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Analysis of Social, Economy and Environmental Assessment of Iron Sand Mining in South Coast Cikalong Sub-district, Tasikmalaya Regency, West Java Year 2015-2016

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ANALYSIS OF SOCIAL, ECONOMY AND ENVIRONMENTAL ASSESSMENT OF IRON SAND MINING IN SOUTH COAST CIKALONG SUBDISTRICT, TASIKMALAYA REGENCY, WEST JAVA YEAR 2015-2016

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Abstract *The research aims to analyse the impact of iron sand mining activity in Cikalong Sub-district, Tasikmalaya Regency, West Java and to describe how the society and the government overcome those impacts. There's several impacts of iron sand mining activity, both of negative impact and positive impact. First, social impact that will affect the social life of the societies around the iron sand mining area. Such as how the societies life before and after the existence of iron sand mining, whether change or not. Second, economic impact which is will improving the economy of the societies, especially those who working as a miner. Another economic impact is decreasing of the number of unemployment of the societies. Third, environmental impact that will caused some damage to the environment around iron sand mining. There are several categories of environmental impacts, such as impacts on the mainland, impact on the water and impact on the air. Iron sand mining must be balanced with the good maintenance of an environment from the surrounding community or from the government itself. if the natural environment is damaged there will be an imbalance that threatens human life, such as natural disaster. Moreover, in the natural environment there are many non-renewable natural resources, if its didn't maintained well, the sustainability of future generations will suffer the extinction.*

Keywords: Iron Sand Mining, Social Impact, Economic Impact, Environmental Impact

Background

West Java is a province with a considerable iron sand reserve in Indonesia, with proven reserves of up to 1,302,000 million tons spread over several districts. This potential will certainly attract many investors to exploit iron sand which will be very beneficial to increase local revenue (*http://jabarprov.go.id* accessed on 05 Feb 2018). Negative impact which felt by the public is the increasing of road damage due to the transportation of mining products through public road. In just five years from 2007 to 2011, the ecological damage caused by iron sand mining is estimated to reach Rp35.74 billion or with a total production of approximately 1.35 million tons of iron sand (*https://daerah.sindonews.com* accessed on 15 March 2018).

Road damage is a serious problem faced by almost all countries in the world. This road damage is caused by many factors, one of which is caused by the load of vehicles passing overcapacity. Road capability for the heaviest (axle load) MST 8 tons and MST 10 tons, traversed by vehicle with MST up to 20 tons. In 2010, the biggest road damage in Indosesia is on the district / city road. The total length of road 288,185 km, about 31.14% of roads slightly damaged, good condition is only 22.46% and the rest is quite heavy. Provincial roads with a total length of 48,681 km are in good condition only about 5.85%, while from 39,310 km national roads are 13.34% in lightly damaged condition and 49.67% are in good condition and the rest are severely damaged (*www.poskota.co.id* accessed on 17 October 2017). This includes strategic roads such as the East Sumatera Highway and the North Coast of Java. It is estimated that the social and economic costs incurred by road users are around 200 trillion rupiah per year, very large when compared with the government's investment of 3-6 trillion rupiah per year (Widjonarko 2007).

One of the areas that have potential is the south coast of Tasikmalaya, especially from Cipatujah Coast until Cikalong Coast. In one of Tasikmalaya daily newspapers mentioned that South Tasikmalaya areas known for the wealth of mineral resources.

From all kinds of minerals in Tasikmalaya District, the largest is the content of iron sands along the coast of South Tasikmalaya. Geographically and administratively, there are three sub-districts in Tasela which has a beach among others, District Cipatujah, Karangnunggal and District Cikalong. Iron sand resources in Java Island are found on the southern coast. West Java has 35,612,966.9 tons of iron sand resources consisting of 28,297,032,29ton (Fe) and 7,315,934.61 (titan) (Rosana et al, 2013). The resources are spread in Ciamis Regency, Tasikmalaya Regency, and Cianjur Regency, Sukabumi Regency and Subang Regency.

