

ECO-PRECARITY: A SOCIO-ECOLOGICAL STUDY OF THE COMMUNITY IN ARTISANAL MINING IN BANJARBARU, SOUTH KALIMANTAN

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Abstract

This study examines *eco-precarity* as a condition of socio-ecological vulnerability experienced by the diamond mining community in Cempaka District, Banjarbaru City. The main objective of this study is to understand how societies deal with ecological and economic uncertainty in their daily lives. Using qualitative approaches and phenomenological strategies, data was collected through field observations and in-depth interviews with miners, machine owners, and local policy makers. The results show that societies are highly dependent on depleted natural resources, while expansive cultures and profit-sharing economies reinforce the cycle of vulnerability. Severe environmental damage, low levels of education, and a change-resistant mindset reinforce *eco-precarity* as a structural condition that is inherited between generations. Identity as a harvester is considered a destiny, making mining work not just an economic activity, but part of culture. These findings confirm that *eco-precarity* is not only triggered by ecological crises, but also by social and cultural structures that limit people's adaptive abilities. Therefore, development interventions need to consider a socio-ecological approach that is just, especially in the context of small-scale small-scale smallholder mining.

Keywords: eco-precarity, people's mining, socio-ecological vulnerability, phenomenology, local communities.

INTRODUCTION

In recent decades, attention to the relationship between communities and the environment has expanded significantly, particularly in the context of the global ecological crisis and its impact on vulnerable local communities. One of the groups most affected by this crisis is the people who depend on natural resources for their livelihoods, especially those in the extractive sector such as mining. The high dependence on non-renewable natural resources puts these communities in a vulnerable position to environmental damage, economic crises, and rapid

social change. It is in this context that the debate about the concept of *eco-precarity*, which is a condition of instability and vulnerability experienced by humans and non-humans as a result of ecological uncertainty and economic pressures. (Jukes, 2023)

Term *Precarity* was originally popularized by Guy Standing to describe the situation of a social group living in uncertainty, job insecurity, and the absence of social security. This group is called (Standing, 2018) *Precariats*, that is, those who are in a vulnerable economic and social position, and have no control over their lives and future. In the context of societies living off natural resources, this situation becomes more complex when economic vulnerability meets ecological damage. Butler expands this concept through the term *eco-precarity*, which refers to conditions when economic instability is exacerbated by environmental degradation, creating double pressures on individuals as well as communities. In this case, (Butler, 2004) *eco-precarity* It not only highlights the social, but also ecological dimensions, so it becomes an important concept in understanding the impact of environmental crises on the lives of structurally marginalized people.

In line with this, Aguiari and Guardigli developed the concept *eco-precarity* as an approach that considers vulnerability from an ecosystem point of view, encompassing the interaction between humans, the environment, and the socio-economic systems that surround it. This means that (Aguiari & Guardigli, 2023) *eco-precarity* It concerns not only the vulnerable living conditions of humans, but also illustrates the instability of the ecological system itself. This concept is relevant to understand the socio-ecological dynamics in communities involved in small-scale extractive activities, such as small-scale mining.

The city of Banjarbaru, South Kalimantan, is one of the regions that has a long history in people's mining activities, especially diamond mining. This activity has been going on since the 15th century during the Dipa Kingdom and continues to this day. However, the sustainability of these people's mining activities brings with it a variety of significant ecological consequences. Mining practices without adequate regulation lead to land degradation, water pollution, and habitat destruction that not only affect the quality of the environment, but also threaten the survival of the surrounding communities. In this situation, mining communities face double uncertainty: on the one hand relying on environmentally damaging activities to survive, on the other face increasing ecological risks, including declining land productivity and access to clean resources. (Heldiansyah et al., 2019)

The situation shows how *eco-precarity* is a real condition faced by the people's mining community. The ecological uncertainty surrounding their activities is a form of systemic vulnerability. Abba explained that ecological uncertainty refers to the increased risks and uncertainties faced by ecosystems and communities due to pollution, resource over-extraction, and climate change. In the context of Banjarbaru, the continuous mining activities of the people accelerate the rate of ecological degradation and narrow the living space that is suitable for the local community. This worsens their position as a group that has no guarantee of ecological or economic sustainability. (Abba, 2023)

This research is based on the need to understand how the diamond mining community in Banjarbaru interprets the conditions *eco-precarity* that they experienced. This is important because the meaning formed by society of its living conditions is the basis for social action, including in terms of resistance, adaptation, or reproduction of practices that strengthen or weaken their position in social and ecological systems. This meaning is inseparable from the social, cultural, economic, and political factors that affect their daily lives, as well as from the historical heritage and power relations that color the relationship between the state, the market, and the local community.

