycle between interviewer and respondents, where the interviewee studies the existing theories and subsequently gives information and discusses with the interviewer related to the understanding of such theories based on past experience and implementation (Pawson and Tilley, 2004, p. 12). Furthermore, Maxwell (2012) explains how in realist studies, data that are collected through qualitative means cannot be considered as constructions and referred to "evidence for real phenomena and processes" (Maxwell, 2020, p. 103). These data should be used to make inferences regarding such phenomena and processes, therefore the intention of retesting them against additional or alternative data should be an inherent part of the research practice. The aim of realist theory is to start with created theories as well as several tests to prove its validity, in which the result will be used to modify such theories, and will be tested further for improvement in order to obtain a better understanding of the reality. Respondents were selected based on the criteria of access to information, influence based on their position on policy and decision making process as well as in accordance with the relevance and objectives of this study, which falls into the category of purposive sampling to make the collected data to be valid and useful for this research. Several steps will be conducted by analyzing sampling, to make sure that it has already represented the proper data and needs, continued by calculating the proportionality and the reliability of the test to find the similar pattern. Snowball sampling, as a non-probability sampling, will be used to find other data that is initially hard to get and extracted, where it will serve as the continuation of research for additional theories and complementary results.

The complementary method is performed by observations with direct visits to companies and institutions' headquarter or office in Jakarta and Aceh including mining sites regarding operational activities, with a combination of visits in different occasions recurrently in order to collect complete data and assumptions based on constant changes and adaptations. In addition, observations were also made through participation in relevant meetings inside and with the company as well as the

government to perceive their interactions and understandings related to the current development of coal and mining issues from the internal aspect and between institutions. Communication and synergy with the local community around the mining area including environmental activists was also observed to comprehend how a personal approach and consistency in the implementation of company policy through the officials conveyed to the field. Furthermore, in compromising existing rules and norms, companies and governments as well as related institutions generally issue announcements to both public and internal teams in order to elaborate progress, challenges and future plans that are listed in a comprehensive annual report and also in specific documents per project. However, there was a limitation regarding the detailed financial situation of such companies, that was perceived as 'sensitive data'. Nonetheless, it was possible to receive general information, and a sufficient amount of data that are required for this research which is then analyzed and processed based on necessities. Related local and international papers, including topics related to coal, minerals, mining, business, economy, plantation, fishery, poultry, timber, etc., are used as complementary analysis and comparative data as well as the foundation of utilized theories and methods. Several sources that are available solely in Bahasa Indonesia were carefully translated to English by choosing the most suitable words without reducing the original meaning in order to assist in completion of explanations, analysis and assumptions for this research.

5. CRITICAL ANALYSIS

Maximization of potentials of the pre-acquisition and converted land that could be used either by the company and the local people to supply their products and basic needs will change their point of view and reduce the negative impact since most of the lands are usually deserted after reforestation and neglected by the company and society. The first step could be done with wood or timber that is widely used in our daily lives ranging from building construction needs, furniture to papermaking, where balance must be made with the reforestation process. After harvesting, it must be initially processed prior to being used as a final product to increase its value. In terms of non-timber forest products, Forest Management Unit/*Kesatuan Pengelolaan Hutan* (KPH) IV have various resources of Rattan, Dragon Blood, Bamboo, Arenga Pinnata, Agar Wood, Jungle Honey, Swallow Nest, Gemstones, and Redwood, where those have been exploited by the local communities in low intensity. However, data and information on these utilization are still limited to date, and need to be completed by the KPH IV management (Usman, 2018), since utilization in commercial scale has not been initiated. Furthermore, the use of felled timber need to obtain a Permit for Utilization of Forest Zone/*Izin Pinjam Pakai Kawasan Hutan* (IPPKH). It is required for the purpose of using timber in the mining concession area, by initially surveying the amount of existing trees. Collaboration can be established with local cooperatives, since those timbers have already been paid by the company and the produced results can be utilized for village development, construction of mining mess, etc., where those have already been included in the CSR category for corporate report. One of the possible collaborations could be performed for cutting, processing, and selling activities of its timber products which was considered to be inevitable due to the land clearing process prior to the mining activities. Those processes could be conducted with several procedures to ensure its quality and added value to maximize the profits of local people and also to assure the easiest method to sell processed products, by creating sawmills where wood bar which is still in the form of bark must be initially cut to create desirable shape and size according to the furniture design and concept.