Tasikmalaya regency is one of the districts targeted by iron sand mining businessmen. The amount of iron sand resource potential in Tasikmalaya Regency is quite large, which is about 3,659,390 tons spread in three subdistricts namely Cikalong Subdistrict, Cipatujah Subdistrict and Karangnunggal Subdistrict. Iron sand mining in Tasikmalaya Regency began in 2004 starting with the exploration stage which until now generally has been done. Iron sand mining in Tasikmalaya regency is done openly by digging the soil surface, taking the minerals and left open. Sites considered having the potential of iron sands continue to be dug and carried out mining regardless of land cover. Rice fields and plantation land for the livelihood of the residents were mined without regard to reclamation.

Tasikmalaya Regency now faces several problems related to the implementation of iron sand mining. First in the social field there is a conflict between the community itself, between the pros and cons. Secondly, the environment along the coast is now severely damaged and endangering the surrounding area and the people who live there. Third, the damage to road infrastructure through which iron trucks carrying hundreds of passes each day will also cause air pollution from the transporting dust. In this paper, the writer tries to write about “Social, Economy and Environmental Assessment of Sand Mining in South Coast Cikalong Subdistrict, Tasikmalaya Regency, West Java Year 2015-2016”.

Theoretical Framework

Theory of Impacts

Definition of impact according to the Big Indonesian Dictionary is a clash, an influence that has both positive and negative effects. Influence is the power that exists and arises from something (people, objects) that come to form a person's character, belief or deeds. Influence is a state where there is a reciprocal relationship or causal relationship between what affects and what is affected. (KBBI Online, 2017)

Simple impacts can be interpreted as influences or effects. In every decision taken by a boss usually has its own impact, both positive and negative impacts. Impact can also be an advanced process of an internal control implementation. A reliable leader should be able to predict the kind of impact that will occur on a decision to be taken.

From the above description we can divide the impact into two senses namely positive and negative impact. The theory of impacts also related to the Environmental Impact Assessment (AMDAL). AMDAL consist of social impact, economic impact and social impacts. Understanding Environmental Impact Analysis, The Environmental Impact Assessment (AMDAL) is a study of the major and significant impacts of a planned business and / or activity on the environment necessary for decision-making processes concerning the conduct of business and / or activities in Indonesia. This AMDAL is made when planning a project that is expected to have an impact on the surrounding environment.

In this research, impacts divided into three, which is social impact, economic impact and environmental assessment. Here the explanation regarding the theory;

1. Social Impact

   Social impact also related to the social changes. Accoding to Selo Soemardjan social change is any change in the various institutions of society

in a social environment that affects the social system, including social values, attitudes, patterns of behavior between groups in society. Its mean the social impacts will causing the social changes.

2. Economic Impact

Economic impact is related to socio-economic situation. Social impact also related to the social changes. Accoding to Selo Soemardjan social change is any change in the various institutions of society in a social environment that affects the social system, including social values, attitudes, patterns of behavior between groups in society. Its mean the social impacts will causing the social changes.

3. Environmental Assessment

Understanding the environment according to Otto Soemarwoto is the sum of all objects and circumstances contained within the space in place where affect our lives. Theoretically, the space is infinite in number, but practically in that space is always given the limit according to the needs that can be determined, such as: river, sea, cliff, political factor or other factors. So, the environment must be broadly defined, not only for biological and physical environments but also for the cultural environment, social environment and economic environment.

Mining and Iron Sand Mining Theory

Adrian Sutedi (2012: 43) Mining has several characteristics, which are non-renewable, have higher relative risks, and their impact has a relatively higher physical and social environmental impact than other commodities in general. This means that every mining process always has two opposite sides, namely as a source of prosperity as well as environmentally destructive potential. As a source of prosperity, there is no doubt that this sector has supported state revenues for years. As an environmental

destroyer, open pit mining can change the total climate and soil as all layers of soil above the mineral deposits are removed. In addition, to acquire or release mine seeds from rocks or sand as in sand mining in rivers, miners generally use hazardous chemicals that can contaminate soil, water or rivers and the environment.

