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Impact of Lambusango Forest Damage on Environment

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Abstract. The Lambusango forest is located on the island of Buton which is the world's lungs and is a tourist attraction for domestic and foreign tourists. The study aims to (1) Know the impact of Lambusango forest damage on the environment due to mining activities in Buton Regency (2) To know the effect for the community around Lambusango Forest. Judging from the purpose of research, this research is done by qualitative descriptive method [1]. Activities undertaken include conducting in-depth interviews to find out the impacts to some respondents and observations in the field. Implementation Phase Water and Soil Quality Test is a way to know if water and soil have been polluted by mining. Stages of preparation of research results conducted by evaluating and re-examination of data analysis results both secondary data and primary data. The expected results in this study are negative impacts caused by mining such as Pollution of water, barren land, mine hole openings that can disturb community mining area can be minimized.

1. Introduction

Forests in Indonesia have economic, social, environmental and cultural values for the country and especially for the local community. If the various roles are out of balance, one is more emphasized than the others, then the sustainability of the forest will be increasingly threatened [2],[3]. This has been seen during the last 25 years, resource exploitation and development pressures influence forests. In the book "Agenda Ministry of Forestry Indonesia" stated that the factors that suppress the destruction of Indonesia's forests are: a) population growth and uneven distribution, b) forest conversion for plantation and mining development, c) neglect or ignorance of land ownership (d) transmigration programs, e) industrial and agricultural pollution in wetland forests, f) degradation of mangrove forests caused by conversion to tambaks, g) excessive collection of forest species and h) introduction of exotic species. High levels of forest destruction lead to a decline in the ability of



forests to carry out their ecological functions that could have serious environmental impacts such as climate change, reduced biodiversity, availability of water resources and soil erosion [2], [4].

The existence of Lambusango Forest that holds the rich natural resources of both flora and fauna is also pent up the potential of mining resources are very large in number. This is seen by the number of mining companies circulating the forest. As illustrated by Wallacea Trust Opwall on Map of distribution of KP (Mining Concession) in Lambusango Forest. All the mining potential surrounds the protected forest area. The number of KP locations that can be identified is spread around Lambusango Forest as many as 17 KP. With the different types of mining materials explored. For example, the location of nickel mine located around Kapontori subdistrict, Asphalt Mine in Lasalimu District and Pasarwajo, Manganese Mine in Siontapina Subdistrict and Oil Mine spread in six Subdistricts around Lambusango forest [5].

The above conditions will be a major threat to the sustainability of the forest. Forests that have evolved as one source of community income and water resources for many surrounding villages, will soon turn into the land that will be opened for substrate taken. Like the potential of seaweed, Mabe Mutiara Cultivation activities, existing plantation land as diversification of people's livelihood. When the mining business is opened, in short the community's job opportunities will be open. However, the mining resources will be completely depleted when the entire substrate of soil containing minerals is exhausted. In mining locations it is clear how the face of Indonesia's forests is destroyed by excavation, disposal of rock waste and tailings waste and other mining operations supporting activities. Several companies that will stop mining activities, said they were unable to reforest their former mining pits and waste ponds [6].

The Lambusango forest has been moderately damaged as a result of logging activities (legal or illegal), forest encroachment, rattan picking, and mining. If it is allowed, it is not impossible if anoa, andoke and Sulawesi weasel as a flagship species will disappear from Lambusango, extinct. And the duty of all of us, local government, non-governmental organizations, Buton residents and all related components, to conduct a process of cooperation to realize the Community of the forest maintained, people who view Lambusango Forest not an inheritance to be spent, but as a deposit to be forwarded to grandchildren in the next life. Based on the above description, it can be formulated as follows: 1. How is the impact of Lambusango Forest damage to the Environment due to Mining activities in Buton Regency. 2. How it affects people around the Lambusango Forest [4],[7], [8].

2. Materials and Methods

Stage of research compiled in this study as follows: (1) Introduction Research Stage Preliminary research stages include preparation of research materials by conducting literature or document studies to find out more in depth research problem and conduct preliminary review to field to know condition of field condition, both about administrative condition of area of government and condition of research area. (2) Field Survey Phase. Field survey stage by collecting data needed both primary and secondary data. Activities undertaken include conducting in-depth interviews to determine the impact caused to some of the respondents and field observations. (3) Implementation of Water and Soil Quality Test. Implementation of Water and Soil Quality Test is a way to know whether water and soil have been polluted by mining. Implementation of this test includes preparatory work, laboratory test work and analysis of laboratory test results. (4) The phase of Research Compilation. Stages of preparation of research results conducted by evaluating and re-examination of data analysis results both secondary data and primary data and laboratory test results data. Expected results are discussions, conclusions and recommendations.

2.1. Research Plan

Type of research is qualitative naturalistic. Qualitative research, according to Bogdan and Biklen [1], is a research that has a natural background as a source of data research in data collection, is descriptive, more important than the process of results, inductively and the meaning of findings is essential in the design. The naturalistic in this research is done in a natural condition (natural setting),

researcher as the key instrument, data collecting technique by triangulation (combination), data analysis is inductive, and the result of research more importance of meaning from generalize.

