Strategic Assumptions for The Success of Coal Mining Reclamation to be A Tourism Site; A Case Study in Rantau Pandan Village of Bungo Regency

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ABSTRACT

Bad practice of open coal mining in Bungo Regency leaves many abandoned ponds. One pond in Rantau Pandan Village has been neglected for 5 years. Its environmental and social impacts pushed people to sue the government to revoke the permit of XXX Company that manages the mining. The low price of coal as well as the deep and large area to be piled make more difficult to do reclamation. This study aims at exploring the prospect of doing reclamation for tourism purposes with the concept of Community Based Tourism (CBT) and analyzing some strategic assumptions for the success that of reclamation. Primary data were collected through observation, interview and focus group discussion. Data were analyzed descriptively and qualitatively using Strategic Assumption Surfacing and Testing (SAST) method. Research finding shows that the people are eager to welcome the idea of CBT however the compensation from the mining company should be paid first. Of 22 assumptions for the development of tourism village, 18 assumptions can be grouped into quadrant II or Certain Planning Region, while 4 assumptions were in quadrant IV or Problematic Planning Region. To support this plan, it’s suggested five things i.e. resolving the social conflict among parties, strengthening the local institution, giving a mandate to villagers to manage the pond as a tourism site, and enhance infrastructure to ease access.

Keywords: Coal, Mining pond, Reclamation, Strategic assumptions, Tourism village

1. Introduction

Coal mining gives a great contribution to the development of Jambi Province. The income of Jambi Province in 2017 from it reached IDR 140 Billion. There were 150 coal mining companies that had business permits in 2016, but only 23 of them operate actively and have produced a total of 5,928,263.49 metric/ ton coal. According to the 2016 recess report of The Commission VII of Indonesian House of Representatives, there were 71 coal exploring companies that were stated clear and clean; 22 companies were located in the regency of Batanghari, seven in Muarojambi, 11 in Sarolangun, 10 in West Tanjung Jabung, 19 in Tebo, one in Bungo and one in Merangin.

Despite its important contribution to the economy, its environmental impact is not easy to recover. One of them is the loss of forest. Still based on the Report of The Commission VII of Indonesian House of Representatives, there are about 480,502.47 hectares of coal mining taking place inside the forest; 6,300.22 hectares taking...
place in conservation forests, 63,662.22 hectares in protected forests, and 410,540.03 in production forests. Land damages caused by open coal mining are the change of land cover’s vegetation, the change of overburden when stripping the topsoil that’s resulting in the irregular shape of the soil surface, low level of soil fertility and erosion. This damage causes the low ability of land to support plants, the disturbance of physics, chemistry and biology fertility of the land as a result of unequal mixing of topsoil and subsoil when stripping and hoarding the land. (Kumar & Pandey, 2013; Kurniawan & Surono, 2013; Zulkarnaen et al., 2004). Replanting is not easy here because of the lack of water supply for the plants (Kurniawan & Surono, 2013).

Coal mining activities in Jambi Province are done openly (open pit mining). According to Maharani et al. (2010), open-pit mining is a kind of mining by previously cleaning the vegetation (land clearing) and followed by stripping the land layers until reaching the deposit of mine. Based on Act Number 4 Year 2009 concerning Mining and Coal (Article 99 and 100) and Article 2 of Indonesian Government Regulation Number 78 Year 2010 concerning Reclamation and Post Mining as well as the Minister of Energy and Mineral Resources Decree No. 07 of 2014 concerning the Implementation of Reclamation and Post-Mining in Mineral and Coal Mining Business Activities, mining companies are required to have a reclamation plan. Many mining companies neglected the ponds after the operational permit ended.

According to the data from the Energy and Mineral Resources Office of Jambi Province, only 52 companies have reclamation’s plan documents. PT. XXX in Rantau Pandan village of Bungo Regency is one of the companies that overlook its obligation to do reclamation. The IUP of this company is still existed, but the mining operation stops temporarily because of the fall down of coal price and conflict with the community. The cost of reclamation becomes higher due to the area to be piled up is increasingly widespread; so the option to transform the mining pond to be a tourism spot becomes interesting and challenging. It's supported by the beautiful view around the pond and its blue water (the villagers name it Blue Lake) as well as the fact that most of mining land is still owned by the people. The contract between the local people and PT. XXX is in the form of production sharing agreement.

