Evaluating Mine Land Reclamation Policy in Indonesia: The Case Study of East Kalimantan Province

Sonny Widyagara Nadar ^{a*}, Bambang Supriyono ^b, Muhammad Nuh ^c, Thomas Edward Jones ^d

^a Energy and Mineral Resources Agency of East Kalimantan, Samarinda, East Kalimantan, Indonesia

^{bc} Brawijaya University, Malang, East Java, Indonesia

^d Ritsumeikan Asia Pacific University, Beppu, Oita, Japan

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ABSTRACT

The focus of this research is evaluating the mine land reclamation policy in East Kalimantan based on framework developed by Europe Environmental Agency (EEA). Using the reclamation rate as main indicator, the results show that there was no significant increase in reclamation rate after the regulation was issued (2017) compared to the pre-regulation era (2013). In fact the reclamation ratio of disturbed land actually decreased from 67.91% to 62.98% while the revegetation ratio to disturbed land increased slightly from 42.55% to 43.29%, showing that further research and an action plan is needed.

Keywords: East Kalimantan, mining, reclamation, policy, commission

INTISARI

Fokus dalam penelitian ini yaitu melakukan evaluasi terhadap kebijakan reklamasi tambang di Kalimantan Timur dengan mengacu pada kerangka penelitian yang dikembangkan oleh *Europe Environmental Agency* (EEA). Dengan menggunakan tingkat pencapaian reklamasi sebagai indikator utama, hasil pada penelitian ini menunjukkan bahwa tidak ada peningkatan yang signifikan terhadap pencapaian reklamasi setelah peraturan tersebut diberlakukan (s.d. 2017) dibandingkan dengan sebelum adanya peraturan tersebut (2013). Bahwasanya rasio reklamasi mengalami penurunan dari 67.91% ke 62.98%, sementara resio revegetasi sedikit meningkat dari 42.55% menjadi 43.29%, menunjukkan bahwa dibutuhkan penelitian dan rencana kerja yang lebih jauh kedepannya.

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1. Introduction

Environmental issues have been in the spotlight of society particularly after the Rio de Janeiro Earth Summit in 1992 promoted by The United Nations Conference on Environment and Development (UNCED). Decentralization in Indonesia since the early 2000s has brought the expansion of mining permits

escalation exceeded 10,000 licenses. East Kalimantan, a province that has great potential in the mining sector, particularly coal mining, currently has about 19.5 billion tons of coal reserves. In 2016, there are 1404 mining licenses in East Kalimantan consist of 427 operation licenses and 977 exploration licenses (Energy and Mineral Resources Agency of East Kalimantan, 2017). Statistic from Energy and Mineral Resources Agency of

* Corresponding author. Tel.: +62-812-3090-8987; e-mail: sonny_lbr@yahoo.com

East Kalimantan (2016) shows that there are 98.169,92 hectares of land disturbed by mining activities, whereas only around 38.320,50 hectares has been revegetated (about 39%). Theoretically, in purpose for restoring the disturbed area resulted from massive mining activities, mine land reclamation is still the best solution to maintain environmental carrying capacity. To be more specific, mine land reclamation can be defined as activities aimed at improving disturbed lands as a result of mining activities so it can be functioned as intended (Devi & Prayogo, 2013). This means that the management of post-mining land should be directed to the appropriate land use and spatial planning. The fundamental of mine reclamation in Indonesia is regulated under Act No. 4 of 2009 on Mineral and Coal Mining (Mining Law), replacing Act No. 11 of 1967 on Basic Provisions of Mining Act No. 4 of 2009 is then lowered into government regulation No.78 of 2010 on Reclamation and Mine Clossure and Minister of Energy and Mineral Resources Regulation No.7 of 2014 on Reclamation and Mine Clossure Implementation in Mineral and Coal Mining Activities as the technical guidance.

