ENVIRONMENTAL SUSTAINABILITY: THE IMPLEMENTATION OF FREEPORT INDONESIA CORPORATE SOCIAL RESPONSIBILITY POLICY ON ENVIRONMENTAL SECURITY IN PAPUA (2001-2011)

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This thesis entitled “ENVIRONMENTAL SUSTAINABILITY: THE IMPLEMENTATION OF FREEPORT INDONESIA CORPORATE SOCIAL RESPONSIBILITY POLICY ON ENVIRONMENTAL SECURITY IN PAPUA (2001-2011)” prepared and submitted by Muhammad Lutfan Hasby in partial fulfillment of the requirements for the degree of Bachelor of Arts in International Relations in the Faculty of Humanities has been reviewed and found to have satisfied the requirements for a thesis fit to be examined. I therefore recommend this thesis for Oral Defense.

Cikarang, Indonesia, May 29th 2017

Recommended and Acknowledged by,

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DECLARATION OF ORIGINALITY

I declare that this thesis, entitled “ENVIRONMENTAL SUSTAINABILITY: THE IMPLEMENTATION OF FREEPORT INDONESIA CORPORATE SOCIAL RESPONSIBILITY POLICY ON ENVIRONMENTAL SECURITY IN PAPUA (2001-2011)” is, to the best of my knowledge and belief, an original piece of work that has not been submitted, either in whole or in part, to another university to obtain a degree.

Cikarang, Indonesia, May 29th 2017

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The Panel of Examiners declare that the thesis entitled “ENVIRONMENTAL SUSTAINABILITY: THE IMPLEMENTATION OF FREEPORT INDONESIA CORPORATE SOCIAL RESPONSIBILITY POLICY ON ENVIRONMENTAL SECURITY IN PAPUA (2001-2011)” that was submitted by Muhammad Lutfan Hasby majoring International Relations from the Faculty of Humanities was assessed and approved to have passed the Oral Examinations on June 2nd 2017.

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ABSTRACT

Title: “Environmental sustainability: the implementation of Freeport Indonesia Corporate Social Responsibility policy on environmental security in Papua.”

Environmental degradation has appeared as one of main problem of security in Indonesia. PT Freeport Indonesia is MNC that has been operating in Indonesia and bring several impacts towards environment. Grasberg open pit mining as one of the largest mining area in the world that managed by PT Freeport Indonesia bring impacts towards the environment in Papua. According to miningglobal.com PT Freeport Indonesia estimated to have $40 billion in gold ore reserves. besides, the operation of Freeport Indonesia brought several bad impacts such as pollution in Ajkwa river, deforestation and acid rock drainage (ARD). According law Constitution no.40 2007 about (Limited liability company) or PT, that every company should conduct CSR program for participating in sustainable economic development in order to improve the quality of life and the beneficial environment, both for the company itself, the local community, and the community at large. Then PT Freeport Indonesia conducted several CSR program in order to tackle environmental security issues within their operation area. Therefore, in this thesis, the writer aims to address PT Freeport Indonesia CSR program and its policy that applied in order to protect environment and participate in environmental sustainability within Papua, Indonesia.

Keywords: PT Freeport Indonesia, Freeport, Environment, Security, Threat, MNC, Corporate social responsibility, environmental issues.
Abstrak

Judul: "Keberlanjutan kelestarian lingkungan berkelanjutan: penerapan kebijakan Corporate Social Responsibility Freeport Indonesia dalam keamanan lingkungan di Papua."


Kata kunci: PT Freeport Indonesia, Freeport, Lingkungan, Keamanan, Ancaman, MNC, Tanggung Jawab Sosial Perusahaan, Isu Lingkungan.
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LIST OF ACRONYMS

PTFI : PT Freeport Indonesia
ARD : Acid Rock Drainage
WALHI : Wahana Lingkungan Indonesia
MNC : Multinational Company
CSR : Corporate Social Responsibility
UNEP : The United Nations Environment Programme (UN Environment)
AMDAL : Analisis Mengenai Dampak Lingkungan (Ecological Risk Management)
CHAPTER 1
INTRODUCTION

I.1 Background of study

Indonesia as one of largest tropical forest country with huge biodiversity that has high potential in terms of natural resources,\(^1\) but it also brings an impact in which threatening the environment of Indonesia. In terms of International Relation, environmental issues are crucial. The fact that international community recently has put their focused on protecting the environment through Kyoto Protocol.\(^2\) It is an International agreement that giving environmental standard specifically in term of climate change by lowering the carbon dioxide emissions into the environment. Kyoto protocol is one of real example that international community put their concern in the field of environment.

The environment circumstances have a huge impact on human livelihood and relations between one another, and this kind of matter are obviously political issues. For instance, shortages of fresh water in some country would be the major trigger of war between countries to gain fresh water. Besides water issues pollution also become another concern in international community and it is impacting the people way of life.\(^3\)

In this modern era the world are constantly changing including our environment. Nevertheless, as the world and environment change, the need of awareness to prevent bad impact toward society should be improved. This kind of changing, bring a huge impact toward people, many disasters and tragedy happened caused by the environmental degradation.\(^4\) This condition is defined as the destruction of the environment by the subtraction of natural resources like water, air, and earth, and the nature surrounding it.\(^5\)

\(^2\) http://www.kyotoprotocol.com retrieved on 21 09 2016
\(^3\) http://internationalrelations.org/environmental-issues/ retrieved on 21 09 2016
In the international community, the term environment is very often linked with security. According to Buzan’s definition “security is pursuit of freedom from threats”. Threats also could be came from the environmental aspect. Environment is perceived as an important aspect in regards to the human’s live. Throughout history, the environment has been a significant factor in the daily human existence, including to spread infectious diseases, high population, and global inequality and those kind of phenomenon caused conflicts among states.

Nowadays security covers a difference of interconnected issues such as ideological conflicts, economic strength, to ethnic, religious and also threats such environmental degradation, climate change and the activities of non-state actors.

In terms of environmental security, Multinational corporations or MNCs are part of the problem. As we knew that MNC is one of the actor in international relation. MNCs nowadays plays an important role in regards to International community. This is due to the massive contribution of the MNCs into economic activity all over the world. MNCs also play a role to produce, manage, and also distribute resources gained through the use of the environment. Thus explains why MNCS all around the world are concerned with the environment and the waste that they produce.

Indonesia is one of the country that has been suffering due to the environmental issues that happened within country. Air pollution such haze, has become major concerned in Southeast Asia since the air pollution affecting several countries such Singapore, Malaysia and Indonesia. It happened due to the act of illegal burning conducted by several MNCs and local farmers in Sumatra and Kalimantan. This kind of illegal burning claimed as a fast method to remove vegetation to make way for plantations of palm oil. Mining similarly claimed as one of the cause environmental degradation. Besides damaging environment, mining also affecting the health of local people due to the acid mine drainage.

Freeport is one of the biggest gold mining company located at Timika Papua, and Grasberg mine located near Jaya Wijaya that conducts their operation in Indonesia since

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8 ibid
11 The haze is back across South East Asia”. BBC. Retrieved 26 september 2016.
Located in hear of Papua, the Grasberg mine is positioned at a height of 14 thousand feet, located around the remote locations of the Sudirman mountains. The location is reported to have gold ores worth to be around $40 billion. Freeport gradually grew the awareness of environmental security by creating several Corporate social responsibility program in terms of environment that helps Indonesia to keep the environmental security.

I.2 Identification of the Problem

In 2001, the Wanangon River became polluted with toxic waste due to the carelessness of the management of waste rock. Freeport was also responsible for the environmental pollution of river systems and estuaries, that violating water quality standards. This is due to their decision to throw Acid Rock Drainage, without having permission license until they exceed the limit of industrial liquid waste. The tailing river from Freeport destroy mangrove

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forest about 21 until 63 km² due to sedimentation effect. Those acts pollute surrounding environment. The Grasberg mine is one of the largest mines in the world that possesses high grade gold ores, and it’s owned by PT Freeport. The mining results is so massive, that you can practically see its marks from out of space. Reportedly the mine produces a large amount of waste debris, almost 80 million tons every year, and it’s thrown into the river channels near the place of mining, river Akjwa.¹⁶

The toxic and wastes that has been disposed contaminated by Metal from Grasberg tailings. The surrounding of the tailings left by Freeport have been told to possess a higher concentration of toxicity, caused by metals such as manganese, silver, and other toxic substances. This kind of phenomenon ruining the food chain within and around Ajkwa River.¹⁸

Reportedly, the tailings left by the Freeport mine have accumulated to approximately one billion in weight surrounding the Aghawagon-Otomena-Akjwa Rivers. The actions were continued to be done, despite bans that ruled tailings as illegal and restricted upon, based on the 2001 rule under the Indonesian Water Pollution Control Regulations and Water Quality Management. Reportedly, there are approximately three

And about three billion tons of tailings, and an additional four billion tones rock waste was is expected to be released during the lifespan of PT Freeport Indonesia’s mining activities, until the end of its usability, expected to be around the year of 2040.19

The bulk of sediment that came from dumping wastes resulting another problem. An excessive number of solid materials in the accumulating in the river could potentially endanger the natural life within the waters. A report by the Indonesian Environmental Ministry in the year 2004 reported how bad the pollution caused by PT Freeport was. Approximately 45 milligrams of waste by PT Freeport were distributed to the local rivers and swamps, and also the Arafura Sea.20

In 1988, the Grasberg mine produced 18.600 metric tons of ore per day, and in 2001 reached 237.800 tons per day.22 This production rate elevated the status of Freeport into the most productive gold mining company in the world,23 Freeport also the most largest tax payer

Figure 3 Grasberg mine.21

20 (Nakagawa)
in Indonesia.\textsuperscript{24} It sits at 4,270 meters above sea level. 30 years over, Grasberg mine tailings deposited into Ajkwa river system that will be transferred into Ajkwa Deposition Area (ADA; nowadays known as Mod ADA for”Modified ADA”

Freeport Indonesia also has environmental bad impacts towards local society that has been claimed as Freeport’s legacy in Papua province in which

1. **Deforestation and pollution**
   The mine tailing dumped by Freeport Indonesia disgorge into Ajkwa River and Arafura Sea. The tailing of Mining caused a flood in 1991 in which damage a huge area of forest and also threatening Timika town.\textsuperscript{25}

2. **Flooding and landslide disaster**
   The deposition of mine waste into Wanagong lake has resulted in 2 floods and landslide disaster, it caused the death of 8 people and 5 people injured.\textsuperscript{26}

3. **Acid Rock Drainage**
   The deposition of mine tailing has resulted Acid Rock Drainage (ARD) in which contaminating local water supplies near Freeport Indonesia area operates. And lately has been reported that there is an increase of copper levels in the marine fauna that can threat the local flora and fauna near that area.\textsuperscript{27}

The urge of environmental security is real now. The living environment within Indonesia is currently in urgent condition. The role of MNCs and societies is very related with the environmental issues that happened within Indonesia. Due to the fact that environmental security issues in Indonesia caused by the over population and growth of industrialization, an we cannot deny that the government often put lower priority of environmental issues due to high jobless and poverty levels, so they only focus on boosting economic growth.\textsuperscript{28}

In order to keep the environmental security the awareness of actor should be raised. Corporate social responsibility or CSR is one of method to raise the awareness of environment. According to the European Union commission (2002) 347 final : 5. “a concept whereby


\textsuperscript{27} http://wwf.panda.org/what_we_do/where_we_work/new_guinea_forests/problems_forests_new_guinea/mining_new_guinea/papua_freeport_mine accessed on 2 February 2017.

companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.” MNC should consider the awareness of responsible behavior towards society and environment in achieving the sustainable business success.

