

**STUDY OF ENVIRONMENTAL GOVERNANCE IN THE MINING AREA  
WITH COLLABORATIVE GOVERNANCE APPROACH: A CASE STUDY OF TIN MINING,  
WEST BANGKA, INDONESIA**

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**ABSTRACT**

Mining is mostly associated with the environmental security issues. Almost all mining activities have contributed to environmental degradation. The prominent actor in inducing environmental insecurity is the mining company. Therefore, the company has been charged as the most responsible actor in protecting the environment. In fact, the company could not be a single actor in ensuring environmental security. It needs a collaboration between stakeholders to make it possible. Through a qualitative study, this research aims to analyze the environmental security management, in the perspective of collaborative governance, as a consequence of PT. Timah mining activities, particularly in West Bangka District, Indonesia. This study found that the absence of collaborative governance in managing environmental security in West Bangka District is triggered by the lack of coordination and collaboration between stakeholders. It has triggered the unmanageable environmental condition. A new scheme of stakeholders collaboration is needed in pursuing a liveable environmental condition.

**KEY WORDS**

Environmental governance, collaborative governance, tin mining.

Indonesia is known as one of the biggest producers of tin for more than 300 years. According to the data from ITRI, Indonesia's tin reserves are in the second position after China by the total of 16.3% from world tin. Indonesia's tin reserves spread along 800 km known as The Indonesian Tin Belt. The Indonesian Tin Belt itself is part of Southeast Asia Tin Belt extending for more than 3000 km in Asia.

In the context of environmental security, tin mining is considered as one of the main sources of a series of environmental insecurity problems, especially in the area where mining activity runs. Tin mining has caused several environmental problems such as a large amount of ex-mined land which is not used, deforestation and the damage of water ecosystem. The emergence of these environmental security cases becomes a trigger of a mining conflict which is an inseparable part of human security problem. Some of the previous studies show that environmental deterioration because of mining company activity has caused worse disaster, such as the instability of society's economy, the increase of disease, and prolonging social conflict (Laurentiue, Cristine, and Loreta, 2016; Rawashdeh, Campbell and Titi, 2016).

This condition is often associated with "resources curses". Resources Curses is a condition where natural resources wealth of a country cannot guarantee a better state condition. One of the forms of Resources Curse is the degradation of a living environment which continuously becomes sources of conflict and socio-economic problem. Several studies show that actually, resources curse is a condition which should not happen if a stakeholder is able to manage mining well for community welfare (Komaruzaman, 2006; Eggert, 2001; Holden, 2013). Van der Ploeg (2011) revealed that a natural resources-rich country having a good institution, opened trade and high investment of explorative technology seem enjoying the sweet of their natural resources wealth.

Until today, a mining company is always considered as the main actor of environmental deterioration. As a result, the big role of a mining company in guaranteeing environmental quality always becomes the highlight of various parties. The appearance of attention to the needs of environmental security, especially in the mining area, has made Corporate Social

Responsibility (CSR) as an important thing of company's role in guaranteeing the sustainability of the environment. However, the implementation of CSR still gets many critics for its contribution in order to guarantee environmental security. The implementation of CSR tends to be only a formality in their environmental management of mining activity. Thus, depending only on mining company's CSR is comprehensively not able to answer the problem of environmental security in the mining area. This condition also shows that mining company cannot work independently in terms of environmental security. In relation to the appearance of good governance urgency, living environment governance shows the existence of tendency of collaborative governance needs in order to guarantee feasible environmental condition.

One of the areas that have been dealing with the problem of human security as a result of mining is West Bangka District. One of the districts located in Bangka Island is an area with pretty intensive tin mining activity. Tin mining started since 1711 in Bangka Island has been giving contribution in two points. In one side, tin mining has contributed an income to the local government through tax, royalty, and local retributions, as well as income for society working in the fields of mining either working at a mining company or as an unconventional miner. On the other hand, tin mining has contributed more to the environmental deterioration straggling into other problems like health and social conflict. This research will study how environmental security governance in the mining area in West Bangka District is reviewed from Collaborative Governance approach.