However, as the biggest coal producer in Indonesia, East Kalimantan is a benchmark province in implementing good mining practice including good reclamation activities. Based on those facts, One of the things that can be done to reduce damage to the environment by the mining operation is tighten up the regulations related to mining. Therefore, analyzing and evaluating the existing regulation system including the local government regulation is one of the tools to ensure mine reclamation process will be properly implemented.

2. Theory

2.1 Prior Studies

There can be found several other studies in the literature that have assessed regulation of mine land reclamation. To give more detail explanation, according to Yonk, et.al. (2017), the Surface Mining Control and Reclamation Act of 1977's as a milestone in the enactment of mining reclamation regulations in the United States, had an important impact on environmental protection. While the need for energy supplies derived from extraction of minerals was high at the time, the United States government struggled to achieve a balanced level of economic movement and environmental protection. However, there are many conflicts of interest that occur after the issuance of this regulation, such as industry actors who do not allow the Office of Surface Mining Reclamation and Enforcement (OSMRE) to issue environmental policies, but the spirit of the rule is clear, to fully protect the environment with

its consequences, and the government has full authorities to take the necessary action.

Furthermore, Cao (2007) makes a fairly firm statement of the policy characteristics present in the developing countries. Developing countries are characterized by contradictory objectives, segmented and general legislation, by complicated and confused institutional structures with low effectiveness, and by poor compliance. By exploring mine reclamation policy in China, Cao can provide a portrait of governance in developing countries that have not well implemented yet and put forward the solution for developed countries to help developing countries in designing legal framework and enhance their institutional capacity building at all levels with the assistance of international financial institutions, as well as to jointly review the costs and benefits of mineral distribution.

Finally, Hu (2014) argue that, the study of mine land reclamation policy from new public management perspective in China, is a comprehensive research both in theoretical and practical level, for promoting the good model of mine land reclamation policy. In their paper, the mine land reclamation regulation system framework and elements were expounded in detail through preliminary analysis, i.e., regulatory rules, regulatory purposes, regulatory subjects and objects, regulatory procedures, and regulatory means. However, He concluded with the statement that China's land reclamation regulation is still at its early stage, the theories relevant with regarding mine land reclamation system still need to be improved and completed in order to provide stronger theoretical basis and technical support for the development of land reclamation regulation.

2.2 Environmental Policy Evaluation

Policy evaluation, only recently gaining popularity in the environmental field, is much older than many people think. As the governance of national states grew increasingly complex during the course of the 19th century, national parliaments found themselves barely able to carry out their task of checking the executive branch of government (Crabe, et.al., 2012). According to European Environmental Agency (EEA), there are many definitions of evaluation, some more relevant than others for environment and climate policy evaluation. The EEA frequently uses two of these definitions. The first definition stresses the real world utility of evaluation, and the fact that ex post evaluation should aim to be relevant. Basically, this definition referred to the statement made by Vedung (2010):

Evaluation is minimally defined as careful retrospective assessment of public sector interventions, their organization, content,

implementation and outputs or outcomes, which is intended to play a role in future practical situations.

The second definition of evaluation emphasises a set of evaluation criteria commonly used in evaluations and, like the first definition, accentuates the retrospective (ex post) character of evaluation. Evaluation is defined as an evidence based judgement of the extent to which an intervention has been effective and efficient; relevant given the needs and its objectives; been coherent both internally and with other EU policy interventions; and achieved EU added value (EEA, 2016).

2.3 Mine Land Reclamation

Reclamation is defined as activities aimed at improving disturbed lands as a result of mining activities so it can be functioned as intended (Devi & Prayogo, 2013). This means that the management of post-mining land should be directed to the appropriate land use and spatial planning. In Reclamation aspect, the fundamental of mine reclamation in Indonesia is regulated under Act No. 4 of 2009 on Mineral and Coal Mining (Mining Law), replacing Act No. 11 of 1967 on Basic Provisions of Mining. Act No. 4 of 2009 is then lowered into government regulation No.78 of 2010 on Reclamation and Mine Clossure and Minister of Energy and Mineral Resources Regulation No.7 of 2014 on Reclamation and Mine Clossure Implementation in Mineral and Coal Mining Activities as the technical guidance.