Besides it helps the MNCs to achieve their goals, the CSR also help the country in keeping the environmental security. For instance PT Freeport Indonesia that has CSR in the environment sector such reclamation and revegetation to support Indonesia as a country in terms of environmental security. The existence of MNCs is very connected with their responsibility towards society and environment, not only focusing on their profit. Freeport is one of the biggest gold mining company located at Timika Papua, and Grasberg mine located near Jaya Wijaya that doing their operation in Indonesia since 1967. The mine is believed to be highly valuable, reaching a value of $ 40 billion in gold.

I.3 Statement of the Problem
“How did PT Freeport Indonesia implement its policy of CSR in addressing environmental security in Papua ?”

I.4 Research Objectives
This research is aimed to find the answer to the statement of problem above. the author came up bringing the topic into discussion mainly to provide significant study focusing on the contribution of Freeport Indonesia as MNC to the protection of environmental security in 2011. This thesis seeks to:

- To explain the contribution and involvement of MNC (Freeport Indonesia) regarding to the contribution on the protection of environmental security in 2008-2011.
- To explain the potential threats towards mining industry in regards to the environmental security.

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I.5 Significance of Study
The author believed that this research is intended to gain knowledge, information, and comprehension on contribution of Freeport Indonesia to the environmental security protection in 2008-2011. In addition, there are also some points that the author highlights in this thesis:

- Understanding the involvement and contribution of Freeport Indonesia in Environmental security protection
- Understanding the use of CSR in protecting the environmental security
- Understanding the potential threats towards mining industry in regards to the environmental security.

I.6 Theoretical Framework
To examine the role of Freeport as MNC that help to keep environmental security within Indonesia, the author will use Security and environmental security according to Buzan.34

I.6.1 The Concept of Security (Barry Buzan)

“Security is taken to be about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and their functional integrity against forces of change, which they see as hostile. The bottom line of security is survival, but it also reasonably includes a substantial range of concerns about the conditions of existence. Quite where this range of concerns ceases to merit the urgency of the "security" label (which identifies threats as significant enough to warrant emergency action and exceptional measures including the use of force) and becomes part of everyday uncertainties of life is one of the difficulties of the concept”.35

From the statement above Security is seen as an action to fight for freedom from threats, the term of threat also explained In his book (People, States and Fear) by involving 5 sectors of security (Political, Military, Economic, Societal, and Environmental) that has been concerned, and the sector related one each other. Each sector interpret a main point of the security problematic.36

34 Professor Barry Buzan is best known as a leading scholar on the English School of International Relations, and for developing the theory of securitization with Ole Waever and the Copenhagen School. http://www.e-ir.info/2013/03/27/interview-barry-buzan-2/ accessed 14 January 2017
36 Ibid
In the terms of political security, states focus on the procedure of the government and the ideologies that implemented within state. Military security focuses on the two-level interaction in which offensive and defensive capabilities of states. Economic security focusing on financial stuff that is needed in order to keep the sustainable level of welfare within state. Societal security focuses on the abilities of state to promote and to keep the identities their traditional language, culture, religions and sense of belonging to a nation. The issue of the environment is also considered as a problem, regarding the well-being of the local wildlife and its surroundings, which humans heavily rely on for to live.37

1.6.2 Concept of environmental security

Security traditionally focused on the national security in which two main purposes: (1) to keep the integrity of state territorial (2) to maintain the stability of government, by military and political means.38 But nowadays political scientist claimed that the environmental aspect is a part of security problem. 39 According to Smil, the threat of nuclear warfare global has replaced by the environmental security issues, as it has two characteristic that both are worldwide reach and the impact of both issues are highly damaging.40 The most interpretation of environmental security concern on the way environmental issues could trigger the conflict.41

Buzan underlined that the environmental security focusing on the conservation or the maintenance of the local flora and fauna as the main support system in which human depend.42 The main point in the connection between environment and security is the impact of conflict that caused by environmental issues. The conflict such clean water provision, illegal logging, hazardous very often lead further conflict.43

1.6.3 MNC Role in CSR for Protecting Environmental Security in International Relations

Multinational corporation (MNC) has been one of the most powerful actor in International relation in international community (Bieler and Underhill 2000). Willets

37 Ibid
38 http://www.uvm.edu/~shali/Kirchner.pdf accessed 20 January 2017
39 Ibid
emphasizes that the state is dominant actor in International relation and other actors such MNC, NGO etc are secondary (willets 2008: p.332). But now the terms of ‘non-state actor’ also known as ‘transnational actors’ to confirm that the state is no longer the main actor inside the system of international relation (willets 2008: p.332).

The role of MNC within international community has been improved (Bieler and Underhill 2000). In order to keep the stability of their business operation and building the positive yet sustainable connection with all the parties that involved in business directly or indirectly, MNC should conduct Corporate social responsibility (Du, Bhattacharya & Sen, 2010). According to European Union commission 2002 (347 final:5), Corporate social responsibility is a concept of companies in integrating environmental and social concerns during the business operation with their stake holders voluntarily.

Due to the fact that the operation of MNC also give bad environmental effect within state, so MNC came up with CSR to help the state to protect the environmental security. CSR also helped the company to build their good reputation toward the shareholders and the entire society that involved in business. world Bank described CSR as an obligation of company to be responsible for all the activities during their operations activities including the economic and environment.

I.6.4. The essence of CSR in helping environmental security, ethical conduct

Corporate social responsibility defined as voluntary action done by company in which take concern on social and ecological aspects in their activities that involving stakeholders (Green paper,2010). And stakeholders are representing as a group of people that can directly issued by potential benefits or harm that caused by the action and decision that made by company (Churchill, 1982; Boddy, 2011).

The company’s goal is to achieve high profit and serviced the customers with a good product through the sales and operations (Ethics Resource Centre, 2009; Kalshoven, 2011). According to Lewis, (2012) besides the business goal is to gain more profit, the other important point that need to be concerned is to bound moral and ethical standards for their stakeholders. However, the ethic in business has to be put as main focus of company since ’Pearl and Hughes

(2008) said that the ethic is defined as a preventive action in regards to any potentially harmful actions for the sake of benefit, being done to any groups or individuals.

As we know that businesses are type of human activity that conducted by company, in spite of looking from economical angle, the moral obligation also has to be considered as important aspect (Georgescu, 2012). In addition, that the company also has responsibility in regards to the every stakeholders involved in the business process, to ensure their business does not harm the environment, while also maintaining a friendly business practice (Maignan, 2011). The decision made by the company have an impact on the local society, so the company should fulfill the social obligation in regards to their business as compensation for undermining or threatening local society (Navran 2002; Tseng and Fan 2011).

1.7 Scope and Limitations of Study
The case being discussed in this thesis is comprehensive, environmental security is a part of the emerging concerns of security, elaborated Buzan in his book.46 The author will discuss about the contribution and the involvement one of the biggest gold mining MNC which is Freeport in terms of contribution to the protection environmental security in Indonesia (2008). In order to properly support the thesis, the writer will elaborate the following limitations:

- This thesis will focus on the contribution of Freeport Indonesia in regards to the contribution of environmental security protection in Indonesia, in order to give and educate the society to prevent and to take any necessary step in order to protect the environment security in Indonesia.
- The work will also provide analysis about the contribution of Freeport Indonesia as MNC that doing their Corporate Social Responsibility (CSR) in Indonesia in order to protect the environmental security within Indonesia.

1.8 Research Methodology

1.8.1 Qualitative method
This research will use a qualitative method, to provide an adequate analysis of the thesis, based on the aforementioned theory, supporting data, and other variables mentioned in this research. Empirical research will be conducted in this thesis, by observing sources from the

primary resources, also adding in secondary resources to support the thesis. This thesis takes in the research method by C.R. Kothari, as elaborated in his book:

Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use the term Ex post facto research for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most ex post facto research projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. Ex post facto studies also include attempts by researchers to discover causes even when they cannot control the variables. The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods. In analytical research, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.47

The work will also use books, journals and internet as the research instrument in order to provide the proper analysis based on the background, and problem identification. As discussed above in the background of study and identification problem, the impact of environmental issues has experienced many changing in terms of social, economical and environmental. The changing of situation has bad impact toward the society and it requires to be extra attention in order to prevent and decrease the destruction of environment. However, there was still no published thesis that specifically discusses about Freeport environmental issues that focusing on the impact towards local people and analyze it from the perspective of International relation.

I.8.2 Conceptual framework

In this thesis the author will be explaining about The implementation of CSR in addressing environmental security in Indonesia. Besides, there are 2 main actors in this thesis which are Freeport as MNC and Indonesian government as state. Another actor such Amungme people that affected by the operation of Freeport Indonesia, and USA is the headquarter of Freeport MCMoran in which the affiliation of PTFI. According to Buzan, environmental

security is focusing on the conservation or the maintenance of the local flora and fauna as the main support system in which human depend.\textsuperscript{48}

In order to answer the RQ, the writer will explain using the connection between environment and security, in which CSR takes a part in regards to environmental sustainability. In this case the operation that has been done by PT Freeport Indonesia degrading the environment of Indonesia especially in Papua. Indonesia as a country where PT Freeport operates has to ensure that the company complies with Indonesian regulations, the company should conduct CSR that obligated by Indonesian regulations in terms of incorporated company that has been established since 2007 that stated on Law No. 40 of 2007 in terms of Limited Liability Company (Company Law).\textsuperscript{49} The implementation of CSR is aimed to preserve environmental sustainability in Indonesia. Besides, the CSR also aimed as a tool for company in order to build their good reputation for the company.

