



Aldo Leopold's Land Ethic in Open-Pit Mining in Tampakan, South Cotabato

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Abstract

This research paper evaluates the ethical implications of the Open-Pit mining project in Tampakan, South Cotabato, through the lens of Aldo Leopold's Land Ethic. The study highlights the conflict between the economic benefits presented by Glencore Xtrata and Sagittarius Mining International (SMI) and the environmental concerns raised by the B'laan tribe and local citizens. By utilizing Leopold's criteria of stability, integrity, and beauty, the paper argues that the proposed mining activities threaten the ecological health of the region. It posits that viewing land merely as a commodity undermines its intrinsic value and neglects the responsibilities humans have as custodians of the environment. The findings suggest that the mining project, while financially promising, is ultimately immoral as it compromises the welfare of the biotic community, advocating for a paradigm shift in how we relate to the land.

I. Introductory Part

Is the Open-pit mining project in Tampakan, South Cotabato ethical or not? Glencore Xtrata (the main company behind the project) and its subsidiary, the Sagittarius Mining International (SMI) had been pursuing their proposed project, the Open-pit mining, because it is more beneficial for the economic progression of the government. However, the B'laan tribe and some concerned citizens had been opposing the project because it can cause a massive destruction in the environment, particularly on the plain and valley areas. In this sense, some part of Tampakan land area is on jeopardy.

On this ongoing dilemma, this research paper attempts to evaluate the Open-pit mining project on Tampakan, South Cotabato using Aldo Leopold's Concept of Land Ethic. Primarily, the Land Ethic of Leopold is offering a decision process for most environmental and ecological issues. It uses three criteria or substance to determine the land sickness and health, which are: the

stability, integrity, and beauty of the land. Thus, the researcher believes that Aldo Leopold's Land Ethic will be the way to answer our query.

Statement of the Problem:

The presentation of this research study will be focused on the following questions:

- 1) What is Aldo Leopold's Land Ethic?
- 2) What are the possible environmental impacts of Open-pit mining project in Tampakan, South Cotabato?
- 3) How can Aldo Leopold's Land Ethic be of help to determine the morality Open-pit mining project in Tampakan, South Cotabato?

Relevance of the Study:

Hitherto, we, human beings view land as strictly economic and entailing privilege but not an obligation. We have no sense of respect on the worth and value inherent on it. And so, we become the conqueror of it.

To contend this mentality, Aldo Leopold presented to us his concept of Land Ethic assuming that land is not merely a soil but an organism which has its own worth and value. It expands the boundaries of the neighborhood which includes soils, plants, and animals or collectively, the land. On his writings, he includes also that the land is part of the community and we should act respectfully to it rather than treat it as just an area with no intrinsic value. In other words, we, human beings, need to love, respect, admire, and put a high regard value, inherent on land.

Methods of the Study:

The researcher will utilize book sources from Notre Dame University and Notre Dame Archdiocesan Seminary libraries. In addition, online sources as supporting data will also be utilized to make this study more comprehensive.

Scope and Limitation

This research paper focuses only on Aldo Leopold's concept of Land Ethic to evaluate the act of Open-pit mining project either it is ethical or not. Moreover, the researcher will present only the possible environmental impacts of Open-pit mining project in Tampakan, South Cotabato.

A: The Land Ethic of Aldo Leopold

a.) Aldo Leopold's Land Ethic

Ethics, as every individual knows, are the standards to evaluate whether one's action is good or bad, right or wrong which lead everyone to live in accordance and harmony as one community. In other words, ethics are centered and can be applied only to human beings (Anthropocentric). However, for Aldo Leopold, the father of "Land Ethic", he assumes that there is no ethic yet dealing with man's relation to land; to animals and plants which grow upon it (Leopold, 1949). In this sense, he introduces to us his concept of Land Ethic as the third element of all ethics to enlighten every individual that the land has its own intrinsic worth and value the same as the human beings. At the outset, he relates his concept, the Land Ethic, to the myth of Odysseus that goes "When god-like Odysseus returned from the wars in Troy, he hanged all on one rope a dozen slave girls of his household whom he suspected of misbehavior during his absence (Leopold, 1949, p. 119)." This statement, primarily, involves a metaphorical understanding that, like Odysseus' slave-girls, every individual treats the land as a mere property and an object for their own economic benefit but not an obligation.

b.) The Land Definition

For Leopold, he defines land as not a mere soil that can be simply utilized by human beings but it is an integrated community of life that which includes human beings, other animals, plants, rocks, soils, and waters (Callicot & Frodman, 2007). It means that land is composed of various kinds of organisms that include human beings as part of the biotic community.

