

# Energy Access in Mountain Arba Hill, Jango Village From The Perspective of Community Environmental Justice

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## Keywords

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## ABSTRACT

The application of environmental justice in developing energy access has become the main focus of this research. In order to achieve this goal, an inclusive and engaged approach will be implemented, taking into account the balance between energy needs and environmental protection. Utilization of renewable energy is identified as one solution to meet energy access in the future. Indonesia, with its abundant natural wealth, has great potential to develop renewable energy sources. However, the gap in energy access is still a problem in society, especially in terms of access to electrical energy. This research uses descriptive qualitative methods to identify the level of energy access in Gunung Arba Hamlet, Jango Village, Central Lombok Regency. It is hoped that the results of this research will have a positive impact on the community in Gunung Arba Hamlet, Jango Village, by providing solutions to improve better energy access. In addition, this research will analyze the implementation of environmental justice in developing better energy access in the region. By considering the interests of society and environmental protection, this research seeks to present recommendations and concrete steps to achieve environmental justice in the development of energy access. Thus, this research has the potential to be an important contribution in promoting sustainable development and creating a more inclusive and sustainable society in terms of energy access.

## INTRODUCTION

Indonesia is a country that has abundant natural wealth from various sectors including oil, natural gas, coal, palm oil (Rahman et al., 2023)(Yana et al., 2022). However, in this case the management of natural resources still deviates from various problems, especially in the distribution of management results and the impact on the development of the producing areas (Rahman et al., 2023; Sani et al., 2021). The discovery of the first oil in Indonesia was one of the oldest drilling in the world or twelve years after the first oil drilling (Jurasz et al., 2020; Sadorsky, 2021).

The utilization of renewable energy will be one of the sources of energy access in the future (Hoang & Nguyen, 2021; Lowitzsch et al., 2020). Indonesia is a country that has abundant natural wealth, Indonesia can even be said to be the richest country (Endo & Ikeda, 2022; Rahim et al., 2021). However, overcoming societal gaps is still a problem, especially regarding access to electrical energy. Utilizing renewable energy from natural resources will address the gap if the community can actively participate in the development of renewable energy (Liu et al., 2022; Luo & Mabrouk, 2022). Such participation needs to be encouraged even beyond the New Order era, starting from the desire to respond to dissatisfaction with the state's centralized pattern of government. Centralized policies are the antithesis of the increasing pressure to decentralize regional government, including managing natural resources

(SDA) in the mining and oil and gas sectors (Mustalahti et al., 2020). It was initially thought that the decentralization policy to address perceived dissatisfaction could lead to separatist measures (Haseeb et al., 2021; Tang et al., 2022).

The gap occurred as a result of the decision to take over authority by the central government over the management of natural resources and human resources (HR) (Brisbois, 2020), including in the oil and gas and mining sectors so that it remains under the authority of the Unitary State of the Republic of Indonesia (*NKRI*) (Brisbois, 2020; Tymstra et al., 2020). But then, developments showed a tug-of-war over regional authority for all reasons for the consequences it caused. Provisions for community political participation in the government, including management in the field of natural resources, are important in maintaining a democratic government climate on the one hand amidst the renewed desire to strengthen state politics through repositioning the center to control regional government policies on the other hand. The impact of granting authority is that the community's active role is not visible in policymaking (Amon et al., 2022; Hahnel et al., 2020). The object of environmental justice is society.

In environmental justice, community participation is needed at all policy levels. This is also the basis for consideration in preparing the Environmental Impact Analysis (AMDAL) for Kutai Kartanegara Regency as a provider of abundant natural resources. Still, community participation is minimal, especially when preparing the Amdal itself. In UI Economics, 1998), p. 28. So, the community environment allows us to socialize with other people. Because, as humans, we are social creatures who cannot live alone. And according to one of the experts, his name is "Otto Soemarwoto" (Akbar et al., 2022).