The figure above shows the linkage between the human activity and environmental issues that altered into a conflict potential. According to Chalecki the patterns of human behavior could have a potential impact toward the political stability within a country, means that every country should consider their own environmental security due to the fact it could leads to global conflict. The CSR helps to prevent the global conflict, so the 3rd level could not be happened due to the prevention that done by MNC, in this case PT Freeport Indonesia.

The corporate social responsibility came up as an action of MNC (non-state actor). The role of MNC within international community has been improved (Bieler and Underhill 2000). In order to keep the stability of their business operation and building the positive yet sustainable connection with all the parties that involved in business directly or indirectly, MNC should conduct Corporate social responsibility (Du, Bhattacharya & Sen, 2010). According to European Union commission 2002 (347 final:5), Corporate social responsibility is a concept of companies in integrating environmental and social concerns during the business operation with their stake holders voluntarily.

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I.9 Thesis Outline  
This thesis will be structured as the following:

**Chapter I: Introduction**

The first chapter will provide the introduction to the whole thesis process. This includes the background, problem identification, problem statement, and also others. This chapter will also include the theoretical framework, of which the thesis will be built upon.

**Chapter II: Environmental damage in Papua caused by PT Freeport Indonesia**

This chapter provides discussions on the environmental damage occurred caused by PT Freeport Indonesia in Papua.

**Chapter III: The policy of Freeport CSR program in addressing environmental security**

This chapter the author would like to explain about social and environmental policy, but in sub chapter 3 the author will focus more on CSR policy of PT Freeport Indonesia in environmental security.

**Chapter IV: The implementation of PT Freeport Indonesia CSR policy in addressing environmental security in Papua**

This chapter will focus on the implementation of Freeport Indonesia CSR policy in addressing environmental security in Papua. The chapter will also answer the research question and strengthen the study in chapter two and three.

**Chapter V: Conclusion**

The final chapter will provide the conclusion of the thesis into one chapter. This chapter will serve to summarize the thesis process, conclude, and also elaborate the findings of the thesis. To serve this purpose, this chapter will elaborate on the implementation of PT Freeport Indonesia CSR policy in addressing environmental security in Papua.
CHAPTER II
ENVIRONMENTAL DAMAGE IN PAPUA CAUSED BY PT FREEPORT INDONESIA

II.1 Natural sources exploitation by PT Freeport Indonesia

Mining and sedimentation brings significant adverse impacts on the ecosystem sea in Indonesia. For example, sedimentation coastal waters and the fringing reef District-Ratototok Buyat North Sulawesi, is said to suffer from the tailings of disposal underwater of the gold mining industry and small-scale use of the fusion relationship mercury.\(^{51}\)

Nonrenewable resource extraction that is unsustainable has caused conflict between environmental protection and economic growth. And the oil, gas industry and mining industry increased in the last 10 years.\(^{52}\) One of the most bad examples are tailings disposal by Freeport McMoRan in mine gold-silver-copper in Papua West. Flow to the tailings disposal Otomina and Ajkwa river, leading to the Sea Arafura. The mine is producing and disposed of more than 200,000 tons of tailings per day, more than 80 million tonnes per year.\(^{53}\) This mine estimated has produced more than three billion tons of tailings, mostly ending in sea.\(^{54}\)

PT Freeport Indonesia originally from USA and started their operation in Indonesia since 1967.\(^{55}\) Grasberg mine located in Papua near Jaya Wijaya, and it sits at a height of 14,000 feet in the remote highlands of the Sudiman Mountain Range. The Grasberg mine contains copper, gold and silver that valued around $40 billion.\(^{56}\) Freeport McMoran is the holding


\(^{54}\) Walhi – Indonesian Forum for Environment. 2006. The Environmental Impacts of Freeport-Rio Tinto’s Copper and Gold Mining Operation in Papua. Walhi, Jakarta. 119 pp


company of PT Freeport Indonesia (PTFI). Freeport McMoran controlled 90.64% stake in PTFI
where the rest is controlled by the government of Indonesia. Mastery of these shares amounting
to 81.28% directly and 9:36% through subsidiary, PT Indocopper Investama.\(^5\)

The damage that Freeport has made is clearly degrading the environment within Papua,
within 10 years almost 90 square miles of wetlands contaminated with the high levels of copper
and sediment that almost all fished disappeared due to to the tailings of Grasberg mine.\(^5\)
Freeport Indonesia also has disposed tailings in the Aghawagon-Otomona-Ajkwa rivers,
amounting to around one billion tons. This is highly illegal, with the Water Quality Management
and Water Pollution control Regulation 2001 Number 82, already specified that said actions
are highly prohibited in Indonesia.\(^5\)

The Ajkwa river contains with dissolved copper that beyond 42 micrograms per liter in
which above the limited amount for fresh water in Indonesia, at 20 microgram/L. The copper
that contained in lower Ajkwa river also has reached the legal limit in which around 22 – 25
microgram/L levels. PT Freeport Indonesia produced waste 53.000 tons of copper in a year and
released ARD (acid rock drainage) that dumped directly, this kind of pollution by heavier metal
is considered to be much worse than the standard mining industry regulations in the policies to
prevent river pollution.\(^6\)

Acid Rock Drainage (ARD) is one of the most thoughtful problem in terms of mining
operation industry, as the effects of tailings can last for years or even decades. In Indonesia
waste rock of Freeport mining industry dumped into the rivers system near the pit and has
produced significant amount of Acid Rock Drainage.\(^6\)

The tailings of Freeport Indonesia also give huge impact towards local plants, it
smothered by the tailing deposition that block the spread of oxygen into the root of the plants
and causing them to die. And the tailings damaging the trees and sago palms that growing

\(^5\) [http://www.kompasiana.com/sondi325/data-dan-fakta-kontrak-freeport_54ff1512a333118b2850feca accessed on 4 February 2017]
\(^5\) Jane Prleze dan Raymond Bonner, Below Mountain of Wealth, a River of Waste. in [www.nytimes.com accessed on 5 February 2017.]
within disposal area. And the tailings also destroyed the ecosystem of natural jungle, rainforest.\textsuperscript{62}

The deposition of Freeport Indonesia tailings brought the toxicity. The aquatic ecosystem has been destroyed due to the water that contaminated by the tailings toxicity. And habitat destruction also happened where the river flows in which receive tailings. The tailings are so harmful for fish gills, any kind of organisms that doing photosynthetic process, eggs and predator around tailings.\textsuperscript{63}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure4.png}
\caption{The changing surface of Grasberg mine tailings detail between 1988 - 2003\textsuperscript{64}}
\end{figure}

the tailings from Grasberg mine flooding the forest in Papua in which it contains waste rock, mud, copper heavy metal etc. the tailings which contains toxic disturbing the environment, it changes the surface of the soil and contaminated with copper. The figure showing on how rapidly the area of tailing grew during 1988 and 2003. Due to the fact that the tailings bring the toxic, mangrove waters reached the level of chronic toxicity 30\%-90\% of saltwater organism, that caused the disappearance of many fish species.\textsuperscript{65}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{63} ibid retrieved on 11 February 2017
\item \textsuperscript{64} \url{https://skytruth.org/2009/06/grasberg-mine-tailings-inundating/} retrieved on 13 February 2017
\item \textsuperscript{65} \url{http://www.thejakartapost.com/news/2015/07/29/environmental-audit-freeport-a-must.html} retrieved on 13 February 2017
\end{itemize}
\end{footnotesize}
The dissolved copper constrains the respiration process in fish gills that caused the destroyed of aquatic life. And the level of toxic heavy metals such as zinc (Zn), selenium (Se) and copper (Cu) are increase significantly within Freeport’s tailings rather than natural jungle soil. This kind of phenomena would lead to the chaos within food chain, which are:

- Birds that eat fish (since the river contaminate with copper, metal, zinc or toxic)
- Birds that eat invertebrates in soil
- Cassowaries bird and also the other bird that eats fruit

The destruction of estuary habitat happened in Ajkwa Estuary, the local people depend on the river while the environment of the river has been contaminated. The tailings destroy the aquatic life with a huge amount of habitat diversity live within the tailings area including the mangrove forest, swamp forest and sago wetlands. The Kamoro people are having intensively cultural and nutritional dependence on mollusk that live near the estuarine area, in which lately difficult to find due to the impact of copper toxicity.

The mangrove forest will be destroyed by the Freeport tailings around 21-63 km2 due to the sedimentation effects. The estuary of Ajkwa river has been clogged up by the tailings from Grasberg mine, and as the time goes by it would be more shallow and narrow. The wildlife within the area of mangrove is stricken by the toxic during eating plants and invertebrates, that brought heavy metal and copper from tailings sediment.

Lorenz national park also having an impact toward the tailings of mine, its area has been reduced in order to accommodate the mine. And the coastal area portion also effected by the tailings. More than 250 million tons of mining tailings directly dumped to the Ajkwa estuary and disembogue offshore Arafura Sea, and the level of dissolved copper from Freeport mining tailings has reached 5 to 10 km offshore.

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68 Harple, T. S. *Controlling the Dragon: an ethno-historical analysis of social engagement among the Kamoro of south-west New Guinea.* (Australian National University, 2000).
II.2 The Legacy of Mining Industry in Papua PT Freeport Indonesia

The environmental impacts that faced by society around PT Freeport Indonesia in which Papua has been a persistent problem. There some of legacy that Freeport left towards the environment in Papua such as:

- **Deforestation and pollution**
  The mine tailing dumped by Freeport Indonesia disgorge into Ajkwa River and Arafura Sea. The tailing of Mining caused a flood in 1991 in which damage a huge area of forest and also threatening Timika town.

- **Flooding and landslide disaster**
  The deposition of mine waste into Wanagong lake has resulted in 2 floods and landslide disaster, it caused the death of 8 people and 5 people injured.

- **Acid Rock Drainage**
  The deposition of mine tailing has resulted Acid Rock Drainage (ARD) in which contaminating local water supplies near Freeport Indonesia area operates. And lately has been reported that there is an increase of copper levels in the marine fauna that can threat the local flora and fauna near that area.