c.) The Community Concept

“Human beings are not conquerors of the land but a plain members and citizens of the greater community (Leopold’s Land Ethic, 2014).” This adage of Leopold signifies that his concept on Land Ethic simply enlarges the boundaries of the community which include human beings, soils, waters, plants, and animals, or collectively: the land (Leopold, 1949, p. 120). For him, being a conqueror of the land defeats oneself because he knows only what and who is valuable and worthless in the community life. Land, in other words, is not only exclusive to the community of human beings but it belongs to the biotic community.

d.) The Land Pyramid

In order for every individual to enhance and broaden their relation and understanding of the land, Leopold sketches a truer image of the land which best describe as his biotic pyramid. As what Leopold stated: “We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in (Leopold, 1949, p. 122).”

For him, he believes that the energy absorbed by the plants coming from the solar energy is being relayed or transferred to the community. This energy flows through a circuit called the biota, which may be represented by a pyramid consisting of the layers. First, the bottom layer of the land pyramid consists of the soil; then it follows the layer of the plant which rest on the soil and an insect layer on the plants as well as a bird and rodent (such like mice and squirrel) layer on the insects. Second, the middle layer consists of the omnivores, including human beings.

Lastly, the apex layer consists of the larger carnivores (Leopold, 1949). To easily understand his land pyramid, he best describes this notion as (1949):

Land is not merely a soil but it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is degenerate in decay, some is added by absorption from the air, some is stored in soil, peats...but it sustained circuit, like a slowly augmented revolving fund of life (p.123).

The above statement pertains that each species are independently contributing to the continuous smooth flow of energy and to the equilibrium of the biotic community. In addition, the Land Pyramid of Leopold is not a concept to show that human beings are inferior to other organisms but to show that they are also essential part to the continuous flowing energy of the land circuit.

e). The Substance of Land Ethic

Leopold summarizes his discussion on Land Ethic into his famous maxim that goes: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise (Leopold’s Land Ethic, 2014).” The three keywords attached on Leopold maxim which are: integrity, stability, and beauty are considered as the ecocentric values to determine the land sickness and health. However, Leopold vaguely discussed those three keywords attached on his maxim. In a more recent study, Julliane Newton tries to understand what Leopold meant about those key words which are written on her published book, Aldo Leopold’s *Odyssey*.

Stability, by which Leopold meant not a community with an unchanging biological membership but a biotic system that possesses and retains an ability to cycle nutrients repeatedly at high levels of efficiency without significant loss (Callicot & Frodman, 2007). To validate this

notion, Leopold also explained in his “Biotic Land-Use”, that land is stable when its food chains are so organized as to be able to circulate food at the same number of times (Leopold 1949, p.205). In other words, preservation of the stability of the land depends on its ability to cycle the flow of energy repeatedly or continuously in the land circuit.

Integrity for Leopold apparently referred to the suite of species required in a landscape for the landscape to retain its stability. He preferred that the position of the nutrient chains filled by native species (Callicot & Frodman, 2007). In other words, it advocates the wholeness or the original complement of species being intact in the landscape. It means that being true of own character or not false or fake (plastic trees, plastic birds or fake lawn). However, in order to maintain the land health it allows exotic species to substitute the native species as long as it contributes to the stability of the land (Callicot & Frodman, 2007). In other way, native and also exotic species are those essential to the preservation of the stability of the land. Through this way, the integrity of the land is still preserved.

Beauty is too vague and subjective concept to provide an objective definition. Beauty for Leopold, as Newton understands, apparently was an attribute of the lands that has an ability to retain their health, particularly lands that displayed their native integrity (Callicot & Frodman, 2007). Health here refers to the ability of an ecosystem to carry out its biological and ecological functions (water and nutrient cycling). Thus, Beauty will not be recognized without the preservation of integrity and stability. Then, these three substance or concepts are interrelated to each other because these are the criteria to determine the land's health.

B: The Possible Environmental Impacts of Open Pit Mining Project in Tampkan, South Cotabato

a.) Brief History

In 1990 Western Mining Corporation (WMC), an Australian company, signed an Option Agreement for the mine lease. In July 1994, WMC and their local partner entered into a consent agreement which allowed WMC to apply for a Financial and Technical Assistance Agreement (FTAA) with the Philippine Government. This is a type of mining license which allows for 100% foreign ownership. In 2001 FTAA No. 002-95-XI was transferred to Sagittarius Mines Inc (SMI), managed by Xtrata Copper, an Australian-based subsidiary of the Anglo-Swiss Xtrata Company which owns 62.5 % of Tampakan Copper Gold Project (Internet 1, 2014).