The mining area can be designed as a tourist site (either it still operates or had been closed), one of them is in Sawahlunto, West Sumatra. Anarta et al. (2019) suggest that the area should be laid out as specific tourism (not mass tourism). Another research done by Meyana et al. (2015) in Bangka also suggest the potentials of mining area (tin mining) is desaign as tourism site. This kind of business can improve community income, however the development must consider spatial patterns according to the Spatial Planning and Territory (in Bahasa: RTRW) document and hierarchy development area. This research proposed five main strategies to the Bangka Regency Government, i.e (1) developing mining tourism as a travel brand image, (2) improving facilities and public infrastructure, (3) utilizing company CSR for the development of mining tourism, (4) facilitating access for investors in developing tourism potential, and (5) improving coordination between stakeholders (government, private and community).

Though there are many mining area developed in Indonesia as tourism site, yet it’s not easy to transform it in Jambi due to the conflicts concerning the pond have lasted several years and cannot be solved by the government. To lessen the disappointment of the villagers and to help them obtain great benefit from tourism activities, this research offers a tourism village concept or popular with the name of Community-Based Tourism (CBT). This term firstly appeared in the mid of the 1990s. CBT is usually on a small scale and involves the interaction between visitors and the host community. It is suitable to be developed in rural areas.

Village tourism aims at developing and strengthening the institution of the local community. This point differentiates village tourism with mass tourism whereas the later focus on maximizing the profit of the investor (Sugianto, 2016). The concept of CBT has some advantages as follows: (a) there are local resources owned and managed by the local community. These local resources are not only limited things from the community, it also included the natural environment, infrastructure, as well local culture; (b) there is a growing local responsibility among the locals; (c) there is community involvement in protecting the environment and local culture; and (d) it allows the difference among the regions in applying the tourism management system (Okazaki, 2008).

This research aimed to dig up the present condition of Rantau Pandan Village that’s suffered from mining activities and not-reclaimed pond, and to see the prospect of having a tourism village by analyzing/testing some alternative policies to be implemented through various strategic assumptions. CBT approach is important to be promoted here so the local people obtain benefits from this program after so long being the victims of natural resources and environmental exploitation.

2. Methods

At the beginning, there were four places that considered being the locus of this research i.e. mining pond in Sub district of Pelepait, Rantau Pandan, Bathin III Ulu dan Jujihan. Finally the pond in Rantau Pandan Village (locates in the administrative area of Sub district of Rantau Pandan) and managed by PT. XXX was chose with some considerations: (a) there was a mining company that had mining reclamation plan and mining bail; (b) there was a land use planning; (c) there was road to the site; and (d) the location is attractive to be a tourist site. Also one more important factor is most of the mining land managed by PT. XXX is still owned by the people so they are entitled to determine its use after being abandoned for a long time.

Respondents/experts for focus group discussion (FGD) consist of local government elements, local public figures, local religious leaders, head of the village, and representative of the mining company (14 people). They all knew the problems related to the presence of the mining pond so they were considered worthy to give an assessment of the strategic assumptions. The data was collected from May-August 2017. Premier data were gained through observation, in-depth interview (IDI) and FGD with selected interviewees. The observation and IDI...
results were analyzed descriptively and the FGD result was analyzed by using Strategic Assumption Surfacing and Testing (SAST) method. Mason and Mitroff (1981) state that SAST method is applied to bring out and examine the strategic assumption which is an ideal condition or a requirement that a system must meet. Bloncard and Fabrycky (1981) revealed that the nature of SAST philosophy is as follows: (1) contrastive; the effort to assess the unstructured problems can be made as good as possible by considering the contrastive perspective; (2) participative; the involvement of many kinds of individuals or related groups or different organizations to solve complex problems and then to distribute the solutions to these problems to those who take part; (3) integrative; doing synthetic assumption from various points of view to produce implemented action plans; (4) supportive on managerial ideas; by involving managers who are always dealing with various assumptions and understand more about organization, policies, and problems that they encounter.