II.2.1 Deforestation and Pollution

According to Mark Smulders the Head of FAO (Food and Agriculture Organization) representative in Indonesia of United Nation in a press released 2015, high deforestation rate occurred in Indonesia that reaches 680,000 hectare per year. There are several aspects in Indonesia that driven the deforestation and forest degradation such as illegal logging and trading, wildfire, mine tailings etc.

The Grasberg mine is located on the north of Timika, Tembagapura Irian Jaya. The Grasberg mine adapting open pit mine, an underground mining process with four concentrators.
The Grasberg mine use open pit mine since the process is high volume and low cost operation, it produces more than 67 million tons ore in 2006. In the large scale of mining operation, specifically those who use open pit mining method, it could significantly raise the level of deforestation through forest clearing in order to build the roads of mining operation. The tailings from the Grasberg mine caused the death of mangrove within the area of tailings in which damaging the aquatic live, decreased the water flows and significantly affecting local population of fish within area.

II.2.2 Flooding and Landslide Disaster
9 October 2003 flooding and landslide disaster happened within area Freeport mining. The landslide disaster that happened caused the death of 8 peoples and hurting the other 5 people. The wall of the mine pit in south part collapsed and 2.3 tons of rock and mud hit the mine workers. It triggered the mass public anger, so in 28 October 2003 more than a hundred of young people from the West Papua Students Alliance of West Papua have been protesting in front of the Freeport office in Kuningan area, Jakarta.

Freeport claims that they have a history of good safety and health system in mining areas. But the disaster on October 9 illustrates the reverse as well as other cases of accidents:

- In June 1998, the Indonesian newspaper reported that about 20 feet (6 meters) waves waste water released from Lake Wanagon, flooding Waa village.
- In 1999 there was an abundance of waste, but no casualties were reported
- In July 1999, a local NGO reported that two people were killed by a several floods and landslides near the mining town of Tembagapura.
- The 1999 report by the environmental organization in Jayapura YALI and the Indonesian Legal Aid Institute shows that five people were killed by toxic copper Papua after eating shellfish (mollusk) and the living creatures in the river was affected Freeport waste disposal.

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75 http://www.mining-technology.com/projects/grasbergopenpit/ accessed on 15 February 2017
76 http://rainforests.mongabay.com/0808.htm accessed on 17 February 2017
78 http://www.mongabay.co.id/2013/05/15/empat-pekerja-tewas-pemerintah-dan-polisi-didesak-investigasi-longsor-freeport/ accessed on 17 February 2017
• In May 2000, four contract workers were killed when the load of waste rock from the mine exceeded collapse then hoard Wanogan lake, which caused the raised wave of water, mud and rocks that flows directly into the villages below.

• In April 2001, WALHI reported that sewage from the Freeport / Rio Tinto has caused pollution of 35,820 hectares of land in the river mouth area of mining operations, and about 84,158 hectares offshore. Pollution also reaches the Lorentz National Park. The pollution causes damage to the river and forest resources, as well as destroying life Amungme and Kamoro indigenous communities who live in estuaries.

II.2.3 Acid Rock Drainage (ARD)

The term acid rock drainage is defined to the condition of the water that contained of acid that formed if sulphide minerals are spoiling the water and air, causing a chemical reaction, mixing into sulphuric acid.\(^{80}\) ARD has a bad impact towards aquatic life, so controlling the ARD can harm the sites used for mining, especially for the nature and the wildlife living around it. The ARD also decreasing the quality of water due to the fact that ARD lowering the pH and increase the metal content in the water.\(^{81}\)

ARD has different impacts towards environment, depending on the amount, volume and levels of sensitiveness of the water. For instance, the ARD that has same volume would give bigger impact in a small river rather than ocean, since ocean has high level of dilution ability and the water is salty in which has stronger acid buffering ability compare to the fresh water.\(^{82}\)


The aquatic life, plants and animal would be hit the impact of ARD when it enters surface water. And the dissolved metal in this case is ARD are more dangers to fish and other organism rather than acidity.\textsuperscript{83}

According to WALHI Freeport did the water pollution in which threatening local people in Papua. Water pollution is when the substance, energy or other elements enter the water so that the water quality level is decreased.\textsuperscript{85}

Colored water indicates the result of oxidation of copper (blue / green) and iron (reddish brown) in the waste rock containing chalcopyrite and pyrite contained in waste rock. In addition, produce acid and remove metals, sulphide oxidation process also generates heat; This is why active reaction occurs in the discharge of waste rock at Freeport observed in extreme heat.\textsuperscript{86} The tailings from PT Freeport in the form of rock and liquid that having


\textsuperscript{85} http://ejournal.hi.fisip-unmul.ac.id/site/wp-content/uploads/2014/06/Rath%20H%20PDF%20(06-03-14-02-45-44).pdf

\textsuperscript{86} Miller, ”Acid Mine Drainage” 2009 accessed on 21 February 2017.
potential cause Acid Mine (Acid Rock Drainage) around 1 billion tons that dumped directly into the river system Aghwagon-Otomona-Ajkwa that disembogue in Arafuru ocean that reached 1.4 billion tons and the tailings into Ajkwa river system 536 million tons.87

In 2006 the waste rocks piles reached 3 billion tons This buildup is very susceptible to erosion by rainfall of about 4000-5000 mm that fell every year at the mine site. The erosion and the waste rocks piles aggravating the tailings that already contained high sediment level that contaminating the river system. There had been several landslides accident in the rock pile of waste, including waste rock dumps in the valley Wanagon at 22:00 pm, May 4, 2000. In this accident, four hundred tons of waste rock avalanche and into Lake Wanagon which caused a wave big enough hit Lake. Waves as high as 15 meters and mud ARD including toxic copper content that suddenly slid toward Wanagon River, killing four people and swept downstream of the village of Banti.88

II.2.4 Estuarine Habitat Destruction

Ajkwa estuary has an important environmental role for local residents because there are terrestrial and aquatic environments that have an amazing diversity of habitats, including mangroves as high as 25-30 meters, sago swamp forests and wetlands. Kamoro have a dependency culture and in animal nutrition molluscs (molluscs) estuary. Nowadays it is hard for them to find the animal that has obviously been affected by toxic copper. They also depend on sago, which has also been dying in large numbers because of the closed area of the tailings.89

Tailing river Freeport-Rio Tinto will destroy mangrove forests covering an area of 21 to 63 km2 due to sedimentation. Estuarine canals already clogged tailings and quickly became narrower and shallower. Estuarine water turbidity also has far exceeded the standards level within area, thus inhibiting photosynthesis process waters.90

II.2.5 Contamination of the food chain in estuaries

Metals from the tailings causing contamination of the food chain in Muara Ajkwa. Freeport tailings area into which indicate the hazardous metal content was significantly higher

87 www.walhi.or.id accessed on 21 February 2017
than the closest estuaries are not affected and used as a reference. The heavy metals are copper, arsenic, manganese, lead, silver and zinc.\(^91\)

The wildlife around the mangrove areas exposed to heavy metals because they eat plants and invertebrates that absorb metal substances around the deposits, specifically copper. Fishermen harvesting around the Ajkwa River also have found their harvest to have a higher levels of copper compared to the normal amount. Aquatic animals that live in estuary Ajkwa that has been polluted by copper, the level of copper within the animals reached 100 times higher than normal fish.\(^92\)

### II.2.6 Ecological disturbance

Freeport had stated that estuary downstream tailings deposition area are functioning as a good ecosystem and diverse water harvesting that is abundant. Despite this, the existence of the species (mobile species) such as fish and shrimp in the estuary Ajkwa is can’t be used as evidence that the territory is indeed healthy, or have a good future. Dissolved copper content found in mangrove waters can lead to chronic poisoning at 30 percent - 90 percent seawater organisms. Currently the number of species of fish, crabs, clams and polychaetes in Ajkwa estuary decreased by 35 percent compared to the number in the reference area.\(^93\)

ERA (environmental risk assessment) that done by Freeport Indonesia estimates that 68 percent of aquatic species in the upper estuary threatened. The outer Ajkwa Estuary, including the area is the Arafura Sea, having a decreasing level in the Living Animals Period seabed base (who lived in bottom of the sea) by 40% to 70%.\(^94\)

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\(^91\) Wahana Lingkungan Hidup Indonesia. (2006). Dampak lingkungan hidup operasi pertambangan tembaga dan emas PT FI-Rio Tinto di Papua. [www.walhi.or.id](http://www.walhi.or.id) accessed on 21 February 2017


\(^93\) Wahana Lingkungan Hidup Indonesia. (2006). Dampak lingkungan hidup operasi pertambangan tembaga dan emas PT FI-Rio Tinto di Papua. [www.walhi.or.id](http://www.walhi.or.id) accessed on 21 February 2017

CHAPTER III

THE POLICY OF FREEPORT INDONESIA CSR PROGRAM IN ADDRESSING ENVIRONMENTAL SECURITY

III.1 Freeport Indonesia Corporate Social Responsibility policy

The development of a company can not be separated from its close ties with consumers, and any aspects that involving the stakeholders. Many corporate activities plays a significant role in the quality of society, especially to the stakeholders including individuals, groups, and even the whole society. The actions by a company can impact directly to the environment, damages that could occur are global warming, deforestation, poverty, and the many kinds of pollution that can impact the environment, and with the growing awareness of its impact, it also increases the role of Corporate Social Responsibility (CSR). According to John Elkington, CSR must be focused on economic growth, environmental protection, and social equity in terms of sustainable development.95

According to Schermerhorn (1993) Corporate Social responsibility is a sense of responsibility implemented through policies conducted by a company in order to fulfill and serve the interest of company and society outside company. The notion of corporate responsibility focuses on the idea that to be socially aware and responsible should not be a for-profit issue anymore, but also a responsibility for the environment and society. CSR is used as an approach by companies to support the integration of issues in society into their own business practices and process, with also interacting with the stakeholders voluntarily and conduct partnerships.96

Archie B. Carrol believed that the social and economical aspects are not separated or even contradicting one each other in terms of CSR. Elaborated three main aspects that can be used to identify the main focus of each companies’ CSR. The three are Profit, People, and Planet.97

Profit: Companies must still have orientation to seek economic benefits in order to continue the operation and development of the business.

96 Nuryana, Mu'man (2005), corporate social responsibility dan kontribusi bagi pembangunan berkelanjutan, makalah yang disampaikan pada Diklat Pekerjaan Sosial Industri, Balai Besar Pendidikan dan Pelatihan Kesejahteraan (BBPPKS) Bandung, Lembang 5 Desember.
People: Companies must have a concern for the welfare of society. Some companies establish CSR programs such as scholarships for the student around company, build public educational facilities and public health etc.

