

## The Impact of Using Mining Technology on the Environment in the Manggarai Mine Circle Community From the Ethical Perspective of Hans Jonas

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### ABSTRACT

This paper focuses on the issue of the impact of the use of mining technology on the environment of the Manggarai mining circle community from the perspective of Hans Jonas responsibility ethics. Technological advances increasingly developing have a tangible impact on the entire order of human life. In addition to being very helpful to humans in everyday life, it turns out that the presence of technology negatively impacts humans, including the environment. The environment is often used as an object that provides satisfaction and benefits for humans, even so, many problems arise due to the transition of functions to nature to generate profits. The environment becomes threatened because it is polluted and damaged. The authors raised this issue using the literature method with the sources used in the form of literature from various books and journals. According to Hans Jonas, the findings of this paper are that the environment is the place and future of all living things, especially humans. Therefore, the living environment needs to be appropriately maintained, cared for, and preserved for the integrity of the existing creation and living in it.

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### ABSTRAK

Tulisan ini berfokus pada persoalan dampak penggunaan teknologi pertambangan bagi lingkungan hidup pada masyarakat lingkaran tambang Manggarai dalam perspektif etika tanggung jawab Hans Jonas. Kemajuan teknologi yang kian berkembang membawa dampak yang sungguh nyata dalam seluruh tatanan hidup manusia. Selain sangat membantu manusia dalam kehidupan sehari-hari, ternyata kehadiran teknologi memiliki dampak negatif bagi manusia itu sendiri, termasuk bagi lingkungan hidup. Lingkungan hidup sering dijadikan sebagai objek yang memberikan kepuasan dan keuntungan bagi manusia, bahkan begitu banyak persoalan yang muncul akibat peralihan fungsi terhadap alam demi menghasilkan keuntungan. Lingkungan hidup menjadi terancam karena tercemar dan rusak. Para penulis mengangkat persoalan ini menggunakan metode kepustakaan dengan sumber yang digunakan berupa literatur berbagai buku dan jurnal. Ada pun temuan dari tulisan ini menurut Hans Jonas ialah lingkungan hidup merupakan tempat dan masa depan semua makhluk hidup, terutama manusia. Oleh karena itu, lingkungan hidup itu perlu dijaga, dirawat, dan dilestarikan dengan baik demi keutuhan ciptaan yang ada dan hidup di dalamnya.

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## 1. Introduction

Technology is a product of human invention or imagination (Faggian et al., 2017). The development of knowledge causes the creation of technology by humans (Adamopoulou & Moussiades, 2020). With the presence of technology, humans find it very easy to fulfill their needs. More than that, technology has generally changed all patterns of human work (Patrício, 2018; Shcheblyakov et al., 2019). The development and advancement of technology today cannot be denied that it has brought humans into a new world order that is more sophisticated and advanced (Juul et al., 2019; Rane, 2019). Every day, this development is felt in real life; even every human being is competing to be more advanced than others, even justifying all means can be an alternative to seek and gain profits (Baeva, 2016). We can find this in nature. The nature we know today may be very different from the nature known to people in the past (Akçayır Dündar Akçayır, G., M, 2016). Nature has now become the object of human greed for profit (Mazur & Tomashuk, 2020; Mousa & Othman, 2020).

When technology is more advanced, and its interference with the earth's ecosystem is getting bigger, what happens is that humans are no longer able to realize and predict what consequences will result from the use of certain technologies. With the irregular and unmeasured use of technology, there are possibilities that there will be bad consequences for the survival of natural ecosystems, especially humans (Bombiak & Marciniuk-Kluska, 2018). Now, nature can no longer be said to give life to humans because human actions that destroy nature have made nature damaged and destroyed. In other words, technological advances not only provide humans with everything positive but also negative (Owston, 2018; Rahman & Mufti, 2021).

Mira Rosana (Rosana, 2018, p. 152) said that development aims to improve the quality of life of the people and better meet their basic human needs. To improve the quality of life of the people, as is the goal of development, the ability of the environment to support life at a higher level should be protected from damage. According to her, the development and use of technology need to pay attention to environmental sustainability.

According to Nurul Listiyani, Muzahid Akbar Hayat, Subianta Mandala (Listiyani et al., 2018), in environmental management, the main effort must be done is to prevent pollution or ecological damage, not to overcome pollution that has occurred. There are various efforts to prevent environmental damage caused by the use of technology. The presence of technology should be able to help humans in their work and not even damage environmental sustainability.