This research aims to examine energy access in Gunung Arba Hamlet, Jango Village from the perspective of community environmental justice. Qualitative research methods used include case studies, interviews with community members, local leaders and energy experts, as well as data collection from related sources.

The main goal is to find solutions to increase energy access for society. In addition, this research will analyze the implementation of environmental justice in developing better energy access in the region. This research will collect data about people's needs and desires regarding better energy access. In addition, it will be researched how the community can be more active and involved in the planning and development process for better energy access.

Applying environmental justice in developing energy access will be an important focus of this research. In this case, an inclusive and inclusive approach will be implemented, as well as considering the balance between energy and environmental needs. It is hoped that the results of this research will positively impact the community in Gunung Arba Hamlet, Jango Village. The information obtained will also be valuable for local leaders, energy experts and governments in developing better regional energy access. In addition, this research will also provide important contributions to communities and organizations involved in developing better energy access in other regions.

## **METHODS**

This type of research uses descriptive qualitative to determine the level of energy access in Gunung Arba Hamlet, Jango Village in Central Lombok Regency. From the Environmental Justice Perspective, the community in Central Lombok Regency has a population of 70 people using purposive sampling techniques, so 23 people are obtained who will be used as research samples. The research was conducted in Gunung Arba Hamlet in Jango Village, Janapria District, Central Lombok Regency. Primary data was collected from the results of energy checks in Jango Village, Janapria District, using the POCT (Point-of-care testing) easy touch GCHB (Glucose, Cholesterol, Hemoglobin) tool.

The community's position tends to be weak regarding policies taken by the regional government regarding natural resource management, such as mining. In fact, in terms of substance, as regulated in Law No. 23 of 2014, the position of community participation tends to be strengthened. The point of strengthening this position is the existence of provisions from the regional government to encourage

local community participation, especially in Gunung Arba Hamlet, Jango Village, Janapria District, Central Lombok, and West Nusa Tenggara Province.

## **RESULTS**

Various polemics that occur in society prove that society is no longer the subject of licensing and tends to become the object of exploitation of natural resources. In Gunung Arba Hamlet, Jango Village, Janapria District, especially in Central Lombok, this is an area rich in natural resources and energy near the coast, especially petroleum and natural gas around the coast (oil and gas) and coal, so the economy in this village is still dominated by the mining and quarrying sector which reached more than 80%. The agricultural and forestry sectors only contribute around 15%, while the rest is contributed from the local trade and lodging sector, namely approximately 5%, the processing industry around 20%, buildings 75%, finance 17% and other sectors around 10%, with an area Kutai, Central Lombok Regency and has a water area of around 4,097 km<sup>2</sup> which is divided into 20 sub-districts and 237 villages/sub-districts with a population of 834,485 people.

From the vast area of Central Lombok Regency, Kutai Kuta, which is near the coast, is supported by abundant natural resources, of course it is the government's obligation to overcome the gaps that occur in Kutai Kartanegara, especially energy access in rural areas. This needs to be done because there are villages that are currently still experiencing social inequality due to the lack of access to energy provided by companies operating in their area. We can see this in Jango Village, where this village is located in the middle of the Kuta Mandalika sea, surrounded by the activities of oil and gas companies operating there, but the level of welfare is still far from adequate. One of the indicators that is taken into consideration for the welfare of the people there is energy access. The people can only feel electricity for 13 hours, starting from 18.00 to 06.00 in the morning. From here we can conclude that energy is an important factor in meeting the needs of the people there, especially since the majority of the people there are fishermen. Utilizing energy in the oil and gas sector as an important instrument in meeting the basic needs of society is an important thing to do in Jango Village, especially in the Janapria District area in Central Lombok Regency.