Planet: The company should concern about environment and sustainability of biodiversity. Some companies that believe in keeping the planet usually they adapt environmental greening, provision of clean water and the development of tourism.

Freeport has grown into a huge company with earnings around 2.3 billion US dollars per year, their presence has directly and indirectly benefiting Indonesia in which 33 billion US dollars from 1992 -2004 has been given to the Government of Indonesia. According to the New York Times in December 2005, the amount paid to the government of Indonesia Indonesia Freeport between 1998 - 2004 reached nearly 20 billion US dollars. The Indonesian government, the people of Papua and PT. Freeport has approved an investment contract renewal by signing investment contract for 30 years to come.99

In Indonesia CSR is obligated, at the very beginning the provisions of Law No. 1 of 1995, previously CSR itself is not a mandatory for the company, but then after the enactment of Law No. 40 of 2007 on Limited Liability Company (Company Law), CSR becomes the obligation of the Company.100

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98 http://businessethicsworkshop.com/textbook.html Chapter 13.2 "Three Theories of Corporate Social Responsibility."
Law, stated, "The Company who runs its business activities in the field and / or related to the natural resources required to carry out the responsibilities of social and environmental." Under the provisions of Article 74 paragraph (1) of the Company Law, the CSR becomes mandatory for the Company engaged in the field of natural resources.\textsuperscript{101}

The Company has implemented a social responsibility to the society and the environment, it is proved by hiring local people in which Papuan people that placed inside mining industry and conservation of the environment.\textsuperscript{102} PT Freeport Indonesia has committed to manage and minimize the impact of its operations on the environment and to reclaim and re-green the affected land. Through environmental policy, PT Freeport Indonesia committed to implement the management of good environment practice, providing decent enough resources to fulfill these responsibilities and perform continuous improvement to the environmental performance of activities at each location.\textsuperscript{103}

Freeport Indonesia as a member of ICMM (International Council of Mining and metals) dedicated to sustainable development activities in order to make the vision of the mining industry, mineral become real. In the other hand Freeport Indonesia also responsible and plays an important role in supporting human life and a key contributor to sustainable development activities.\textsuperscript{104} PT Freeport-Indonesia sustainable development activities are tool towards biodiversity assurance and preservation, natural recovery, social engagement through dynamic exchange, the reclamation of environment, free public health administrations and the venture and the establishment of renewable energy source innovations, for example, biodiesel and solar system in order to decrease environmental footprints that destroy the environment.\textsuperscript{105}

\textbf{III.2 Corporate Social responsibility of PT Freeport Indonesia}

Through the environmental policy of CSR, PT Freeport Indonesia has committed to implement the good environmental practice in order to take responsible for the environment around company. and PT Freeport Indonesia also support the research for understanding the environmental change within mining area of PT Freeport Indonesia. In addition, PT Freeport Indonesia also working with government agencies, local communities, as well as non-governmental organizations, to improve environmental performance. In this case PT Freeport

\textsuperscript{102} http://www.fcx.com/sd/pdf/audits/Freeport_Mgmt_Response.pdf accessed on 1 March 2017
\textsuperscript{103} http://ptfi.co.id/id/csr accessed on 1 March 2017
\textsuperscript{104} http://ptfi.co.id/id/about/governance/international-council-on-mining-and-metals accessed on 1 March 2017
adapt the principles of sustainable development framework of the international board of the mining and metals Sustainable Development.\textsuperscript{106}

PT Freeport Indonesia also conducted 10 principles that has been obligated to the members of ICMM in order to achieve sustainable development as a visions of ICMM (International Council Mining and Metals). 10 principles that adapt by PT Freeport Indonesia as a member of ICMM are\textsuperscript{107}:

1. Implementing and maintaining business practices to be ethical and following good corporate government
2. Integrate sustainable development considerations within the corporate Decision-making process.
3. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
4. Implement risk management strategies based on valid data and sound science.
5. Seek continual improvement of our health and safety performance.
6. Seek continual improvement of our environmental performance.
7. Contribute to conservation of biodiversity and integrated approaches to land use planning.
8. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.
9. Contribute to the social, economic and institutional development of the communities in which we operate.
10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.

So that the company conducting CSR activities in economic, social and environmental sectors.\textsuperscript{108}

### III.2.1 ECONOMIC SECTOR OF CSR

PTFI And LPMAK (Lembaga Pengembangan Masyarakat Amungme dan Kamoro) committed to accelerate the growth of economy to provide positive value share for local people through competitive advantage from their respective regions. In carrying out that role, PTFI and also LPMAK engaging stakeholders to be able to participate in regional and community development in the economic sector. In this construction, PTFI and give attention to the program LPMAK fisheries, animal husbandry, agriculture, food, support for the economic system and alternative economic program, as well as cooperation with other parties.\textsuperscript{109}

\textsuperscript{106} http://ptfi.co.id/id/csr accessed on 2 March 2017
\textsuperscript{107} http://www.icmm.com/en-gb/about-us/member-commitments/icmm-10-principles/ accessed on 2 March 2017
\textsuperscript{108} http://ptfi.co.id/id/csr accessed on 2 March 2017
\textsuperscript{109} http://ptfi.co.id/id/csr/freeport-in-society/economic-program accessed 3 March 2017
the development of small business (UMKM) and revolving funds aims to improve and develop the activities of social economic by providing training, guidance to the local entrepreneurs within Papua. This program also aims to boost the local economy and living standard around Papua and to increase market competition ability of local entrepreneurs. In order to help the economy of Papua, PT Freeport Indonesia conducting 2 main programs in terms of economic, which are 1.) Economic development, Village-based and economic development through SME (Small Medium Enterprises) 2.) economic development through revolving funds. 

A. Economic development, Village-based: The program aims to support the economic development of society through the utilization of natural resources around them. The program is run by optimizing the capabilities of the community as well as combined with local wisdom.

1. Fisheries program: Fisheries program initiated by PT Freeport Indonesia in 2009 involving LPMAK and Koperasi Maria Bintang Laut (KMBL) from the Diocese of Timika. PTFI, through a team of Program Pendampingan dan Pengembangan Masyarakat Lima Desa (P3MD), provide companionship and support of transport and human resources to the local fisherman.

2. Animal husbandry program: The program animal husbandry in the village Wangirja (SP IX) and the village of New Utikini (SP XII) aimed to improve the skills of the people in village. Economic programs in both villages can not be separated from the infrastructure program is built for people who voluntarily move away from their home villages in the highlands to the lowlands.

3. Agriculture and food program: agricultural mentoring program aims to transfer knowledge to people in the cultivation of crops especially that has commercial value by utilizing existing land around their homes.

4. Sago plantation program: Sago Gardens development program in the village Nayaro is an early effort to achieve food security, based on local wisdom and character.

5. Lowland agricultural program: PT Freeport Indonesia has developed a program of land use yard by planting different types of horticultural crops such as vegetables, fruits, and cassava The villages in Kamoro.

http://ptfi.co.id/id/csr/economic-program/msme-development-program accessed 3 March 2017
6. Coffee and Horticulture Agro-forestry program: Economic development programs for communities in highland Amungme focused on the development of agroforestry coffee business, mentoring cultivation of horticultural crops and food plants. PTFI through Jayasakti Mandiri Foundation is now develop the cocoa plantations mainly Around SP SP IX and XII.

B. Revolving funds: PTFI through Yayasan Bina Mandiri Utama (YBUM), a revolving fund lending to local entrepreneurs who do not qualify for bank loans carry. Through this program revolving fund local entrepreneurs also receive education and knowledge of the system of partnerships with the banks, so that they understand the procedure and requirements in applying for funds (credit) by banks or other formal financial institutions.

III.2.2 SOCIAL SECTOR OF CSR

in order to support the development of living standard in society PT Freeport Indonesia conduct program known as "Freeport Peduli" that was also involving local people and some organization in order to support and promote the events. Freeport Peduli is concerning on the education, health, and environmental sector. This program also help the natural disaster victims that happened in all around the country. This process involves company stakeholders such as the management, the employees, and also the ambassador (Champion) for Freeport Cares in collaboration with a number of parties to run these programs since 2010.\(^{111}\)

a. Charity program Copper bikers: motorcycle club of PT Freeport Indonesia employees copper bikers cooperate with "Freeport Peduli" conducting touring and social events at Kalianda, Lampung (2008) and Ujung Genteng, Sukabumi, Jawa Barat (2009). this event was attended by hundreds of PTFI employees with riding a motorcycle.

b. Beach cleaning action: Beach cleaning action conducted in Jayapura by PT Freeport Indonesia, Papua, in order to celebrate World Environment Day, June 5, 2008 followed by representatives of the Provincial Government of Papua, Jayapura City Government, the Environmental Management Partenrsip Forum, which involves students from the city of Jayapura and PT Freeport Indonesia employees.

c. Children conference on climate change: PT Freeport Peduli supports the conduct of the World Children's Conference on Climate Change in Surabaya 26 to 30 November 2007, held by the Yayasan Tunas Hijau. During the event a declaration was written, mainly about the significance of maintaining and preserving the environment, and spreading that information to schools.

d. Clean water provision for school: Freeport Peduli, in collaboration with Helping Hands, Jakarta Free Spirit, and Aman Tirta, helping school kids around Jakarta by providing sanitary water facilities in their schools. March 1st, 2009, Freeport Peduli also supports the "Run for H2O" organized in Jakarta, to raise funds to build clean water facilities. The program is run by the high school students from the Jakarta International School, as a community service program. This also includes the Jakarta Free Spirit, as a running organization in Jakarta, collaborating with Aman Tirta and also the USAID.

e. Indonesian Business Coalition on AIDS (IBCA): PT Freeport Indonesia is one of the innovators that established the IBCA, in order to raise awareness of HIV/AIDS within the workplace environment, the coalition involved several other MNCs.

f. Combating HIV / AIDS epidemic: Health campaign in Timika done by PT Freeport Indonesia through training to improve the knowledge of HIV / AIDS for employees. PT Freeport Indonesia was awarded the Millennium Development Goals (MDGs) Award in 2008 by the United Nations (UN), in collaboration with Metro TV to the category of "Combating HIV / AIDS, malaria and other diseases."112

g. Combating Malaria and Tuberculosis: Malaria and Tuberculosis (TB) remains a major threat in Papua. PT Freeport Indonesia is actively making efforts tackling this disease by working with local governments, community leaders and local NGOs

III.2.3 ENVIRONMENTAL SECTOR OF CSR
Freeport Indonesia committed to preserve natural resources and help to achieve sustainable development, especially in Papua. Therefore PT Freeport Indonesia will take any necessary action in order to achieve those target. According to PTFI executive committee members, the company will.113

112 http://ptfi.co.id/en/about/awards accessed on 3 March 2017
113 http://ptfi.co.id/id/csr/freeport-in-environment/environmental-policy accessed on 4 March 2017
• Comply with all matters related to environmental legislation in force, environmental commitments were voluntarily followed, and also the FCX Environmental policy provisions.
• Promoting prevention of environmental pollution.
• Striving for continuous development through improving the management system that has goals and targets based on evidence and research, by through reviews of the objectives set out in the Environmental Management Plan (RKL) and Environmental Monitoring Plan (RPL) as well as through internal audit and audit periodic external.
• Ensuring that environmental considerations become an integral part in every stage of planning, engineering and operations.
• Comply with all matters related to environmental legislation in force,
• Cooperate with the communities around company with the principles of mutual respect and develop active partnerships.
• Support energy efficiency efforts along with the reduction, reuse, and recycle (3R), while also being responsible disposal of products used in the operations.
• Contribute to the conservation of biodiversity and integrated approach for land use planning.
• Ensuring the documentation is proper and well-spread throughout the company and everyone who works for the company, and also being transparent to it.