2.2. Analysis Technique

The technique of analysis begins with trying or trying to see something and represent it based on the view of the resource person. But to get to this stage, the data obtained need to be tested back validity or validity. To test the validity of the data in this study used triangulation technique by way of; first, compare the results of observations with interview data; second doing test Laboratory and conduct analysis of test results; the third compares the circumstances and perspectives of resource persons with other sources who have different expertise, backgrounds, professions but are suspected of having information about the facts asked. Fourth, comparing the results of interviews with the results of laboratory tests, the results of data recording, such as documents, research results, historical stories that have relevance to the object of research. The final step, primary and secondary data is processed by the qualitative approach, reducing the data, presenting the data that has been arranged, making the results of field findings in the form of themes that are interconnected with each other than conclude.

3. Results and Discussion

Environmental pollution is a condition that occurs due to unfavorable changes to environmental conditions (soil, air and water) caused by the presence of foreign objects (such as garbage, industrial waste, oil, harmful metals, etc.) as a result of human actions, resulting in the environment not functioning as before.

3.1. Impact on the Environment

Forest mining has caused significant environmental damage, be it water, land, air, water. The mining directly causes pollution, among others; (1) Water pollution. The development of nickel in the Lambusango forest contains thorium in low concentrations that form naturally. Although these compounds are contained in low concentrations, they will have a significant impact if they are wiped into the environment in large quantities. (2) Air pollution chronic pollution/air pollution is very harmful to health. According to the dirty air logic affects the work of the lungs. (3) Soil contamination Nickel mining in the Lambusango forest can damage existing vegetation, destroying the genetic profile of the soil, replace the genetic soil profile, destroy wildlife and its habitat, degrade air quality, alter land use and to some extent subject to the permanent topography of the mining area.

3.2. Impact on humans

Pollution impact Pollution due to nickel mining to humans, the emergence of various diseases includes: (1) Nickel washing wastes substances that are very harmful to human health if the water is consumed can cause skin diseases in humans such as skin cancer. Because the waste contains sulfur (b), Mercury (Hg), Clarida Acid (Hcn), Manganese (Mn), Sulfuric Acid (H₂SO₄), in addition nickel dust causes air pollution along the road used as nickel transport activity. This leads to an outbreak of respiratory infections, which can have long-term effects on lung, blood or stomach cancer. Even allegedly can cause birth defects babies, (2) Among the negative impact is the environmental damage and health problems caused by the mining process and its use. nickel and its waste products, in the form of light ash, heavy ash, and residual crust, containing a variety of heavy metals: arsenic, lead, mercury, nickel, vanadium, beryllium, cadmium, barium, chromium, copper, molybdenum, zinc, selenium, radium, which is very dangerous if disposed in the environment. (3) As with other mining activities in Indonesia, Nickel mining has also caused severe environmental damage, including water, land, air, and water directly causing water pollution.

3.3. Social Impacts

The social impacts are: (1) Disruption of Public Road Flow. The number of passing vehicles used for nickel transport impacted the activity of other road users. The increasing number of accidents, the

increasing cost of maintaining bridges and roads, are part of the impact. (2) Land Conflict Up to Social-Cultural. Movement of Communities Land conflicts often occurs between companies and local communities whose land is the object of evictions [9],[10]. The company often show the arrogance by displacing land without passing the approval of the owner or user land. Or not infrequently they provide compensation that is not balanced premises results they will get later. Not only land conflicts, the most common problem is discrimination. As a result of this shift makes their life patterns changed to be more consumptive. Even moral damages can occur due to a changing lifestyle.

4. Conclusion

The government has an important role in finding solutions to the impacts and effects of mining in Lambusango forests, providing counselling/information continuously motivating behaviour change and raising awareness to participate in preserving the environment.

References

- [1] Tanjung 2007 *Metode Penelitian Untuk Penulisan Skripsi/Tesis* (Jakarta, Indonesia: PPM)
- [2] Muis A 2011 *Hukum Kehutanan di Indonesia* (Jakarta, Indonesia: Rieneka Cipta)
- [3] Manik 2003 *Pengelolaan Lingkungan Hidup Jakarta* (Jakarta: Djembatan)
- [4] Ardhana 2009 Sinkronisasi Kegiatan Pertambangan Pada Kawasan Hutan *J. Bumi Lestari* **9** 288–99
- [5] Edy 2006 *Lambusango, Sebuah Pengalaman dari Hutan Operation Wallacea*
- [6] Ardhana 2011 Kajian Kerusakan Sumber Daya Hutan Akibat Kegiatan Pertambangan *J. Ecotrophic* **6** 87–93
- [7] Silalahi 2001 *Hutan Lingkungan dalam Sistem Penegakan Hukum Lingkungan Indonesia* (Bandung)
- [8] Salamudin 2009 *Penjajahan Dari Lubang Tambang: Temali Modal Asing, Utang & Pengerukan Kekayaan Tambang Indonesia* (Jakarta, Indonesia: JATAM)
- [9] Soerjani, Yuwono and Fardiaz 2006 *Lingkungan Hidup: Pendidikan, Pengelolaan Lingkungan, dan Pembangunan Berkelanjutan* (Jakarta: Institut Pendidikan dan Pengembangan Lingkungan)
- [10] Supriadi 2008 *Hukum Lingkungan di Indonesia* (Jakarta, Indonesia: Sinar Grafika)