Several assumptions related to the development of CBT are collected through FGD. After that, the assumptions are rated based on their importance and satisfaction (implementation) using a Likert scale (the least important/certain (1) up to the most important/certain (7)). According to Nemoto and Beglar (2013), a Likert scale is a psychometric scale. The respondents can choose one scale to indicate their opinions, attitudes, or feelings about a particular issue. The result of the rating/scoring will be made into the diagram or the chart of assumption rating.

![Diagram of Assumption Rating](source: Eriyatno and Larasati (2013))

Figure 1. Assumption rating

X and Y's score of assumption are mode value (the most frequently appearing value) from each assumption based on respondents’ opinion.

3. Result and Discussion

Rantau Pandan Village is located in the Sub-District of Rantau Pandan. The district area is 239.6 km² and geographically locates between 101.939017° East Longitude and between -1.64145° South Latitude. It has 6 villages, they are: (1) Leban Village (30.71 km²); (2) Lubuk Kayu Aro Village (27.57 km²); (3) Lubuk Mayan Village (20.26 km²); (4) Rantau Duku Village (31.21 km²); (5) Rantau Pandan Village (70.63 km²); and Talang Sungai Bungo Village (25.57 km²) (BPS, 2014).

The villagers of Rantau Pandan are most affected by the non-reclaimed mining pond of PT. XXX. Due to the fall down of coal price in the international market, the conflicts with the other coal mining company and the villagers, the company has stopped operating since 2014. This company had opened two pits. The first pit is in the area of 6.54 hectares (the lake) and the second pit is in the area of 3 hectares. The company provided as much as IDR 477,000,000 of mining bail for the reclamation plan.

The land used by PT. XXX is in area for other uses (in Bahasa: Areal Penggunaan Lain/APL) that are out of forest zone. It was previously plantation land and rice field owned by the villagers. The total mining area is 106 ha. The company bought 2 ha of total mining area from the locals, the other 20 ha was in profit-sharing agreement scheme, and the other prospective land has not been acquitted yet (still belong to the local people). The land status of the first pit which is a puddle (mining pond), is in the form of production sharing agreement with the villagers. It’s clear that most of the land still owned by the people, only a small portion that’s bought by PT. XXX. The remaining coal that reserved in pit 1 is less than 67,000 million tonnes (MT) with average SR 1:7. Stripping Ratio is the ratio between the overburden of the strip ore and the obtained waste rock.

![Map of Rantau Pandan Village](source: Eriyatno and Larasati (2013))

Figure 2. The administrative area of Rantau Pandan Village

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The conflicts between villagers and PT. XXX caused by many complaints such as the cracking on the villagers’ houses as an impact of mining activity, no payment on dust compensation, flood sourced from the pond mining that drowned rice fields, and drifted the villagers’ fish, decreasing rice yield, and river contamination. When PT. XXX still operated, the people that had a production sharing agreement with this company got income, but when its production stopped, they only got the negative environmental impact.

As an impact of the closing down of PT. XXX, many villagers lost their job. The closing down of some mining companies also happen throughout Jambi Province. The Recess Report of Commission VII of the Indonesian House of Representatives revealed that only 11 out of 71 coal mining companies were still operating. They were the companies with clear market places such as the ones that supply Electric Steam Power Plant (PLTU) or Electric Gas Power Plant (PLTG). This situation also reduces royalty fee for the government of Jambi Province, from IDR 86 millions per year to IDR 20 millions-IDR 30 million per year.

The reclamation of mining pond in Rantau Pandan is very difficult to be realized. The pond is very large with a depth of around 40 meters. The bail reclamation provided by the company is not enough to pile up it. The estimated cost needed to hoard the pond can be seen in Table 1.

Table 1. Cost estimation for reclaiming the coal mining pond of PT. XXX in Rantau Pandan Village of Bungo Regency

| No. | Description                                      | Width (m²) | Depth (m) | Cost (IDR/m²) | Total Cost (IDR)   |
|-----|--------------------------------------------------|------------|-----------|---------------|--------------------|
| 1.  | Land arrangement cost                            | 65,400     | 40        | 12,000        | 31,392,000,000    |
| 2.  | Topsoil dispersion cost                          | 65,400     | 0.5       | 15,000        | 490,500,000       |
|     | Total                                            |            |           |               | 31,882,500,000    |

Notes: a. hoarding the pond by purchasing the materials  
b. the price of the materials is approximately IDR 12,000/m² (cost estimation in year 2018)

From Table 1 we can see that the cost to hoard the pond is more than the mining bail provided by the company. It needs IDR 31,882,500,000, while the bail is only IDR 447,000,000. The high cost is caused by the delay to do reclamation. The company did not close the hole right after digging it so the soil/covered material was missing. In order to cover this, the material must be bought or taken from another place.