Other shareholders of this project are the Austrian Indophil (34.23%), and Philippine Alsons, Inc. (3.27 %). In 2006 Xtrata Copper exercised its option to acquire 62.5% of the controlling equity interest (40%) in the Project. In March 2007 Xtrata assumes management of the Project and commenced the Extended Pre-Feasibility Study that was completed in December 2008 (Internet 1, 2014).

The main result of the company activities is the militarization of the project area, a lush valley and the last remaining coherent tropical highland forest area on the island of Mindanao, which is also a home of B'laan tribe. The B'laan, who lived there as farmers and hunters have been forced out of the area after refusing to sign up to a relocation scheme (Internet 1, 2014).

b). The Benefits of Open-pit Mining Project in Tampakan, South Cotabato

Mark Williams, a SMI general, said that if the Open-pit mining project in Tampakan, South Cotabato would be approved, he believes that it gives a better future for the people of Southern Mindanao. Primarily, it can produce the following benefits (Maitem & Alconaba, 2011): First, it will produce an estimated average of 375,000 tons of copper and 360,000 ounces of gold which can contribute Php 134 billion to the Philippine gross domestic product (GDP) per annum over a 17-years mine life. Second, a total government revenues (national and local) through a variety of taxes and charges approximately Php 307 billion (nominal) over the life of

the project. Third, it will contribute a royalty payments and direct contributions in excess of Php 39.8 billion (nominal) to local communities and indigenous group over the Project's life. Lastly, he said also that 10,000 workers will be employed "at the peak of the construction phase project, while some 2,000 others will be hired if and when the firm starts operation.

c.) The Possible Environmental Impacts of Open-pit Mining Project in Tampakan, South Cotabato

As we noticed, there are various benefits that can be contributed of Open Pit Mining in Tampakan, South Cotabato. However, the two mining companies, Xtrata and SMI forgot the underlying impacts of their proposed project in the Environment. Open pit mining is primarily defined as:

...a type of stripping mining in which the ore deposits extends very deep in the ground, necessitating the removal of layer upon layer of overburden and ore. In many cases, logging of trees and clear-cutting or burning of vegetation above the ore deposit may precede removal of the overburden. The use of heavy machinery, usually bulldozers and dump trucks, is the common means of removing burden. Open-pit mining often involves the removal of natively vegetative areas, and is therefore among the most environmentally-destructive types of mining, especially within tropical forest (Overview of Mining and its Impact, 2014).

Clive Wicks and other Filipino Environmental consultant experts presented their evaluation and discussed the real risks of the Open-pit mining project that had been covered up in the massive Environmental and Social Impact Assessment (ESIA) documents (Internet 2, 2014). At the outset, Wicks pointed out the Open pit mining has the high potentiality for loss of life and severe environmental damage if the tailing dam or rock storage faulty collapse (Internet

2, 2014). According to Dr. Robert Goodland, he stated that the mine area is located on the top of stratovolcanoes and fault lines, some of which cross each other, and is located in an area of high seismic activity (Internet 2, 2014). In addition, he said also it will build large dams and a rock storage facility for 1.6 billion tons of toxic rock that are highly prone to breakage and disasters (Internet 2, 2014). In this event, many people will die and forest as well as rivers will be exterminated and polluted. Through this, the provincial government, some concerned citizens and the B'laan tribes are opposing on the Open-pit mining project. The main reasons of it are the following:

d.) Habitat

According to Clive Wicks, an Environmental consultant, the Tampakan mine development project will cover an area of approximately 10,000 hectares (Internet 2, 2014). The Xtrata and SMI mining companies plan to cut down almost 4000 hectares of forests and including old growth forest for their 800 meter gigantic open pit that covers 500 hectares and 1.6 billion of tons of toxic waste rock in a 300 meters dump (Zonio, 2011). In this sense, the land area of Tampakan, South Cotabato, specifically the forest will be devastated where the people, animals, and plants are living.

e.) Water and food

Wicks said also that the Open-pit mining project will affect the water source of communities on 6 rivers with arsenic and acid mine drainage (Internet 2, 2014). The tailing dam covering 1,300 hectare will be built to accommodate 1.1 billion of mine tailings (Zonio, 2011). The Mal river, the region's biggest river system, will be the worst affected as many streams in its catchment will be destroyed and replaced by the tailing dam (Internet 2, 2014). The project also will pollute 5 other rivers: the Altayan, Dalal, Mainit, Manteo and Taplan and these rivers irrigate the rice fields of Mindanao (Zonio, 2011). Judy Pasimio, executive director of Legal

Rights and Natural Resources Center –Kasama sa Kalikasan, said that: the SMI and Xtrata mining companies will actually pollute approximately 7 billion liters of fresh water that is currently being used by the communities (Mindanao Examiners, 2011). Moreover, when this proposed project will be approved the lives of fishes, mammals and other species are in danger.

f.) Geological risk

The Philippines is geologically an active region. Earthquakes are common and the Tampakan mine project will result in a deep hole in the earth, together with a tailing lake, at about ten kilometers from a young volcano, Mt. Matutum. Earthquakes could lead to breaking of tailing dams or damage for crucial preventing water pollution (Internet 1, 2014).