### LITERATURE REVIEW

*Environmental Security.* It has been agreed on by many people that various aspects of human living are in relation to the problem of the guarantee of environmental security aspect. For that matter, understanding the phenomenon of environmental deterioration caused by the impact of mining in Indonesia will be more comprehensive by understanding first the basics coverage of environmental security approach. Environmental security concept appears since several problems of development which correlate each other in the era of 1960s. This concept gradually becomes a point of consideration in a security study which is always opposite to traditionalist (Martinovsky, 2011). The existence of environmental security becomes stronger since UNDP adds environmental security into one of the seven components of human security. Other six components are economic security, health security, food security, political security, personal security, and community security. In a human security's framework, those seven components relate each other (Figure 1).

There is no agreement on the definition of Environmental Security until today. Commonly, Environmental Security can be defined as a concept of national security reached by fighting poverty environmental deterioration. This point of view is clearly shown that the study of environmental security focuses more on the sustainability of environment for human security. The guarantee of environmental security has automatically guaranteed one of the human's basic needs of a conducive environment for human activity implementation. This simultaneously will decrease the potential for conflict and the environmental stability destruction.

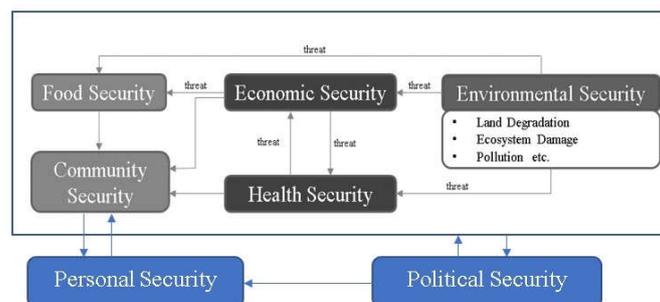


Figure 1 – The Interrelationship between the Seven Principles of Human Security

*Collaborative Governance and Environmental Security.* Every environmental rescue effort, conservation or environmental conflict solving will always involve many elements or stakeholders in a society. One of the concepts to help to answer this need is Collaborative Governance. Collaborative Governance is an idea of the needs of cooperation among the stakeholder to solve the problem. According to the existing literature, collaborative governance can be commonly defined as a form of governance involving all of the stakeholders under the different characteristic, in a cooperative relationship through a dialogue and regular interaction to reach a joint goal (Kim, 2010; Ansell and Gashi, 2007). Among the several fields of the governance, collaborative governance is a representative concept as a modern governance model needed to overcome the complexity of the contemporary problem and cannot be solved by single actor only. The major role of collaborative governance is to encourage all stakeholders to reach their joint purpose by combining different resources and creating innovative mind through negotiation and cooperation (Innes & Booher, 2004). In a context of environmental protection, collaborative governance is an important part to make sure the sustainability of the implementation of the environmental security program. Collaborative governance changes to be important because, even though the company or government has a high commitment on the effort of environmental safeguard, but is not known and has no complete support from other stakeholders so that the benefit of that commitment cannot be felt.

Ansell and Gash (2007) make a model by adding the element of starting condition, institutional design and facilitative leadership in a collaborative process. Starting conditions are started by a question of whether there is or not asymmetry to the power condition, resources and the existing knowledge within the society. In addition, it should be seen if ever had or not a conflict or initiated cooperation. This will then help to know and analyze in relation to the incentive and barriers in the participation process. This initial condition is a condition which will truly influence the process of innovative governance. Institutional design is a basics regulation setting in the collaborative process, such as participatory inclusiveness, forum exclusiveness, clear ground rules and transparency process. While the leadership gives an important mediation and facility to the collaborative process. The leadership is essential to determine and maintain clear basic regulation, build trust, facilitate dialogue and explore joint benefits.