Furthermore, Based on regulations above, in order for optimizing reclamation activities, the government obligates reclamation bonds, which can be defined as a fund provided by a mining company in form of security deposit for reclamation, to anticipate unexpected situations regarding the continuities of reclamation, like bankruptcy, or even irresponsible behaviour from mining company by neglecting the obligation to reclaime the mining area.

3. Research Method

This research is a descriptive qualitative study using environmental policy evaluation framework developed by European Environmental Agency (EEA) through four levels of evaluation; instrumental, institutional, behavioural, and outcome referring to International Union for Conservation of Nature (IUCN) guidance. Furthermore, in order to obtain a clear perspective on the actual condition of mine land reclamation, case study approach proposed by Yin (2013) is used. By using triangulation of data resources (data triangulation), the potential problems of validity can be addressed clearly since the multiple sources of evidence essentially provide multiple measures of the same phenomenon.

However, this research is focusing only to the applied policy in East Kalimantan provincial government without any comparation to the other local government and starting from main research question “what was the impact of the regulation on the reclamation rate and reclamation fund as the mine land reclamation succesfull indicators ?”. The conceptual framework has been built to evaluate mine land reclamation policy as shown in the figure below:

Figure 1 Research Framework
Source: Analytical result, 2018

4. Results and Discussion

The Provincial Regulation of East Kalimantan No. 8 of 2013 on Reclamation and Mine Closure is established in response to the concerns from environmentalist, environmental NGO, local parliament, and communities to what they assume as “environment killer” namely mining. A potential failed of coal mining companies to carry out reclamation, poor licensing practices, in-optimum supervision, including insufficient and unclear provisions for implementation were only some reasons to be raised as background to push the government for taking advance steps. This regulation is an initiative of the East Kalimantan Provincial parliament and attracts quite significant attention from mining actors and government at that time. The involvement of civil society, NGOs (local, national, and international), experts and practitioners from various universities contribute in the preparation.

The succesfull criteria for reclamation and the urgent need for independent supervisory institution are the main substances in the formulation of the Regulation. In addition, the obligation of submitting reclamation plan and reclamation bond simultaneously with the application of mining license is also fundamental substance in this regulation as part of preventive principle in reclamation and mine closure implementation. Although it was finally passed into Local Regulation No. 8 of 2013, but in fact, the East Kalimantan provincial government requires 2 years for making the Governor Regulation related to Reclamation and mine closure Supervisory Commission as stipulated

in Article 20 of the Local Regulation Number 8 of 2013, with the issuance of Governor Regulation No. 53 of 2015. The Governor of East Kalimantan established this Commission On May 16, 2016 based on the Governor's Decree Number 540 / K.302 / 2016 on the Appointment of the Reclamation and mine closure Supervisory Commission. Based on the Decree, The Commission consists of 7 (seven) Commissioners. There are 4 people who go through the selection process in accordance with expertise and scientific capacity, while 3 people are the assignment of agencies in East Kalimantan Province Which covers the areas of the forestry, mining, and environment.

For addressing the effectiveness of this local policy, this study is using two main indicators, reclamation rate and reclamation bond. Basically, the reclamation rate is the ratio between the area of land disturbed by mining activity and the reclaimed area. Meanwhile, the reclamation bond is the amount of money deposited by the mining company to the Government Bank, as a guarantee if the company abandon its responsibility in reclamation, then the funds can be used by the government to appoint a third party. This reclamation bond can be disbursed annually by the company after review of its compliance with the reclamation plan document by the mining inspector.