Even though energy itself is not a basic need, it is the main support for achieving basic needs. Without energy, these needs are difficult to achieve. A simple example can be seen from the role of energy in meeting people's food needs. Even though the availability of food can be sufficient, without solving the energy problem, society will still experience the phenomenon of food shortages. This is because to be able to solve the food problem, not only the necessary food raw materials must be available, but access to energy services that enable these foodstuffs to be processed and/or cooked, must also be available. Likewise with clean water. Energy services in the form of electricity enable clean water to be pumped from water sources and distributed to users.

How is Energy Access in Jango Village, Janapria District, Central Lombok Regency? In simple terms, energy is defined as something that is able to make an object do work. According to the Big Indonesian Dictionary (KBBI) energy is the ability to do work (for example electrical and mechanical energy); power (strength) that can be used to carry out various activities. According to Law no. 30/2007 concerning Energy, Article (1) Energy is defined as the ability to do work which can be in the form of heat, light, mechanics, chemistry and electromagnetics.

Indonesia has high clean and renewable energy potential. Especially in Jango village. Based on data from the Ministry of Energy and Mineral Resources, Indonesia has extraordinary potential for renewable energy resources. The potential of this renewable energy resource can be utilized to create clean and equitable energy access. By looking at the renewable energy potential spread across Indonesia, domestic energy supply, especially in areas that do not yet have access to energy, can be fulfilled with local potential; thereby responding to geographical challenges that often hinder the fulfillment and provision of energy access in Indonesia.

Central Lombok Regency is one of Indonesia's oil and gas producing areas, and fishermen also make their living on the coast. There is history that says that the largest oil well was found in the Janapria sub-district, Central Lombok Regency, West Nusa Tenggara Province. There are many wells and jets of seawater along this coast, especially on Kuta Mandalika beach, which is located in the Central Lombok district, with the permission of the local community at that time, which was managed by a prominent leader of the Kuta community. BPM then managed these wells and the beaches in Central Lombok district for the next 40 years. BPM, or Batavia Petroleum Maatschappij, has been sucking up oil from the Sanga-Sanga land since 1905 until now; this is said by the founders or ancestors around Kuta Mandalika.

In the midst of the large oil and natural gas reserves on the coast and coal, there are social disparities that occur among the people in the natural resource-producing area of Central Lombok. This is a problem that should be handled through several programs that have direct contact with the community. Especially in Central Lombok Regency Province, some areas are isolated or do not have electricity. Several of these problems are influenced by several factors, including the lack of adequate energy capacity and renewable energy management, even though Central Lombok Regency is the largest natural resource-producing area starting from oil and gas, coal, and the results of fishermen around the Mandalika coast to be precise. There are in Central Lombok Regency as well as other natural resources, but behind the wealth contained therein, energy access is still not met, resulting in social inequality occurring in Central Lombok Regency, especially in Jango Village, Central Lombok Regency, West Nusa Tenggara Province.

Janapria District, Central Lombok Regency is one area with oil reserves in Jango Village, Central Lombok Regency. Coal entrepreneurs around Central Alaombok currently control the discovery of oil wells. In 2018 the level of realized oil production reached 30,000 BPOD or 109% above the company target of 25,649 BPOD. For the realization of gas production to reach 50 MMSCFD (Million Standard cubic feet per day or million cubic feet of gas per day) or the equivalent of 120% above the RKAP target of 588 MMSCFD. Based on this data, it proves that natural resources in the oil and gas sector are very large. If mini natural resources are utilized to overcome social disparities in Jango Village, then basic needs can be addressed, especially energy access. One of the energy accesses that can be utilized in Jango Village is the use of wave power.

The sea waves always flow due to the wind blowing over the sea. The sea waves on Kuta Mandalika beach have the potential to become a great and vast source of energy if they can be utilized properly. There are several methods for harnessing wave energy. Sea waves can be captured and raised into the chamber and air is forced out. The moving air drives a turbine (such as a wind turbine) which drives a generator to produce electricity. Another side dish wave energy system in Kuta Mandalika utilizes the waves' up and down movement to move a piston that can drive a generator. It is not easy to generate electricity from waves in large quantities. Moreover, transferring this energy to the beach, especially at Kuta Mandalika Beach, is difficult. This is why wave power systems are not very common so far.