Hans Jonas was a German-American philosopher of Jewish descent. He was born on May 10, 1903 in Monchengladbach, Germany. He died on February 5, 1993. Jonas studied under Husserl, Heidegger, and Bultmann. In 1933, Adolf Hitler took power, Jonas left Germany and went to Palestine. Because, at the time of Adolf Hitler, violence was like a party (Armada Riyanto, 2013, p. 96). Then, in 1949 he moved to Canada. In Canada, Jonas taught in Montreal and Ottawa from 1949-1955. In 1955 he left and settled in the United States. From 1955-1976 he taught at the New School for Social Research in New York.

In 1979, Jonas published a book entitled *“Das Prinzip Verantwortung. Versuch einer Ethik für die technologische Zivilisation”* (Responsibility Principle. Experiment of an Ethics for the Existence of Technology). It is written in German, and is one of the most widely praised and discussed philosophy books in Germany. He initially rose to prominence for a major school of Gnosis and also for his research into the philosophy of life sciences and the ethical aspects of technology.

## 2. Results and Discussion

### a. Mining Activities in Manggarai

Investigation of mining potential in Manggarai and Manggarai Regencies as a whole was started in 1980 by PT. Aneka Tambang. The investigation continues to this day. The results show that in the Manggarai area, which includes Manggarai, West Manggarai, and East Manggarai, there is abundant mineral potential.

The results of mapping and geological and geochemical investigations from 1980 to 2008 mentioned several mineral findings (*JPIC OFM*, 2008).

1. Some areas in Manggarai Regency, West Manggarai and East Manggarai found several types of minerals. In the area of the Pesi - Kalo - Nere mineral cluster there is a type of copper (Cu) mineralization accompanied by gold (Au). The mineral clusters dominated by gold (Au) are found in the Kuli, Watu Ci'e and Sapu areas. Some minerals were also found in the Bari, Musur, Rawul, Encuring (Ncuring) and Wangkal mineralization clusters.
2. There are manganese deposits in Manggarai District (and West Manggarai and East Manggarai) in Reok, Cibal, Lambaleda and Sambu Rampas Districts. The manganese deposits found have very good prospects with 3 categories, namely (1) manganese deposits that are being mined, (2) manganese deposits that have been mined and (3) manganese deposits that are still in the exploration activity stage. The areas where manganese mineralization was found were Ponglalap, Rokot, Tumbak, Waso and Merong, Kajong, Lante, Wangkal, Kubis, Meas, Kadung, and Ngampur. Especially for manganese deposits in Wangkal village, it is quite interesting because it is exactly in the village. Likewise, in Meas Village, manganese deposits are close to the village so the village must be moved when the manganese location in the area is to be exploited.

Recently the mining in Manggarai has stopped operating because there have been many rejections, such as rejection by the local Church, students, and residents around the mine.

### b. Mining Problems in Manggarai

Many problems occur due to mining activities that occur in the Manggarai area. Issues such as damage to ecosystems or the environment, residents around the mine area experiencing skin diseases, and lack of access to clean water. This problem arises from the exploitation of large mines and technology (heavy equipment) in the mining process.

A crucial mining issue in Manggarai is mining exploitation in forest areas, as in Reo, Reok District, Manggarai. Indonesia is a country that has the third largest forest area in the world (Handadhari et al., 2009, pp. 2–3). But what happens if there is mining exploitation in it? Of course, this will damage the environment. Mining exploitation in Reo covers forest areas. Mining companies carry out massive exploitation using heavy equipment.

An example of mining allegedly carried out by PT Sumber Jaya Asia ("PT SJA") in the RTK 103 Nnggalak/Rego Forest Area in Reo. PT Sumber Jaya Asia has been operating since 2005. The Manggarai Regency Government permitted this company to explore mines in protected forest areas. Of course, this is a wrong step taken by the government, which will significantly impact environmental pollution.

The government just let PT SJA leave ecological destruction due to extracting manganese minerals using dynamite, which has a destructive effect, without obtaining a borrow-to-use permit from the Minister of Forestry (Kehutanan, 2009). This unclear mechanism and coordination certainly benefit the company. They seem not to want to know whether this area is included in the protected forest area or not. The corporation felt uneasy when it discovered Soga 1 and 2 were in a protected forest area. But interestingly, the company seems to be avoiding and blaming the previous company for exploiting it (Kehutanan, 2009).

The use of heavy equipment and dynamite contributed to the further destruction of the forest. Communities around the mine feel how much they suffer due to this. They experience skin diseases,

bleeding cough, and difficulty accessing clean water. This occurs due to air pollution caused by dynamite explosions and deep mine dredging. In line with that, the Indonesian Forum for the Environment (WALHI) released data on the percentage of damage and pollution by corporations reaching 82.5%. This means that mining has become an ecological apex predator.