The collaborative process itself is a cycle consisted of trust-building, commitment to process, shared understanding, intermediate outcomes and face-to-face dialogue. Trust building or an effort to build trust is an effort to build society's trust to this collaborative process. The next process is commitment to process. Commitment to process is an effort to convince society so that they will keep their promise regardless the possibility happened. Commitment to process is important to be made sure since collaborative process needs a longer time. Shared understanding is an effort to build understanding among the various parties in a collaborative process. For that matter, in terms of that understanding process, various technical aspects should be discussed in detail. Those various technical aspects are as follows: a clear mission, common problem definition, and identification of common values. The clear mission is an effort to build the similarity of vision and mission among all stakeholders getting involved. In addition, it needs to create common problem definition to develop common perception of the main problem that needs to be finished first jointly. While intermediate outcomes is an output of the collaborative process that is commonly in form of "small wins, strategic plan, and joint-fact finding.

All of the collaborative governances as explained above are built under face-to-face dialogue among the stakeholders. As a consensus-oriented process, "thick communication" can be conducted by engaging direct dialogue among the stakeholders to identify the opportunity for common goal and interest. Face-to-face-dialogue is more than a negotiation and the point of the process to delete other stereotype and communication obstacles which can prevent exploration of the joint benefits in the collaborative process. Face-to-face dialogues are the point of the trust-building process, the sense of honoring each other, joint understanding and commitment to that process.

## METHODS OF RESEARCH

This was descriptive-qualitative research with a case study conducted at PT.Timah in West Bangka District. The objective of this research was to make the researchers know deeper and in detail on the dimensions related to the problem highlighted in this research so that it finally can be formulated problem model and the solution clearly. Analysis on the interrelationship among the dimension causing a problem is truly needed to be able to understand the complexity of a problem entirely. For that matter, qualitative research was chosen as the methodology.

Semi-structured interviews were conducted with 20 respondents consisted of the representative of local government (2 people), PT.Timah (2 people), NGOs focusing on the environmental problem (2 respondents) and local community (14 respondents). Respondent selection uses snowball sampling technique in which the first respondent recommends someone considered able to provide any complete and detail information on the research problem observed.

In addition to the interview, this research also relies on the secondary data collected from all related stakeholders (government, tin company, NGOs, and society), a previous study (journal and report) as well as other related documents. The data been collected and then analyzed systematically relied on the Ansel and Gash's collaborative governance (starting condition, institutional design, facilitative leadership and collaborative process), under the stage of classifying, reducing, data display and formulate as well as verifying conclusion. Data analysis conducted in this research was simultaneous and cyclic.

## RESULTS AND DISCUSSION

*Tin Mining and Environmental Security.* As the largest tin producer, Bangka Belitung Island's economic structure showed that tin mining was at the second-largest economic activity in Bangka Belitung Island after agriculture and fisheries. In 2012, ITRI indicated that there have been more than 60,000 activities of tin mining with details of one big-scale Company, 30 small and medium-sized tin mining, and 15,000 until 50,000 conventional tin company and 32 private smelters (ITRI, 2013).

As the biggest economic activity in Bangka Belitung Island, tin mining activity entirely brought a consequence to the environmental problem simultaneously to the economic problem and socio-community, especially those residing in the mining area. According to the Indonesian Governance Index (IGI) of 2009, Bangka Belitung Island was categorized as one of the provinces with worst environment quality in Indonesia. West Bangka, as the largest tin producer in Bangka Belitung Province, did not miss from the environmental problem as the result of tin mining activity.

Commonly there are two tin mining activities in West Bangka District i.e. onshore and offshore. Particularly in relation to the large-scale mining undertaken by PT.Timah, there was an additional activity that was the operation of metallurgic units. Every activity related to the tin mining has a risk on the condition of the living environment. At least there were three major issues related to the environmental security that must become a consideration of related party, that was pollution, the destruction of marine ecosystem and reclamation.