#### Principles of Community Participation in Central Lombok, West Nusa Tenggara Province

In principle, the participation of the people of Central Lombok, West Nusa Tenggara Province has been regulated internationally through reference to the Aarhus Convention (Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters). This Convention aims to protect the rights of everyone, both present and future generations, to live in an adequate environment, health and welfare. So that the provisions stipulated in this convention can become the "foundation" as well as the main reference for the government or companies in implementing community participation in environmental management for the people of Central Lombok, West Nusa Tenggara Province.

In the Aarhus convention, a number of community rights have been established in Central Lombok district, West Nusa Tenggara Province, both individuals and groups, in this case relating to the right to a healthy living environment. Where the parties to this convention must guarantee the rights of

access to information, participation of the people of Central Lombok district, Nusa Tenggara Province in decision making, and access to justice in environmental matters following the provisions in the reference to the convention. The Aarhus Convention stipulates several provisions, including:

The right of everyone to receive environmental information held by public authorities (access to environmental information). This may include information about the state of the environment, but also about policies or actions taken, or about the state of human health and safety where this may be affected by the state of the environment.

The right to participate in environmental decision making. Arrangements should be made by public authorities to allow affected public and environmental non-governmental organizations to comment on, for example, proposals for projects affecting the environment, or plans and programs relating to the environment, the suggestions and input provided should be taken into account in decision making, and information to be provided about the final decision and its reasons (public participation in environmental decision making);

The right to review procedures to challenge public decisions that have been made without respecting the two rights mentioned above or environmental law in general (access to justice). Even though the Aarhus Convention is only intended for local communities, politically it has strengthened recognition of its substance, namely in the form of principles that have been established in the convention, for example Indonesia, even though it has not ratified the convention, has adopted the substance or principles of the Aarhus Convention in Article 65 and Article 68 of Law no. 32 of 2009 concerning Environmental Protection and Management (UUPPLH) (Ohler et al., 2021).

The principle of community participation, the people of Central Lombok district, West Nusa Tenggara Province is important in environmental development and management because the people of Central Lombok district, West Nusa Tenggara Province are the parties most vulnerable to the impacts caused by environmental damage so that for the community the concept of involvement The community is a manifestation of the environmental development and management process itself as well as an effort to improve the quality of government policies related to the environment.

The principle of community participation in environmental decision making is divided into 3 pillars, namely: Openness of environmental information (Access to Environmental Information). Without open environmental information, community participation is meaningless. Because open information can provide more rational and informed decision making and foster transparency. Community participation (Access to Public Participation).

Community participation is important in making environmental decisions because the community can help identify the environmental impacts that will occur from an environmental decision. Access to justice (Access to Justice). Access to justice can overcome potential dispute resolution or resolution of other disputes related to environmental decisions because the presence of the community can provide its own perspective, both from victims or those who have experienced real losses or environmental organizations regarding losses due to pollution and/or damage to an environmental decision.

Openness of information and community participation are principles that have been firmly internalized in the substance of Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management (UU PPLH). This principle of community participation is expressly stated in Article 65 paragraph (2) of the PPLH Law which states that "Every person has the right to environmental education, access to information, access to participation and access to justice in fulfilling the right to a good and healthy environment". Among other provisions, Article 65 paragraph (4) of the PPLH Law states that every person has the right to play a role in environmental protection and management in accordance with statutory regulations.

To realize environmental justice, the central government and regional governments can open up space for public participation as a form of openness of information regarding environmental

management. As in Article 70 Paragraph (1) of Law No. 32 of 2009 concerning Environmental Protection and Management, it has been emphasized that the community has the same and broadest rights and opportunities to play an active role in environmental protection and management. The aim is to:

Increase awareness in environmental protection and management; Increasing independence, community empowerment and partnerships; Developing community capabilities and pioneering; Develop the community's immediate responsiveness to carry out social supervision; And Develop and maintain local culture and wisdom in the context of preserving environmental functions.