Switching the use of pond mining for other uses has been done in many regions. In Central Bangka Regency, the government manages it as a source of raw water. The decision bases on Regional Regulation Number 26 of 2011 concerning Management and Utilization of the Basin (Himawan et al., 2015). Transforming the pond to be a tourist site with the concept of CBT is the best option. This will empower the local people (Prasiasa, 2012; Tolkach & King, 2015). That idea is fully supported by the locals. The potential aspects of tourism village’s development in Rantau Pandan are presented in Table 2.

Table 2. Description of the existing condition of Rantau Pandan Village for CBT development

| No.  | Aspects                        | The existing condition                                                                 |
|------|--------------------------------|----------------------------------------------------------------------------------------|
| 1.   | Institutions                   | The village has custom board, youth organization, Religious Group of Majelis Taklim (BKMT), and Village enterprises (BUMDes). |
| 2.   | People participation           | People participation is quite high. The discussions related to this research in the village office or in The Planning and Development Office of Bungo Regency were attended by all village representatives, from various age, gender and formal/informal public figures. |
| 3.   | The understanding of CBT concept and attractions | The villagers did not understand about tourist village concept. Yet they were enthusiastic with that idea. Other than the beauty of mining pond and the waterfall nearby, the villagers explained other tourist attractions they have such as krinok (a traditionally poetic performance), bride and groom’s carriage procession pulled by calves, traditional dishes, and boat race. |
| 4.   | The availability of infrastructure | Road to reach the village and mining pond not too good. No hotel or inn nearby. The nearest hotels are in Bungo city. |

Table 2 shows that the village does not have any problem related to the availability of institutions and people’s participation to implement a tourism village. However, they do have problems with the understanding of CBT concept and the availability of infrastructure to support tourism. Conceptually, CBT is different from mass tourism. In CBT the villagers are the pioneers and the activators of tourism. The supports from the government or the private agencies are still needed, though. Purbasari and Asnawi (2014) state that CBT should be started from the awareness of the value owned by the people and it should give more benefit to the need, initiative, and the chance of the locals. In addition, Zakaria and Suprihardjo (2014) say that people’s daily routines, like farming, have the potential to be developed as a tourist attraction. However, there are some weaknesses found in implementing tourism villages such as less awareness of the villagers on promoting their village as well as lack of facility and infrastructure. If all these problems can be solved, this tourism village will be a success.

Related to the availability of infrastructure, Asker et al. (2010) argue that the lack of infrastructure and the absence of investment are obstacles in
developing CBT. However, in CBT implementation, infrastructure does not have to be excellent, unlike in mass tourism infrastructure. Based on research by Astami and Erli (2015) in Sumbererejo village, Lojejer Village and Puger Kulon Village of Jember Regency, the priority of infrastructures according to the point of view’ visitors and villagers are road, means of transportation, the facilities to support transportation means, recreational sports, and health service facilities.

The FGD result brought out 22 strategic assumptions for tourist village development planning in Rantau Pandan Village. These assumptions are assessed by their level of interest and satisfaction/assurance, using SAST Method. The connection between the agreed level of interest and assurance of these assumptions can produce a new strategy, based on its classification in the ranking graph of assumption.

Table 3. Strategic Assumptions for the successful development of mining pond as a tourist site (quadrant II)