Offshore has brought a consequence in form of the increase of the amount and the pit that determine the speed of reclamation. The size and the depth of pit would truly depend on the mining activity. In 2010, there were at least 130 pits in West Bangka District with the total area of 118.08 hectares. The data from WALHI explained that mining activity of PT. Timah has also violated the regulation on mining in the forest area. Total mining area in the forest area belongs to PT.Timah was 3,202.22 hectare under the category of C&C by 2.097.91 hectare and non-C&C by 1.103.31 hectare. In addition to the overlapping ownership with forest area, as much as 328.708-hectare area belongs to PT.Timah also overlapped with production and agricultural forest area.

Onshore also has changed land use in West Bangka District, polluting groundwater and river water. Tailings management using on-site tailing disposal has caused water pit

contaminated by heavy metal and poisonous material. This condition has potential to damage surrounding area.

Environmental quality degradation of tin mining has a positive correlation to the public health. According to the data of Health Agency of West Bangka District, the large amount of ex-mined quarry has an influence on a large number of malaria cases. A puddle of ex-tin mining that does not evaporate quickly can become standing water, which can become polluted by decaying organisms and are often home to breeding mosquitos, which can act as vectors for malaria in West Bangka whose number is large enough every year. The area playing a role as a focus of tin mining exploitation such as in Parit Tiga and Munto sub-district has a more impact than others (Figure 2).

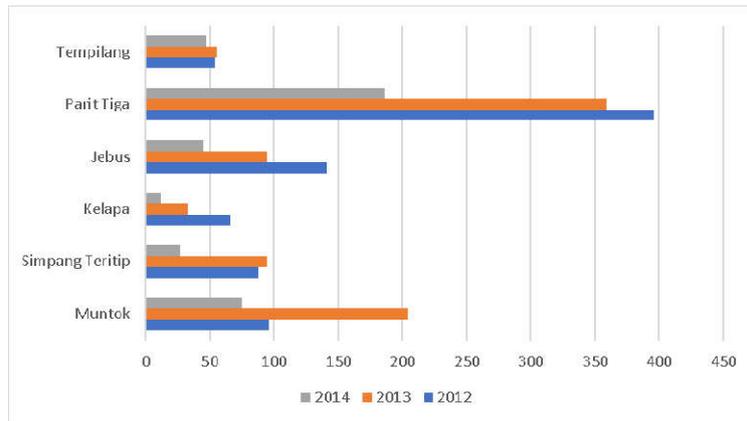


Figure 2 – Malaria Case in West Bangka District  
Source: West Bangka Health Service

In addition to onshore, offshore using suction dredger and dredger has led into water ecosystem destruction such as the increase of contamination level of hazardous waste in West Bangka waters, water sedimentation, and destructing water ecosystem. From 42 points explored by Bangka Belitung University' coral team in 2013, coral in West Bangka waters was categorized acute. Of 11 coral spots, there were only 2 spots whose condition was average but starting to be damaged, while remain 9 spots have been damaged. The fisherman was the one who mostly gets impacted by tin mining activity.

The metallurgic unit which is also one of the active units of PT. Timah in West Bangka District is the unit focusing on the processing of tin ore. The result of inspection carried out by Finance Auditor Body (FAB) in 2007 regarding the installment of smelter of PT. Timah in Muntik revealed that tailing location at stockyard is an opened area that enables the existence of radiation to the nearest surrounding location to human activity around 50 meters. In addition to the stockyard, tailing storage is also an opened area so that enabling the existence of radiation to the opened air. This is possible given storage location is next to the beach having pretty strong wind gust to the land in which there are a settlement and office. Metallurgic unit standing next to the area of people's housing has given bad impact on public health, such as a headache and asthma.

*The Role of Stakeholders to Guarantee Environmental Security.* There are at least four stakeholders who play an important role to guarantee environmental security in West Bangka District i.e. local government, tin miner (both small and big scale), NGOs and society.