Dimensions of Amdal. AMDAL is a study of the significant impact of a planned Business and/or Activity on the environment which is necessary for the decision-making process regarding the organizer of the Business and/or Activity. Environmental Management Plan, hereinafter referred to as RKL, is an effort to handle impacts on the environment resulting from business plans and/or activities. Environmental Monitoring Plan, hereinafter abbreviated as RPL, is an effort to monitor environmental components that are impacted by business plans and/or activities.

Amdal itself is an important instrument in ensuring environmental protection and management runs in accordance with applicable regulations. The general uses of AMDAL are: Provide clear information regarding a business plan, along with the environmental impacts it will cause. Accommodate the aspirations, knowledge and opinions of the population, especially regarding environmental issues, when a project or business plan is to be established. Collect local information that is useful for initiators and the community in anticipating impacts and managing the environment.

Environmental Impact Analysis (AMDAL) has an important role in realizing good environmental management. This can be seen in the main task based on Government Regulation of the Republic of Indonesia No. 22 of 2021 concerning the Implementation of Environmental Protection and Management in article 1 which states that Environmental Impact Analysis (AMDAL) is to sort out changes caused by development activities offered so that they become part of natural cycles. A controlled experiment can be conducted to compare changes in environmental quality parameters. One system is set up as a controller; this function can be assigned to protected areas. Meanwhile, development activities occur in other natural systems, namely in cultivation areas. An Environmental Impact Analysis (AMDAL) assessment that is fragmented or ignores one particular component can disrupt the stability of other components.

According to Ninik Suparni, AMDAL is intended for development, and development improvements are identified with AMDAL. AMDAL is one of the sustainable development tools as a means of decision making at the project level. AMDAL should be one of the development motors, but if one takes the wrong steps, the AMDAL process can become a burden.

What is the importance of the environment for society? It can be concluded that the environment for humans is a very important element in their lives, because the environment is not only a place for humans to do activities, but also plays a role in supporting various human activities.

## CONCLUSION

The concept of environmental justice from the perspective of public participation in developing natural resources cannot be separated from the principles of social justice. Social justice, in this case, is not only intended for people who exist and live in the present but more than that, environmental justice from the perspective of public participation in the development of natural resources, which is intended to provide opportunities for the community to be involved in any development of natural resources. Bearing in mind that in terms of developing natural resources, there are things that require the community to participate as the subject of an Environmental Impact Analysis (AMDAL). Talking about public participation in natural resource development is certainly very important for every level of society to be involved in monitoring. The supervision in question has the aim of ensuring that environmental justice can be achieved following the use of resources into green energy in the future.