The aim of this paper is to fill in the gaps in the academic literature related to socio-ecological dynamics in small-scale mining areas, with a particular focus on how communities interpret *eco-precarity*. Although there have been a number of studies that have addressed environmental damage caused by smallholder mining, there have been very few studies that specifically link these conditions to social constructions of ecological vulnerability and how societies cope with and respond to these uncertainties culturally and structurally. Therefore, this research not only contributes to the empirical realm, but also enriches the treasure of theory in environmental sociology.

Furthermore, this research offers novelty and originality by examining in depth how the concept of *eco-precarity* can be used as a lens to understand the dialectical relationship between society and the environment in a specific local context. The study takes an interdisciplinary approach in sociology and environmental anthropology, highlighting everyday practices, community narratives, as well as the configurations of power that shape experience *eco-precarity*. On the one hand, this study aims to unravel how socio-economic and political structures create

conditions of vulnerability, and on the other hand to look at how local communities reflexively construct meanings, survival strategies, and even forms of resistance to the situations they face.

In a broader scope, this study underscores the importance of looking at *eco-precarity* not only as a result of environmental damage, but as a condition produced by the complex interaction between production systems, resource management policies, and social inequality structures. With this approach, this paper tries to present a more comprehensive picture of the socio-ecological challenges faced by the diamond mining community in Banjarbaru. The solutions offered in this context are not merely forms of technocratic intervention, but rather local capacity building, a rereading of adaptive cultural practices, and advocacy for inclusive and ecological justice-based policies.

Finally, this research is expected to broaden the horizons of thought in the study of environmental sociology, in particular by proposing *eco-precarity* as a useful category of analysis to explain the vulnerable conditions of communities in the ever-changing ecological landscape. By understanding *eco-precarity* On a deeper level, we can design strategies that are more sensitive to the needs of local communities and the environmental challenges they face, while driving a more equitable and sustainable development agenda.

METHODOLOGY

This research uses a qualitative approach with a phenomenological strategy within the framework of an interpretive social science paradigm. The main goal of this approach is to understand the meaning of *eco-precarity* as experienced and interpreted by the diamond mining community in Cempaka District, Banjarbaru City. This location was chosen because it has a long history of folk mining and faces high ecological and social pressures. The research subjects consisted of five main groups directly involved in mining activities: bakers, diamond traders, diamond craftsmen, non-diamond traders, and members of the Tourism Awareness Group. Additional informants came from the relevant local governments. Primary data was collected through participatory observation and semi-structured in-depth interviews, while secondary data was obtained from government documents, NGOs, mass media, and scientific publications. The interview was recorded and transcribed into two versions: native and Indonesian. Data analysis was carried out with a phenomenological approach according to Moustakas, which emphasizes the extraction of meaning from the participants' experiences. The analysis process starts from

transcription, coding, to the preparation of a horizontalization table to reveal the explicit meaning and deepest essence of the informant's statement. This process is iterative and reflective, allowing for a complete understanding of the condition *eco-precarity* as a complex socio-ecological experience.

RESULTS AND DISCUSSION

1. Economic Dependence and Pattern of People's Mine Production Relations

The results of the study show that the community around the diamond community mine in Cempaka District lives in an economic structure that is highly dependent on mining products as the main source of livelihood. This was shown through an interview with the owner of a pit digging machine who explained that failure to obtain results from the mine caused many miners to go bankrupt. An economic system built on a profit-sharing scheme between miners, landowners, and machine owners has become the dominant practice in mining activities in the region. However, this system is only profitable if mining products can be obtained on a regular basis, which in reality is increasingly difficult due to the depletion of natural resource reserves.

This dependency depicts the dimension *eco-precarity*, which is a condition of economic uncertainty exacerbated by ecological scarcity. People in this position not only run the risk of losing their source of income, but also being trapped in a system that does not allow for economic diversification. They operate within an informal economic framework that has neither social security nor environmental protection, making them part of the group (Butler, 2004) *Eco-precariat* as explained by Aguiari and Guardigli.