Regarding the difficulty of Indonesian wood products in penetrating European markets, businessmen urged the European Union to immediately implement the Forest Law Enforcement Governance and Trade Voluntary Partnership Agreement (FLEGT-VPA). With these provisions, EU countries will only accept certified wood products from Indonesia. Unfortunately, VPA for Indonesia and the European Union have been postponed twice. Furthermore, Indonesia has prepared the Timber Legality Verification System/*Sistem Verifikasi Legalitas Kayu* (SVLK) to guarantee timber legitimacy and carry out a shipment test, which aims to recognize the suitability of the applicable system in Indonesia and the European Union. Processed wood products, including pulp and paper, can only be considered legal if the raw materials come from sustainably managed forests (Ministry of Industry of Indonesia). Despite that, the use of illegal wood in the wood processing industry in Indonesia is still

rampant, where applied modes by employers also vary, from manipulating forest management rights to logging trees illegally and has been carried out systematically by large companies along with local communities. The use of non-systematic illegal timber is usually carried out by people who live around protected forests where they are used to chop down trees for generations and do not realize that such actions are considered to be illegal. Moreover, there are also illegal timber processing and trading that are carried out by corporations by utilizing the local community. Unfortunately, wood products are still considered to be fairly sensitive due to attention from environmentalists, even though they are actually used for the benefit of the local community. Nonetheless, there are still negative views and connotations from such people regarding this topic.

Shrimp farming is an alternative for the utilization of post-mining and reclamation land area. In general, such activity is included in the aquaculture category, in accordance with its definition as "the farming of aquatic organisms, including fish, molluscs, crustaceans, and aquatic plants" (FAO). In Indonesia as an archipelago, especially in Aceh, is having part of its traditions and habits of society regarding seafood consumption, which is related to the abundant, easier to obtain, and have high protein value natural resources. Shrimp farms have a contribution of 55% of the total shrimp supply in the world (World Wildlife Fund), where sustainability is one of the main challenges in order to maintain the quality and quantity for consuming countries and companies. Thus, to create a sustainable aquaculture strategy, it is needed to have a fair and an equitable distribution between costs and benefits, creating jobs while improving the living standards of the community as well as shrimp farmers, create sustainable system between the government and the farming industry, provide adequate and nutritious food access for the community along with paying attention to environmental balance, as well as avoiding pollution and waste. In the common practice, there are several stages in the operation of shrimp farming, such as the stage of making or supplying and hatching shrimp seeds, breeding stage of baby shrimp to young shrimp and the final breeding stage of young shrimp to adult shrimp. In addition to the aquaculture industry, there are several classifications that are made for its operational activities, such as extensive, semi-intensive, and intensive. Extensive classification is given if the growth process is done naturally without any meaningful or intense intervention, such as natural food without additional nutritional inputs and water characteristics in the area of farms that use currents, contours and natural water from nearby sea. As for the semi-intensive classification, natural feeding is still carried out even though additional supplements are still given to ensure the quality growth of shrimp. Lastly, intensive classification is given if there is a significant intervention in the process based on the level of intervention, such as provided food modification along with regulation of temperature, acidity, saltiness and oxygen levels including shrimp farm density control. The latest is preferable and being used in the pilot project in Sigli, Aceh, with a common method of using artificial ponds where the bottom has been specially coated to ensure the desired result. Sales to the prospective market in the city of Medan in North Sumatra province, in its development has changed with the modified system where the first harvest will be sold to local market in Sumatera, while the second and third harvests will be focused to both local and international market with export quality at a much higher price.

Another alternative is poultry as one of the massively growing industries in Indonesia, which is related to the number of products that can be used for food (e.g., meat, wings, legs, eggs, etc.) and feathers that can be used for decoration and household items. Ease of breeding in terms of food, area, number of chicks, and costs are factors supporting the outbreak of this industry. FAO has defined it as "domesticated avian species that can be raised for eggs, meat and/or feathers. It covers a wide range of birds, from indigenous and commercial breeds of chickens to Muscovy ducks, mallard ducks, turkeys, guinea fowl, geese, quail, pigeons, ostriches, and pheasants." Chicken is the most widely bred type of poultry, with around 91% of the world's poultry industry. The pilot project will be developed in Aceh due to its potentials from local menus and community consumption of chicken eggs, which are considered to be more visible in the process and sales as well as its less risky nature, especially related to food standardization and also animal diseases. The majority suppliers originate from the city of Medan in North Sumatra province with the remaining originating from within Aceh itself that generally are not in large operational capacity and not well systemic, i.e., traditional type. The issue of infrastructure is also a challenge in Indonesia in the operational activities of the poultry

industry, where a commonly used method is manual feeding to overcome such constraints even though it requires higher cost and manpower. Improvement in infrastructure from mining companies will have several benefits on the final price of chicken and eggs. Not only should the impact of transport costs be reduced and lowering cost of production, but better or shared roads would allow the transport of specialized equipment such as feed bins (Ferlito and Respatiadi, 2018).