*PT. Timah and CSR in the fields of environment.* In relation to the environmental issue, PT. Timah has had a policy of Occupational Health Safety and Living Environment (OHSLE). This policy aims to be the reference in the application of good mining practice through the following steps:

- Obeying laws and the norms of Occupational Health Safety and the management of Living Environment;
- Preventing pollution, occupational hazards, and the disease because of working as early as possible;

- Increasing employee's skill to keep the Occupational Health Safety as well as controlling environmental impact;
- Increasing a concern over the problem of Occupational Health Safety and Living Environment;
- Conducting a continuous improvement in the fields of Occupational Safety and Living Environment.

Company's commitment is explained in Environmental Management Plan (RKL) and Environmental Monitoring Plan (RPL), it provides a guide on the best mining practices. All of the mining activities are always evaluated internally by Company or independent party referring to the Environmental Management System of ISO 14001, achieved by the company in 1997. In addition, document compilation practice of Environmental Impact Assessment (AMDAL) also has been conducted by the company since 1992. AMDAL is a prerequisite that should be completed by a business player to achieve sustainable development target. In order to support living environmental policy, PT. Timah allocates budget to the activity of living environmental protection which is part of CSR (Figure 3). According to the data of 2014, environmental spending is still lower than CSR budget for other activities. In its distribution, the environmental budget is more absorbed for consultant fee and sample analysis.

Until today, the implementation of good mining practice of PT. Timah, especially related to the environmental security, is still considered less optimal. It is shown by there are still many cases of environmental deterioration as a result of tin mining such as a small amount of land reclaimed, the damage of landform and seascape as well as water contamination by dangerous waste (Table 1). On the other hand, the increase in the number of diseases and natural disaster as a result of the environmental deterioration calculated as a contribution from that tin mining.

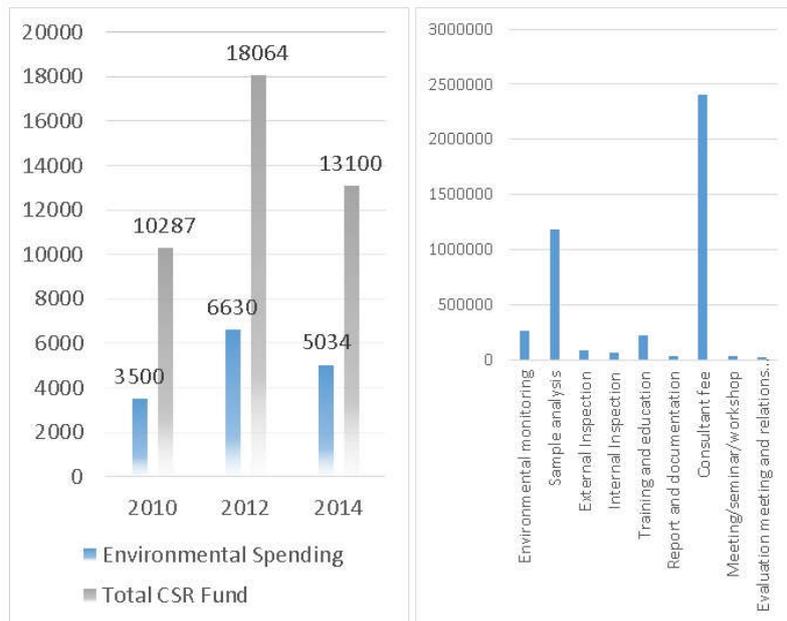


Figure 3 – PT. Timah CSR's Budget Allocation and its Distribution

Table 1 – Environmental Impact of PT. Timah Activities, Environmental Policy and Results

PT. Timah Operation	Impact	PT. Timah Policy	Result
Inland Mining	The number of pits mine	Reclamation	Slow reclamation, Larger number of pit mine
	Deforestation	Rehabilitation	Slow rehabilitation
Sea Mining	Coral reefs damage	Rehabilitation	Slow rehabilitation
Metallurgic Unit	Emission	Chimney emission measurement	The increasing of annual SO2 released

*Local Government.* In terms of environmental security, West Bangka government has a program to encourage sustainable development oriented to the natural and environmental balance, under the following governance.