The commitments above shows that PT Freeport Indonesia also concerning to the environmental issues that has been major issues towards mining company around the world.114

The company also conduct internal and external audits on the environment on a regular basis in order to evaluate environmental compliance, as well as systems and management practices. Employees throughout the organization assume direct responsibility to preserve the environment and develop a work plan based on the results of the audit. PT Freeport Indonesia environmental program is driven by the requirements of the Environmental Management Plan (RKL) and Environmental Monitoring Plan (RPL), which is submitted every year to the government under the terms of the Environmental Impact Assessment (AMDAL/ analisis mengenai dampak lingkungan).115

115 http://ptfi.co.id/id/csr/freeport-in-environment/approach accessed on 4 March 2017
There’s also the monitoring program by Freeport Indonesia for concerns in the environment in the long-term. This program is established to help the monitoring of the risks of environmental impacts by routinely measuring water quality characteristics, biology, hydrology, sediment, and meteorological throughout our operating area. Typically each year more than 7,000 samples resulting in more than 50,000 separate analytical results used to develop the scientific information needed to make decisions regarding the operations management, and is hoped to reduce the risks and damages and those program directly monitored by the Ministry of Environment.  

III.3 Environmental sector of PT Freeport Indonesia CSR

Under the Contract of Work (Kontrak Karya) already signed with the Government Indonesia in 1991, Freeport Indonesia has a working area which covers two areas, those are: (1) The mining area around 100 km2 with activities covering drilling, open pit mining, underground mining, ore processing, and stock piling overburden; and (2) The area project around 2,029 km2 area that covers from the coast Arafura Sea in the south to the mining area in the north, at an altitude of over 4,000 meters above sea level (asl). Most of the supporting facilities such as settlements, airports, seaports, and power generation located in this region.

As stated in PT Freeport Indonesia website, that they concerned about the environmental sector of their operation in Indonesia, the company took several methods to promote and secure the environment around the company in which Papua.

The implementation of management and monitoring environment is one of company commitment to the environment. In 2012, PT Freeport Indonesia conducted a lot of activities related to environment, including: stability management within mining area slopes and rock pile cover, take steps to prevent and control acid rock water, the application of system management in ModADA has been suitable in accordance EIA(AMDAL)300K and geochemical stability control Tailings deposited in ModADA. Until now, PT Freeport Indonesia generally continue to meet Environment Minister Decree requirements No. 431 of 2008 concerning on the requirements Tailings management of Freeport Indonesia in ModADA. The management of solid waste, liquid waste and hazardous and toxic waste (B3) is also in accordance with the procedures and rules regulations.

116 http://www.menlh.go.id/laboratorium-terakreditasi-ii/ accessed on 4 March 2017
117 http://sra.ncsr-id.org/media/2014/01/SR-2012_PTFI_forWebsite.pdf accessed on 4 March 2017
118 http://ptfi.co.id/id/csr/freeport-in-environment/environmental-policy accessed on 4 March 2017
III.3.1 Environmental Audit

PT Freeport Indonesia conduct an audit for the environment, in order to know the chance of environmental damage that caused by the Freeport Indonesia, then decrease environmental damage using data form the audit. And the workers throughout the organization assume direct responsibility to preserve the environment and develop a work plan based on the results of the audit. According to President Jokowi, PT Freeport Indonesia should conduct an independent and transparent environmental audit and consult with Papuan people in order to decrease the environmental damage and build sustainability development. The Environment and Forestry Ministry also was ordered to handle Freeport’s environmental audit, which should be directly supervised by independent auditors and the ministry.

III.3.2 Tailings Management Program

Tailings are the rest of the natural stone that finely ground mineral ore processing results. PT FI using flotation processes (flotation), defined as the physical separation of minerals containing gold and rock from the mined resources. The process involves no mercury and cyanide. A watershed transport the sediment to a determined deposition area in the lowlands and the coast, called Modified Deposition Area (Modified Deposition Area), which is a system that is designed and used for tailings deposition and control. Tailings deposition system is operated under a comprehensive tailings management plan of PT FI, as approved by the Government of Indonesia.

Sampling is widely on the quality of water in the tailings management system showed that the water in the river that carries the tailings from the processing plant PT FI in the highlands to the deposition area in the lowlands have met the quality standard of clean water for dissolved metals corresponding rules of the Government of Indonesia and the USEPA (US Environmental Protection Agency). From the sampling of the biology surrounding the estuary, data can be taken to conclude that the tailings desposition can work as an ecosystem, concluded from the population living within it, such as nektonik organisms, such as fish and shrimp.

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121 [http://www.tailings.info/basics/tailings.htm](http://www.tailings.info/basics/tailings.htm) accessed on 5 March 2017


The company also use tailings for the construction of bridges, government offices, roads drains, and to produce such as paving blocks, wave breaker. The tailings also utilized for helping local infrastructure construction.\textsuperscript{124}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{tailings_utilization.png}
\caption{Tailings utilization by PT Freeport Indonesia\textsuperscript{125}}
\end{figure}

\section*{III.3.3 Overburden and Water Management of Acid Mine}

Overburden is rock that should be shelled in order to reach the mined ore and processed, then the metal taken for commercial purposes.\textsuperscript{126} PT Freeport Indonesia handle overburden

\textsuperscript{124} http://ptfi.co.id/media/files/publication/542cfb9acd306_tailing.pdf accessed on 5 March 2017
\textsuperscript{125} http://ptfi.co.id/media/files/publication/542cfb9acd306_tailing.pdf accessed on 5 March 2017
through a comprehensive overburden management plan that has been approved by the government of Indonesia. At the time of mined ore and overburden containing sulphides are exposed, then the action of water, oxygen and natural bacteria has the potential to form sulfuric acid. Acidic water can dissolve metals contained in the rock overburden and carried away in a drainage system, and if not managed properly it could give a negative impact on the environment. The process known as acid mine drainage.

in order to avoid negative impacts towards environment, PT Freeport Indonesia conduct monitoring and management program in terms of overburden acid mine. Several independent audit done towards the environmental management system, then came up with conclusion that overburden management program PT Freeport Indonesia “well conducted”. PT Freeport Indonesia plans in order to decrease the air impacts of acid mine, they accommodate and process aerial acid mineral that they have, along with an effort to mix limestone and regional placement closure with limestone in order to manage the formation of acid mine air in the coming.

III.3.4 Re-Vegetation and Reclamation

• Highland

The ecosystem in Highland formed by extreme environmental conditions, such as night temperature is very low, high levels of radiation from the sun under the daylight, while having short durations of photosynthesis, thick mists, heavy rainfall and low quality soil. Vegetation that grow in the area are very specific, those which already adapted to rigorous circumstances. PT Freeport Indonesia have method to cultivate the plants for the indigenous species. The studies that have been done until now include ethno botany, biodiversity of the ecosystems of sub-alpine and alpine, use of native species of plants algae and bacteria to develop plans and tissue culture in order to cultivate indigenous species of alpine vegetation. Despite this, the impacts of area stockpiling overburden surrounding the mine will still be active for up to 10 years into the future, PT Freeport Indonesia has committed to reclaiming the top lands overburden is available each year when no longer used, to study the survivability of various planting techniques, and make modifications to the program to improve results end. By the end

of 2005, above 10 hectares of disturbed land at the mine in the highlands who successfully re-vegetated in order to meet the commitment of PT FI to the Government of Indonesia.129

- **Lowland**

  In the lowlands, reclamation research has repeatedly proven the success of native plant species to colonize rapidly and naturally on soils containing tailings. Containing tailings soil is suitable for planting some crops when the land is improved by adding organic carbon. The goal of the reclamation and revegetation program PT FI in low-lying areas is to change the tailings deposits on the deposition area to agricultural or other productive land used as, or grow back to the original plant after the mining is completed. By the end of 2005, 138 species of plants successfully grown on soils containing tailings. Plant species that succeed in trials to date include legume cover crop to be used as animal feed; local trees such as casuarina and matoa; agricultural crops such as pineapple, melon and banana; as well as vegetables and grains such as chili peppers, cucumbers, tomatoes, rice, beans, and squash. Numerous species of edible plants and fruits are successfully harvested in 2005.130

  A farming development program also has been established low-lying areas to prove that the animals can be maintained and graze on land tailings deposits. In this region, in 2005, four different species of grass - Arachis pintoii, Brachiaria humidicola, Paspalum notatum and Stylosanthes sirens - are grown on an area of 1.5 hectares. The program was organized hand in hand with the local government to monitor the health of livestock. Until December 2005, has been kept 100 animals in this area.131

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CHAPTER IV
THE IMPLEMENTATION OF PT FREEPORT INDONESIA CSR POLICY IN ADDRESSING ENVIRONMENTAL SECURITY IN PAPUA

IV.1 The implementation of Corporate Social Responsibility
CSR programs are emerging in Indonesia in line with the enactment of Law No. 40 of 2007 on Limited Liability Companies and Law Number 25 Year 2007 regarding Investment, while the contents of the Act relating to CSR, those are:\(^{132}\)

1. article 74 in Law No. 40 of 2007,

Article 74

1. (1) Companies doing business in the field of and/or in relation to natural resources must put into practice Environmental and Social Responsibility.
2. (2) The Environmental and Social Responsibility contemplated in paragraph (1) constitutes an obligation of the Company which shall be budgeted for and calculated as a cost of the Company performance of which shall be with due attention to decency and fairness.
3. (3) Companies who do not put their obligation into practice as contemplated in paragraph (1) shall be liable to sanctions in accordance with the provisions of legislative regulations.
4. (4) Further provisions regarding Environmental and Social Responsibility shall be stipulated by Government Regulation.