**REFERENCES**

- Akbar, A. M., Rahma, T., Lemuel, Y., Fitriana, D., Fanani, T. R. A., & Sekarjati, R. D. L. G. (2022). Moral education and Pancasila in encouraging the prevention of intolerance in the era of globalization: Experiences of Indonesia and Malaysia. *Jurnal Panjar: Pengabdian Bidang Pembelajaran*, 4(2), 223–282.
- Amon, D. J., Gollner, S., Morato, T., Smith, C. R., Chen, C., Christiansen, S., Currie, B., Drazen, J. C., Fukushima, T., & Gianni, M. (2022). Assessment of scientific gaps related to the effective environmental management of deep-seabed mining. *Marine Policy*, 138, 105006.
- Brisbois, M. C. (2020). Decentralised energy, decentralised accountability? Lessons on how to govern decentralised electricity transitions from multi-level natural resource governance. *Global Transitions*, 2, 16–25.
- Endo, K., & Ikeda, S. (2022). How can developing countries achieve sustainable development: Implications from the inclusive wealth index of ASEAN countries. *International Journal of Sustainable Development & World Ecology*, 29(1), 50–59.
- Hahnel, U. J. J., Herberz, M., Pena-Bello, A., Parra, D., & Brosch, T. (2020). Becoming prosumer: Revealing trading preferences and decision-making strategies in peer-to-peer energy communities. *Energy Policy*, 137, 111098.
- Haseeb, M., Kot, S., Hussain, H. I., & Kamarudin, F. (2021). The natural resources curse-economic growth hypotheses: Quantile-on-Quantile evidence from top Asian economies. *Journal of Cleaner Production*, 279, 123596.
- Hoang, A. T., & Nguyen, X. P. (2021). Integrating renewable sources into energy system for smart city as a sagacious strategy towards clean and sustainable process. *Journal of Cleaner Production*, 305, 127161.
- Jurasz, J., Canales, F. A., Kies, A., Guezgouz, M., & Beluco, A. (2020). A review on the complementarity of renewable energy sources: Concept, metrics, application and future research directions. *Solar Energy*, 195, 703–724.
- Liu, H., Saleem, M. M., Al-Faryan, M. A. S., Khan, I., & Zafar, M. W. (2022). Impact of governance and globalization on natural resources volatility: The role of financial development in the Middle East North Africa countries. *Resources Policy*, 78, 102881.
- Lowitzsch, J., Hoicka, C. E., & van Tulder, F. J. (2020). Renewable energy communities under the 2019 European Clean Energy Package–Governance model for the energy clusters of the future? *Renewable and Sustainable Energy Reviews*, 122, 109489.
- Luo, S., & Mabrouk, F. (2022). Nexus between natural resources, globalization and ecological sustainability in resource-rich countries: Dynamic role of green technology and environmental regulation. *Resources Policy*, 79, 103027.
- Mustalahti, I., Gutiérrez-Zamora, V., Hyle, M., Devkota, B. P., & Tokola, N. (2020). Responsibilization in natural resources governance: A romantic doxa? *Forest Policy and Economics*, 111, 102033.
- Ohler, A., Peeters, M., & Eliantonio, M. (2021). How to represent the silent environment? An Update on Germany's Struggle to Implement Article 9 (3) of the Aarhus Convention. *Journal for European Environmental & Planning Law*, 18(4), 370–389.
- Rahim, S., Murshed, M., Umarbeyli, S., Kirikkaleli, D., Ahmad, M., Tufail, M., & Wahab, S. (2021). Do natural resources abundance and human capital development promote economic growth? A study on the resource curse hypothesis in Next Eleven countries. *Resources, Environment and Sustainability*, 4, 100018.
- Rahman, A., Richards, R., Dargusch, P., & Wadley, D. (2023). Pathways to reduce Indonesia's dependence on oil and achieve longer-term decarbonization. *Renewable Energy*, 202, 1305–1323.
- Sadorsky, P. (2021). Wind energy for sustainable development: Driving factors and future outlook. *Journal of Cleaner Production*, 289, 125779.

- Sani, L., Khatiwada, D., Harahap, F., & Silveira, S. (2021). Decarbonization pathways for the power sector in Sumatra, Indonesia. *Renewable and Sustainable Energy Reviews*, *150*, 111507.
- Tang, C., Irfan, M., Razzaq, A., & Dagar, V. (2022). Natural resources and financial development: Role of business regulations in testing the resource-curse hypothesis in ASEAN countries. *Resources Policy*, *76*, 102612.
- Tymstra, C., Stocks, B. J., Cai, X., & Flannigan, M. D. (2020). Wildfire management in Canada: Review, challenges and opportunities. *Progress in Disaster Science*, *5*, 100045.
- Yana, S., Nizar, M., & Mulyati, D. (2022). Biomass waste as a renewable energy in developing bio-based economies in Indonesia: A review. *Renewable and Sustainable Energy Reviews*, *160*, 112268.
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