Table 2 – Environmental Security Policy of West Bangka Government

Main Target	Fields of Business	Policy in 2015-2020
The establishment of beautiful and natural environment.	Living environment; spatial planning, development planning; housing; forestry.	Revising spatial and area zoning which are susceptible to pollution; Seeking for river normalization; Growing society's awareness to jointly maintain the sustainable environment; Arranging an adaptation and mitigation of the decrease of pollution level; Cooperating with the central/provincial government in order to make an effort on reforestation on critical land.
The formation of the characteristic of environmental care and friendly environment development-oriented.	Public works; social; cultural; village and community empowerment; land.	Optimizing the implementation of AMDAL document and other documents which regulates the pollution decrease; Encouraging friendly environment - oriented development; Seeking for the waters area benefiting zonation.
The establishment of green & sustainable economy concept (environmental friendly economic activity).	Living environment; industry; marine and fisheries; energy and mineral resources; tourism; trade.	Seeking for RAD Green Economy compilation by involving society (bottom-up); Seeking for friendly environment technology in the economy activity like on agriculture and industry.

Those policies above are environmental security policy which is applied generally and entirely. In relation to the tin mining company, West Bangka local government position is as a recommendation giver for company's environmental impact assessment conformity as well as mining execution partially. For that reason, not all environmental impact of tin mining resulted by a company can be identified entirely by the local government. While in terms of CSR implementation, West Bangka government only accepts an annual report from the company concerning CSR activity done well in the fields of social, economic, or environment.

*NGOs.* Ideally, NGOs play a role as an advocate for audit and give input and critical to the government and mining company in order to maintain and solve human security issue. NGOs can also be a partner for company and government which actively engage to guarantee human security through activity, program, and project related to the security in various aspects. At the practice and involvement scheme of stakeholder, PT. Timah does not place NGO in a special position or partner, but being placed into and as part of a community. NGOs' role is more than as an advisor for society in the compilation of partnership activity proposal as well as in the distribution of social help such as mask and water stock during the water shortage. It can be said that NGOs' role in guarantying environmental security can be categorized low.

*Mining Society.* Mining society is those who depends their life on tin mining. Mining society is divided into two categories that is those working legally, commonly an employee or a miner standing under the legal mining company, such as PT. Timah and its partner. The second group is an unconventional miner, which is commonly categorized into illegal mining. Those two groups are a marginal group whose position is as a worker. As a marginal group, mining society has not a wide access to the mining policy both arranged by company and government. In relation to the environmental security, legal mining worker will follow an environmental policy that has been set by a company as an effort of environment preservation. However, illegal worker or artisanal mining tends to avoid environmental security within mining process. This is because there is no information which they accept on

the good mining practice. In the end, this mining society also participates in bringing the environmental deterioration in West Bangka District.

*Society living in the mining area.* Society categorized in this group is the one who has a job at external mining but living near mining area. This civil society is commonly those who are susceptible to environmental impact as a result of mining and frequently become a CSR target group of a mining company. Ideally, this civil society has an important role to audit environmental friendly mining process. This role is commonly in form of aspiration explanation on the impact of the environment of mining process to the related parties. Field condition shows that society's role living in the mining area is still very low. This is more caused by the unavailability of information delivery access to the government or a company through a clear and well-structured dialogue forum.

*Implementation of Collaborative Governance.* The implementation of collaborative governance within the contexts of environmental security is important to guarantee the success of environmental security effort. Collaborative governance includes starting condition, institutional design, facilitative leadership and collaborative process.