2. Expansive Culture and Social Relations to the Environment

The culture of the people's mining community is characterized by the orientation of continuous resource extraction from nature without paying attention to the sustainability aspect. In one of the interviews, a baker revealed that when diamonds were no longer found, they would pick up stones and sand, and if they ran out, then they would fish in the former quarrying ponds. This practice shows that society has formed a social-ecological relationship that is exploitative to nature.

This kind of culture is referred to by Safitri as an expansive culture, which is a pattern of relationship between humans and nature that relies on taking activities without cultivation or

preservation efforts (Heldiansyah et al., 2019). In contrast to agricultural or coastal communities who are used to regenerating resources, mining communities tend to expand exploitation space according to the availability of minerals in the location. In a phenomenological framework, the meaning formed by the community towards the activity of trashing is part of their culture and destiny of life, so that exploitation of the environment is seen not as damage, but as a habit of life. (Heldiansyah et al., 2019) (Nurdiyana, 2009)

3. Socio-Economic Vulnerability and Low Welfare Index

Economically, the people's mining community in Cempaka is in an unstable condition. Previous research by Suprayogie et al. (2015) showed that the majority of heads of families were at welfare level II, two levels below the ideal standard according to the BKKBN. This condition is exacerbated by limited access to education and alternative jobs, as emphasized by the Banjarbaru City Mining Office which states that many miners reject formal jobs because they are not used to the work system that requires discipline.

This phenomenon indicates the presence of *structural poverty* which perpetuates economic vulnerability in the midst of mining communities. According to Nursinah, the limitation of natural resources and low social capacity such as education and skills cause mining communities to experience multiple layers of vulnerability—economic, social, cultural, and ecological. In the long run, these conditions limit the ability of communities to break out of the cycle of vulnerability and improve their quality of life. (Nursinah et al., 2023)

4. Ecological Degradation and Cross-Dimensional Damage

The diamond mining activities of the people in Cempaka District not only generate economic and social impacts, but also contribute greatly to environmental degradation. Research by Nasution et al noted that there are three main types of damage that occur: abiotic (soil, water, air), biotic (biodiversity), and cultural (social values and practices related to the environment). Sungai Tiung District as the center of mining activities experienced the most severe environmental damage. This condition strengthens the category (Nasution et al., 2021) *eco-precarity*, i.e. when ecological degradation has a direct impact on human life and threatens the sustainability of the social system as a whole. (Jukes, 2023)

One obvious example of ecological degradation is the pollution of rivers by mercury waste from gold separation activities carried out in conjunction with diamond mining. Wastewater containing mercury flows into the former excavation pit and empties into the river which is the community's water source. Research by Maulidah et al shows that the water quality in this area has been included in the heavily polluted category, posing health risks for people who use the water for daily needs. (Maulidah et al., 2015)

Environmental damage like this not only has an impact on the quality of life, but also narrows the ecological space that can be used by the community. In this sense, *eco-precarity* is not only about individual risks, but also collective ones—where entire communities face systemic and sustainable ecological threats.

5. Rejection of Vertical Social Mobility

One of the interesting findings of this study is the resistance of mining communities to formal jobs offered by the local industrial sector. The Mining Service noted that despite the need for labor in industrial sectors such as the factory in Liangganggang, the majority of mining communities refused to get involved because they felt they were not suitable for a work system that demanded discipline. This rejection is not only individual, but collective, and passed down from generation to generation. Most miners prefer to migrate to other areas and continue to work as diamond cutters, indicating an attachment of identity and existence to the practice of trapping and rearing.

This condition shows that vertical social mobility in mining communities is not always desirable. For most people, leaving the mines means abandoning the way of life they have culturally inherited. In this context, *eco-precarity* It is also a form of cultural "stability" that is maintained even though it objectively does not provide a guarantee of the sustainability of life. As expressed by Nurdiyana, the work of earning is not only considered a livelihood but also a vocation of life that has spiritual and historical meaning. (Nurdiyana, 2009)

Conclusion

The above findings reveal that *eco-precarity* in the diamond mining community in Cempaka is multidimensional. It includes fragile economic aspects, exploitative work cultures, resistance

to social change, and severe ecological damage. Vulnerability comes not only from external factors such as the depletion of natural resources, but also from the internal structure of communities that maintain a culture of exploitation and reject alternative socio-economic development. Thus, *eco-precarity* It is not solely the result of environmental damage, but is also a social and cultural construct that continues to be reproduced in the context of mining community life.

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