• Whereas in Article 25 (b) Law - Investment Law states that each investor should carry out its corporate social responsibility.\(^{133}\)

From two articles above, we can see how the Indonesian government seeks to regulate the obligations of CSR by companies or investors.

According to the World Business Council on Sustainable Development, CSR is defined as the commitment from businesses or companies to pursue ethic and fair business operations


while enabling sustainable economic development, and also ensuring the improvement towards
the stakeholders, employees, and also the society surrounding its business. The discourse of
CSR (Corporate Social Responsibility), now has become an important issue that is increasingly
aware, and even placed a very important place, therefore many business groups and
stakeholders began to respond to this discourse, not only by following the trends, but also
putting the effort to understand the consequence and benefits of doing so.\textsuperscript{134}

CSR is implemented as a form of investment from a company that enables it to grow
and provide a sustainable business process, and this is more than ever seen as a way to gain
profit, rather than merely a cost for the company. The program itself would show the sense of
responsibility of the company, in providing a sustainable environment to develop. CSR
program is one of the implementation action from company that adapt good corporate
governance (GCG). It is necessary to have good corporate governance for business actor in
order to accommodate the purposes of stake holders that can be fulfilled ideally, and also to
prevent significant and errors possibility in strategy that can happen immediately.\textsuperscript{135}

With such understanding, CSR is able to be used as a strategy to manage risk, and
helping companies in forming a security in society, economy, and also the environment.
Furthermore, by building CSR a company can also develop its branding in society, building
reputation, and raising the image for shareholders to be above competitors.\textsuperscript{136}

But the form of CSR is not the same as a charity, or other social contributions. A CSR
should be taken based on long-term plan, in order to provide a sustainable program that
considers the needs of stakeholders. The difference is in the planning, where charities are tend
to be a short-term planning, CSR takes in the long-term planning. CSR can help to establish a
sense of balance for companies, communities, and also the environment. CSR is hoped to be
integrated as a part of the culture for businesses, in order to pursue solutions over problems
looming in society.

There are three important reasons why businesses should respond and develop the
Corporate Social Responsibility (CSR) issues in line with their business operations. First, the
cOMPANY is part of society, so it is reasonable if the company pay attention to the interests of

\begin{itemize}
\item \textsuperscript{134} http://old.wbcsd.org/work-program/business-role/previous-work/corporate-social-responsibility.aspx
accessed on 21 March 2017
\item \textsuperscript{135} Solihim, Ismail. 2008.Corporate Social Responsibility from Charity to Sustainability. Jakarta : Salemba Empat
\item \textsuperscript{136} https://www.inc.com/maureen-kline/how-to-manage-your-companys-reputation.html accessed on 22 March
2017
\end{itemize}
the community. Second, business and society should have a symbiotic relationship of mutualism. Third, the activities of Corporate Social Responsibility (CSR) is one way to reduce or even avoid social conflict.\textsuperscript{137}

\textbf{IV.1.1 The implementation of environmental audit}

Environmental audit that conducted by PT Freeport Indonesia is aimed to measure the environmental degradation that happened around company. By that method the company can analyze the chance and decrease the environmental degradation that happened. Environmental audits by PT Freeport Indonesia (PTFI) generate information for managers about current environmental performance and help to identify improvement opportunities. PTFI responds to the results of these audits with work plans to implement the proposals put forward by auditors. In 2005, environmental assessments were carried out:\textsuperscript{138}

- Representative of Crescent Technology Inc. Representing the Board of Directors and senior leaders of Freeport-McMoran Copper & Gold Inc. Audits PTFI's activities as part of its annual internal audit program. These annual audits have been taking place since 1994.

- \textit{International Certification Services Division} from \textit{Societe Generale de Surveillance} (SGS) An ISO 14001 registration and certification organization from Geneva, Switzerland with offices in Indonesia, has conducted an oversight audit of PT FI's environmental management system. The audit is one of the requirements in maintaining ISO 14001 certification. ISO (International Standardization Organization) 14001 provides a systematic approach to companies for effective environmental management and continuous improvement.\textsuperscript{139}

- A three-year external independent environmental audit has been conducted by Montgomery Watson Harza in order to fulfill one of the commitments of PT FI as stipulated in an Environmental Impact Assessment document (AMDAL) approved by the Government of Indonesia in 1997. The audit concludes that PTFI's mining activities are "Including the largest activities in the world with the greatest level of environmental challenges and complexities "and that" the environmental management practices


\textsuperscript{138} http://www.fcx.com/sd/pdf/audits/MontWatAudit_Rec.pdf accessed on 22 March 2017

\textsuperscript{139} http://ptfi.co.id/id/media/news/a-mining-company-with-an-advanced-environmental-management-system accessed on 22 March 2017
undertaken by the company are still based on (and in some cases represent) the best management practices for the international copper mining industry and gold.\textsuperscript{140}

The long-term audit for Freeport Indonesia and Monitoring Program is established for measuring positive impacts on air, biology, hydrology, sediments and meteorology throughout the company operations. Each year over 7,000 samples that produce over 50,000 variables to be considered, and each is assessed accordingly to provide the proper analysis in regarding the operation of the company so as to minimize and mitigate environmental impacts.\textsuperscript{141}

PTFI has an environmental laboratory in the area that produces data analysis for use in monitoring programs. This laboratory is certified ISO 17025 quality standard for analytical laboratory from National Accreditation Committee of Indonesia and has been registered by Ministry of Environment as Environmental Laboratory. As part of the environmental monitoring and auditing conducted by the Government of Indonesia, Environmental Supervisors take samples of water, sediment, fish, surface water, and stack emissions. The results regularly confirm data from Freeport Indonesia.\textsuperscript{142}

In the year 2002, PTFI submitted a report of its Ecological Risk Assessment to the Indonesian government to be reviewed upon. The contents of the report included the effects of their business operations to the surrounding environment, effects of tailings into the nature, animals, and also plants in the area. The report is also used as a basis to lax the perception of tailings in the AMDAL.\textsuperscript{143}

The biology program from Freeport Indonesia monitors over 200 sampling sites for nekton, benthos, and plankton. Results from recent monitoring show that fish and shrimp samples from the tailings area are feasible to be consumed as regulated in Indonesian food quality standards. From the data gathered, it was concluded that the conditions of the estuary located south to the tailings DAS can support an ecosystem of various species and population, with shrimp, fish, and nekton organisms surviving the environment.\textsuperscript{144}

The audit also concludes, as with the audits conducted before it, that PTFI's tailings management program is best suited to the tailings management option to unique topographic and climate conditions within area, with far lower environmental impacts and risks" than other alternatives. The auditors from Montgomery Watson Harza also put forward some

\textsuperscript{140} http://www.fcx.com/sd/audits.htm accessed on 22 March 2017
\textsuperscript{141} http://ptfi.co.id/media/files/publication/515a7efeb7336_wtsd_2011.pdf accessed on 22 March 2017
\textsuperscript{142} http://ptfi.co.id/media/files/publication/515a7efeb7336_wtsd_2011.pdf accessed on 22 March 2017
\textsuperscript{143} http://ptfi.co.id/media/files/publication/515a7efeb7336_wtsd_2011.pdf accessed on 22 March 2017
\textsuperscript{144} http://www.fcx.com/sd/audits.htm accessed on 23 March 2017
recommendations on improvements to the environmental management of PT FI, and the recommendations implemented at that moment.\textsuperscript{145}

IV.1.2 The implementation of tailings management program

Tailings management program that was implemented by PT Freeport Indonesia. The tailings of PT Freeport Indonesia has successfully re-utilized in cooperation with LAPI-ITB, they created a concrete mixed material by adding a polymer to a concrete, it has strong characteristics, cheap and definitely environmental friendly. PTFI also cooperating with BPPT and Ministry Public work in order to make standardization of tailings concrete.\textsuperscript{147}

PT Freeport Indonesia also reutilize the tailings for the infrastructure construction of the society around company such as bridge, government office etc. the MoU in regards to the utilization of tailings as a construction material between Papua provincial government and PT Freeport Indonesia has renewed at 2011, it shows that the MoU bring a good impact towards Papua provincial government. As the implementation of MoU program, Freeport Indonesia

\textsuperscript{145} \url{http://www.fcx.com/sd/audits.htm} accessed on 23 March 2017

\textsuperscript{146} \url{http://ptfi.co.id/media/files/fact/57c93359314ff_6-manajemen-lingkungan.pdf} accessed on 25 March 2017

\textsuperscript{147} \url{http://ptfi.co.id/media/files/publication/542cbf9acd306_tailing.pdf} accessed on 25 March 2017
supply the material for construction more than 460,000 m³ tons of tailings in order to build the infrastructure of Timika Papua.\textsuperscript{148}

The tailings deposition area also used for or agricultural, forestry, or fishery activities. The purpose of Freeport Indonesia to reutilize deposition area is to conduct revegetation within area of tailings. Plant species that succeed in trials to date include legume cover crop to be used as animal feed; local trees such as casuarina and matoa; agricultural crops such as pineapple, melon and banana; as well as vegetables and grains such as chili peppers, cucumbers, tomatoes, rice, beans, and squash. Numerous species of edible plants and fruits are successfully harvested in 2005.\textsuperscript{149}

IV.1.3 The implementation of overburden and water management of acid mine

Overburden is a cover of rock with having none at all or small economic value that encloses a reserve. Within the Grasberg mine, about 3.4 billion metric tons of overburden will be mined to reveal 1.4 billion metric tons of economically valuable ore. Overburden consists of a number of different types of natural stone, including limestone. Overburden is placed in areas that allow the open pit to be developed as closely as possible for the benefit of resource efficiency.\textsuperscript{150}

PT Freeport Indonesia implementing overburden and acid mine monitoring by conducting environmental audit. Under the government-approved overburden management plan, PT FI places overburden in managed areas around the Grasberg open pit. PT FI's plan to reduce the impact of acid mine water that was done by collecting and treating the existing mine acid, together with the process of mixing with limestone and closing the overburden placement with limestone to manage the formation of acid mine water in the future.\textsuperscript{151}