Lastly, plantation as “activities that commercialize certain plants on land and/or other growing media in suitable ecosystems, process, and market the goods and services of these crops” based on the definition of the Indonesian Center for Estate Crops Research and Development/*Pusat Penelitian dan Pengembangan Perkebunan Indonesia* has massive potential since local people are already familiar with such activity, even though mostly are still using traditional methods. Hence, with the help of science and technology, capital and management, it could realize prosperity for plantation businesses and the community due to its suitable agricultural land that is usually located in the tropics or subtropics area to be used to produce large-scale agricultural trading commodities and sent to distant markets (i.e., export or sent to other provinces). It can be sowed with industrial plants such as cocoa, coconut, and tea, where the size of the area is fairly relative and depends on the size and volume of the commodities. However, it requires a minimum size of land to maintain profits through the applied production system that could be provided by a post reclamation mining area. In addition, plantations generally implement the monoculture method. Another feature, although not always the case, is the processing or packaging of the harvested commodity on the plantation area prior to sending the product to buyers (ibid). The positive aspect of plantation is to aim the integration of company for not only focusing on coal and minerals yet could also create additional jobs, profits, and benefits in the same territory that will be transformed and prepared for plantations, farms, fishery ponds, etc., where the development of such activities and business is considered purely as part of their CSR program.

Furthermore, the community empowerment programs are desired to be accomplished through activities that are directly related to the economic conditions, such as improving literacy on technology in agricultural or livestock business, as well as taking into account the fertile natural conditions, where each planted seed will relatively be able to survive until the producing or harvesting phase. However, the current shortcoming lies in the absence of sustainable cultivation, where current benchmark and extension is issued only for palm oil plantations, which used to be in good condition despite at present have shifted to the industrial sunset phase due to declining selling prices and absence of benchmark for farmers on the short and medium term. The mining company has a mission to empower the local people in agricultural commodities or plantations that have high economic value and broad markets such as fruit or plants which have unique specifications and have been proven to be possible for planting in lowlands and other areas with special features such as in the designated mining area. Some examples are the Dragon Blood’s resin (*Jernang*) that can be used as cosmetic ingredients, followed by Durians, Avocado (*Alpukat*) and Thorny Palm (*Salak*). The main source of income of the community around the location of the majority have further dependence on the plantation and agricultural sectors, where detailed and updated information are also obtained from the Aceh Plantation Service. The authorities in this regard are the forestry service (KPH) which is under the central government and has authority over all forest areas, including those with Other Areas of Use/*Areal Penggunaan Lain* (APL) status on a regional basis, along with authority over land status, where the management for agriculture is handled through the agriculture and plantation services. Seedlings are already available and free, however the obtaining process is considered to be complex due to bureaucratic systems (Hadi, 2019). Studies must be carried out to discover the most appropriate method which is also in line with the thoughts and desires of the local community, since modification of common practice will require a strong and a sustainable effort.

Another alternative is to use a hydroponic system to meet the needs of food production due to damage and reduction of fertile land by the reason of economic and construction activities to address the increasing necessities of mankind, where common traditional techniques of agriculture and plantations are highly affected. With limited area and allotment that has transformed into an urban area, making non-soil with less cultivation method to be one of the best choices. Other types of utilized techniques are aquaponics and aeroponics. However, compared to the last two, hydroponics