*Starting condition:*

*Power-resource-knowledge asymmetric.* Power-resource-knowledge asymmetric is a condition in which stakeholders have a dissimilarity and imbalance in terms of power, resources, and knowledge of a problem. This condition is one of the factors determining if the collaborative process will run in accordance with those collaborative goals. The higher the asymmetric level, the lower the level of collaborative process success, so is the opposite. The case raised in West Bangka is the level strength asymmetric, resources and stakeholders' knowledge in relation to the environmental security can be categorized high enough (Table 3). Therefore, people who can decide environmental security problem are those having resources, authority and strength knowledge i.e. mining company and local government.

Mining company as the major actor in this mining process clearly has an authority, resources and high knowledge in relation to the environmental security effort, so has the local government. Another case with NGOs, they have enough knowledge on environmental security effort but is low in terms of authority or owned resources to cover the effort of environmental security. It is also different with society having authority, resources and low knowledge so that their role in order to conserve the environment becomes weak. This opinion is in light to Ansell and Gash's idea stating that if there is a stakeholder who has no capacity, status, resources to participate in the decision-making process than another stakeholder so that the process of collaborative governance will be susceptible to be manipulated by a stronger actor.

Table 3 – Power-resource-knowledge asymmetric

Stakeholders	Power	Resource	Knowledge
Mining Company	High	High	High
Local Government	High	High	High
NGO	Low	Low	High
Community	Low	Low	Low

*Incentive and constraints on participation.* The incentive here means benefit accepted by getting participate in a collaborative process. Even though collaborative approach becomes an obligation based on the laws, but stakeholder participation is a voluntary activity. For that matter, Ansell and Gash have explained the importance of incentive as an encouragement of collaborative process success. In terms of environmental security case in West Bangka District, willing to participate in an effort of security is high enough, especially NGO engaged in the fields of the environment. However, constraint faced to participate is also high, especially regarding the dialogue between stakeholders which is very minim.

*Prehistory of cooperation and conflict.* The increase of environmental deterioration in the area of Bangka Island is not only caused by big-scale tin mining. Illegal unconventional mining (society mining) also provide a contribution to the environmental deterioration at all

land of Bangka Island. Illegal tin mining commonly tends to avoid a regulation prohibiting to conduct mining activity in the area of protection forest and the obligation to apply good mining practice. A large number of illegal tin mining is not separated from the role of PT. Timah and the local government. In 1998, P.T Timah and the local government open a chance for unconventional miners to conduct mining activity in ex-PT. Timah area to increase the local income as an effort to overcome economic crisis problem happened. PT. Timah delivers their potential mining area, considered less profitable if mined alone, to the local contractor and provides simple mining equipment to them. This local contractor does not have a background of knowledge in good mining practice and the lack of control from company's side. At its development, there were many people working as an unconventional miner as the result of that policy. The existence of this unconventional miner finally will only aggravate the availability of tin metal in Bangka Belitung and destruct the surrounding area since mining was conducted at every place. The issuance of unconventional mining in Bangka Belitung has decreased state and local revenue as the result of smuggling, as well as threatening the availability of tin stock in Bangka Belitung. In 2006, the local government hugely issued control policy on the illegal tin and often caused a conflict with tin mining.

From another side, environmental security conflict appears between NGO and PT. Timah. NGO considered that mining activity of PT. Timah hugely contributes to the environmental deterioration. PT. Timah itself did not conduct entire socialization on the environmental security program that they have. For that matter, society living around the mining area did know or participated in the reclamation program and rehabilitation conducted by PT. Timah. At the end of 2015, 321 fishermen from Bangka District held a rally in front of Bangka Belitung gubernatorial hall to ask to withdraw offshore policy since considered decrease the income of their catch. This condition brings a fact that the effort of a collaborative process will need a high enough effort to be realized.