By taking and processing the data from Energy and Mineral Resources Agency of East Kalimantan, the comparison graph "before and after" the Local Regulation No.8 enacted can be shown as below. The graphs compare cumulative data from 25 mining companies in 2013 to 2017. To be noted, the reclamation ratio quite different compare to the cumulative data stated in the introduction chapter in reason of only the data from 25 mining companies are eligible to compare (2013 to 2017) considering the data provided, while the percentage in the introduction chapter is cumulative data from all mining companies until 2017.

Figure 2 Disturbed area, reclamation, and revegetation before 2013 and after 2013

Source: Analytical Result, 2018

Figure 3 Reclamation rate and revegetation rate before 2013 and after 2013

Source: Analytical result, 2018

To give more detail explanation, reclamation ratio as a proportion of the total disturbed area declined from 68% (2013) to 63% (2017). This means that mining activities that open new areas increased while the reclamation activities undertaken by the company decreased. As shown in Figure 3, disturbed area growth double in size, although reclamation also increased but the increase was not as great as that in disturbed areas. Meanwhile, the increase in revegetation ratio to disturbed land that is only 1 percent is not significant enough to meet the objectives of the regional regulation. Many justifications can be given to this data, but the fact that this regulation is being issued to improve environmental protection, and increase the reclamation ratio up to 80 percent, has not shown the consistency of the targeted outcomes. Large production needs are always raised by the private sector that they need to expand their work area, but the government should remain consistent that the main priority is the environment and limiting the production capacity that will automatically minimize the newly opened areas while continue to encourage reclamation. Another fact that nearly 80 percent of the coal produced is exported to other countries, the government must be firm that the price to be paid in the form of environmental damage from coal extraction is too expensive and it is time to improve the environment and create added value in the fulfillment of domestic needs.

The graphics above give us an idea of how the local regulation on reclamation and mine closure is less effective after approximately 4 years of enactment. The reclamation rate which based on the regulation is targeted at least 80 percent of the disturbed land area, in fact, decreased by about 1 percent, although revegetation rate on the contrary increased by almost equal percentage. Indeed, there are many justifications or factors that can make people argue how the reclamation process is an integral part of the mine sequence, so it is easy for people to deny that the unfinished mining process at a site has caused the

reclamation process to be delayed. However, is not this regulation made because environmental damage is considered to have exceeded the carrying capacity of the environment?

There are some fundamental ideas that can be used as a reference by the government if they are serious in implementing this regulation. One of the most effective is using technical and environmental plan annual reports as a powerful law enforcement instrument. The legal basis is clear, the company can not perform its activities if the annual report has not been approved by the government. This is the weakness on the side of the government that stands out today. The government does not have the courage to put the pressure on the company to reclaim immediately when the progress of the mine has reached the final elevation. However, 80 percent of the reclamation rate in the regulation has caused much debate, especially for mining actors, since it is considered not based on a clear scientific basis. For them, price fluctuations on certain coal quality make they sometimes have to move from one location to another in their concession area, and beyond what they plan for that year. They plan to re-mine the first area when prices are starting to increase, and surely this will leave the open area and lowering the reclamation rate. In addition, they also argue that the actual percentage of reclamation can be seen close to the mine closure time, since all facilities have been dismantled and the disposal material has been backfilled to the mine void. But still, the government should have the view that the regulation exist to be implemented. In fact, events in the past should be a lesson in which governments give too much concession to mining companies. In relation to reclamation, many of them ran away and leave huge voids even leading to the death of people.

Figure 4 Reclamation Bonds before 2013 and after 2013

Source: Analytical result, 2018

There is an interesting fact when it comes to reclamation bonds. As a second indicator to assess the effectiveness of this regional regulation, apparently, from a data compilation of 215 mining companies in

East Kalimantan, although there was an increase of disturbed land by almost 100 percent from before and after this regulation enacted, while the increase in the number of reclamation bonds was only 20 percent. In fact, the amount of reclamation bond is highly dependent on the disturbed area. This could be the beginning of the assumption that there is a possibility that not all companies have set up reclamation bonds as required.