C: Analysis and Conclusion

The land of Mindanao, particularly in Tampakan, South Cotabato, is considered as one of the land areas that possesses rich resources of minerals such as gold and copper. There are various mining companies, specifically the Glencore Xtrata and its subsidiary, the Sagittarius Mining International, are much interested to extract the gold and copper within the land.

Thereby, the two mining companies proposed the Open- pit mining project as a means to successfully extract those minerals inherent on the land. For them, if this proposed project will be approved by the government and with the consent also of the B'laan tribe, it will provide more benefits to the residence of Tampakan, South Cotabato. However, the provincial government and the B'laan tribe had been opposing to the proposed project because it can cause a massive destruction to the land area.

Throughout the discussion of this research paper, the researcher presented the Open-pit mining project in Tampakan, South Cotabato that up until is being pushed by the two mining companies which are the Glencore Xtrata and its subsidiary, the Sagittarius Mining International (SMI). Primarily, the two mining companies deem that the Open-pit mining project can

generates thousand tons of copper and ounces of gold which can help to the economic progression of the Southern Mindanao. Based from the perspective of Aldo Leopold, the two mining companies become conquerors of the land who do not have a deep concern to the underlying impact of their proposed project in the land but they treat only the land as a means to gain more wealth. In fact, the Open-pit mining project does not contribute to the preservation of the stability, integrity, and beauty of the biotic community. Therefore, the Land Ethic of Aldo Leopold proves that the act of Open-pit mining project is immoral. Then, if it is immoral, the two mining companies must abolish their proposed project in order to preserve the welfare of the biotic community.

In this case, we need to stop thinking as conquerors of the land but rather custodians who are willing to love, admire, respect, protect and preserve the worth and value inherent on, the land. Moreover, we need to think for ourselves as a plain member of it as well as preserving the stability, integrity, and beauty of the biotic community.

B. Recommendation:

There are various act of destroying the continuous flowing energy and the equilibrium of the biotic community that which can be addressed by the Land Ethic of Aldo Leopold such as deforestation and illegal logging. Then, these issues would like to recommend by the researcher for the future study.

IV. Bibliography

Leopold, A. (1949). *A Sand County Almanac, and Sketches Here and There*. (pp. 201-226). New York: Oxford University Press.

- Calicot, J.B. & Frodman, (2009). Encyclopedia environmental ethics and philosophy. U.S.A: Mcmillian Reference.
- Leopold's Land Ethic (2014). An example of "ecocentrism," About Aldo Leopold. Retrieved August 10, 2014 from [http://hettingern.people.cofc.edu/Environmental Ethics Sp 100/ Leopold's Land Ethic.htm](http://hettingern.people.cofc.edu/Environmental%20Ethics%20Sp%20100/Leopold's%20Land%20Ethic.htm)
- Mindanao Examiners. (2011). Filipino Environmentalist oppose mining in Mindanao. Retrieved August 10, 2014 from <http://www.minesandcommunities.org/article.php?a=11212>
- Maitem, J & Alconaba, N. (2011). Church group gather 1000K signature vs. mining firms. Retrieved August 10, 2014 from <http://www.minesandcommunities.org/article.php?a=11212>
- Zonio, A.Z. (2011). South Cotabato vows to block open pit mining. Retrieved August 10, 2014 from <http://www.minesandcommunities.org/article.php?a=11212>
- Overview of Mining and its Impact. (2014). Retrived August 10, 2014 from [http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui EHS Guide-lines 2007 Mining/\\$FILE/Final+-+Mining.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui%20EHS%20Guidelines%202007%20Mining/$FILE/Final+-+Mining.pdf)
- Internet 1: Retrieved August 10, 2014 from [http://www.banktrack.org/manage/ajax/ems_dodgydeals/createPDF/tampakan copper and gold mine project](http://www.banktrack.org/manage/ajax/ems_dodgydeals/createPDF/tampakan_copper_and_gold_mine_project)
- Internet 2: Retrieved August 10, 2014 from <http://www.minesandcommunities.org/article.php?a=11212>

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