*Institutional design.* Institutional design is a protocol and the basic regulation which is the legitimating of important procedural in a collaborative process. Institutional design includes participatory inclusiveness, forum inclusiveness, clear ground rules and process transparency. The case happened in West Bangka was all indicators in the institutional design can be said not entirely complete. In the effort of communication or dialogue among the stakeholder is not found clear ground rules. Transparency in the information can also be said not clear. Those two things were more because of the communication model conducted in form of socialization, not a dialogue. Answer-question session was used to get input into consideration. Having no power to influence environmental policy both at the mining company and the local government. This condition truly influences participatory inclusiveness level and inclusiveness forum. So that it can be concluded that institutional design in the collaborative process in West Bangka District is truly weak.

*Facilitative leadership.* According to Ansell and Gash, facilitative leadership is an important aspect to bring related stakeholder and led them into a good collaborative process. Lasker, Weiss, and Miller (2001) stated that collaborative leader has at least four skills: (1) promote a brand and active participation, (2) ensure broad-based influence and control, (3) facilitate productive group dynamics, and (4) extend the scope of the process. At the case study in West Bangka District, those four criteria seem not appeared yet from PT. Timah or the local government. This is shown by the minimum dialogue intensity conducted, and commonly only socialization in nature.

*Collaborative process.* The collaborative process includes trust building, commitment to process, shared understanding, and intermediate outcomes. That collaborative process can be built through face-to-face dialogue among the stakeholder. Communication activity regarding the effort of environmental security in West Bangka District commonly has been conducted, but it frequently more in form of one-way communication through socialization activity of working plan of local government or activity planning of CSR of PT. Timah. That was sometimes only information so that the community or stakeholder's idea invented into communication activity only ended up as a "consideration". Not used as the basis of policymaking. For that matter, trust building activity, commitment to process, shared

understanding until intermediate outcomes as wishes from the collaborative process do not happen.

According to the study of stakeholder's role in managing the healthy environment, it can be known that the implementation of collaborative governance in environmental case handling in West Bangka as the result of tin mining can be said strongly weak with the indicator below:

Table 4 – The Implementation of Collaborative Governance within the Context of Environmental Security in West Bangka Tin Mining Area

1	<i>Starting condition</i>	
	Power-resource-knowledge asymmetric	high
	Incentives for and constraints on participation	Low incentive, high constraints
	Prehistory of cooperation or conflict (initial trust level)	
2	<i>institutional design</i>	
	Participatory Inclusiveness	Low
	Forum Inclusiveness	Low
	Clear Ground Rules	Low
	Process Transparency	Low
3	<i>facilitative leadership</i>	
4	Collaborative Process	
	Trust Building	Low
	Commitment to Process	Low
	Shared Understanding	Low
	Intermediate Outcomes	Low

## CONCLUSION

According to the research result, it is known that the absence of governance collaborative process in West Bangka District is contributed by the weak of strategic stakeholder's role, such as community and NGOs in guaranteeing environmental security. The weak of that stakeholder's role is more caused by starting condition which is not sufficient from the early, the unavailability of institutional design, and the weak of facilitative leadership that causes the absence of collaborative process. The lack of coordination and collaboration among the stakeholder to manage human security issue is the point of environmental security problem appears. Coordination and collaboration here are related to the systematical coordination that encounters the interest of every stakeholder to the mining governance, including how a company together with society and government prevent the emergence of human security. Coordination that has been conducted is only ended up with socialization providing passive information on company activity. There is no coordination of multi-stakeholder and collaborative process initiated well by company or government. On the other hand, this indicates the weak of stakeholder's concern, especially government and private in guaranteeing prosperous and community safety, especially those living next to mining area.

According to the analysis result, this study offers a recommendation in overcoming human security issue, especially in mining area, that is through stakeholder involvement systematically and comprehensively accompanied by collaboration among the stakeholder. This study emphasizes that stakeholder involvement should be conducted in three levels that cover planning stage, implementation and post-mining through multi-stakeholder dialogue.

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