However, this must be verified by literature studies and in-depth document analysis. Issues concerning the negligence of the company in depositing reclamation bond to the Government Bank, in fact has been raised several times in the local media. As news on the "Tribun Kaltim" newspaper on 7 August 2017 stating that the transfer of authority in mining sector from Regency/ City to Province, makes Energy and Mineral Resources Agency must re-arrange the licenses (Anjas, 2017). In addition to revocation for the Non Clean and Clear (CnC) mine, billing on outstanding reclamation bonds will also be made. From the data compilation, according to the Energy and Mineral Resources Agency, there are 60 companies that have not deposited their reclamation bonds. Warning letter has been given to the companies up to three times. Letter of Warning 1 down on January 17, then Letter of Warning 2 on February 17, and Letter of Warning 3 on March 17, 2017. Moreover, the Energy and Mineral Resources Department also issued a follow-up letter regarding warning letter 3 on March 29 to all companies. Furthermore, there are some companies that have not provided their reclamation report. The absence of such reclamation report, made the Energy and Mineral Resources Agency has not been able to determine the amount of arrears to be paid by the companies.

The irregularity that occurs in the management of reclamation is indeed a picture of the quality of a government, but that does not mean that nothing is done to overcome it. The transfer of authority from districts to provinces since 2013 has made the provincial government's problems become worse. The transfer of authority means unraveling a tangled thread that comes from a different background of political interests. So far, the provincial government has started to arrange reclamation bonds by stopping all mining activities that do not have reclamation bonds or have not deposited reclamation bonds. This is quite effective considering that companies with an interest in mining activities, while the current high coal prices, are bound to pay reclamation bonds at a new price standard for the next five years at least.

Compared to China, many similarities are found in terms of how the government regulates reclamation and mine closure. Departing from the dependence on mining products as a driver of the country's economy, as well as

Indonesia, China also has difficulty in balancing rapid national economic growth and environmental protection. As Cao (2007) points out, While supplying much-needed energy, the mine in China has suffered from many problems: substantial environmental damage, low recovery rates, unlicensed and irrational extractions, and poor safety records. Another similarity that can be found in the existing reclamation and mine closure regulations in China and Indonesia is that the structure of the contents of the regulation is initially still very general, non-binding, and dispersed in other regulatory regulations. However, China started early to include reclamation and mine closure as an issue that should be included in more specific regulations than Indonesia, in 1988 through the Regulation of Land Reclamation (RLR). It defines land reclamation as “the activities in which the land destroyed by extraction, subsidence and reoccupation, etc. during the process of production and construction is to be restored to a reusable state through certain measures”. In terms of establishing specific regulations on reclamation and mine closure, Indonesia lags behind China where Indonesia has only just begun incorporating the regulation in 1995 through a Ministerial Decree of Mining and Energy at that time. It only regulates in general the obligation of reclamation without any technical guidance. When China had incorporated reclamation bonds in RLR in 1988, Indonesia only incorporated the same in more technical terms in 2008 through Regulation of the Minister of Energy and Mineral Resources number 18 of 2008 on reclamation and mine closure. This regulation is the starting point for the reclamation and mine closure in Indonesia especially with the reclamation bond scheme.

To conclude, China and Indonesia with all the characteristics of government from the national, provincial and district levels, have similar problems from various aspects. It turns out that legal uncertainty over people who violate the regulation of reclamation and mine closure, as people expect to be prosecuted by the reclamation and mine closure commission in East Kalimantan, also occurs in China as described by Cao (2007), that ambiguity in the rewards and punishments, and the paucity of incentives adds to the difficulty of implementing the reclamation laws and regulations, but rather provides the opportunity for corruption and regulation. However, it must be admitted that China seems more prepared and responsive to the issue of reclamation as described by Hu (2014) that China has produced 25 standards related to mine reclamation compared to Indonesia which can be seen in tables below.