\textsuperscript{149}\url{http://ptfi.co.id/media/files/publication/515a8033daa25_riverinetailing2009.pdf} accessed on 25 March 2017
The main areas of overburden placement are in the Carstensz meadows and the Wanagon area to the west and north. Overburden is transported to the placement area using trucks. For some specific placement areas such as the Lower Wanagon, the transport truck pours the covered rocks into the crusher first, and then the crushed rock cover is transferred to a stacker that will place the rock cover material at Lower Wanagon. PTFI grouping type of rock cover and put the rocks are selectively so they can minimize acid water formation mine. Acid water that formed Collected and acid neutralization mine is done by adding calcium towards mine. Then the reclamation conducted using local plants on Rock cover. Around 333 hectare overburden area has been reclaimed and 17 hectare in 2014.\textsuperscript{153}

IV.1.4 The implementation of Revegetation and reclamation

PT Freeport Indonesia use Grasberg as mining operation area. Open pit mining that adapted by Freeport Indonesia clearly changes the shape and structure of the earth. For example from an open field with a lot of vegetation, when the mining occurs then the land will be lost. The natural vegetation that initially grows on top of the top layer will change as the soil contour changes. Minerals mined such as copper, gold, and silver. This mineral material is then processed into raw materials for the goods we use everyday such as electronic devices, vehicles, and other needs.\textsuperscript{154}

The area of open pit mining Grasberg diameter about 4 km, with a depth around 1 km. From this Grasberg area reserves of copper, gold, and silver are mined every day. Based on

\textsuperscript{152} http://ptfi.co.id/en/csr/freeport-in-environment/overburden-and-acid-mine-water accessed on 26 march 2017
\textsuperscript{153} http://ptfi.co.id/media/files/fact/57c93359314ff_6-manajemen-lingkungan.pdf accessed on 26 March 2017
\textsuperscript{154} Alexander Sonny Keraf, 2002, Etika Lingkungan Hidup accessed on 26 march 2017
data of ore production (mineral rocks) of PT Freeport Indonesia about 220,000-240,000 tons per day, about 70% coming from Grasberg. Grasberg is a world-renowned mining icon. Right at the top of the Grasberg mining site there is a large area dedicated to the cultivation of Papuan endemic crops which will be planted at the site of ex-rock residue. Its location is named Nursery Manado Grasberg.\textsuperscript{155}

With an altitude of more than 3,800 Mdpl, some distinctive plants that live in the subalpine area are maintained. Throughout 2011, more than 60.1 hectares of land near the mining area in the highlands. By the end of 2011, more than 171 plant species have successfully grown on land containing tailings. With a strict and systematic supervision, several types of grasses have spread widely in Grasberg heights. Vegetation of plants developed in the nursery include: Deschamsia Klosii, Deschamsia Caespitosa, Rhododendron spp, and others. The three parts above are the most planted species. The plants are preserved and will become pioneer plants in the mine reclamation area. Pioneer plants are expected to be the beginning to invite various types of wildlife that usually live in locations such as various species of birds and small animals. The existence of these animals will be a natural spreader through the fruit eaten then the seeds that come out with the animal feces.\textsuperscript{156}

In summary of those implementation, Freeport has been implementing several policy in order to prevent and reduce the impact of environmental degradation, those are:\textsuperscript{157}

6. Obey with government regulations and policy.
7. Establishing environmental management system in accordance to ISO 14000 as well as carrying out its commitment under AMDAL.
8. Reducing environmental impacts that happened around company area: Tailings, acid water neutralization.
9. Implementing 3R reduce, reuse, and recycle in terms of environmental research and development.
10. Engaging with local people and other stakeholders.

\textsuperscript{155}https://informasibioteknologi.files.wordpress.com/2013/03/prosiding-IBC-v-2012_edit12032013secured.pdf accessed on 26 March 2017
\textsuperscript{156}http://ptfi.co.id/id/csr/freeport-in-environment/reclamation-and-revegetation accessed on 26 March 2017
\textsuperscript{157}http://ptfi.co.id/media/files/fact/57c93359314ff_6-manajemen-lingkungan.pdf accessed on 27 March 2017
IV.2 Linkage between CSR implementation and environmental security

According to Buzan’s definition “security is pursuit of freedom from threats”. Threats also could be come from the environmental aspect. Environment is perceived as an important aspect in regards to the human’s live. Throughout history, environmental factors have significant impact in terms of human existence, including the spread of infectious diseases, high population, and global inequality and those kind of phenomenon caused conflicts among states.

Barry Buzan and Ole Waever at the Copenhagen School established a framework, entitled the securitization of conceptualizing security. This kind of theory shows on how problem could transformed into security issues including environment. According to Matthew and Mcdoland, Environmental security includes the dynamics interaction between human and nature that create the modern world. Moreover, natural resources originating from the environment has very important role for the development of states, these can come in the form of valuable resources such as oil and gas.

According to Shaukat Hassan in Adelphi Paper, the more environmental calamities in a nation, more decrease of development in a state, and affecting its social structure, and also disrupting its political stability within a nation. Environmental stress also could be major driving factor of political disorder due to the fact that the environmental issues can trigger policy decision that can catalyze a potential trigger issues. According to Jon Barnett and W. Neil Adger, in their book “Climate Change, human security and violent conflict,” environmental issues that happened within nation such as pollution depletion, or natural disasters, often causing a very serious threat towards security, it because of the increase individual’s vulnerability due to the climate change and environmental degradation.

The following figure illustrate on how the environmental issues potentially lead to the conflict.

160 ibid
The figure above shows the linkage between the human activity and environmental issues that altered into a conflict potential. As what the author has mentioned in conceptual framework that Chalecki believed that the patterns of human behavior could have a potential impact toward the political stability within a country, means that every country should consider their own environmental security due to the fact it could leads to global conflict.  

The corporate social responsibility came up as an action of MNC (non-state actor). The role of MNC within international community has been improved (Bieler and Underhill 2000). In order to keep the stability of their business operation and building the positive yet sustainable connection with all the parties that involved in business directly or indirectly, MNC should conduct Corporate social responsibility (Du, Bhattacharya & Sen, 2010). According to European Union commission 2002 (347 final:5), Corporate social responsibility is a concept of companies in integrating environmental and social concerns during the business operation with their stake holders voluntarily.

Due to the fact that the operation of MNC also give bad environmental effect within state, so MNC came up with CSR to help the state to protect the environmental security. CSR

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165 The figure made by the author.
also helped the company to build their good reputation toward the shareholders and the entire society that involved in business. World Bank described CSR as an obligation of company to be responsible for all the activities during their operations activities including the economic and environment.

Business morals is portrayed as a proper rule and standard for the business actor in doing its company structure to be adequate and ecologically good. Acceptable activities in business morals involving stakeholders in which including society, customer, worker government etc and the general population and additionally the qualities and moral standards of every people. According to Ferrel, O.C the business ethic comprehended through introduction of ethical issues, circumstances, or chance that can be classified and need individuals to choose or pick an action then assessed as true or false or ethical or unethical.

This business ethics is not necessarily made only because of public demand for corporate activities that are considered to be detrimental to society, but this business ethics is also considered important for the company to do. This business ethics is not necessarily made only because of public demand for corporate activities that are considered to be detrimental to society, but this business ethics is also considered important for the company to do. Ferrell et al (2009: 31) explains that firms that have a strong commitment to ethical values will get more benefit business due to the fact that the companies are believed to benefit more, making choices related to ethical values leads to the suppression of pressure on managers and workers, Reputation, ethical action can encourage good leadership, as well as other alternatives tend to be more demanding and costly for regulation.

Business ethics also tends to indirectly influence the development of the company because good reputation that gained from the implementation of business ethics within the company can increase the number of consumers because of their belief in the company and its products, improve the performance of workers due to the company's improved health and safety insurance, Shareholders with the company as it has been secured by the implementation of business ethics.

170 ibid p.30
171 ibid p.31
CHAPTER V
CONCLUSION

Environment has an important role on human livelihood and relations between one another. In terms of International Relation, environmental issues are crucial. The fact that international community recently has put their focused on protecting the environment through Kyoto Protocol, and this sort of matter are clearly political issues. In this modern era the world are constantly changing including our environment. Nevertheless, as the world and environment change, the need of awareness to prevent bad impact toward society should be improved. This kind of changing, bring a huge impact toward people, many disasters and tragedy happened caused by the environmental degradation.

Mining industry is one of the aspect that caused bad environmental impacts. Grasberg in Timika Papua is on of the largest open mining pit that has been operating since 1967. Situated in the fortune of Papua, the Grasberg mine sits at a height of 14,000 feet in the remote highlands of the Sudiman Mountain Range. Estimated to have $40 billion in gold ore reserves. Due to the fact that PTFI also also has environmental bad impacts towards local society that has been claimed as Freeport’s legacy in Papua province, such as Pollution and deforestation: the tailing that derived from mining operation dumped directly to Ajkwa river and flows to Arafura Sea, it polluted the forest around Ajkwa river and local aquatic ecosystem such as fish, shrimp and also cause flood in 1991. Flooding and landslide disaster, in 2003 there was landslide disaster and flood that caused the death of of 8 people and 5 people injured. Acid rock drainage: the acid rock drainage (ARD) has caused the increase of the copper levels in Ajkwa River and it damage the aquatic ecosystem and flora around mining area, and also contaminating the local supplies water for the society.

PT Freeport Indonesia as Multinational Company has prepared the action in order to tackle and handle environmental security issues through their CSR program. PT Freeport Indonesia implementing several CSR program, Environmental audit, in order to analyze the environmental impact that happened around company, by that the company can prepare and and decrease the environmental impact that caused degradation. CSR on tailings management program conducted in order to maximize the tailing for the use of goods such as concrete mixed material, it has strong characteristics, cheap and definitely environmental friendly. The material use for the infrastructure construction of the society in Timika such as bridge, government
office etc. The tailings deposition area also used for or agricultural, forestry, or fishery activities. The purpose of Freeport Indonesia to reutilize deposition area is to conduct revegetation within area of tailings. And PTFI also conducted overburden and water management of acid mine monitoring, in order to know the level of acid mine that contained in water to decrease the level and also overburden in order to reduce the impact of acid mine water by collecting and treating the existing mine acid, together with the process of mixing with limestone and closing the overburden placement with limestone to manage the formation of acid mine water in the future.
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