receive growing popularity due to its simplicity and efficiency, especially for growing and harvesting commercial crops. The system uses water and rockwool as its main media, including the additional use of nutrient solutions along with recycling and reuse techniques. In definition, hydroponics is considered as “a technique of growing plants in nutrient solutions with or without the use of an inert medium such as gravel, vermiculite, rockwool, peat moss, saw dust, coir dust, coconut fiber, etc. to provide mechanical support” (Sharma et al., 2019, p. 364). Horticultural plants that are usually developed are leaf vegetables, fruit vegetables, fruits, ornamental plants, landscaping, and medicinal plants. In Indonesia alone, such cultivation techniques began to be applied since 1980 and are still developed for vegetables although recently become popular and reached massive commercial activities, due to its perception as an alternative for healthy and organic vegetables and crops. In terms of environmental issues, hydroponics is regarded as a clean and sterile farming since the use of pesticides can be diminished due to no risk of soil-borne disease insect or pest infection along with harmful chemical compounds left in the soil or conventional water sources. Furthermore, the system is also helpful to save a large amount of water by 70%-90% (ibid, p. 369) which is usually used for irrigation and watering in traditional techniques to wet and maintain the moisture of soil. Plant roots are submerged in water or wet substances where absorb nutrition can be applied efficiently in water that is flowed continuously in a recycle or rotating pattern to be pumped back into the growing media. In addition, the use of water and needed nutrient solutions that can be adjusted according to the needs of each type of plant makes the growth to be faster, healthier and bigger. Hence, the price will be higher and more profitable for local farmers that also consist of former or retired mining workers. Moreover, even though Indonesia is in a tropical climate area with two different seasons, there is an uncertainty of seasonal changes due to global warming which makes planting and cultivating ineffective. Thus, it is possible to overcome such issues with this system. Furthermore, higher density or huge amounts of plants per unit due to more systematic and more effective arrangements can also reduce land usage where other unused areas can be utilized for other needs or conserved as a natural area in post mining activities or post reclamation, along with higher yields. The local community can receive the benefits in terms of ecosystems and economy due to high demand, especially in the global market which is estimated at US\$ 21,203.5 million in 2016 for hydroponics, where tomatoes is the largest segment that has a global market share of 30.4% (ibid). In addition, FAO has a concern that prior 2050, food production is expected to increase by 70% in order to meet future needs, where hydroponics is one of the methods that promote technological improvement and productivity growth. It can also overcome yield gaps and economic inequality for farmers, especially in a more prosperous island, such as Java due to lack of information, suppliers, complementary services and technical skills. Adoption of hydroponic technology that is commonly carried out in Java to Aceh could be triggered by mining companies, including by adapting to local conditions and assisting in the construction of related infrastructure which serve as solution as well as examples, not only for the local community but also for the local government, to gain their interest in implementing and developing this method.

Chart 1. Corporate Social Responsibility program based on mining phases



Collaboration and cooperation for the implementation of the integrated mining practices program are carried out by partnering with other mining companies, where they allow the use of mining facilities that they already have and will be built such as roads, ports, jetties and bridges, where cooperation with local cooperatives institutions and small-scale companies owned by communities around the mine is also carried out through the provision and implementation of the process of transporting mining products using trucks, cleaning services, waste disposal, food catering, laundry, camp management, security, etc. With such collaboration, the regional and individual economic level of the surrounding community can be raised as well as reducing the unemployment rate, which is one of the

main causes of crime, especially nearby mining areas that are conducted by thugs who generally terrorize local residents and company's employees. Increased economic level is also one of the factors that increases the quality of education which will later benefit the company for future recruitment of qualified workers in the local area rather than obtaining from external area that commonly elevate the number of immigrants and raise the potential conflicts due to social enviousness and resentment from local people and inhibit productivity due to the homesick effect which is generally experienced by non-domestic workers. Those alternative and potential business activities such as poultry, plantation, and shrimp farm in collaboration with local cooperatives, could serve as an added value for mining companies where there are varieties of produced products, flexibility in managing the mining areas and increasing positive views on mining company since generally in the eyes of common people, mining activities tend to be arrogant, exclusive, self-interested as well as damaging the nature and the community settlements including as the main cause of severe pollution. The integration of these products is carried out after mining activities at certain phases have been completed and after the reclamation process and land conversion have been carried out, where the mining company assists the preparation of road access, logging operations in land clearing, seeds purchasing, etc. For timber products originating from the mine area, cooperation must be carried out with companies that have timber utilization permits.

The implementation of intensive social responsibility activities from the company to the surrounding community needs to be done to solve existing local problems. However, it must be understood that not all existing issues can be resolved by the company alone. What needs to be performed is to do assistance in accordance with the existing capabilities and rules, such as by repairing and strengthening roads and bridges. Hence, it will increase the company's brand image which leads to the reduction of conflicts and the negative views from the surrounding people, where the purpose is also to make the local community experience the benefits and realize that they have a mutual relationship with mining companies. Preparation of complementary business activities in collaboration with surrounding communities, as has been described before, is part of the community development program incorporated in the scope of CSR, in addition to Community Development as "the planned evolution of all aspects of community well-being (e.g., economic, social, environmental, and cultural). It is a process whereby community members come together to take collective action and generate solutions to common problems" (Frank and Wright, 1999, p. 3), where it is part of the main subjects in the scope of CSR. Its activities are intended for stakeholders within (i.e., employees) and outside (i.e., community) of the company. Thus, CSR could be the first initiation prior to starting large-scale operations, related to the need for a good relationship with the local community. Another considered impact is for social communities where in the initial planning which is only regarded as a community development program in a small scale and is limited in its operations that later changed to corporate social responsibility with a wider range of scope and types of activities.