| Assumptions                                                                 | Level of Importance | Level of certainty |
|-----------------------------------------------------------------------------|--------------------|-------------------|
| A1 The existence of tourism objects and attractions that are unique from other regions | 6 (Very important) | 5 (Moderately certain) |
| A3 There are souvenirs and folk handicrafts                                   | 6 (Very important) | 5 (Moderately certain) |
| A4 easy access to visit the place                                           | 7 (Extremely important) | 6 (Very certain) |
| A5 Sufficient accommodation to support tourism                              | 6 (Very important) | 5 (Moderately certain) |
| A6 Development funds from government (Province/Regency) to support tourism sites | 7 (Extremely important) | 6 (Very certain) |
| A8 Low rate of crime                                                         | 7 (Extremely important) | 7 (Extremely certain) |
| A9 Regional regulation to support the development of tourism                | 7 (Extremely important) | 6 (Very certain) |
| A10 The increasing number of tourist                                        | 6 (Very important) | 6 (Very certain) |
| A12 Availability of water, electricity, toilets, parking areas etc. as supporting facilities | 7 (Extremely important) | 6 (Very certain) |
| A14 The involvement of local youth                                          | 7 (Extremely important) | 6 (Very certain) |
| A15 Community approval toward the plan and preparation program              | 6 (Very important) | 6 (Very certain) |
| A16 Process of engineering land around the pond that is too steep and would endanger visitors/community | 7 (Extremely important) | 6 (Very certain) |
| A17 Flood handling activities                                                | 7 (Extremely important) | 6 (Very certain) |
| A18 A settlement (compensation) for the land around the lake which belongs to the community | 7 (Extremely important) | 7 (Extremely certain) |
| A19 a tourism concept that minimize the negative impact of tourism on the lives of community | 7 (Extremely important) | 6 (Very certain) |
| A20 Government decisions to terminate mining activities in some abandoned mining | 7 (Extremely important) | 6 (Very certain) |
| A21 A contract settlement between PT. XXX and the landowners of the pond mining | 7 (Extremely important) | 6 (Very certain) |
| A22 Formal rule to use the reclamation funds to support the tourism object   | 7 (Extremely important) | 6 (Very certain) |

Source: research data, 2017

Among 18 assumptions in Table 3, there are two assumptions with the highest score ((7, 7) = very important and very certain). It means that the two assumptions are the most ideal condition or an absolute pre-requisite to establish a tourist village. They are the low rate of crime (A8) and the compensation to pay the land of villagers around the mining pond (A18). The payment of compensation in Rantau Pandan village has been suspended for years and can’t be solved yet. The same problem also happens in some countries as reported by Cao et al. (2018), the consideration about adequate compensation of the land can be various and striking in each country, and different between advanced and developing countries. For example, Pakistan has adopted the fixed level compensation to avoid speculation. Compensation distribution in India is not transparent or consultative. The rehabilitation package offered to landowners was old fashioned and inadequate based on the lowest value of the land. There is a big gap among policies, compensation practice and reassignment in Vietnam. In Malaysia, the law obliges the country to pay adequate compensation but it is not defined clearly.

The failure to pay the compensation by PT. XXX raises questions about the role of the Government of Bungo Regency to solve the problem. The villagers were on strikes for a couple of times. Moomen (2017) says that prior calculation and serious handling of local apriori toward an issue can create peace between the mining company and the villagers. Actually, some conflicts in the mining area were started from many problems, such as the eviction of local people’s farm or land, bitter and continuous experience related to the damage of farm, forest, flora/fauna, or even local people who have no decent experience about mining displacement. In accordance with Cao et al. (2018) research, the regency government has to change their position from solving (the focus is only on the negative impact of the coal industry), so that it will lessen the negative impact toward the larger community. The farmers whose
land was used by company must take part actively in discussions to make standard compensation and social policies. The crime rate in the village of Rantau Pandan is low and should be maintained. This will be important and certain work planning to develop a tourism village. According to Wirajuna and Supriadi (2017), the involvement of community and POKDARWIS could create it.

The assumptions in quadrant IV have a high level of importance. However, their level of certainty is low. To formulate the policies related to these assumptions, there should be anticipatory or improvement steps. Table 4 presented those four assumptions.

| Assumptions                                      | Level of Importance | Level of certainty |
|--------------------------------------------------|---------------------|--------------------|
| A2 Availability of recreational facilities       | 7                   | 3                  |
| A13 Support from mining companies around the tourist sites | 7                   | 3                  |
| A7 Strong locally institutions to support tourism | 6                   | 4                  |
| A10 Recognition from several institutions / ministries | 6                   | 4                  |

Source: research data, 2017

Table 4 shows that the strategic assumption that should be paid closer attention in the process of planning is recreational facilities; strong local institutions to support tourism business; the recognition from outer institutions/ministries; and supports from mining companies nearby and availability recreational facilities. Recreational facilities tourists will be the strategic assumption with the lowest level of certainty related to the funding.