WALHI data shows that mining and excessive use of technology significantly impact environmental damage. Mining corporations have become predators destroying environmental sustainability and human existence around the mine. In addition, the communities around the mines do not get welfare, instead, they experience suffering. This is contrary to the 1945 Constitution Article 33 paragraph 3 of the 1945 Constitution which states that "Earth, water and natural resources contained therein are controlled by the state and used as much as possible for the welfare of the people" (Hakim, 2015, p. 116).

### **c. Hans Jonas's Environmental Ethics Concept**

Hans Jonas, in seeing the development of the environment, no longer adheres to traditional ethics that are looking for profit for humans now, but in the future. Ethics is more about human responsibility towards nature. For Hans, nature has many advantages for the survival of all living things, including humans. This ethic is something new because the entire order of rules and natural laws created by humans to regulate and place nature as a source of profit now for humans is turned into a shared responsibility for humans to better see nature as a source of strength and life in the future. The global and temporal reach of shared responsibilities has a new challenge in Hans Jonas's ethics (Coyne, 2020; Jonas, 1985). Hans ethics can also be referred to as the ethics of the future natural environment. Therefore, he emphasized that humans should see in detail and thoroughly the development of technology that is developing very rapidly until now, so that it does not only adhere to efforts to find and find solutions to the problem of dealing with nature today, but also the future that is carried out individually and collectively using new principles (Coyne, 2020).

The development of technology received special attention from Hans, because humans can no longer own the technology developed by humans to control nature because technology, regardless of the objective side of its development, applies ethical significance from the center in which humans live and settle (Jonas, 1985, p. 9). In this case, traditional ethics can no longer be used as a reference and basis because this kind of ethics only cares about today's natural problems. Therefore, according to Hans, such an ethic does not at all answer the situation, even though its actions can guarantee human welfare today, but make the future a hope without reality. Hans states this because the future has already grasped the destruction caused by the actions of the present and is always on the alert towards imminent (potential) destruction (Bertrand, 2019).

With the future ethic of Hans Jonas, we can see that in seeking welfare that is taken from nature, one must have the courage to leave old forms of thought that have been buried in the mind and dare to take real good actions for a better future for the whole society. Thus, in his ethical theory of future responsibility, Hans Jonas expresses the idea that our current activities can trigger coming destruction due to natural destruction. He sees that recent technological developments must be used responsibly in preserving nature, not just stopping at steps that can be taken advantage of now, but for future generations' future. So, Hans decided that the old ethics that had developed did not provide more significant benefits and were helpful for the future development of nature (Chan et al., 2018; Jonas, 1985).

### **d. The Relevance of Hans Jonas's Thoughts for Environmental Sustainability**

According to the thought of Hans Jonas, who looks far ahead in reaping the benefits of natural products, we can know that the existing nature can not be used for ourselves but also for generations to come. We can use all the resources of nature to meet all our needs, but not in a way to meet the needs of the present, but of the future (Coyne, 2020). Responsibility for the results and use of nature is a common problem for all humans (Arrieta et al., 2020; Kusuma & Rahman, 2018).

Hans Jonas's thoughts will always be relevant to the existence of today's world. One example is the problem of manganese mining in Manggarai, precisely in Reo, north of the capital city of Manggarai. Initially, the local community did not care about mining because they also received logistical assistance every month from the corporation. However, after they saw and learned that the corporation's existence caused the water flow to decrease, the animal population became increasingly scarce, and ancient rivers began to dry up, soil pollution, reduced rainfall, damaged forest conditions and ecosystems, they finally realized that it was mining has given them a dark future. In the end, the local Church called for anti-mining propaganda (Regus, 2015, pp. 14–15).

From this small example, Hans Jonas's thoughts and ethics get the special attention that protecting nature is essential because nature can provide us with food today, tomorrow, and in the future and not just for today; tomorrow is gone.

### 3. Conclusion

It is undeniable that the presence of technology is enough to help humans in everyday life. There are many positive factors in using this technology. But that does not mean that the presence of technology does not harm human life. The negative impact of technology on human life is tremendous, including environmental damage.

Likewise, excessive use of technology in mining activities is quite influential. WALHI released data on damage caused by mining corporations, namely 82.5%. This is a huge number considering that Indonesia's forests are the third largest forest in the world. This data confirms that environmental damage due to excessive technology is quite risky. The impact of mining technology is also very influential for residents of mining circles in Manggarai, especially for residents of Reo, Reok District, Manggarai. They experienced great suffering. Apart from this they lose the forest where they get clean water and other necessities of life, due to the over-exploitation.

Hans Jonas views this as inequality. According to the thought of Hans Jonas who looks far ahead in reaping the benefits of natural products, we can know that the existing nature can not be used for ourselves but also for generations to come. We can use all the resources of nature to meet all our needs, but not in a way to meet the needs of the present, but of the future. Responsibility for the results and use of nature is a common problem for all humans.

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