Complementary service, especially in the health sector is fundamental to ensure the sustainability of planned CSR projects and integration by the construction of an adequate clinic in the village or at the mining site area that can accommodate health services to the community for free or at a low price with its revenue that will only be used as administration fees. In addition, counselling will be conducted to the community regarding clean and healthy life to realize massive prevention of infectious diseases, where the most common one in such areas is malaria, followed by dengue, typhus and cholera. Other missions are the development of adequate infrastructure, which includes basic necessities such as drainage (i.e., to avoid flooding) as well as clean water facilities along with washing and toilet facilities/*Mandi Cuci Kakus* (MCK) to also increase public awareness in maintaining cleanliness in the environment. For electricity issues, distribution needs to be done more evenly for the allocation of electricity to remote villages for the reason that it will be a great aid to the community, in which will make it possible to use necessary equipment to conduct previously mentioned businesses and daily activities. Tertiary cable distribution can be established where a mining company only accommodates and assists in the financing aspect, while the technical aspect will be done by the electricity company (PLN) to supply electricity for the needs of both companies and surrounding communities, with branching from its main electric cable.

In addition to the complementary businesses on pre and post mining activities that were previously unplanned and uncommon in the integrated business model of mining area have become a serious program where huge future potentials exist, especially to increase overall profits, foster positive relationships with local communities and meet regional needs in Aceh as well as other provinces in Indonesia, which were started in gathering information and knowledge from partners who are experienced in these fields. The latest research and survey results from KPH IV state that there is an interest from the local community for the development of recreational areas, whether in the form of natural and artificial or modern tourism activities. However, it requires further advancement and adaptation in relation to the development of local community desires and Aceh government planning related to this issue. Lastly, reforestation has a common practice where all areas are replanted. However, due to other post-mining projects, this activity was carried out with detailed information from the KPH and post-mining projects adaptation regarding changes in land contours, types of suitable plants, land preparation, new facilities for local residents, etc. Thus, companies should not solely replace the land for local communities but by developing complementary aspects, such as preparing roads and accesses, clearing lands, seeking prime quality seeds as well as other related activities and programs, by making and preparing local people's businesses to receive sustainable results. CSR could be done in collaboration with cooperatives or villages, where employees from nearby areas (i.e., locals) are hired, in collaboration with the mining company within the mining period, where partnership is carried out to support mining operations such as catering, cleaning services, laundry, camp management, coal transportation and waste disposal. Furthermore, there will be remaining assets that could be used for future projects when the initial works have been finished.

6. CONCLUSION

The implementation of CSR and community development programs to strengthen the local economy could prevent the undesirables. Moreover, the best practice could only be possible by the rationality of decision making through good strategic management to prevent selective classification of information. Related to relocation of local people for new mine areas, adaptation to a new uniquely different location proved to be difficult even though compensation were given based on the results of mutual agreement. Hence, the process of hearings and input for planning CSR programs as well as finding the root causes of the unsustainability of similar previous programs are key in the continuation of their economic activities in new areas, which were also supported by mining companies during the early period. In addition, the benefits to local society through the Indonesian mining cooperative system (i.e., small scale mining) in Aceh are also effective. This application makes them have simpler and easier administration processes that could lead to poverty alleviation by encouraging job creation, since collaboration with the community with a cooperative system needs to be done as efforts to increase the capacity and business performance, strengthen and expand the role of business support systems, as well as to increase the assistance of the business climate, that will leads to the maximization of land acquisition and converted land potentials that could be used either by the company and the local people to supply their products and basic needs by implementing complementary business. The combination and integration of coal mining with timber, plantation, poultry, and shrimp farm in the coal mining concession is possible since there is a regulation to develop community development and empowerment programs that result in incentives for companies that are complying with the law, without specific directives and technical guidance for mandatory CSR. Collected data could serve as discussion and negotiation materials with contractors as well as for the purpose of partnerships with the local community for the distribution of costs, work and benefits. Furthermore, mapping can also be done to the community surrounding mining site for the development and empowerment of the local community. For this reason, to maximize the existing process and the obtained value, an integrated mining plan and system is needed from the beginning to the end for the most favourable implementation of the mining program. This could change their point of view and reduce the negative impact based on the previous data since most of the lands are usually deserted after reforestation and neglected by the company and society. Such integration will serve as an option to overcome their alternative work as illegal miners and loggings as well as land burning that have vastly greater risks since previously it was considered to be of less or even have no value.

The best practice through a system of cooperation and profit sharing could be an added value and boost the local community's economy.

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