There is an opportunity to use village funding (Dana Desa) to complete the basic facilities but its use has a strict guide as regulated by Village, Development of Disadvantaged Regions and Transmigration Ministerial Decree Number 19/2017 about The Establishment of Village Funding Priority. Chapter 4 article 4 cites some usage priorities of village funding; namely: (a) to fund the program implementation and the activities in village development area and the empowerment of villagers; (b) to fund the implementation program and the cross area activities; (c) programs and activities as mentioned in article (2), such as the field activity of village or village’ superior products, village enterprises, joint village enterprises, village reservoir, and sport facilities; (d) the establishment of village sport facilities as mentioned in article (3), i.e, the business units managed by village enterprises or joint village enterprises; and (e) the priority for village funding usage as mentioned in article (1) and has to be published openly as well as must be easily accessed by the villagers.

According to Frinces (2011), the role of the local institution does not only support the success of a tourism village in the village but also to improve the competitiveness in order to survive in the tourism field. This competitiveness is interpreted as a process to snatch a strategic object, i.e. market, consumers (tourists), and the chance to be more popular; while the competitiveness is the top result of various excellence and owned value in order to push a tourist village to be more famous and having larger market.

Darwis et al. (2014) summarize that village institutions have a great role in finding different kinds of people and members’ aspirations as well as mediation to solve the conflicts. However, the delay succession of management, the loss of public figures/activators and the less support from the local government can cause troubles in the institution of tourism village. One institution that has to be established to develop a tourism village is Tourist Awareness Group (POKDARWIS). Putra (2013)
claims that the role of POKDARWIS is started from the planning aspect, planning of implementation up to managing the tourist attraction by involving the third party, including the local people. A good cooperation between POKDARWIS and the other stakeholders strengthens the existence of Tembi Tourist Village in improving the quality and quantity of tourist attraction programs. Furthermore, the role of POKDARWIS is to manage activities which are directed to (1) improve the knowledge and insight of the POKDARWIS members; (2) improve ability and skills of the members in managing tourism business; (3) promote or motivate people to be a good host for the tourists; (4) encourage or motivate people to improve the local tourist attraction by manifesting Sapa Pesona (seven pillars for the development and management of tourism in Indonesia); (5) collect, process and give tourism information service to tourists and the local people; and (6) give suggestion to related government apparatus in the tourism area. The mining company so far does not show any effort to improve the locals’ live. Figure 3 presents the strategic assumption in the form of graph ranking.

Referring to Figure 3, the assumptions in quadrant II are categorized as Certain Planning Region. It means that the assumptions are part of a definite planning area. The assumptions in quadrant IV are categorized into the Problematic Planning Region or the area whereas the planning is in trouble and needs to be anticipated in implementing them.

4. Conclusion

Mining pond in Rantau Pandan Village is very prospective to be developed into a tourism site with the concept of tourism village or community-based tourism. This can solve the chronic dispute between PT. XXX and the local people. These people are aggrieved socially, economically and environmentally because of the presence of not reclaimed mining pond. There are many obstacles to be cleared in the first hand, especially relating with land compensation and some efforts to prepare the locals in aspects of empowerment of local institutions, people participation, the understanding of CBT concept, and the availability of infrastructure. Of 22 strategic assumptions, as many as 18 assumptions are in the area of certain planning while the other 4 assumptions are in the uncertain planning area which needs anticipation before implementing.

It's suggested that The Integrated Team of Conflict Settlement of Bungo Regency to solve the problem between PT. XXX and the local people so that the obligation/right of each party can be settled before developing a tourism village. To minimize abandon mining pond, the local government is suggested to look more closely at Environmental Impact Assessment (AMDAL) document as well as the reclamation plan and promote the mining reclamation to be a tourist site.

The development and extension of the creative economy and local culture also need to be advocated by related parties (especially the Office of Culture, Tourism, Youth and Sports of Bungo Regency). It's important to give the local people a mandate to manage the mining pond through legal decisions (regulation) that also binds the mining company. Finally, the government should support the locals to strengthen the institution and give some training so the villagers ready to run their tourism village.

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