Research Method

This research uses qualitative descriptive research method with case study approach, which is a detail against a background or one subject or a document storage or event in this research. The data collection methods using an interview technique. Data analysis technique used in this research is interactive analysis. This model has 4 components of analysis that is: data collection, data reduction, data presentation, and conclusion. The research location in this research is the South coastal Cikalong Subdistrict, Tasikmalaya Regency, West Java.

Finding and Analysis

According to the operational definition there's three indicators in the impact of iron sand mining activity, namely:

1. Indicator of Social Impact

There is no social change that occurs in the community after the sand mining activity in the villages. Indigenous people of Cikalong and immigrant residents mingle each other and help each other out. The most prominent thing in this social impact is between the pros and cons of the sand mining activities. Actually, the societies who working as miners declared to disagree if the sand mining is continued. However, economic conditions put pressure on the people to keep taking the job.

Before the existing of iron sand mining activity, some society work as a farmer or traders. There's some of society that still need a job to fulfil their needs besides working as a farmer and a trader. They decided to taking a job as a miner to increase daily revenue. The lack of job space causing the unemployment people depend on

sand mining in Cikalong Sub-district. However, this social condition doesn't reduce the harmony between communities with one another. They continue to help each other and support the decisions taken by the community itself.

There's two types of society in facing the iron sand mining activity. There are societies who support and reject these activities. Societies who rejected the presence of companies around their villages because most of the company's locations are damaging their area. While Societies who support the mining activities because they feel benefited with the opening of new jobs for them.

2. Indicator of Economic Impact

Iron sand mining is one of the solutions to reduce the number of unemployed people because some people work to become laborers in sand mining, be a supervisor / miner / food seller. Most of the unemployment that is reduced due to the workforce in sand mining is male labor. The existence of sand mining activities has created considerable employment opportunities for some communities in villages close to sand mining sites. Income from iron sand mining is not much as other jobs can produce, but the income is enough for people who have problems of economic shortage. At least the income from mine sand is enough to connect their lives in a day. It also makes the peace of mind for some families because by working in sand mining there is income they earn to support their previously unemployed families. Most of the miners are the head of the family, about 21% of the miners who become the backbone of the family of young people who initially do not have a job.

Iron sand mining also increasing the income of society. Before becoming a miner most of them are becoming farm laborers with income Rp. 10.000, - / day, now there is an increase in revenue. After the existing of iron sand mining, they can get Rp. 30.000 - Rp. 45.000/day as a miner/labourer. After the existence of iron sand mining activity, the economic structure also developed, such as stalls becoming more than before. There's 10 pieces stalls and the presence of food vendors around 5 people.

3. Environmental Assessment

Iron sand mining causes damage to ecosystems, such as Mangrove ecosystems and coral reef ecosystems. As a result of sand mining activities, causing damage that occurs, among others, reduced oxygen levels in water due to sedimentation / excessive precipitation, mangrove forest function changes as abrasion retarder and marine biota ecosystem. Damage to coral reef trash can result in, among others, abrasion, decreased water productivity decreasing the attractiveness of marine tourism and decreasing the welfare of fishermen.

Impact on other mainland is the increasing of road damage. Company routes in some villages in Kecamatan Cikalong can be passed by vehicles with a maximum of 8 tons. At the mine operation stage every day, it is planned that 1500 - 2000 tons of iron sand are transported using a truck with a capacity of 20 tons per unit. This condition will damage the road along the transport route because, the maximum weight of the route road is 10 tons.