Table 1 Mine Reclamation Standards/Codes in Indonesia

No	Standards/ Codes	Code Number
1	Procedures for determining the	SNI 03-6250-

No	Standards/ Codes	Code Number
	quality of land on mining land for revegetation	2000
2	Statical testing for acid mine drainage identification	SNI 6597:2011
3	Acid water treatment	SNI 7742:2011
4	Procedure of top soil management in mining activities	SNI 6621:2016
5	Procedures of the overbuden management for the prevention of acid formation in coal mine activity	SNI 7082:2016

Source: National Standardization Body of Indonesia, 2018

Other factors that greatly affect the performance of the reclamation and mine closure commission are the facilities and infrastructure. The lack of facilities and infrastructure owned by the Reclamation and Mine Closure Supervisory Commission may affect the handling of reported issues. The budget issues arose as an obstacle for the Reclamation and Mine Closure Supervisory Commission. Budget is a tool to assist a work device in the implementation of the functions of planning, coordination, supervision and also as a work guide in carrying out activities for the specific purpose. Based on interviews with Reclamation and Mine Closure Supervisory Commission known that the budget owned by the Reclamation and Post-Mining Supervisory Commission Still attached to the Department of Energy and Mineral Resources of East Kalimantan Province. The budget, among others, only for office stationery and salary. As for supervision activity, the Reclamation and Mine Closure Supervisory Commission submits proposal to the Department of Energy and Mineral Resources.

When viewed from the performance of this commission for six months, indeed this commission has not fully able to use its authority as mandated by the regulation, especially in providing recommendations of legal action on environmental crimes. Yet, this is necessary to be carefully observed. On the one hand, there is a need for assertiveness in enforcing environmental regulations, but on the other hand, to provide recommendations for environmental crimes, they must prepare for various possibilities, such as the adequate knowledge aspect of environmental violation law as set forth in Law No. 32 of 2009. Commission members should Really believe and learn that their recommendations really fulfill the criminal element. In addition, political factors may also be considered by the commission, because almost everyone knows that the mining industry involves many actors who have influence and power.

The level of behavior in obeying the rules indicated by the mining company is usually also based on the size of the company scale. Companies that have bigger productions, or in other words, have a fairly stable

capital strength, it will be more consistent to spend their own funds to invest in things that will not directly benefit them, for example environmental pollution prevention funds in water, soil, and air, or mine accident prevention funds. In terminology, the funds that have been spent do not increase the purse of profits, but will prevent them from spending more money in the event of environmental pollution or fatalities. In contrast, small scale companies think more about making the most profit, rather than thinking of things that have not happened yet.

It is interesting to note and start thinking for future solutions, because small companies normally are given a small area to be mined, and a small amount of reserves. Perhaps this could be seen as a dilemma occurring in the East Kalimantan mining community. The government seems unable to make the regulation applicable for all companies. If the government wants to apply the ideal concept in environmental management, it certainly requires a lot of funds and incriminates small scale companies. On the other hand, if the government lowers the environmental management standards that mining companies must meet, it is a benefit for large-scale companies in an unfair context, whereas the impacts of their activities on the environment are significant. Indeed, the government has never tried to categorize environmental management based on the scale of the company, and put it in the regulation.

5. Conclusion

To conclude, the granting of licenses should consider various aspects of the technical and administrative sides. From the results of data collection on policy evaluation output indicators, there is already a fairly clear picture that the implementation of regional regulations number 8 of 2013 still needs to be improved. The decrease in the reclamation rate, even insignificant, illustrates that the government has not been able to increase the reclamation area through administrative controls or direct supervision, even though the government actually has the authority to do so. Accurate calculation of resources and reserves, mine life, and production capacity plans are indispensable and related to environmental management efforts. As shown in figure 2, the disturbed area has doubled in size in two periodic observed in this research, but the reclamation bond has increased only 20%, suggesting lack of compliance and illustrates the implementation of the regulation, which has been running for four years, still does not fully meet what is desired of the objectives of the regulation. Not only from the results, but also from the process performed by the actors involved.

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