Waste from the management of this course will affect the water content in the neighborhood residents. The treatment of iron sand mining equipment will certainly produce used lubricants. The remainder of this used oil if not managed properly will be able to contaminate resident's wells, as well as seawater in the mine environment. Water will become very unstable or cloudy, so that the type of biota present is targeted. This condition will decrease the number of fish, shrimp, crab, which is an additional livelihood for the community besides farming.

The iron sand mining also causing the noise level, which is will increase when mining operations begin to run normally. The duration of noise lasts as much as 150-200 times per day according to the planned volume of 1500-2000 tons per day. With 75-100 rit transport volume per day. This condition will certainly affect the peace of people during sleep.

Principles in The Sand Mining Mining Management Model in Cikalong Sub-District

Environmental management planning will be effective when considering the economic, social and environmental sectors so that the policy taken as a decision is not only a policy that is technically environment but some related policies. In this research, the policy of environmental management model of sand mining location in Cikalong Sub-district is carried out based on the following principles:

1. Realizing the Society Empowerment
2. Implement Sustainable Development
3. Realizing Good Governance
4. Paying Attention to Social, Economic and Environmental Aspects

Steps to Implement the Sand Mining Mining Management Model in Cikalong Sub-District

The steps undertaken in implementing the sand mining mining management model in Cikalong Sub-district are to realize the selected policies, all policies are interconnected and implemented in an integrated manner for one common goal. The steps are as follows:

1. Preparation Phase

The preparation stage consists of three aspects, namely administrative aspects, governmental aspects and institutional/community aspects.

2. Activity Implementation Phase

The activity implementation phase is divided into several stages, namely:

1. Activities to Realize a Culture of Awareness and Environmental Awareness on All Stakeholders Involved in Agro-Tourism Activities
2. Localize Activity and Stop Mining Activities

3. Community-Based Crop Management and Soil Conservation Activities
4. Activity of Agriculture System Based on Environment and Based on Agribusiness
5. Land Reclamation Activities of Former Iron Sand Mining
6. The Development of Facilities and Infrastructure of Agro-Tourism Location
7. Tourism Promotion Activities
8. Agro-tourism Activity
9. Monitoring, Evaluation and Reporting Activities
10. Community Empowerment Activities in Agro-Tourism

Conclusion

Iron sand mining activities in Cikalong Sub-District, Tasikmalaya Regency, have several impacts on the physical and social environment of the community, both positive and negative impacts. The impact on the physical environment is the change of soil structure, the occurrence of air pollution in the form of dust, some of the village roads become damaged, the cut off of the ground water flow, the comfort and safety of the environment is reduced, the change of land use, the decrease of water availability, the loss of some beautiful and cool scenery, as well as irregular and hollow land.

The positive impacts of the socio-economic aspects felt by the people are to reduce the number of unemployed, the increase of income from farm laborers to labour in sand mining and the inclusion of routine money for the cadets who manage the retribution. Negative impacts of the socioeconomic aspects that are felt on the mining community are the lack of security at work so often cause accidents such as fractures or fractures or minor injuries to the feet, hands, eyes or respiratory disorders.

Recommendation

With the impact of iron sand mining activities in the form of physical impacts and socio-economic impacts both positive and negative, it is necessary an effort to manage the environment so that negative impacts are not widespread or increasingly severe. Physical impacts of environmental damage must be addressed in an integrated manner under the responsibility of Bappedalda (Regional Environmental Impact Management Agency) and Department of Forestry and Plantation and KSDA (Natural Resource Conservation) so that the land recovered in accordance with its intended use. The local government must strictly enforce the policy of land reclamation obligations to mining entrepreneurs.

Environmental management of iron sand mining location in Cikalong Sub-district at every stage of its activities since planning, implementation, monitoring, evaluation and reporting, must always involve the local community in a concrete and real way so that the realization of community empowerment can be realized. One possible environmental management model is the environmental management plan of the sand mining site to be one of the agro-tourism sites in Cikalong Sub-district. Development activities with community empowerment does take a long time and funding is not small, but success in any program will be realized in a real and sustainable way.

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